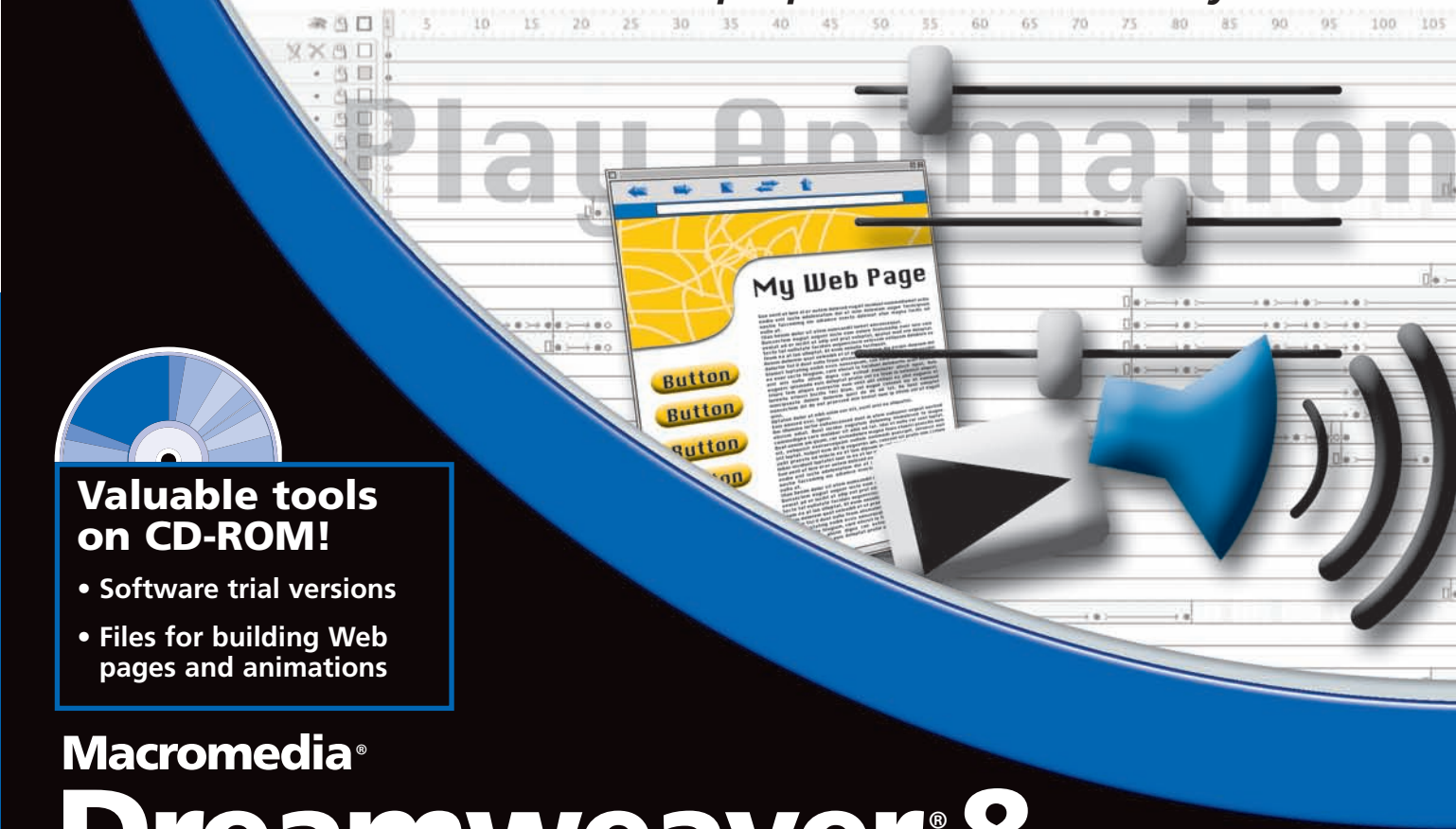
Read Less-Learn More®

Visual®

MASTER VISUALLY®

Step Up to Success—Visually



Valuable tools on CD-ROM!

- Software trial versions
- Files for building Web pages and animations

Macromedia®

Dreamweaver® 8 and Flash® 8

MASTER VISUALLY®

by Denise Etheridge and Janet Valade

Dreamweaver® 8 and Flash® 8

Wiley Publishing, Inc.

Master VISUALLY® Dreamweaver® 8 and Flash® 8

Published by
Wiley Publishing, Inc.
111 River Street
Hoboken, NJ 07030-5774

Published simultaneously in Canada

Copyright © 2006 by Wiley Publishing, Inc., Indianapolis, Indiana

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Legal Department, Wiley Publishing, Inc., 10475 Crosspoint Blvd., Indianapolis, IN 46256, (317) 572-3447, fax (317) 572-4355, Online: www.wiley.com/go/permissions.

Library of Congress Control Number: 2005938255

ISBN-13: 978-0-471-77618-5
ISBN-10: 0-471-77618-1

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

1K/RX/QT/QW/IN

Trademark Acknowledgments

Wiley, the Wiley Publishing logo, Visual, the Visual logo, Master VISUALLY, Read Less - Learn More and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates. Dreamweaver and Flash are registered trademarks of Adobe Systems Incorporated. All other trademarks are the property of their respective owners. Wiley Publishing, Inc. is not associated with any product or vendor mentioned in this book.

LIMIT OF LIABILITY/DISCLAIMER OF WARRANTY: THE PUBLISHER AND THE AUTHOR MAKE NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF THE CONTENTS OF THIS WORK AND SPECIFICALLY DISCLAIM ALL WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. NO WARRANTY MAY BE CREATED OR EXTENDED BY SALES OR PROMOTIONAL MATERIALS. THE ADVICE AND STRATEGIES CONTAINED HEREIN MAY NOT BE SUITABLE FOR EVERY SITUATION. THIS WORK IS SOLD WITH THE UNDERSTANDING THAT THE PUBLISHER IS NOT ENGAGED IN RENDERING LEGAL, ACCOUNTING, OR OTHER PROFESSIONAL SERVICES. IF PROFESSIONAL ASSISTANCE IS REQUIRED, THE SERVICES OF A COMPETENT PROFESSIONAL PERSON SHOULD BE SOUGHT. NEITHER THE PUBLISHER NOR THE AUTHOR SHALL BE LIABLE FOR DAMAGES ARISING HEREFROM. THE FACT THAT AN ORGANIZATION OR WEBSITE IS REFERRED TO IN THIS WORK AS A CITATION AND/OR A POTENTIAL SOURCE OF FURTHER INFORMATION DOES NOT MEAN THAT THE AUTHOR OR THE PUBLISHER ENDORSES THE INFORMATION THE ORGANIZATION OR WEBSITE MAY PROVIDE OR RECOMMENDATIONS IT MAY MAKE. FURTHER, READERS SHOULD BE AWARE THAT INTERNET WEBSITES LISTED IN THIS WORK MAY HAVE CHANGED OR DISAPPEARED BETWEEN WHEN THIS WORK WAS WRITTEN AND WHEN IT IS READ.

FOR PURPOSES OF ILLUSTRATING THE CONCEPTS AND TECHNIQUES DESCRIBED IN THIS BOOK, THE AUTHOR HAS CREATED VARIOUS NAMES, COMPANY NAMES, MAILING, E-MAIL AND INTERNET ADDRESSES, PHONE AND FAX NUMBERS AND SIMILAR INFORMATION, ALL OF WHICH ARE FICTITIOUS. ANY RESEMBLANCE OF THESE FICTITIOUS NAMES, ADDRESSES, PHONE AND FAX NUMBERS AND SIMILAR INFORMATION TO ANY ACTUAL PERSON, COMPANY AND/OR ORGANIZATION IS UNINTENTIONAL AND PURELY COINCIDENTAL.

Contact Us

For general information on our other products and services please contact our Customer Care Department within the U.S. at 800-762-2974, outside the U.S. at 317-572-3993 or fax 317-572-4002.

For technical support please visit www.wiley.com/techsupport.

Sales
Contact Wiley
at (800) 762-2974 or
fax (317) 572-4002.

Praise for Visual Books...

"If you have to see it to believe it, this is the book for you!"

—PC World

"A master tutorial/reference — from the leaders in visual learning!"

—Infoworld

"A publishing concept whose time has come!"

—The Globe and Mail

"Just wanted to say THANK YOU to your company for providing books which make learning fast, easy, and exciting! I learn visually so your books have helped me greatly — from Windows instruction to Web development. Best wishes for continued success."

—Angela J. Barker (Springfield, MO)

"I have over the last 10–15 years purchased thousands of dollars worth of computer books but find your books the most easily read, best set out, and most helpful and easily understood books on software and computers I have ever read. Please keep up the good work."

—John Gatt (Adamstown Heights, Australia)

"You're marvelous! I am greatly in your debt."

—Patrick Baird (Lacey, WA)

"I am an avid fan of your Visual books. If I need to learn anything, I just buy one of your books and learn the topic in no time. Wonders! I have even trained my friends to give me Visual books as gifts."

—Illona Bergstrom (Aventura, FL)

"I have quite a few of your Visual books and have been very pleased with all of them. I love the way the lessons are presented!"

—Mary Jane Newman (Yorba Linda, CA)

"Like a lot of other people, I understand things best when I see them visually. Your books really make learning easy and life more fun."

—John T. Frey (Cadillac, MI)

"Your Visual books have been a great help to me. I now have a number of your books and they are all great. My friends always ask to borrow my Visual books — trouble is, I always have to ask for them back!"

—John Robson
(Brampton, Ontario, Canada)

"I write to extend my thanks and appreciation for your books. They are clear, easy to follow, and straight to the point. Keep up the good work! I bought several of your books and they are just right! No regrets! I will always buy your books because they are the best."

—Seward Kollie (Dakar, Senegal)

"What fantastic teaching books you have produced! Congratulations to you and your staff."

—Bruno Tonon (Melbourne, Australia)

"Thank you for the wonderful books you produce. It wasn't until I was an adult that I discovered how I learn — visually. Although a few publishers claim to present the materially visually, nothing compares to Visual books. I love the simple layout. Everything is easy to follow. I can just grab a book and use it at my computer, lesson by lesson. And I understand the material! You really know the way I think and learn. Thanks so much!"

—Stacey Han (Avondale, AZ)

"The Greatest. This whole series is the best computer-learning tool of any kind I've ever seen."

—Joe Orr (Brooklyn, NY)

Credits

Project Editors
Tim Borek
Tricia Liebig

Acquisitions Editor
Jody Lefevere

Product Development Manager
Courtney Allen

Copy Editors
Lauren Kennedy
Scott Tullis

Technical Editor
Alex Kingman

Permissions Editor
Laura Moss

Editorial Manager
Robyn Siesky

Business Manager
Amy Knies

Manufacturing
Allan Conley
Linda Cook
Paul Gilchrist
Jennifer Guynn

Book Design
Kathie Rickard

Project Coordinator
Maridee Ennis

Layout
Jennifer Heleine
Amanda Spagnuolo

Screen Artists
Jill A. Proll

Illustrator
Ronda David-Burroughs

Proofreader
Lisa Stiers

Quality Control
Brian H. Walls

Indexer
Richard T. Evans

Special Help
Tricia Liebig
Lauren Kennedy

Vice President and Executive Group Publisher
Richard Swadley

Vice President and Publisher
Barry Pruett

Composition Director
Debbie Stailey

About the Authors

Denise Etheridge is the president and founder of BayCon Group, Inc. She publishes Web sites, provides consulting services, and teaches computer courses. She authored *Flash ActionScript: Your visual blueprint for creating Flash-enhanced Web sites.* In addition, she has written several Web-based software tutorials. You can visit `www.baycongroup.com/flash/00_flash.htm` to view her Flash tutorials.

Janet Valade has 20 years experience in the computing field. Her background includes experience as a technical writer for several companies, as a Web designer/programmer for an engineering firm, and as a systems analyst in a university environment where, for over 10 years, she supervised the installation and operation of computing resources, designed and developed a state-wide data archive, provided technical support to faculty and staff, wrote numerous technical papers and documentation, and designed and presented seminars and workshops on a variety of technology topics.

Janet has authored the books *PHP & MySQL For Dummies,* Second Edition, *PHP 5 For Dummies,* and *PHP & MySQL Everyday Apps for Dummies*. In addition, she has authored chapters for several Linux and Web development books.

Authors' Acknowledgments

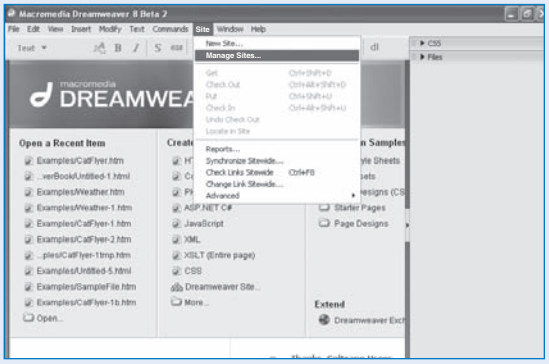
To my mother, with thanks for passing on a writing gene, along with many other things. — Janet

I would like to thank all of the people who provided me with assistance or support during the development of this book. I would like to give special thanks to Malinda McCain for helping me with this and many other projects.

I would like to dedicate this book to Frederick Sr., Catherine, Frederick Jr., and Erskine Etheridge. — Denise

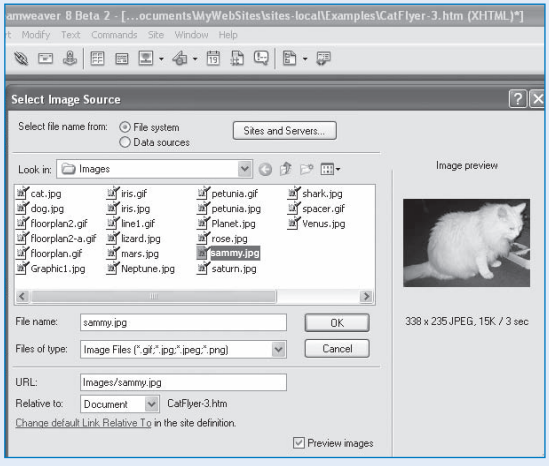
PART I Dreamweaver Basics

1) Setting Up Your Dreamweaver Site
2) Exploring the Dreamweaver Workspace
3) Changing a Web Site



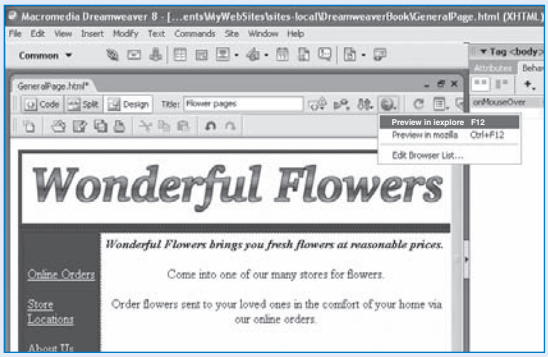
PART II Adding Design Elements

4) Adding and Formtting Text
5) Working with Images
6) Creating Hyperlinks
7) Creating Tables
8) Creating Forms
9) Designing with Frames



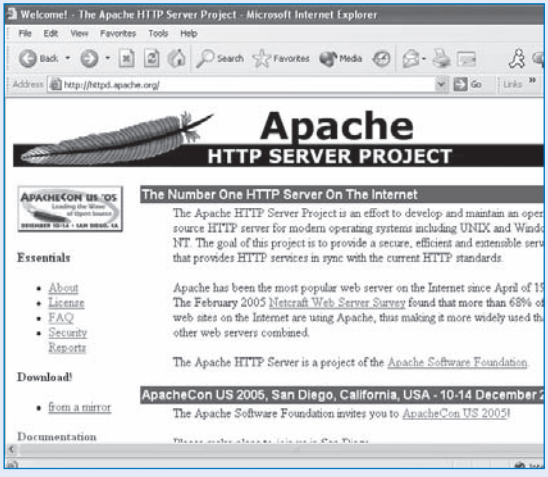
PART III Advanced Dreamweaver Features

10) Setting Up Reusable Web Page Elements
11) Formatting with Style Sheets and Layers
12) Attaching Behaviors to Web Page Elements
13) Animating a Web Page with Timelines



PART IV Creating a Dynamic Site

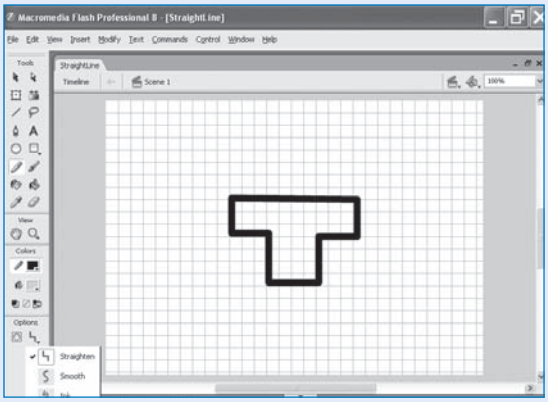
14) Setting Up a Dynamic Site
15) Using a Database with a Web Site
16) Advanced Dynamic Topics



WHAT'S INSIDE

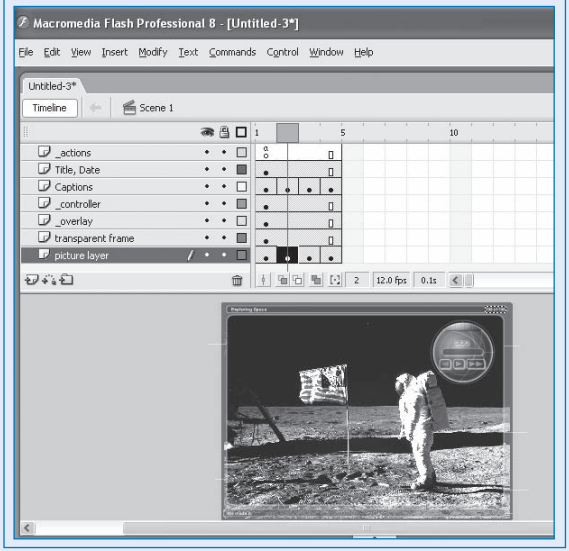
PART V Mastering Flash Basics

17) Getting Started with Flash
18) Creating Objects
19) Editing Objects
20) Working with Text



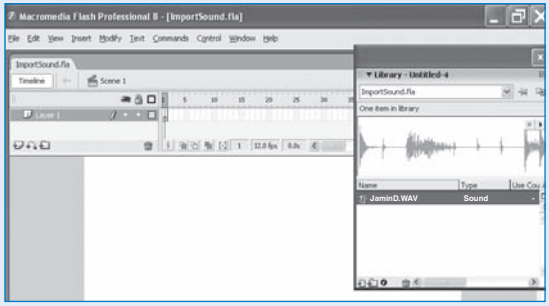
PART VI Building Your Flash Movie

21) Working with Symbols and Instances
22) Working with Layers
23) Working with Frames



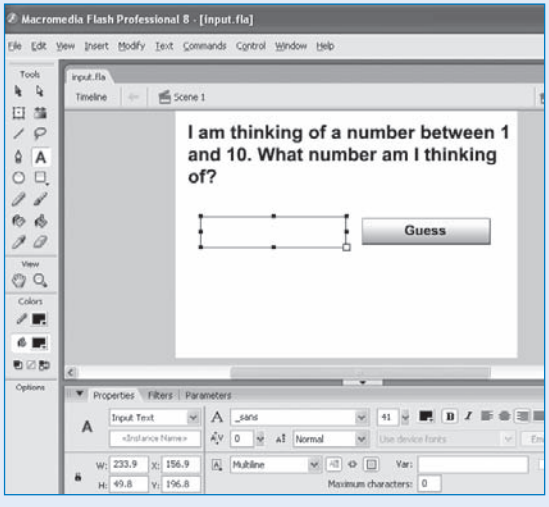
PART VII Adding Finishing Touches

24) Creating Timeline Effects
25) Creating Animations
26) Understanding Buttons and Behaviors
27) Adding Movie Clip Behaviors
28) Adding Sound
29) Working with Video
30) Distributing Flash Movies



PART VIII Building Interactive Elements with ActionScript

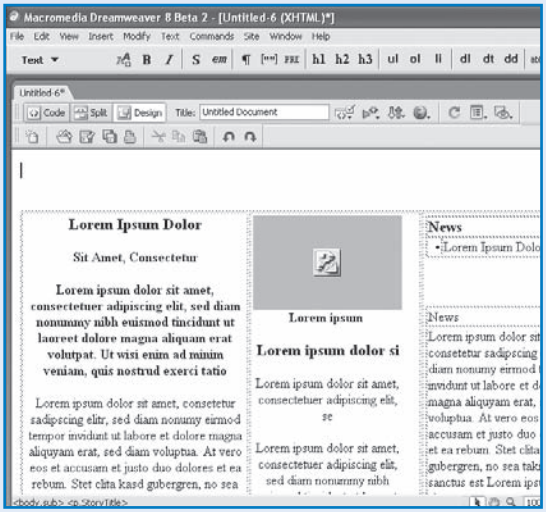
31) Adding ActionScript
32) Changing Movie Clip Properties
33) Programming Basics
Appendix What's On the CD-ROM



PART I Dreamweaver Basics

1 Setting Up Your Dreamweaver Site

Create a Dreamweaver Site 4
Change Dreamweaver Site Information 8
Remove a Dreamweaver Site 9
Move a Dreamweaver Site 10
Create a Web Page.....12
Save a Web Page 13
Using Dreamweaver Page Designs 14
Preview a Web Site 15
Validate the Web Page 16
Check Browser Compatibility 18
Publishing a Dreamweaver Site 20
Copy a Dreamweaver Site 22
Set Up a Check-out System 23
Check Files In and Out 24



2 Exploring the Dreamweaver Workspace

Introduction to the Dreamweaver Workspace....26
Change the Workspace Layout.....27
Open a Web Page 28
Resize the Document Window.....29
Change the Document Window View 30
Using Design View 31
Using Code View 32
Using Dreamweaver Toolbars 34
Using Dreamweaver Buttons 35
Using the Insert Toolbar 36
Using the Commands Menu 38
Using Panels and Inspectors 40
Move a Panel Group 42
Using the Files Panel 43
Using the Property Inspector.....44
Using the History Panel 46
Using the Site Map 48
Set Preferences.....49

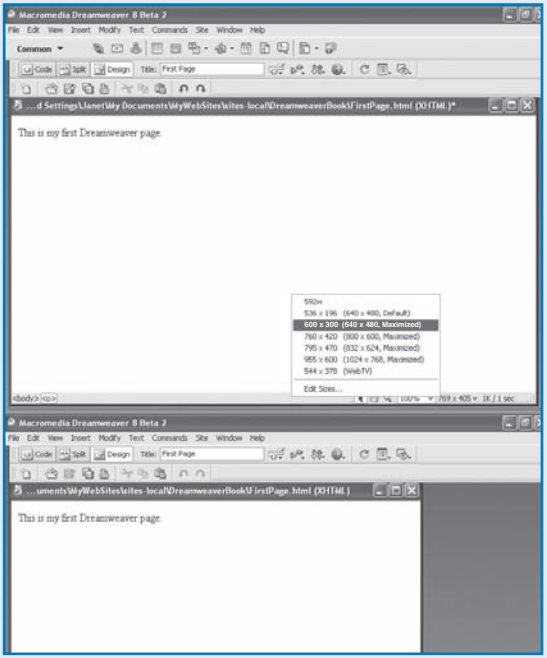
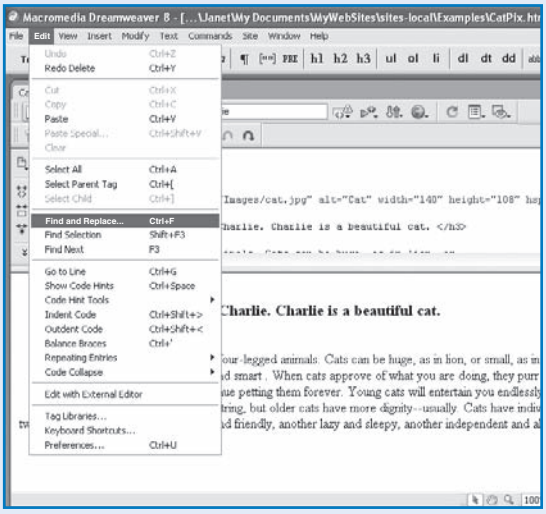


TABLE OF CONTENTS

3 Changing a Web Site

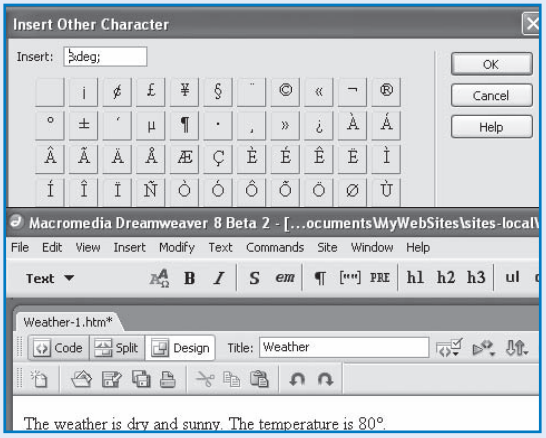
Update a Web Site 50
View Local and Remote Sites 51
Synchronize Local and Remote Sites 52
Find Files 54
Edit a Web Page 56
Undo and Redo Changes 57
Find and Replace Text 58
Edit Source Code 60
Change Tag Attributes with the Tag Inspector 62
Edit a Tag in Design View 63
Search for Tags 64
Using the Reference Panel 66
Troubleshoot File Transfers 67



PART II Adding Design Elements

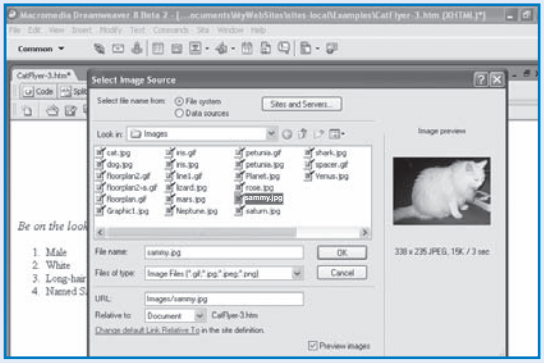
4 Adding and Formatting Text

Add Paragraphs and Headings 70
Align Paragraphs and Headings 71
Insert a Special Character 72
Insert a Line Break 74
Insert the Current Date 75
Change Font Style 76
Change Font Size 77
Change Font Typeface 78
Change Text Color for Selected Text 79
Change the Text Color for a Whole Page 80
Change Multiple Text Properties 82
Create Lists 84



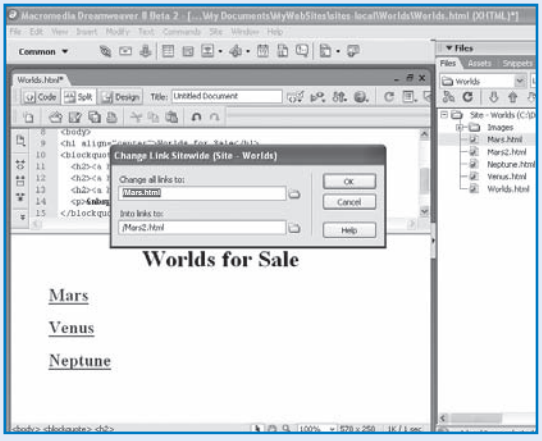
5 Working with Images

Insert and Resize Images 86
Resize an Image in the Property Inspector 88
Align an Image on the Page 89
Align an Image with Text 90
Add Space around an Image 92
Crop an Image 93
Insert a Placeholder Image 94
Add a Background Image 95
Add a Horizontal Rule 96
Add a Spacer Image 97



6 Creating Hyperlinks

Using Hyperlinks 98
Convert Text to a Hyperlink 100
Create a Hyperlink in a Site Map 101
Convert an Image to a Hyperlink 102
Link to a Specific Place in a Document 104
Format Text Hyperlinks 106
Remove a Hyperlink 108
Change a Hyperlink 109
Change Hyperlinks Sitewide 110
Create Multiple Hyperlinks on One Image 112
Create an E-mail Hyperlink 114
Check Links 115



7 Creating Tables

Using Tables in a Web Page 116
Insert Content into a Table 118
Select a Table Element 120
Insert a Row or Column 122
Remove a Row or Column 123
Align a Table 124
Resize a Table 125
Resize a Row or Column 126
Split a Table Cell 128
Merge Table Cells 130

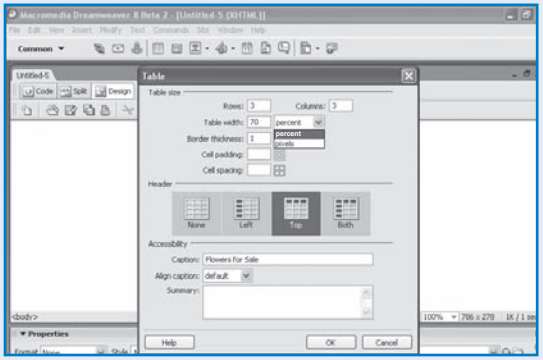
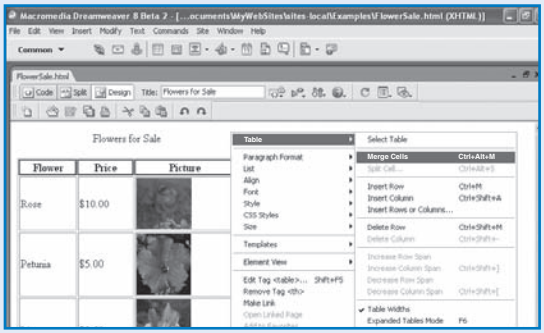


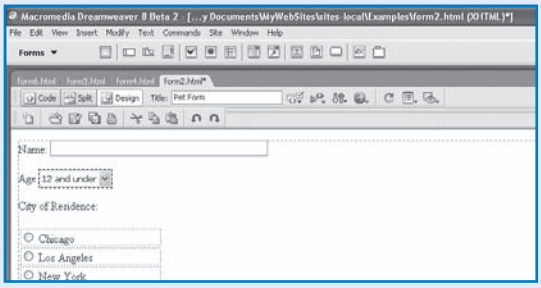
TABLE OF CONTENTS

Turn Off Table Borders 131
Format Table Borders 132
Format Table Cells 134
Move Cell Content 135
Change the Table Background 136
Using Dreamweaver Table Designs 138
Sort a Table 139
Create a Layout Table 140
Import a Table 142



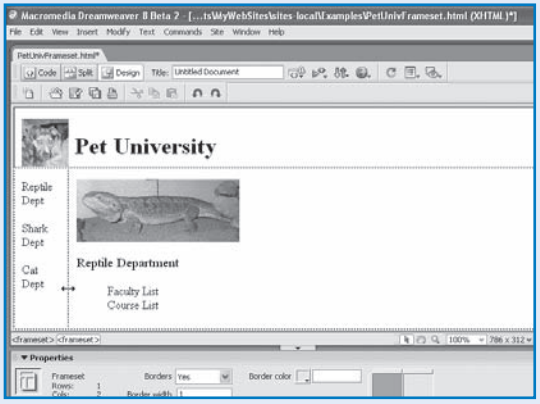
8 Creating Forms

Using Forms 144
Add a Text Field or a Text Area to a Form 146
Add Radio Buttons to a Form 148
Add Checkboxes to a Form 150
Add a List of Options to a Form 152
Add a File Uploading Field to a Form 154
Add Hidden Information to a Form 156
Add a Button to a Form 157



9 Designing with Frames

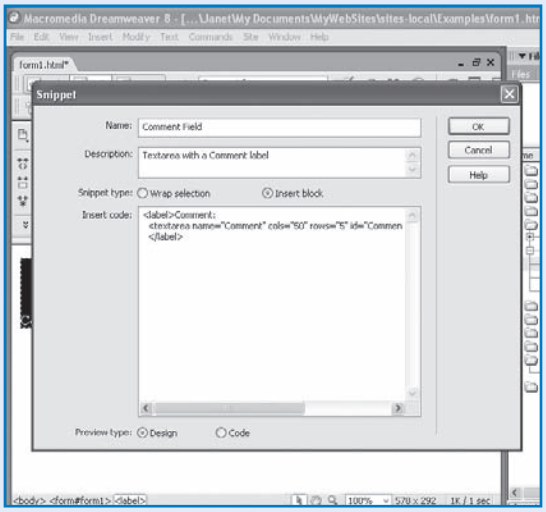
Using Frames 158
Save a Web Page with Frames 160
Using Dreamweaver Frameset Designs 162
Remove a Frame 163
Add Content to a Frame 164
Resize a Frame 166
Control Resizing of Frames 167
Name a Frame 168
Hyperlink to a Frame 169
Turn Off Frame Borders 170
Format Frame Borders 171



PART III Advanced Dreamweaver Features

10 Setting Up Reusable Web Page Elements

Using Snippets, Libraries, and Templates 174
Store a Snippet 176
Insert a Snippet 178
Edit a Snippet 179
Create a Library Item 180
Insert a Library Item 181
Update a Library Item 182
Create a Template 184
Create a Web Page Based on a Template 186
Update a Template 188
Add a Repeating Region to a Template 190
Using a Repeating Region in a Web Page 191
Create a Repeating Table in a Template 192
Create Nested Templates 194



11 Formatting with Style Sheets and Layers

Introducing CSS and Layers 196
Create a Class Style 198
Apply a Class Style 200
Edit a Class Style 201
Change a Style in the Styles Panel 202
Create a Style for an HTML Tag 204
Create an External Style Sheet 206
Attach an External Style Sheet 208
Export Embedded Styles 209
Create a Layer 210
Add Content to a Layer 212
Add a Background Color to a Layer 213
Move a Layer 214
Position and Size a Layer 215
Make a Layer Invisible 216
Align Layers 217
Change the Stacking Order of Layers 218
Convert Layers to Tables 219

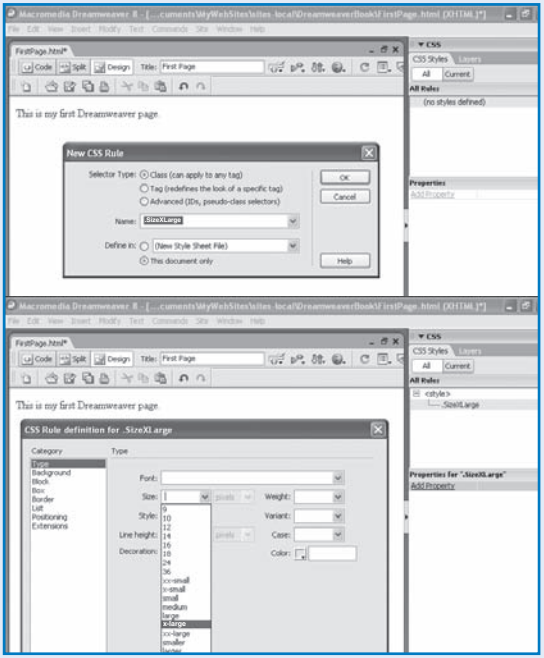
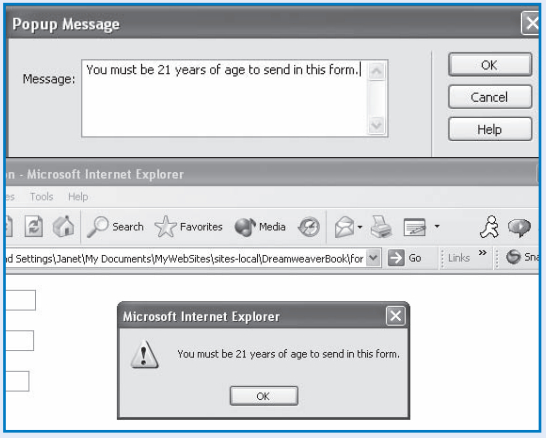


TABLE OF CONTENTS

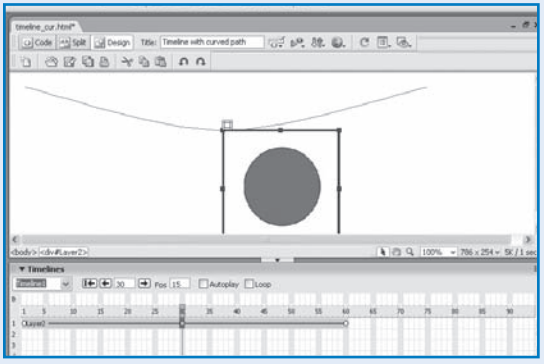
12 Attaching Behaviors to Web Page Elements

Using Dreamweaver Behaviors 220
Change an Action 222
Change an Event 223
Remove an Action 224
Change the Order of Actions 225
Add a Rollover Image to an Image 226
Insert a Rollover Image Link 228
Create a Status Bar Message 230
Open a Customized Browser Window 232
Validate a Form 234
Display Web Pages Based on Browser Type 236
Create a Popup Message 237



13 Animating a Web Page with Timelines

Introducing Timelines 238
Introducing the Timelines Inspector 239
Create a Straight-line Animation 240
Create a Curved-line Animation 242
Remove a Frame, a Keyframe, or an Animation 243
Create an Animation by Dragging a Path 244
Change Layer Properties in Timelines 246
Change Animation Speed 248
Trigger an Animation with a Behavior 250

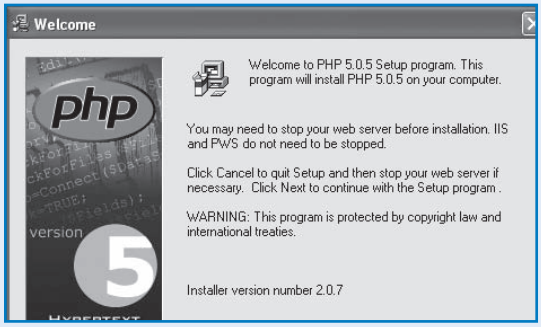


PART IV Creating a Dynamic Site

14 Setting Up a Dynamic Site

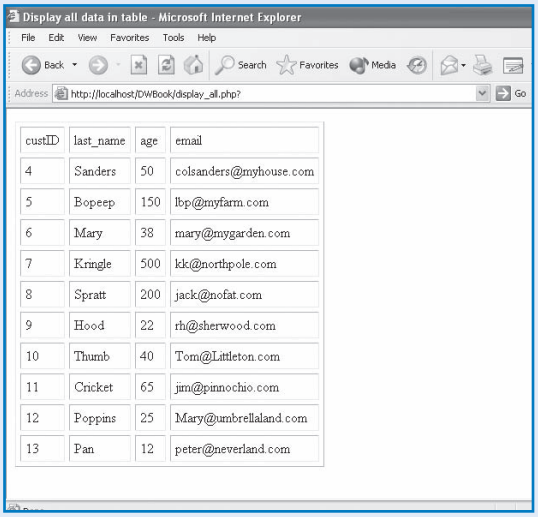
Introducing Dynamic Web Sites 254
Introducing Application Servers 256
Obtain the Apache Web Server 258
Install the Apache Web Server 260

Install the IIS Web Server 262
Obtain the PHP Application Server 264
Install the PHP Application Server.....266
Configure Apache to Process PHP Code 268
Obtain the ColdFusion Application Server.....270
Install the ColdFusion Application Server 272
Set Up a Dynamic Dreamweaver Site.....274
Create a Dynamic Web Page 276
Test a Dynamic Web Page 278



15 Using a Database with a Web Site

Introducing Databases 280
Obtain MySQL 282
Install MySQL 284
Configure MySQL.....286
Set Up PHP to Communicate with MySQL 288
Using MySQL Versions 4.1 or Newer with PHP 290
Connect a Dreamweaver Site to a Database 292
Retrieve Data for Use in a Web Page 294
Display a Data Item on a Web Page.....296
Display Multiple Data Records on a Web Page 298
Add Data to a Database.....300



custID	last_name	age	email
4	Sanders	50	colsanders@myhouse.com
5	Bopeep	150	lbp@myfarm.com
6	Mary	38	mary@mygarden.com
7	Kringle	500	kk@northpole.com
8	Spratt	200	jack@nofat.com
9	Hood	22	rh@sherwood.com
10	Thumb	40	Tom@Littleton.com
11	Cricket	65	jim@pinnochio.com
12	Poppins	25	Mary@umbrellaland.com
13	Pan	12	peter@neverland.com

16 Advanced Dynamic Topics

Using Information from a Form 302
Add Information to a URL 304
Display Information Passed in a URL 306
Store Information in a Cookie 308
Using Information from a Cookie 310
Store Session Information 312
Using Session Information.....314
Display Multiple Records with Paging 316
Create a Search/Results Page Set.....318
Create a Master/Detail Page Set 320

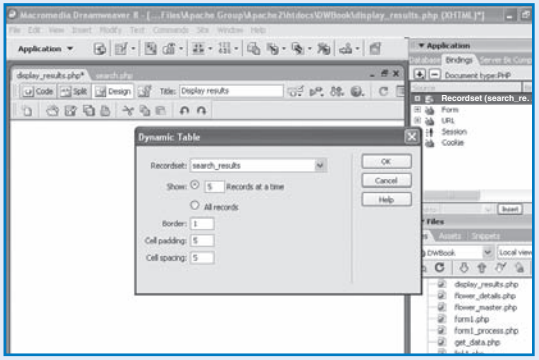
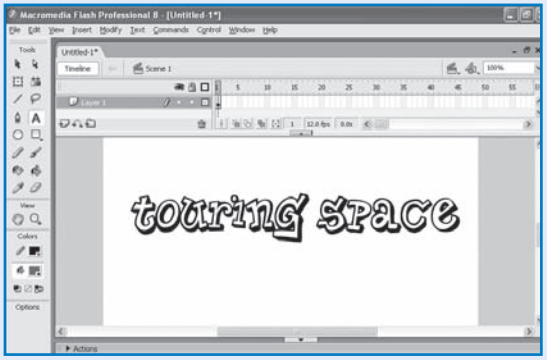


TABLE OF CONTENTS

PART V Mastering Flash Basics

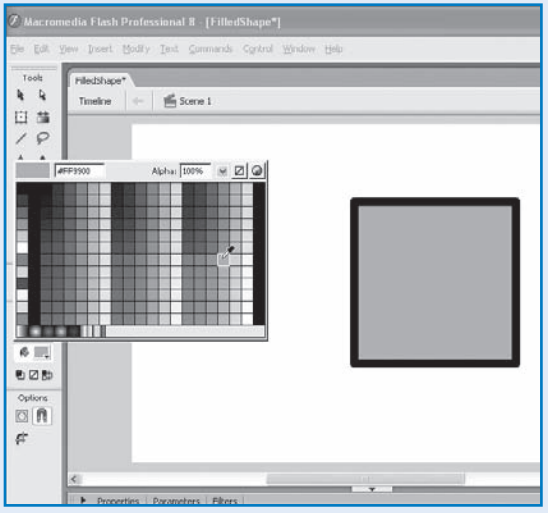
17 Getting Started with Flash

Introducing Flash 324
Find Help 325
Open a Flash File 326
Save and Close a Flash File 328
Using Flash Templates 330
Understanding the Flash Window 332
Understanding the Flash Timeline 333
Understanding the Stage 334
Using Panels 336
Using the Property Inspector 338



18 Creating Objects

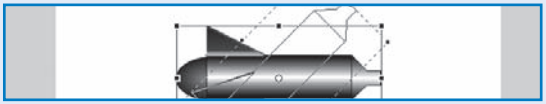
Introducing Flash Objects 340
Draw with the Line Tool 342
Draw with the Pencil Tool 344
Draw with the Oval and Rectangle Tools 346
Draw with the Brush Tool 348
Draw with the Pen Tool 350
Fill Objects with the Paint Bucket Tool 352
Draw with the PolyStar Tool 354
Using the Eraser Tool 356
Format Strokes 358
Create and Use Gradients 362
Import Graphics 366
Convert Bitmaps into Vector Graphics 368
Turn Bitmaps into Fills 370



19 Editing Objects

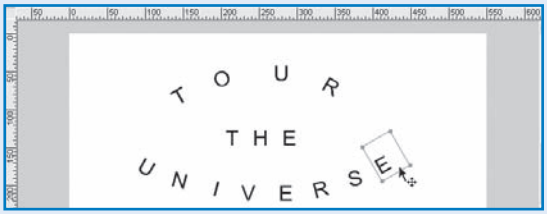
Select Objects 372
Move and Copy Objects 376
Copy Attributes 378
Edit Objects with the Free Transform Tool 380
Transform a Gradient Fill 384
Understanding Drawing Models 386

Stack Objects 388
Align Objects 389
Using the History Panel 390



20 Working with Text

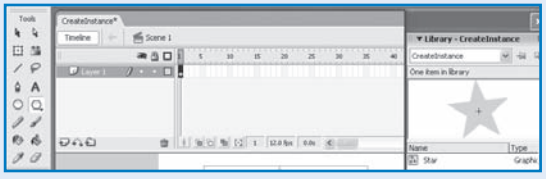
Add Text with the Text Tool 392
Format Text 394
Align and Kern Text 396
Set Text Box Margins and Indents 398
Move and Resize Text Boxes 400
Break Apart Text 402



PART VI Building Your Flash Movie

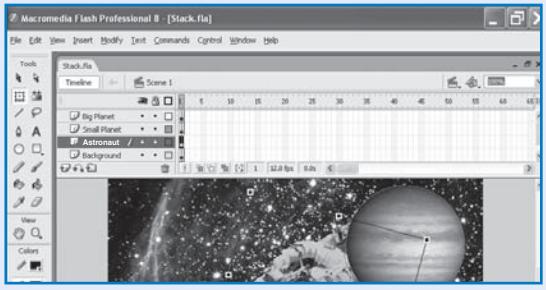
21 Working with Symbols and Instances

Create a Symbol 406
Create an Instance 408
Modify an Instance 410
Edit a Symbol 412
Understanding the Library 414



22 Working with Layers

Add and Delete Layers 418
Set Layer Properties 420
Work with Layers on the Timeline 422
Stack Layers 424
Organize Layers into Folders 426
Add Guide Layers 428
Add and Create a Mask Layer 430
Distribute Objects to Layers 432



23 Working with Frames

Add Frames 434
Select Frames 438
Remove Frames 439
Modify Frame Properties 440
Move and Copy Frames 442

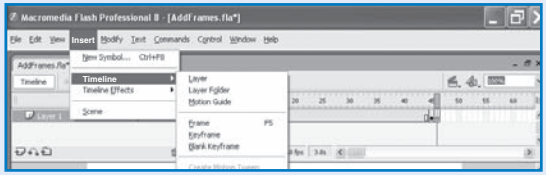
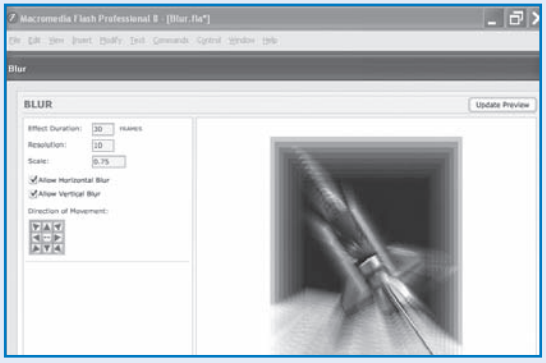


TABLE OF CONTENTS

PART VII Adding Finishing Touches

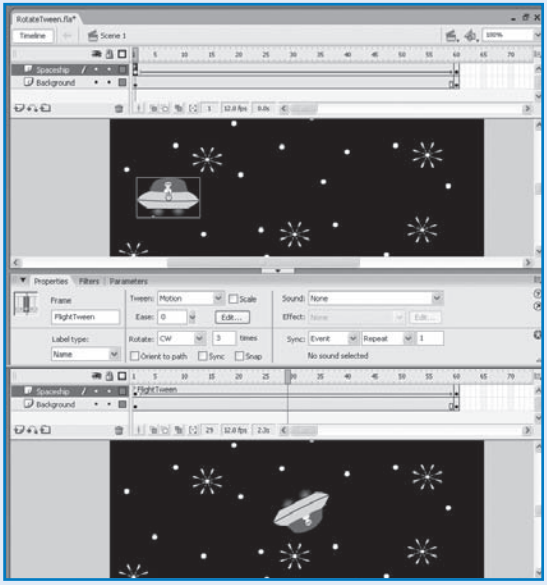
24 Creating Timeline Effects

Preview Flash Animations 446
Understanding Timeline Effects 450
Create a Grid 452
Create Distributed Duplicates 454
Create a Blur 456
Create a Drop Shadow 457
Create an Expand 458
Create an Explode 459
Create Transforms 460
Create Transitions 464



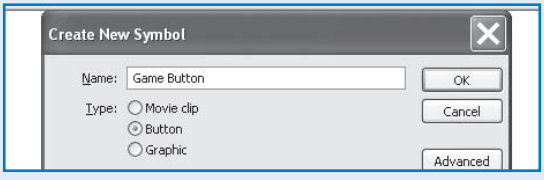
25 Creating Animations

Create a Motion Tween 466
Reverse Frames 468
Create a Rotating Motion Tween 469
Using Transform to Create Tweens 470
Animate an Object along a Path 474
Motion Tween Opacity, Color, and Brightness 476
Create a Shape Tween 478
Assign Shape Hints 480
Animate a Mask 482
Set Tween Speed 484
Create Frame-by-Frame Animation 486
Onion Skin an Animation 488
Create Scenes 490
Create a Movie Clip 492
Using Movie Explorer 494



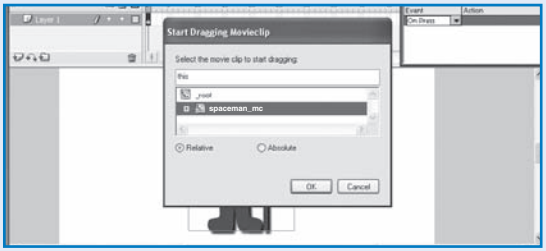
26 Understanding Buttons and Behaviors

Create a Button 496
Create Shape-Changing or Animated Buttons 500
Understanding Behaviors 504
Using the Behaviors Panel 508



27 Adding Movie Clip Behaviors

Understanding Paths 510
Name an Instance 511
Using Goto Behaviors 512
Create Objects Users Can Drag 514
Using the Duplicate Movieclip Behavior 516
Load External Movie Clips 518
Change the Stacking Order 522



28 Adding Sound

Import a Sound File 524
Assign a Sound to a Frame.....526
Assign a Sound to a Button 528
Create Event Sounds 530
Assign Start Sounds 532
Assign Stop Sounds 534
Assign Streaming Sounds 536
Loop Sounds 538
Add Sound Effects.....540
Set Audio Output for Export.....542
Understanding Sound Behaviors 544
Using the Load Sound from Library Behavior 545
Using the Play Sound Behavior 546
Using the Stop Sound Behavior.....547
Using the Stop All Sounds Behavior 548
Using the Load Streaming MP3 File Behavior 549

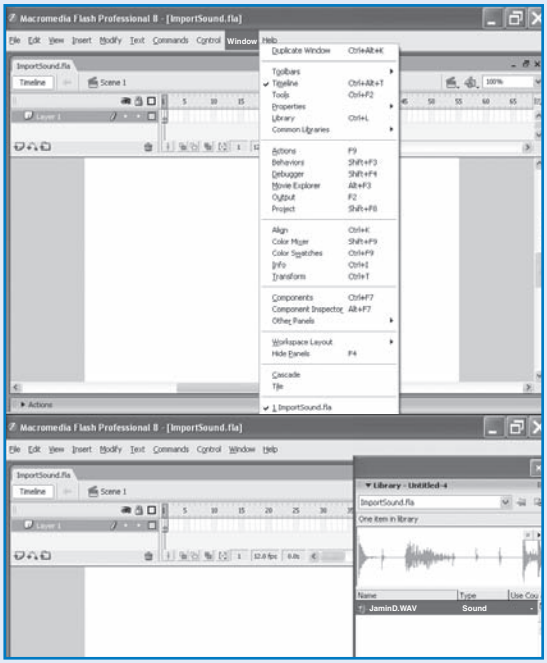
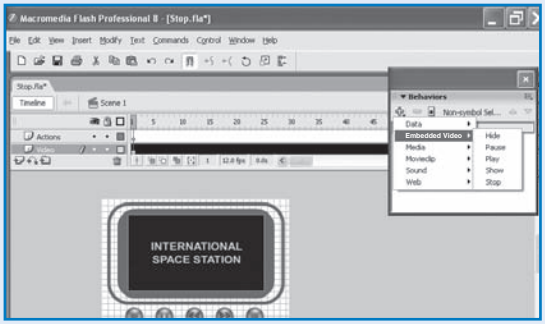


TABLE OF CONTENTS

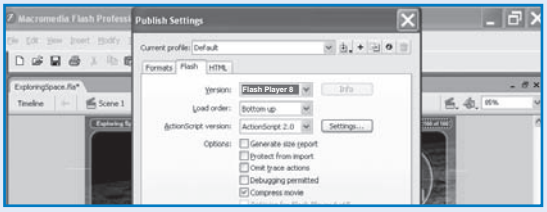
29 Working with Video

Using Progressive Download to Play a Video 550
Embed Video in Your Flash File 552
Using the Embedded Video Stop Behavior 554
Using the Embedded Video Hide Behavior.....555
Using the Embedded Video Show Behavior 556
Using the Embedded Video Play Behavior.....557
Using the Embedded Video Pause Behavior 558
Using the Embedded Video Fast Forward and Rewind Behaviors 559



30 Distributing Flash Movies

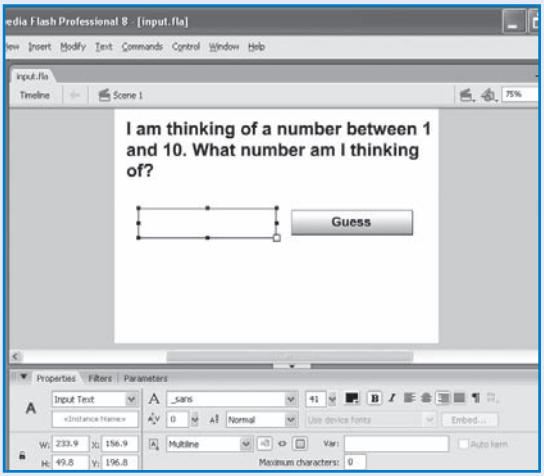
Publish a Movie 560
Publish a Movie in Flash Format 562
Publish a Movie in HTML Format 564
Create a Flash Projector.....568
Export to Another Format.....570
Print Movie Frames 572



PART VIII Building Interactive Elements with ActionScript

31 Adding ActionScript

Introducing Flash ActionScript 576
Create Input Text Boxes 578
Create Dynamic Text Boxes 580
Using the Actions Panel 582
Using Button Event Handlers 586
Using Movie Clip Event Handlers 587
Assign ActionScript to a Frame 588
Stop a Movie 590
Play a Movie 592
Using the Go To Actions 594
Using the Start Drag and Stop Drag Actions 596
Using the Duplicate Movie Clip Action 598



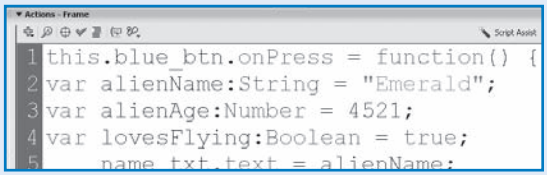
32 Changing Movie Clip Properties

Introducing Movie Clip Properties 600
Adjust Transparency 602
Make Movie Clips Invisible 604
Rotate Movie Clips 606
Change the Width of Movie Clips 608
Change the Height of Movie Clips 610
Move Movie Clips Across the Stage 612
Move Movie Clips Up and Down 614

TABLE OF CONTENTS

33 Programming Basics

Introduction to Variables and Data Types 616
Assign Values to Variables 618
Using If.....620
Using if with else 622
Using else if.....624



Appendix

What's on the CD-ROM 626
Wiley Publishing, Inc. End-User License Agreement 628

How to Use This Master VISUALLY Book

Do you look at the pictures in a book or newspaper before anything else on a page? Would you rather see an image than read how to do something? Search no further. This book is for you. Opening *Master VISUALLY Dreamweaver 8 and Flash 8* allows you to read less and learn more about the Quicken programs.

Who Needs This Book

This book is for a reader who has never used this particular technology or software application. It is also for more computer literate individuals who want to expand their knowledge of the different features that Dreamweaver and Flash have to offer. We assume you already know your way around a computer. You know how to use a Windows or Mac interface, know what computer files and documents are, and can use menus and buttons. We also assume that you know what a Web site is and are familiar with Web site terminology.

Book Organization

Master VISUALLY Dreamweaver 8 and Flash 8 has 33 chapters and is divided into eight parts.

Part I, "Dreamweaver Basics," gets you started with a basic understanding of the organization and management of your Web site using Dreamweaver. The Dreamweaver interface is explained. This section shows you how to set up a Dreamweaver site and to create, publish, and change Web pages.

Part II, "Adding Design Elements," shows you how to add content to your Web pages. You see how to work with text, images, tables, forms, and other Web page content.

Part III, "Advanced Dreamweaver Features," shows you how to work with some of the advanced features that Dreamweaver provides. You learn to use Dreamweaver libraries, templates, behaviors, and other useful features.

Part IV, "Creating a Dynamic Site," shows you how to add dynamic content to your Web pages. You can store and retrieve database data, process forms, build a search/results Web page set, and other dynamic features.

Part V, "Mastering Flash Basics," gets you started with Flash by providing you with an introduction to Flash and the Flash interface. In this part, you also learn how to create objects and text.

Part VI, "Building Your Flash Movie," provides you with an understanding of the basic framework of a Flash movie. You learn how to work with symbols, instances, layers, and frames.

Part VII, "Adding Finishing Touches," shows you how to animate and add interactivity to your Flash movie. You learn how to animate your movie by using Timeline effects, motion tweens, and frame-by-frame animations. You also learn how to add sound and video to your movie, and how to publish your movie.

Part VIII, "Building Interactive Elements with ActionScript," provides you with an introduction to ActionScript. You learn ActionScript basics, how to work with movie clip properties, and some programming basics.

Chapter Organization

This book consists of sections, all listed in the book's table of contents. A *section* is a set of steps that show you how to complete a specific computer task.

Each section, usually contained on two facing pages, has an introduction to the task at hand, a set of full-color screen shots and steps that walk you through the task, and a set of tips. This format allows you to quickly look at a topic of interest and learn it instantly.

Chapters group together three or more sections with a common theme. A chapter may also contain pages that give you the background information needed to understand the sections in a chapter.

What You Need to Use This Book

To use this book, you need to have a working copy of the software — Dreamweaver and Flash — installed. The software runs on Windows or Mac. You can obtain the software at the Macromedia Web site, www.macromedia.com. Trial copies that work for 30 days are available, so you can try out the software before you buy it.

HOW TO USE THIS BOOK

Using the Mouse

This book uses the following conventions to describe the actions you perform when using the mouse:

Click

Press your left mouse button once. You generally click your mouse on something to select something on the screen.

Double-click

Press your left mouse button twice. Double-clicking something on the computer screen generally opens whatever item you have double-clicked.

Right-click

Press your right mouse button. When you right-click anything on the computer screen, the program displays a shortcut menu containing commands specific to the selected item.

Click and Drag, and Release the Mouse

Move your mouse pointer and hover it over an item on the screen. Press and hold down the left mouse button. Now, move the mouse to where you want to place the item and then release the button. You use this method to move an item from one area of the computer screen to another.

The Conventions in This Book

A number of typographic and layout styles have been used throughout *Master VISUALLY® Dreamweaver 8 and Flash 8* to distinguish different types of information.

Bold

Bold type represents the names of commands and options that you interact with. Bold type also indicates text and numbers that you must type into a dialog box or window.

Italics

Italic words introduce a new term and are followed by a definition.

Numbered Steps

You must perform the instructions in numbered steps in order to successfully complete a section and achieve the final results.

Bulleted Steps

These steps point out various optional features. You do not have to perform these steps; they simply give additional information about a feature.

Indented Text

Indented text tells you what the program does in response to you following a numbered step. For example, if you click a certain menu command, a dialog box may appear, or a window may open. Indented text may also tell you what the final result is when you follow a set of numbered steps.

Notes

Notes give additional information. They may describe special conditions that may occur during an operation. They may warn you of a situation that you want to avoid, for example, the loss of data. A note may also cross reference a related area of the book. A cross reference may guide you to another chapter, or another section within the current chapter.

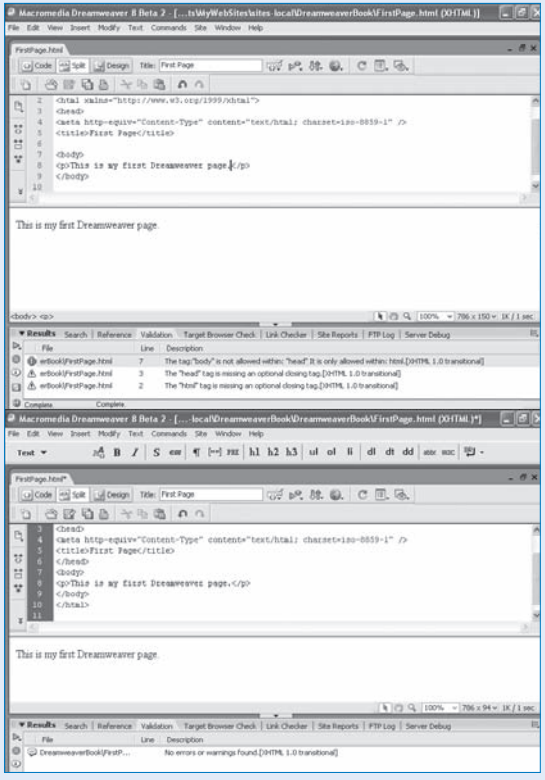
Icons and Buttons

Icons and buttons are graphical representations within the text. They show you exactly what you need to click to perform a step.

You can easily identify the tips in any section by looking for the Master It icon. Master It offer additional information, including tips, hints, and tricks. You can use the Master It information to go beyond what you have learned in the steps.

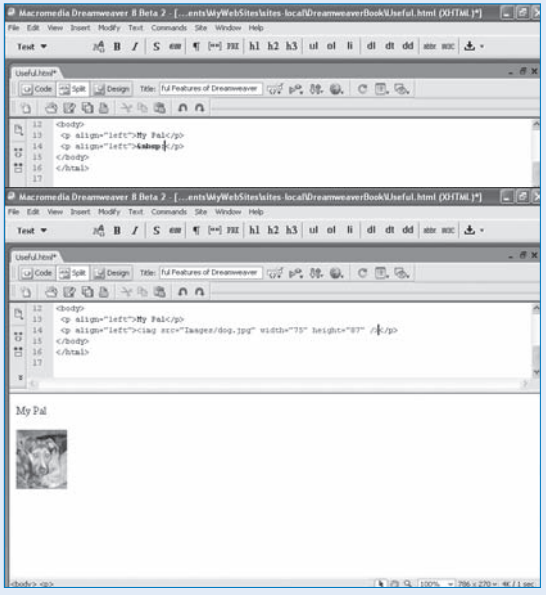
1 Setting Up Your Dreamweaver Site

Create a Dreamweaver Site 4
Change Dreamweaver Site Information 8
Remove a Dreamweaver Site 9
Move a Dreamweaver Site 10
Create a Web Page 12
Save a Web Page 13
Using Dreamweaver Page Designs 14
Preview a Web Site 15
Validate the Web Page 16
Check Browser Compatibility 18
Publishing a Dreamweaver Site 20
Copy a Dreamweaver Site 22
Set Up a Check-out System 23
Check Files In and Out 24



2 Exploring the Dreamweaver Workspace

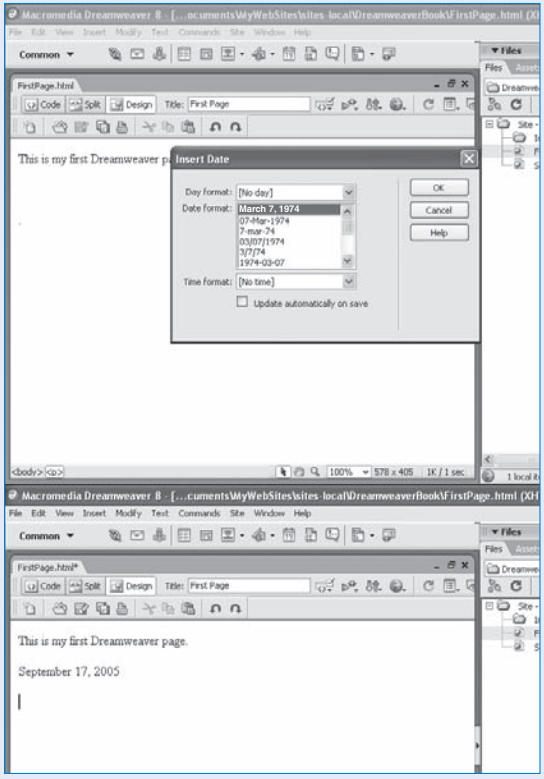
Introduction to the Dreamweaver Workspace 26
Change the Workspace Layout 27
Open a Web Page 28
Resize the Document Window 29
Change the Document Window View 30
Using Design View 31
Using Code View 32
Using Dreamweaver Toolbars 34
Using Dreamweaver Buttons 35
Using the Insert Toolbar 36
Using the Commands Menu 38
Using Panels and Inspectors 40
Move a Panel Group 42
Using the Files Panel 43
Using the Property Inspector 44
Using the History Panel 46
Using the Site Map 48
Set Preferences 49

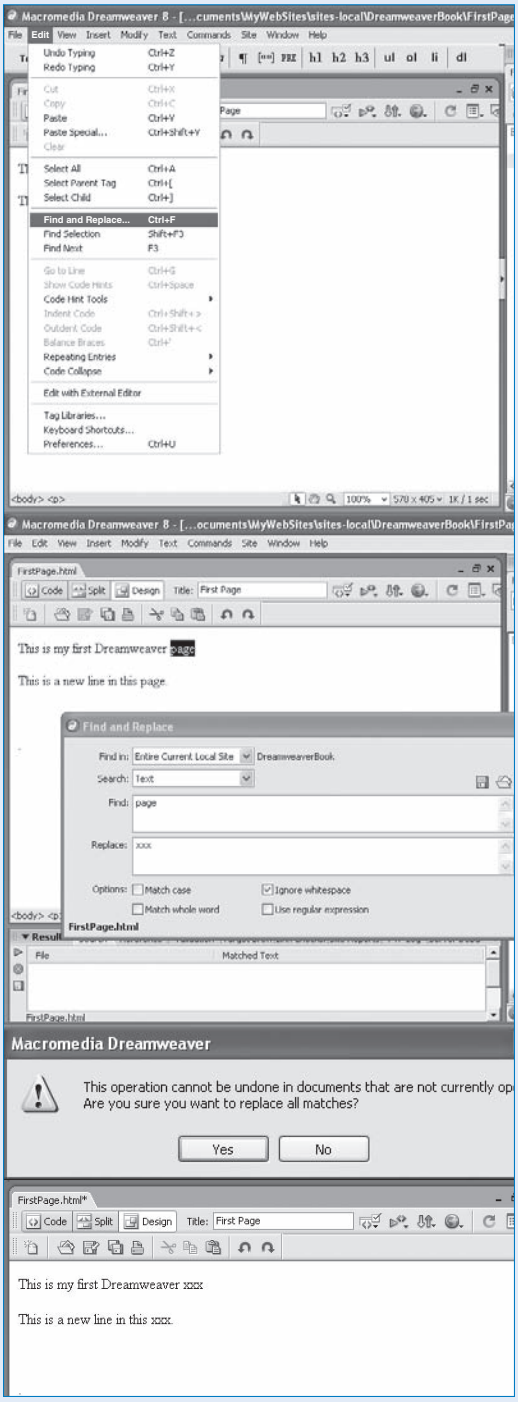


PART I
DREAMWEAVER BASICS

3 Changing a Web Site

Update a Web Site 50
View Local and Remote Sites 51
Synchronize Local and Remote Sites 52
Find Files 54
Edit a Web Page 56
Undo and Redo Changes 57
Find and Replace Text.....58
Edit Source Code 60
Change Tag Attributes with the Tag Inspector.....62
Edit a Tag in Design View 63
Search for Tags 64
Using the Reference Panel 66
Troubleshoot File Transfers.....67





Create a Dreamweaver Site

Dreamweaver is a full-featured Web application development tool. Dreamweaver's features not only assist you with creating and editing Web pages, but also with managing and maintaining your entire Web site. To take advantage of all of Dreamweaver's Web development features, you need to set up a Dreamweaver site that defines your development environment and tells Dreamweaver where files are located.

A Dreamweaver site organizes your Web site to facilitate the development process. In most cases, you create and edit your Web pages in a folder on your local computer and then, when your Web site is completed to your satisfaction, you copy the Web page files to the folder where visitors access your Web site. That is, you copy the Web page files to the folder located at the URL that users type to view your Web site. To support the development process, you create a Dreamweaver site with two different parts: the Local site and the Remote site.

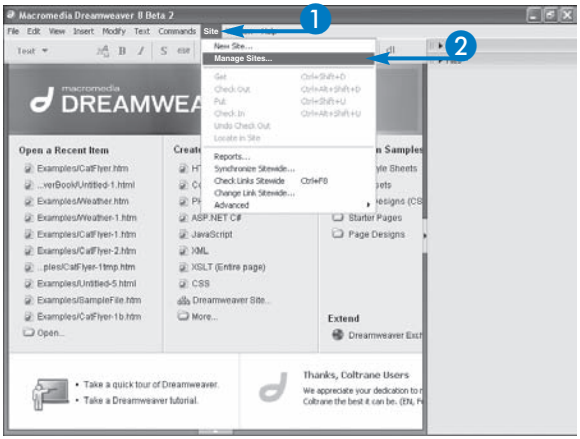
The *Local site* is the folder where you store the files for your Web site while creating and editing them. People visiting your Web site cannot access the files in this site. The Local site is usually located on your own computer, but can be anywhere.

Create a Dreamweaver Site

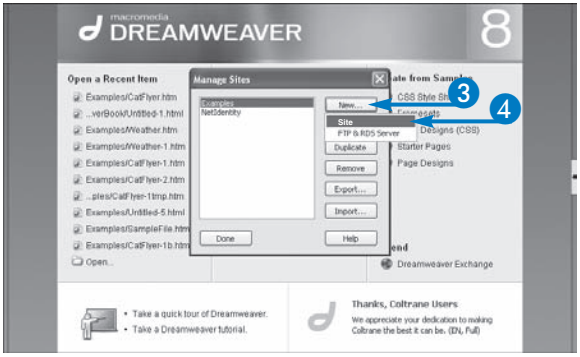
1. Click Site.
2. Click Manage Sites.

   The panel on the right may not appear, depending on whether it was set on or off the last time Dreamweaver was closed. You can open and close the panel by clicking the side arrow.

Note: *See Chapter 2 to learn about the Dreamweaver interface.*



3. Click New.
4. Click Site.

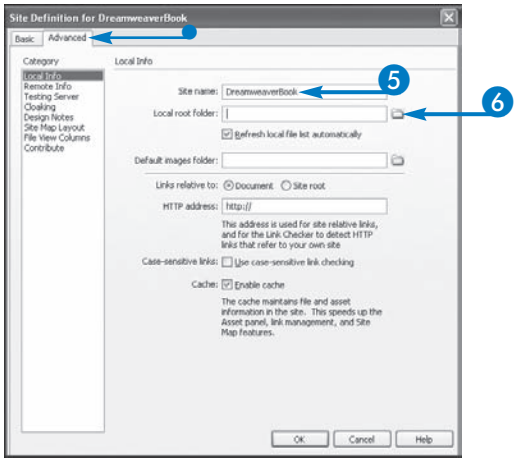


The Site Definition dialog box appears, displaying the Local Info section of the Advanced tab.

- Click the Advanced tab if necessary.

5 Type a name for your new site.

6 Click the folder button ( ) to browse to the folder where you want to store the Local site.



The navigation window opens.

7 Navigate to the folder where you want to store the Web site folders.

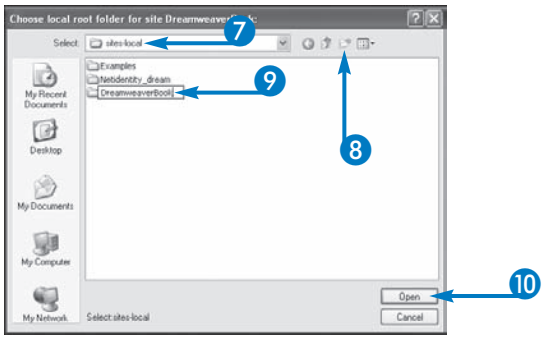
In this example, sites-local is selected.

8 Click the New Folder button ( ).

9 Type a name for the new folder.

10 Click Open.

Dreamweaver opens the new folder.



MASTER IT

Can I set up a Dreamweaver site for an existing Web site?

Yes. The process is basically the same for a new Web site or an existing Web site. During the setup, you enter a path to the Web site files. For a new Web site, the path points to a new empty directory; for an existing site, the path points to a directory that contains the existing Web site files.

How do I set up the Dreamweaver site for an existing site if the Web site files are currently located only at the Remote site?

You can set up a Local site and then copy the files into the Local site. Copy the entire folder structure from the Remote site into the Local site, not just the individual files, so that Dreamweaver does not upload files to the wrong location.

What is the Basic option for setting up a new Dreamweaver site?

The Basic option provides a wizard that prompts for information one step at a time. If you click the Basic tab at the top of the Site Definition window, Dreamweaver starts the wizard that guides you through the steps required to create a new site. This procedure is slower, but can be useful if you are new to developing Web sites.

continued

Create a Dreamweaver Site *(Continued)*

The *Remote site* is the location where users can view your Web pages. After you have finished creating and editing your Web pages in your Local site, you move the completed files to the Remote site. Your Web site might be located in a specific folder on your company network, in a folder assigned to you by a Web hosting company, or in a folder on your own computer if you run your own Web server. If the Remote site is on a different computer than the Local site, the files are moved via File Transfer Protocol (FTP) or a local network that includes the Remote site.

The Dreamweaver site organizes all the documents in your Web site. It tracks and maintains links, manages files, and handles the file transfers from your local site to your remote site. Your Local site and your Remote site need to contain the same hierarchical structure of folders to prevent Dreamweaver from copying files from the Local site into the wrong folder in the Remote site, and vice versa.

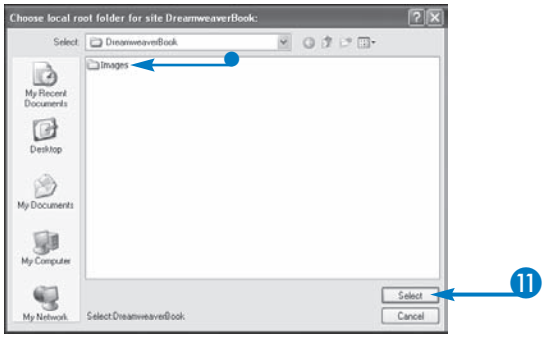
You can manage your files better if you create a folder on your computer (that is, a Local site) that contains all your Dreamweaver sites. Each site is stored in a folder named with the Dreamweaver site name.

Create a Dreamweaver Site *(continued)*

- You can create a folder to hold images, but Dreamweaver does not require one.

11 Click Select.

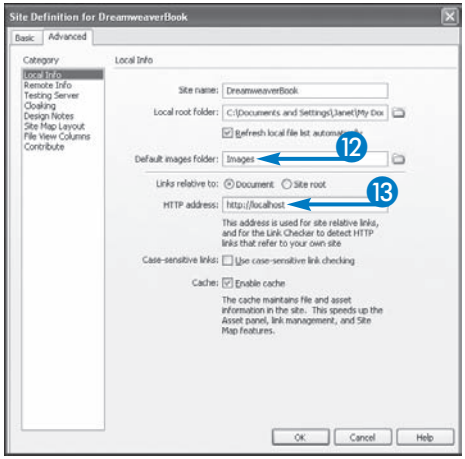
The Site Definition dialog box displays the path to the Local root folder.



12 If you created a folder for your images, add its path/filename to Default images folder.

13 Type the URL that you will use to view your Web pages.

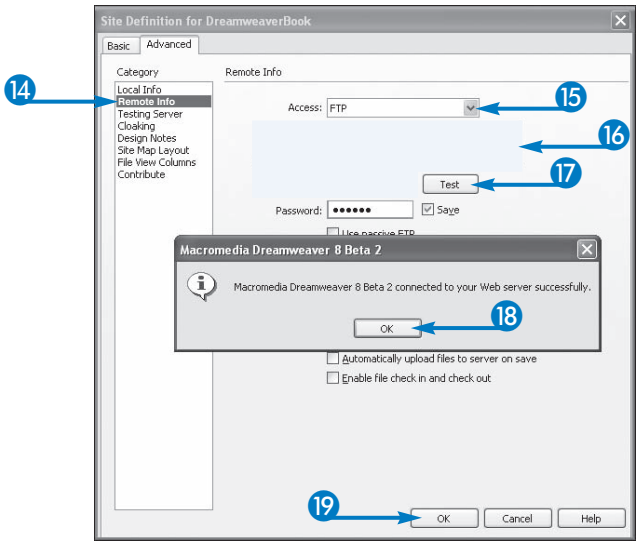
In this example, the Local site is on a local computer, so localhost is used.



14. Click Remote Info.
15. Click here and select an access type.
16. Fill in host, directory, login, and a password for the Remote site.
17. Click Test.

    A response to the test appears.
18. Click OK.

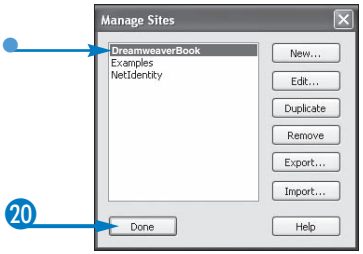
    The test message closes.
19. Click OK.



- Dreamweaver lists the new site in the Manage Sites dialog box.

20. Click Done.

    The new site is now created and you can add Web pages to it.



How does Dreamweaver use a default images folder?

If you specify a default images folder during the Dreamweaver site setup, Dreamweaver places new images that you add to your site into that folder, unless you explicitly put the images elsewhere. For example, if you drag an image from the Desktop into the Document window, Dreamweaver places a copy of the image in the default folder.

Will the name that I give my site appear anywhere on my finished Web site?

No. The name is used only for keeping track of different sites in Dreamweaver. It appears in the Site drop-down list at the top of the Site window. It also appears in the Files panel, which is used to manage Web site files. Using the Files panel is discussed in Chapter 2.

Are Remote and Local the only possible sites in a Dreamweaver site?

No. An additional site — the Testing Server site — can be defined. You need this site only for dynamic Web sites that use ColdFusion, PHP, or another dynamic Web application language. This chapter does not discuss test sites because it does not discuss dynamic Web sites. Chapter 14, which discusses dynamic sites, explains how to set up a test site.

Change Dreamweaver Site Information

The *site information* (also called *site settings*) is the information you provided when you set up the site, such as the name of the Dreamweaver site, the path to the directory where the Web site files are stored, the URL to your Web site, the path to an images folder, information about the remote site, and so on. Dreamweaver stores this information in an internal file, with the information associated with the individual Dreamweaver site.

Sometimes you discover that you provided incorrect information to Dreamweaver when you set up your Dreamweaver site. Or, you provided the correct information, but the information changed at a later time. You can change the information for your Dreamweaver site at any time.

Dreamweaver provides an option to edit the settings for a site. When you select the edit option, you can access the same dialog boxes that you used to enter the information when you set up the site. You can change any of the site settings and save the new settings for the Dreamweaver site.

Change Dreamweaver Site Information

1. Open the Manage Sites dialog box.

Note: *See the section "Create a Dreamweaver Site" earlier in this chapter to open the Manage Sites dialog box.*

2. Click the site name.

   This example uses a site named DreamweaverBook.

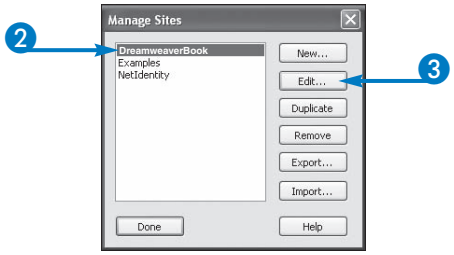
3. Click Edit.

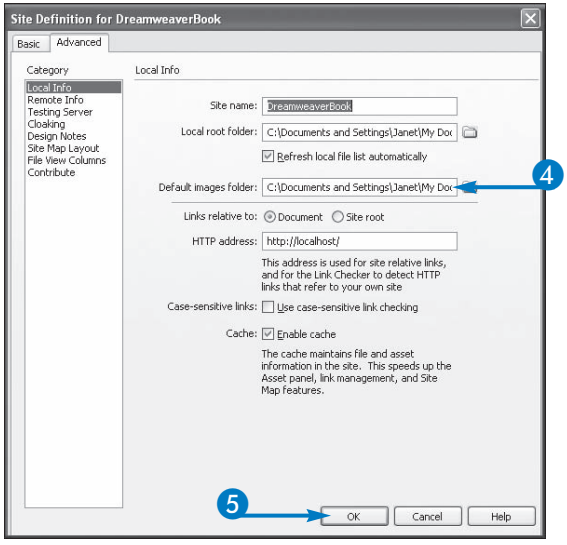
   The Local Info category appears active in the Site Definition dialog box.

4. Change any information you need to change.

Note: *To change information for the Remote site, click Remote Info and change the information in the Remote Info category.*

5. Click OK.





Remove a Dreamweaver Site

You can remove a Dreamweaver site when you no longer need it. The settings saved for the site are deleted from Dreamweaver's internal files. When you remove a Dreamweaver site, Dreamweaver permanently deletes the site information. You cannot undo the action and recreate the site. The site is gone forever.

The Dreamweaver site refers only to the site information. The site contains a path to the root folder where the Web site files are stored. When you remove the site, the path to the Web site files is deleted, along with all the site settings. However, the files themselves are not deleted; the folder with the files is untouched. You could create a new Dreamweaver site, with a new name, and give the new site the same root directory path that was set for the site you just removed. The new site would then display the same Web pages that were displayed by the site you removed.

Remove a Dreamweaver Site

1. Open the Manage Sites dialog box.

Note: *See the section "Create a Dreamweaver Site" earlier in this chapter to open the Manage Sites dialog box*

2. Click the name of the site you want removed.

   This example refers to the site DreamweaverBook.Copy.

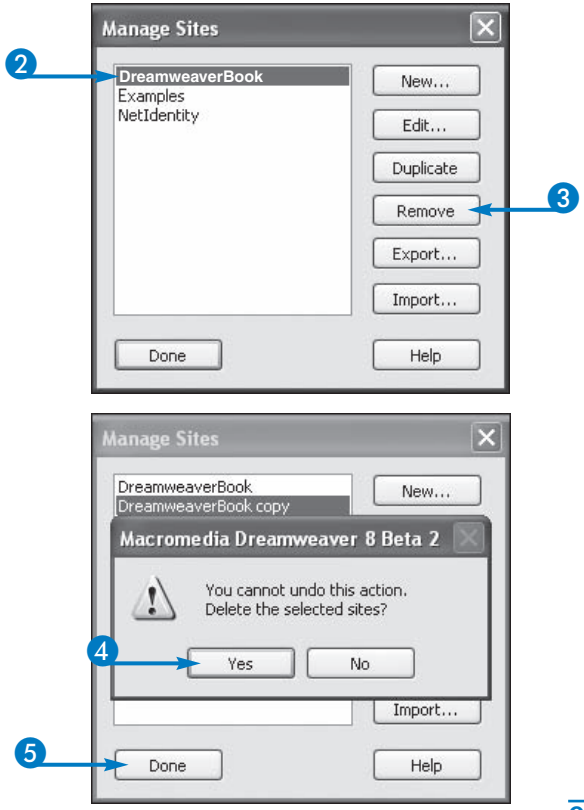
3. Click Remove.

   A window opens to verify that you want to delete the site.

4. Click Yes.

   Dreamweaver removes the site name from the list of sites.

5. Click Done.



Move a Dreamweaver Site

Dreamweaver stores information in internal files for each Dreamweaver site, such as the site name, the path to the root directory, the URL to the Web site, information needed to connect to the Remote site, and so on. In some cases, you might need to set up the same Dreamweaver site on a different computer. Perhaps you need to change your development environment to a different computer; or, if you need to work on the Web site in cooperation with other developers, your co-developers will need to establish the same Dreamweaver environment to coordinate your work. Rather than setting up a new Dreamweaver site on a new computer, with the extra work and potential errors, you can move the existing Dreamweaver site to another computer.

Moving a Dreamweaver site requires three steps: Exporting the current site, moving the file containing the site information to the new computer, and importing the site file into Dreamweaver on the new computer. When you export the current site, the site information is stored in a file called sitename.ste. The exported file contains the information in XML format in a text file that you can examine in a text editor. You move the exported file to the new computer and import it into Dreamweaver.

Move a Dreamweaver Site

Export the existing site

1. Open the Manage Sites dialog box.

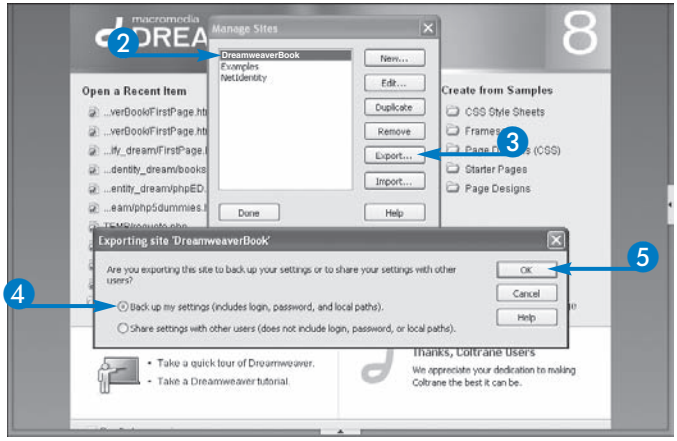
Note: *See the section "Create a Dreamweaver Site" to open the Manage Sites dialog box.*

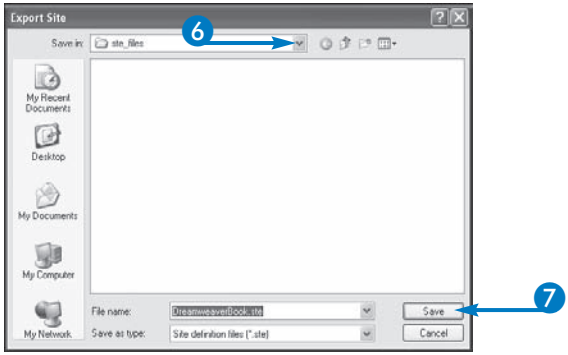
2. Click the site name.
3. Click Export.

   The Exporting dialog box appears.
4. Check an option if the default is not correct (◯ changes to ◉).
5. Click OK.

   The export site navigation dialog box opens.
6. Click here and navigate to the folder where you want to store the exported site.
7. Click Save.

   Dreamweaver saves the file with an .ste extension in the selected folder.



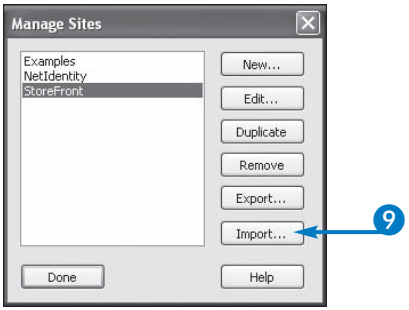


Import on the new computer

8 Open the Manage Sites dialog box.

Note: *See the section "Create a Dreamweaver Site" to open the Manage Sites dialog box*

9 Click Import.



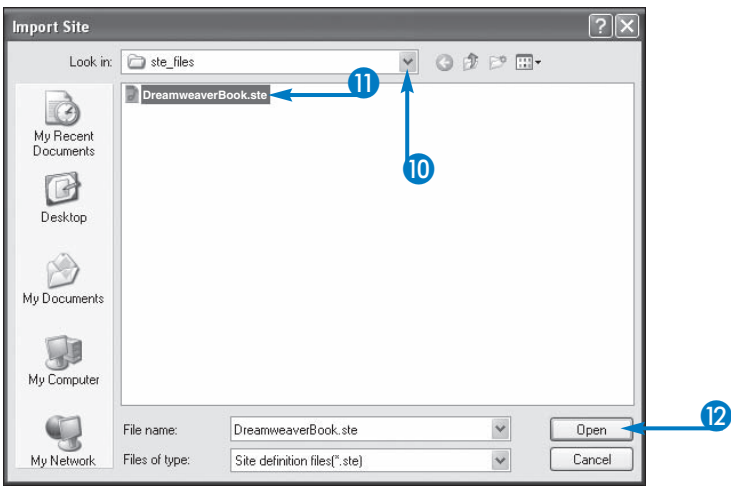
The Import Site dialog box appears.

10 Click here and navigate to the folder where the exported file is stored.

11 Click the filename.

12 Click Open.

Dreamweaver imports the site and lists its name in the Manage Sites box.



Are the Web site files automatically moved when you move the Dreamweaver site?

No. Only the site settings are included in the file that contains the exported site. One of the settings is the path to the root directory where the Web site files are stored.

You must move the actual Web site files separately. You can copy the files on the new computer into a folder with the same path, so that the current path is correct. Or, you can change the path to the root directory after you import the site, setting the path so that the Dreamweaver site looks for the Web site files in a different folder.

What does the file that contains the exported site look like?

The file contains the settings for the Dreamweaver site in XML format. The file begins with an XML tag, such as:

```
<?xml version="1.0" encoding="utf-8" ?>
```

Next, it starts each line of site information with a site tag, as follows:

```
<site>
```

The file then includes various settings. It includes information on the local site, starting with a tag resembling the following:

```
<localinfo sitename= "DreamweaverBook" ...
```

After the local site tag, the file contains a tag for the remote site, similar to the following:

```
<remoteinfo accesstype="ftp" host="janet.valade.
com" ...
```

The file contains other tags containing other site settings.

Create a Web Page

After you have set up your Dreamweaver site, you can create Web pages for the new Web site and store them in the local site. Dreamweaver provides a WYSIWYG (What You See Is What You Get) interface where you can add content to your Web page. You can see the content you enter and move or edit the page as desired. Dreamweaver also provides an interface where you can write HTML code directly if you prefer. The Dreamweaver interface is described in Chapter 2.

In this section, you create a simple Web page, using the WYSIWYG editor, to show the basic process. The next section shows how to save the Web page file in your Dreamweaver site.

A new blank page in Dreamweaver is not completely empty. It contains the required HTML tags, such as `<head>` and `<body>` tags, which do not display any content in the Web page.

Dreamweaver creates your Web page using code that conforms to the document type definition (DTD) specified for your Web page. The new document uses the DTD specified in your preference settings, but you can change it when creating a new document. Changing your preference settings is discussed in Chapter 2.

Create a Web Page

1. Click File and choose New.

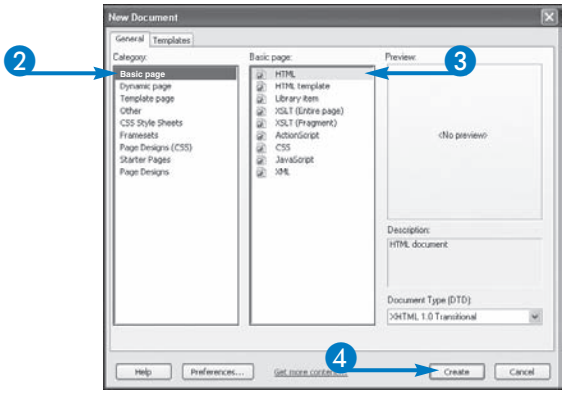
   The New Document dialog box appears.

2. Click Basic page.

3. Click HTML.

Note: *The start page that displays when you open Dreamweaver provides the same menu choices.*

4. Click Create.

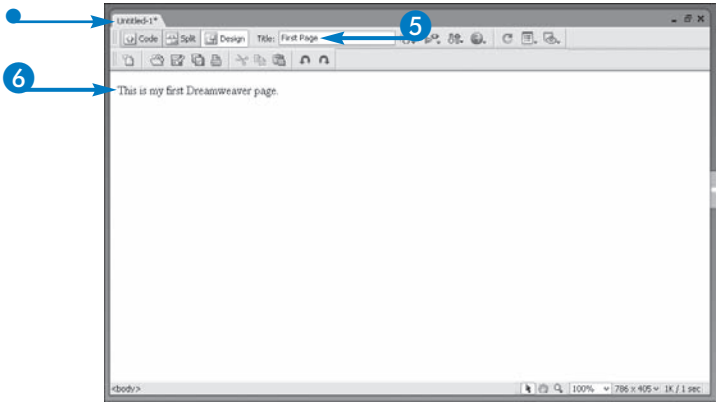


A new, blank Web page opens.

5. Type a title for the page.

6. Type the contents of the Web page.

   - The filename is Untitled-1 because you have not yet saved the file and given it a name.



Save a Web Page

As with most other applications that create files, you must save the Web page or it will be lost when you exit Dreamweaver. Saving your Web page frequently as you work on it is always wise — that way, problems such as computer crashes cause as little content loss as possible. If you attempt to shut down Dreamweaver without saving a Web page, Dreamweaver prompts you to save it.

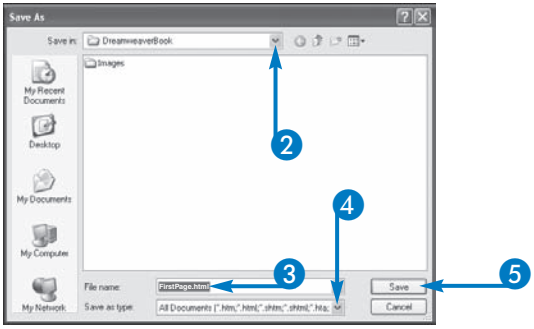
When you save the file, you give it a name. It is best to use only letters, numbers, hyphens, and underscores in the filename. Using punctuation, spaces, or special characters can sometimes cause problems with a Web server, making a file unviewable. Do not begin the filename with a number, which can also sometimes cause problems.

Most non-dynamic Web page filenames require the .htm or .html filename extension. If you are creating dynamic Web pages that interact with an application server and a database, you need to use an extension specific to the application, such as .cfm (ColdFusion), .jsp (Java server page), or .php. Chapter 14 discusses dynamic Web pages.

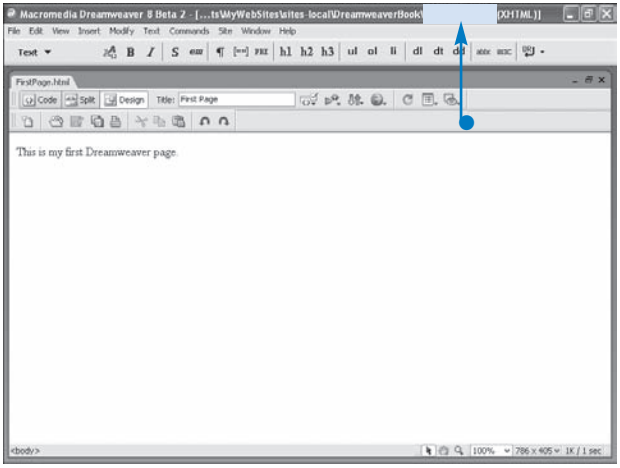
Save a Web Page

1. Click File and then choose Save As.

   The Save As dialog box appears.
2. Click here to navigate to the local site.
3. Type a filename.
4. Click here and select the correct file type.
5. Click Save.



- The filename tab now shows the filename.



Using Dreamweaver Page Designs

Dreamweaver comes with numerous predefined Web pages to help you create starter pages for a number of different types of sites. Using such ready-made designs can save you time and keep the pages within your site consistent.

Dreamweaver page-design documents are formatted and have placeholder information. When you select a page design, a Web page opens that is formatted and has placeholder content for the various parts of the Web page. You just need to replace the placeholder content with the content you want on your Web page. You can also change the Web page format until it suits you perfectly. Then, you save the document in the local site folder of your Dreamweaver site, giving it an appropriate filename.

The predefined pages are grouped into different categories, such as *Commerce* (display products and shopping carts), *Image* (formats for displaying images), *Text* (layouts for online newsletters and magazines), and *UI* (standard forms).

Page-design documents are not templates. They are just Web pages that have code already in them. You can edit the code as you need to and replace placeholder text and images. Templates are more complicated. Chapter 10 discusses the many uses and features of templates.

Using Dreamweaver Page Designs

1. Display the New Document dialog box.

Note: *See the section "Create a Web Page" to display the New Document dialog box.*

2. Click Page Designs.

   A list of available page designs appears.

3. Click page design.

   - Dreamweaver displays a preview and description of the design.

4. Click Create.

   A new page opens with placeholder content.

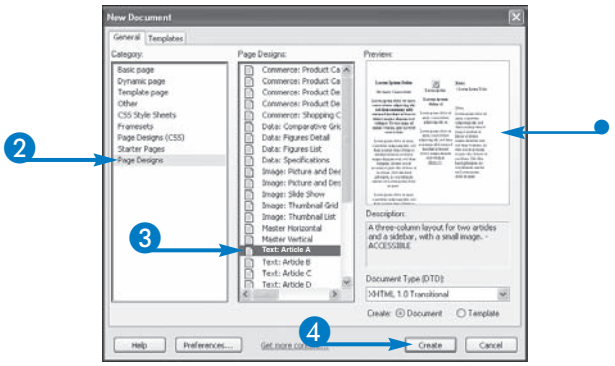
5. Replace the placeholder information with the information you want on your Web page.

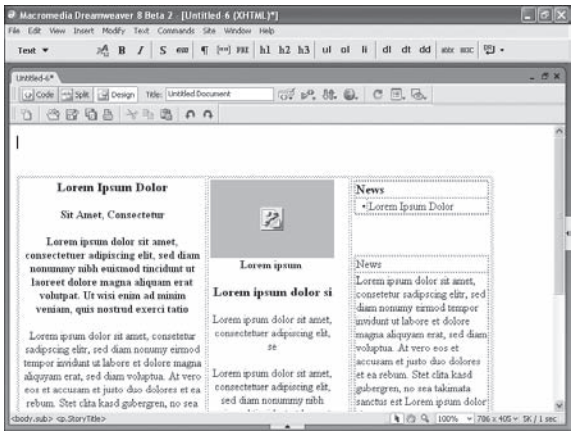
Note: *Chapter 3 discusses editing Web pages.*

Note: *Chapter 3 discusses adding text and Chapter 5 discusses images.*

6. Save the file.

Note: *See the section "Save a Web Page" to save a Web page.*





Preview a Web Site

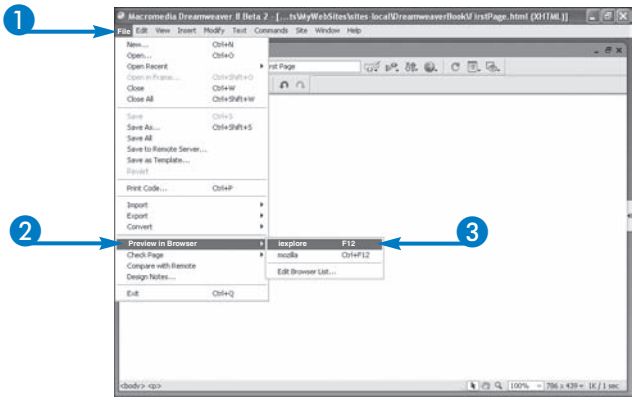
You can view your Local site in a browser to see how it will look when published on your remote Web site. You can preview your Web pages at any time.

You can select a browser in which to preview the Web pages. The Preview in Browser menu item displays a list of browsers from which to choose. You can add or remove browsers from the list by changing your preference settings. Chapter 2 explains how to change preference settings. If you click Edit Browser List in the Preview in Browser menu, the browser list preference settings are displayed for you to change.

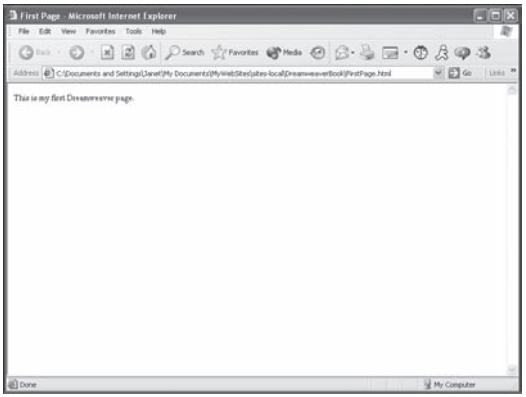
You can create a list of up to 20 browsers that you can use to preview your Web pages. Unless you know exactly what browsers the visitors to your Web site will be using, you should test your Web pages in both current and older versions of the most popular browsers, including Internet Explorer, Firefox, and Netscape. This helps ensure that your Web site displays correctly for the widest possible range of users. You can set one of the browsers as the primary browser and one as the secondary browser.

Preview a Web Site

1. Click File.
2. Click Preview in Browser.
3. Click the browser to use.



The Web page displays in the selected browser.



Validate the Web Page

Dreamweaver provides a validation feature that checks the syntax of your code. The HTML syntax is validated based on the DTD you selected for your document. For example, if you chose XHTML 1.0 transitional for your DTD, the syntax is checked using that standard.

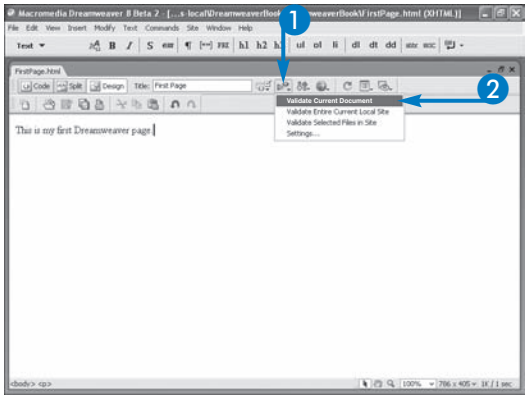
If you create your Web pages using Dreamweaver's WYSIWYG editor, Dreamweaver builds your source code and seldom makes syntax errors. However, if you edit the code yourself, or if you copied some Web page files into your Local site from a Web site that already exists, you need to validate the pages to be sure the syntax is correct.

Dreamweaver displays the results of your validation in the bottom pane of your window in the Results panel. (Chapter 2 provides more details on using panels.) Each error is listed in a separate row, showing the line number in your source code that produced the error. An icon at the beginning of the line indicates the type of error.

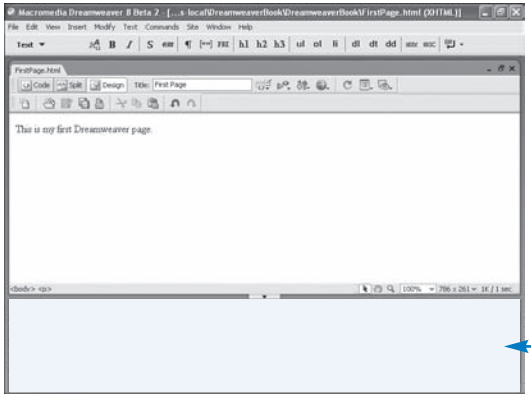
The Web page, created earlier in this chapter, displaying the text "This is my first Dreamweaver page," and saved with the name FirstPage.html, is created by Dreamweaver and has no syntax errors. To show how the Validator works, the `</head>` tag and the `</html>` tag were removed from the source code.

Validate the Web Page

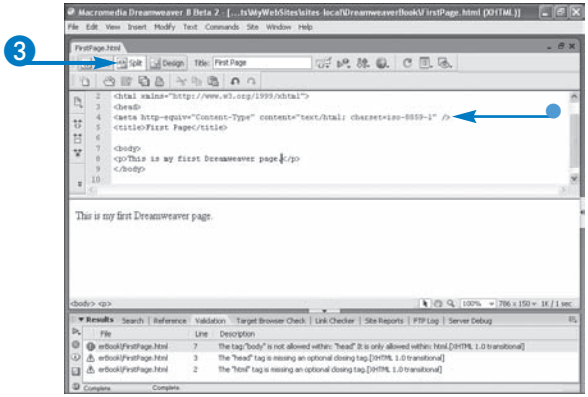
1. Click the Validate button ( ).
2. Click Validate Current Document.



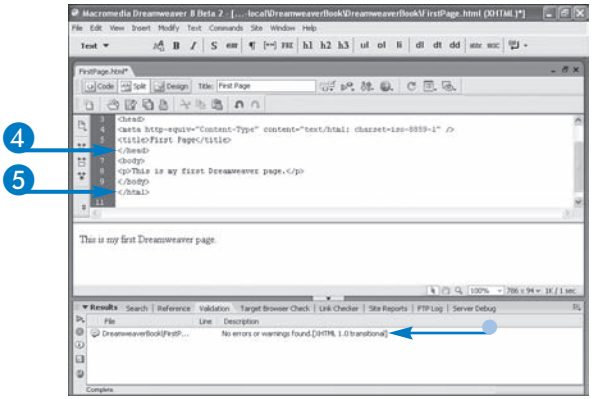
- Validation results appear at the bottom in the Results panel.



3. Click the Split button (Split) to see the code with line numbers.
   - The code window opens, showing the HTML source code.



4. Type </**head**> on line 6 in the code window.
5. Type </**html**> on line 10.
6. Click .
   - New Validator results are displayed.



What types of information does the Validator display?

The Validator displays three types of messages: 1) Informational messages just convey information and are not error messages; 2) warning messages point out incorrect syntax that is unlikely to affect the appearance of the Web page; and 3) error messages point out incorrect syntax that is very likely to affect the appearance of the Web page.

Each message is marked by an icon. The informational message icon looks like , the warning message icon looks like , and the error message icon looks like .

Does the Web page need to be open before I can validate it?

No. You can validate any file. Click the filename in the Files panel. Next, click Windows, Results, and then click the Validation tab. If you have previously run a validation, the Validation Results panel will be open. To validate the selected file, you need to click the Validation button or the Run Validation button in the panel.

Can I validate more than one file at a time?

Yes, you can select more than one file in the Files panel, using Shift-click or Ctrl-click. Click Windows, Results, and the Validation tab. Or you can click the site name in the Files panel, then click Windows, Results, Validation tab, and all the files in the site will be validated.

Check Browser Compatibility

The HTML standards are set by the World Wide Web Consortium (W3C) (`www.w3c.org`). However, not all browsers and/or browser versions implement all parts of the standard the same way. In addition, some browsers have added HTML tags and attributes that are not in the standard and do not work in all browsers. Dreamweaver provides a feature that you can use to check which browsers support the HTML code in your Web page.

Dreamweaver stores a list of target browsers that it uses to check compatibility. You can add browsers to or remove browsers from the target browser list. If you know what browsers your visitors are likely to use, you can include only those browsers in the target browser list. If you do not know, make your code compatible with popular browsers.

You can also select which version of the browser to include. For example, older browsers do not support (Cascading Styole Sheets).

The FirstPage Web page file created earlier in this chapter has no compatibility problems with the default set of target browsers. A problem arises, however, when an older version of IE (4.0) is added to the list of target browsers, as shown in the example in this section.

For the browser check feature to work as described, the Auto-check on Open feature must be turned on. To check that the feature is turned on, click . The menu should show a check by the feature. If not, click the feature to turn it on.

Check Browser Compatibility

1. Open a Web page.

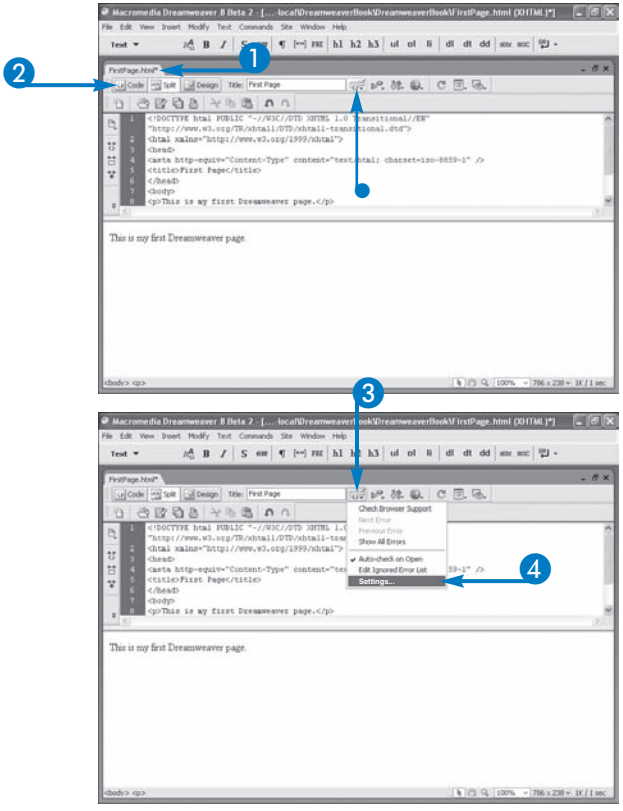
Note: *When the page is opened, Dreamweaver automatically checks for browser compatibility.*

- The green check mark means no browser compatibility problems.

2. Click Split.

   The Code Window opens.

3. Click .
4. Click Settings.



The Target Browsers dialog box opens.

5. Click the ▼ by Microsoft Internet Explorer.
6. Click 4.0.
7. Click OK.

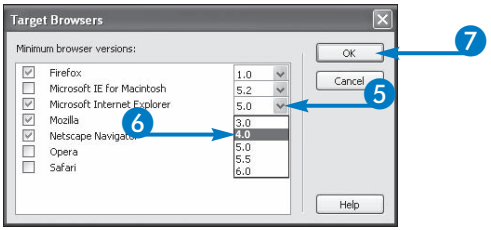
Dreamweaver now checks browser compatibility, including IE 4.0 as one of the target browsers.

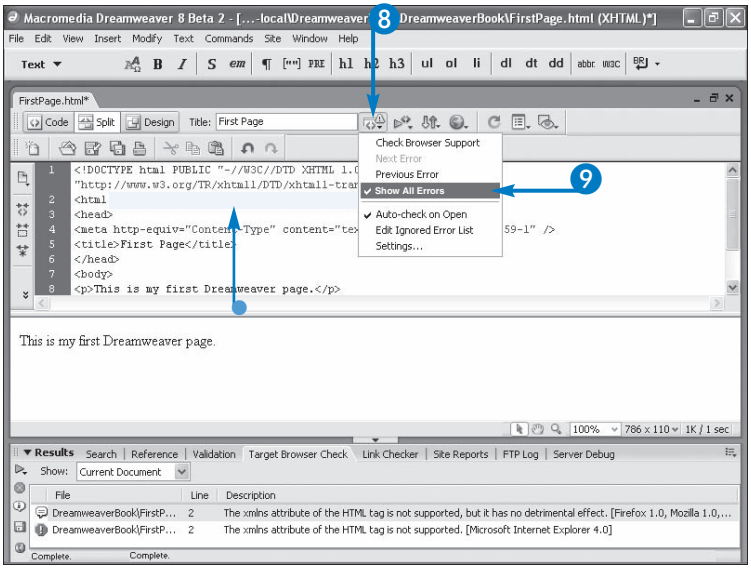
now shows ⚠ because Dreamweaver found a browser incompatibility.

- A red line appears under the problem.

8. Click .
9. Click Show All Errors.

Dreamweaver lists the errors in the Reports panel in the bottom pane of the window.





MASTER IT

What types of messages does Check Target Browsers display?

Check Target Browsers displays three types of messages: 1) Informational messages flag code that is not supported in a specific browser, but does not change the way the Web page displays; 2) warning messages point out code that will not display correctly in a specific browser, but will not cause any serious display problems; and 3) error messages flag code that may seriously affect the Web page appearance in a specific browser, such as making parts of the page disappear.

Each message is marked by an icon. The informational message icon looks like , the warning message icon looks like , and the error message icon looks like Split.

Does Dreamweaver check for syntax errors when it checks browser compatibility?

No. Dreamweaver checks only for HTML elements that are incompatible to any of the browsers in the Target Browser List. Elements that are not implemented in a specific browser are the only elements reported. To check for syntax errors, you need to use the Validator described in the previous section.

Publishing a Dreamweaver Site

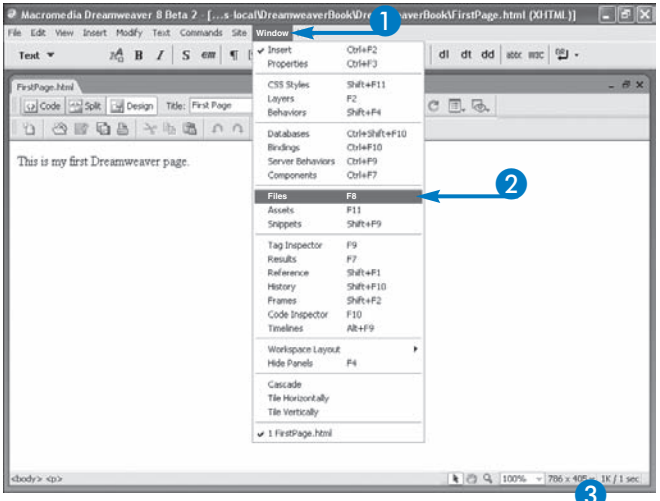
The Web pages you create and edit in your Local site are not available to visitors to your Web site. To make your finished Web pages available on the World Wide Web (WWW), you need to publish your Dreamweaver site. Publishing your site means copying the Web page files to your Remote site.

When you set up your Dreamweaver site, you set up a Remote site — the site where the public can view your Web pages. You provided Dreamweaver with the information it needs to transfer the files from your Local site to your Remote site. Uploading your files to the Remote site is sometimes called "putting your files," based on the FTP command `put`, used to upload files. Dreamweaver handles the details of the connection to the remote server and transferring the files.

You can transfer your entire site or any single file to the Remote site. Because this example shows publishing your first Web site, the entire site is transferred. The Web site in this example actually consists of only one file and an empty Images directory. If more files exist in the Local site, all the files are transferred using the steps shown in this section.

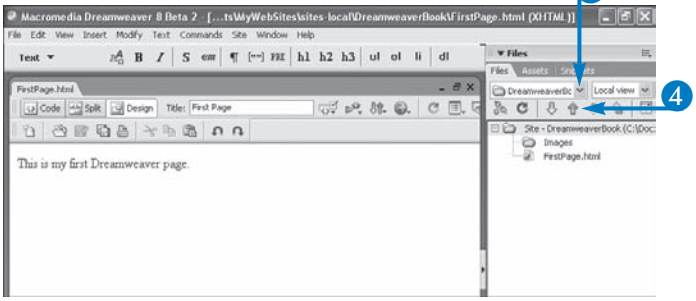
Publishing a Dreamweaver Site

1. Click Window.
2. Click Files.



The Files panel opens in the right-hand pane.

3. Click here and select a site.
4. Click the Upload button ( ).



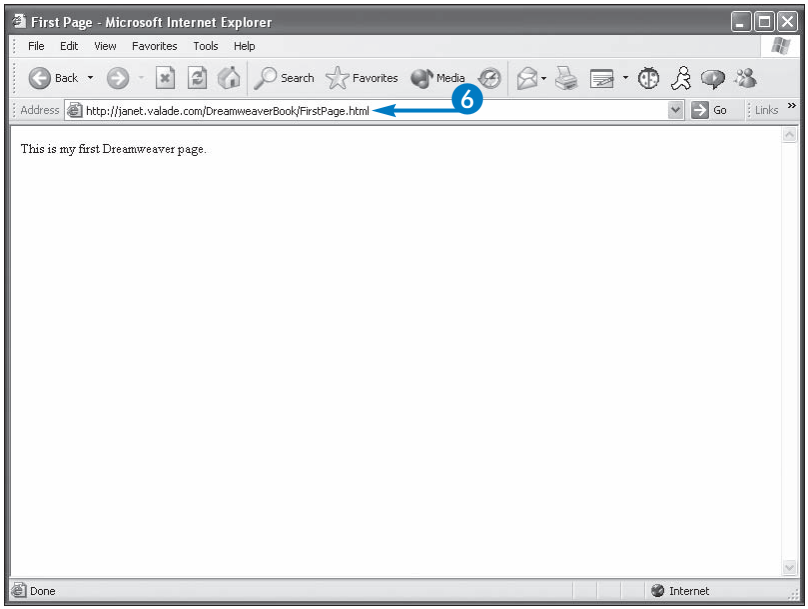
The Uploading window opens.

Note: *When the Uploading window disappears, the site has finished uploading.*

5 Open your browser.

6 Type the URL to your Web site.

Your Web site appears in your browser.



Do I need to save the Web pages before I publish them?

Dreamweaver transfers the saved versions of the files. However, if you currently have a file open with changes that have not been saved yet, Dreamweaver asks you whether you want to save the file before putting the file on the Remote site. If you click No, the Web page uploads without the current, unsaved changes.

Do I need to create the folder structure on my remote server before uploading my local site?

No. Dreamweaver duplicates the Local site folder structure on the Remote site. When Dreamweaver uploads a file from a local folder that already exists on the remote site, it puts the Web page into the existing folder. When Dreamweaver uploads a file from a local folder that does not exist on the Remote site, it creates the folder and then puts the Web page into the new folder.

How can I check that all the Web pages were correctly put on the remote site?

Dreamweaver displays the Local site and the Remote site side-by-side so you can see the structure and files on both. You can open this display from the Files panel. Click beside Local view, click Remote view, and then click the Expand button. Dreamweaver displays the folder/file names, file size, date last modified, and other information about the folders and files.

Copy a Dreamweaver Site

A Dreamweaver site consists of the settings Dreamweaver needs to organize and manage the site Web pages. The settings include the site name, the path to the root folder where the Web site files are stored, the information needed to connect to the remote site, and other information. When you want to set up a new Dreamweaver site that is very similar to an existing Dreamweaver site, you can often save time by copying the existing site and changing only the information that is different, such as the site name and the path to the root folder.

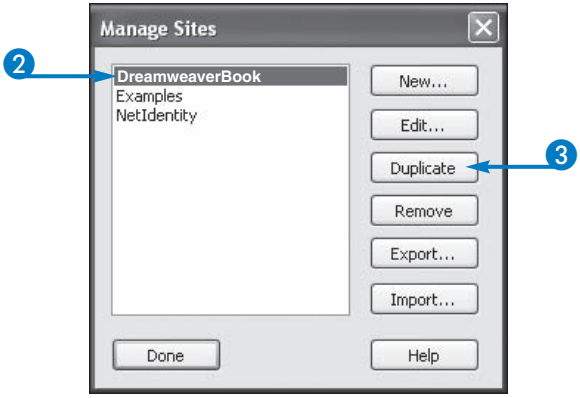
The duplicate site has all the same settings as the original site. It is given the name *Sitename Copy*, such as DreamweaverBook Copy. You can then change the information for the duplicate site, such as the site name, as described in the section "Change Dreamweaver Site Information" earlier in this chapter.

Copy a Dreamweaver Site

1. Display the Manage Sites dialog box.

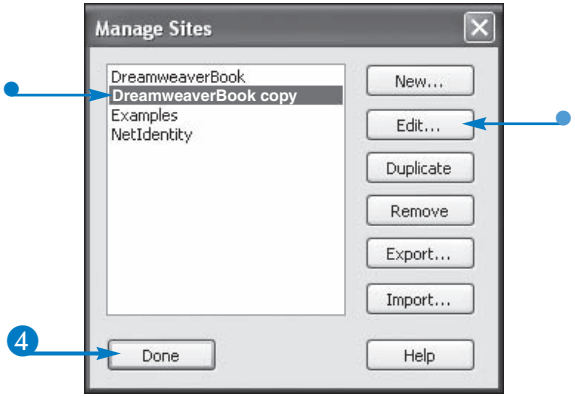
Note: *See the section "Create a Dreamweaver Site" to display the Manage Sites dialog box.*

2. Click the site name.
3. Click Duplicate.



- The duplicate site is added to the list of sites.
- You can click Edit to change the properties of the duplicate site.

4. Click Done.



Set Up a Check-out System

Large Web sites consist of many files with more than one developer working on the files. In such a situation, a system to prevent developers from simultaneously working on the same files and overwriting each other's work is necessary. Dreamweaver provides a check-in/check-out system that prevents two developers from working on the same file at the same time.

The check-out system requires a developer to check out a file before changing it. While the developer has the file checked out, no one else can change the file. When the developer is through changing the file, he or she checks the file back in.

The Dreamweaver check-in/check-out system is implemented on a per site basis. The check-out system must be turned on for each individual Dreamweaver site. You can enable the check-out system when you set up the Dreamweaver site. A check box labeled "Enable file check in and check out" appears in the dialog box when you are setting up the remote site.

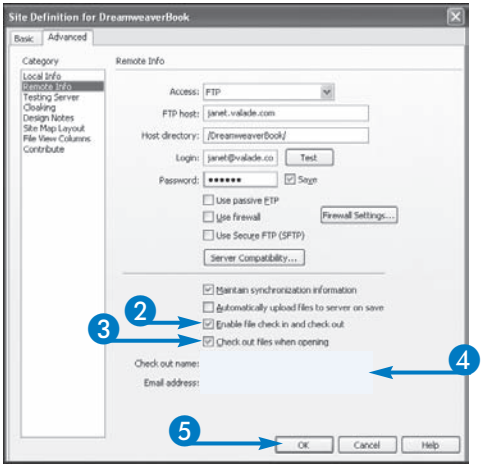
If you did not enable the check-out system when you set up your Dreamweaver site, you can change the site settings to enable file check out, as described in the section "Change Dreamweaver Site Information" earlier in this chapter. You can then check in your site files.

Set Up a Check-Out System

Enable the system

1. Open the Dreamweaver Remote site dialog box.
2. Click Enable file check in and check out (changes to).

   One check box and two fields appear.
3. Leave Check out files when opening checked.
4. Enter your name and e-mail address.
5. Click OK.



Check in your local site

1. Click here and select the site.

Note: *If Files panel is not open, click Window and select Files.*

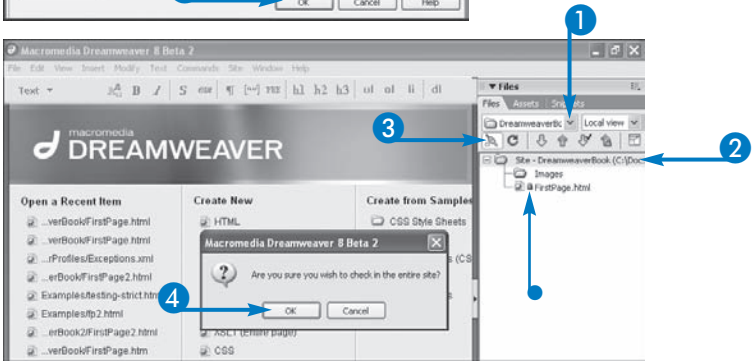
2. Click the site.
3. Click the Check In button ( ).

Note: *If the check-out system is not enabled, is grayed out.*

4. Click OK.

   All files in the site are checked in.

   - A locked icon ( ) displays beside the filenames.



Check Files In and Out

Large Web sites, consisting of many files with more than one developer working on the files, require a check-out system to prevent developers from working on files simultaneously and overwriting each other's changes. Dreamweaver provides a check-out system that requires a developer to check out a file before changing it and prevents anyone else from changing the file while it is checked out.

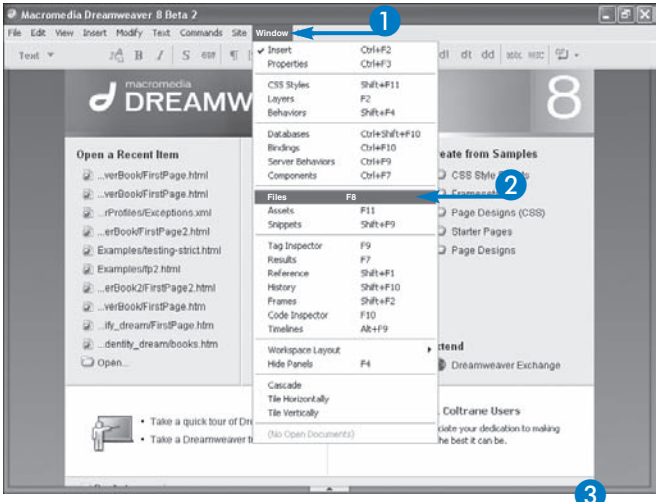
When several developers work on a Web site, the Remote site is the most up-to-date version of the site. A developer's Local site might not contain the latest version of a file that another developer worked on. Therefore, files are checked into and out of the Remote site.

The file list in the Files panel shows the file status — a red check mark beside a file that is checked out, along with the name of the person who checked it out, and a lock beside files that are checked in. Files that you checked out show a green check mark.

A file can be checked in or out with or without its dependent files, such as images and style sheets. Unless you are going to change them, you do not need to check out the dependent files.

Check Files In and Out

1. Click Window.
2. Click Files.

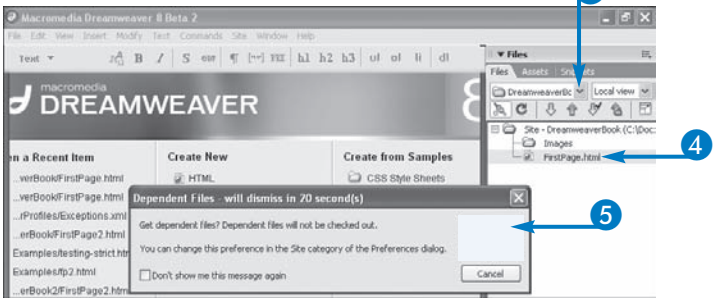


The Files panel opens.

3. Click here and select the site.
4. Double-click a filename.

The Dependent Files dialog box opens.

5. Click Yes or No.



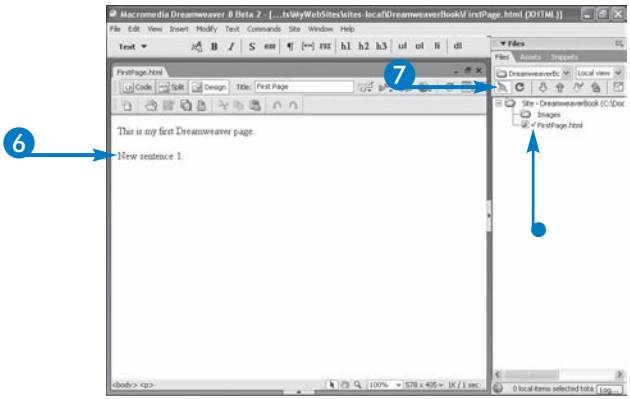
The Web page opens.

- A green check mark appears by the filename.

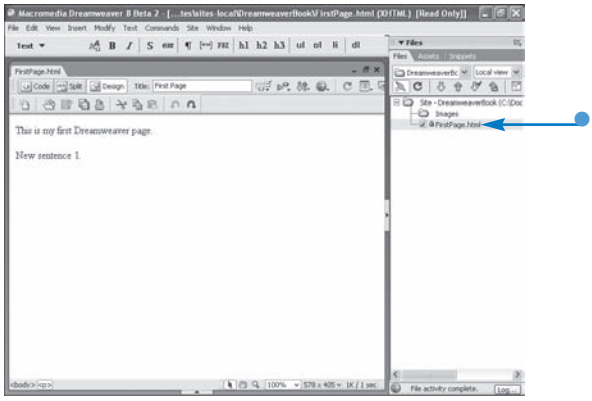
6 Make the changes to the Web page.

7 Click .

The file is uploaded to the Remote site.



- The file status changes back to checked in.



How does Dreamweaver know whether a file is checked in or checked out?

Dreamweaver checks whether a lock file exists. The lock file is named *filename.ext.LCK* (for example, FirstPage.html.LCK). When the file is checked out, Dreamweaver creates this file in the local and remote sites. The lock file is not removed until the file is checked back in. Thus, if Dreamweaver finds the lock file, the file status is checked out; if no lock file exists, the file status is checked in.

How does Dreamweaver prevent me from changing a file without checking it out?

When a file is checked in, the copy of the file in the local site becomes Read Only. You can open the file and make changes, but you cannot save the file. Of course, you can manually change the file status so that you can write to it, using Windows commands, but end runs around the check-in system usually result in confusion, content loss, and possible disaster.

What do I do when I really need to work on a file that someone else has checked out?

When you set up the check-out system for your Dreamweaver site, Dreamweaver requests your name and e-mail address. In the Files panel, the name of the person who has checked out a file is listed beside the filename. The name is a link that, when clicked, allows you to e-mail the person who has the file. You can send the person a message letting him or her know you need to work on the file.

Introduction to the Dreamweaver Workspace

The Dreamweaver workspace offers many tools to assist you in building your Web page. The first time you start Dreamweaver, a dialog box prompts you to select a workspace *layout* — the organization of the workspace. The Designer layout is shown in this section. However, you can move and resize the workspace components at any time.

You build your Web page by inserting and arranging Web page elements in the Document window. Accessory windows assist you to format and stylize the Web page elements.

A Document window

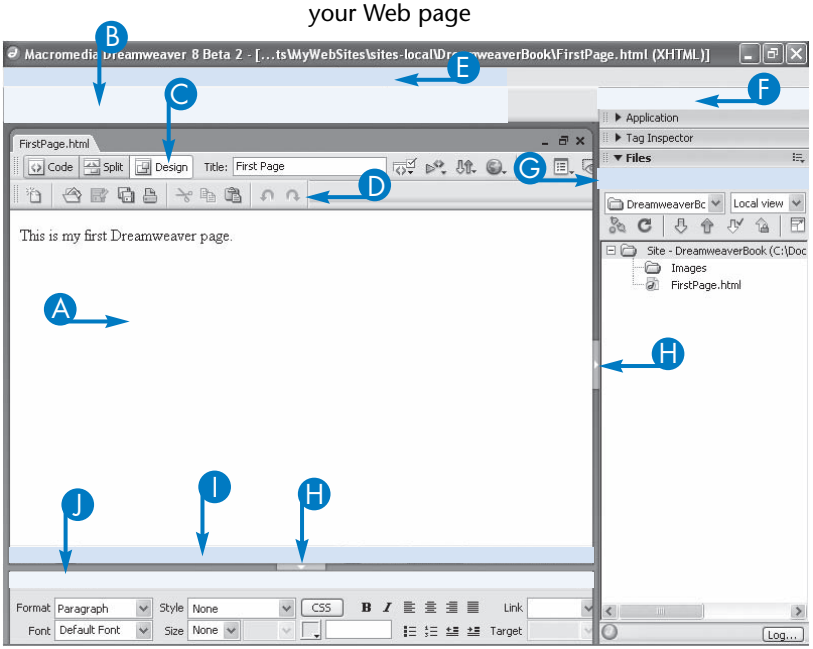
You build your Web page in this window.

B Insert bar

Displays buttons you can use to add elements to your Web page

C Document toolbar

Provides buttons for document related actions.



D Standard toolbar

Provides standard operations for your document.

E Menu bar

Provides menus with commands.

F Panel Group

Contains related panels.

G Panel

Contains related buttons and functions.

H Show/Hide button

Shows and hides the side window.

I Status bar

Displays information about the document.

J Property inspector

Allows you to change properties of Web page elements.

Change the Workspace Layout

When you first start Dreamweaver, a dialog box prompts you to choose a workspace layout. However, you can change the workspace layout at any time to suit your own work style.

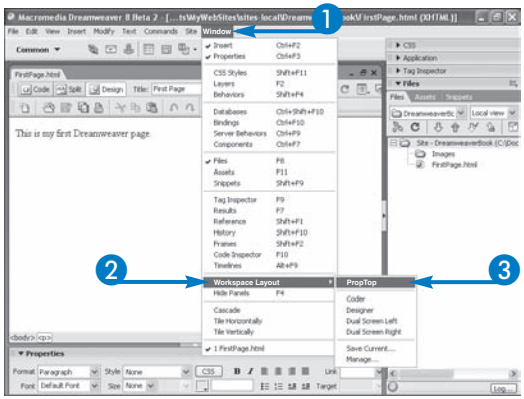
The panels and inspectors, which are described in detail later in this chapter, can open in windows on the sides, top, or bottom of the workspace. You can use the panel as a floating panel, moving it out of the window and locating it anywhere in the workspace. You can also move the windows. The bottom window can move to the top and the right window can move to the left. Moving panels is described later in this chapter in the section "Using Panels and Inspectors." When you open a panel or inspector, it opens in the location where it was last closed.

Dreamweaver provides a Designer and a Coder layout. It also provides two designs you can use if you work with dual monitors. You can switch between layouts using the Windows menu. Dreamweaver also enables you to arrange and save custom workspace layouts. To save a custom layout, arrange the workspace to your satisfaction and then click Window, select Workspace Layout, and click Save Current. Dreamweaver prompts you for a name for the custom layout and adds the custom layout name to the Workspace Layout menu.

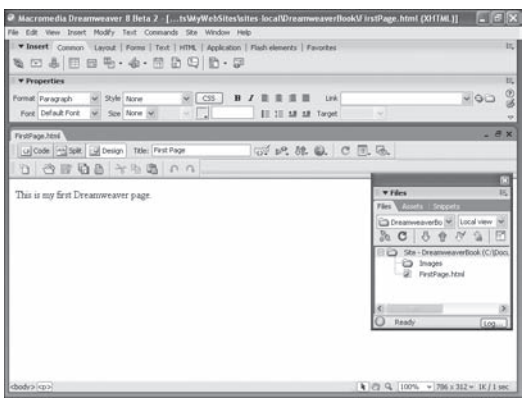
Change the Workspace Layout

1. Click Window.
2. Select Workspace Layout.
3. Click the layout you want to use.

   PropTop is the name of a custom layout.



Dreamweaver changes the workspace to the selected layout.



Open a Web Page

Web page documents open in the Document window. When the Web page is open, you can click Menu bar commands or toolbar buttons to build and edit the Web page.

You open a Web page in the Document window with the File menu on the Menu bar or the buttons on the Document toolbar. (To learn more about toolbars, see the section "Using Dreamweaver Toolbars" later in this chapter.) You can create a new, empty Web page and add elements to it, or you can open an existing Web page file and edit it.

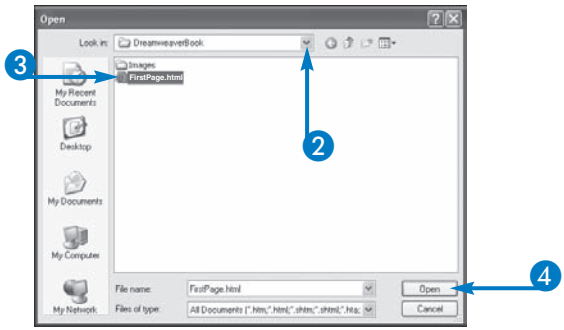
You can have more than one Web page open in the Document window. When the Document window is maximized, Dreamweaver displays the documents in tabbed windows, with the filenames displayed in the tabs. You can view any open Web page by clicking its tab. When the Document window is not maximized, the documents are displayed in separate windows. You can display the windows in a cascading display, tiled horizontally, or tiled vertically. To change the type of display, choose Window from the Menu bar and then choose the type of display you want.

Open a Web Page

1. Click File and choose New.

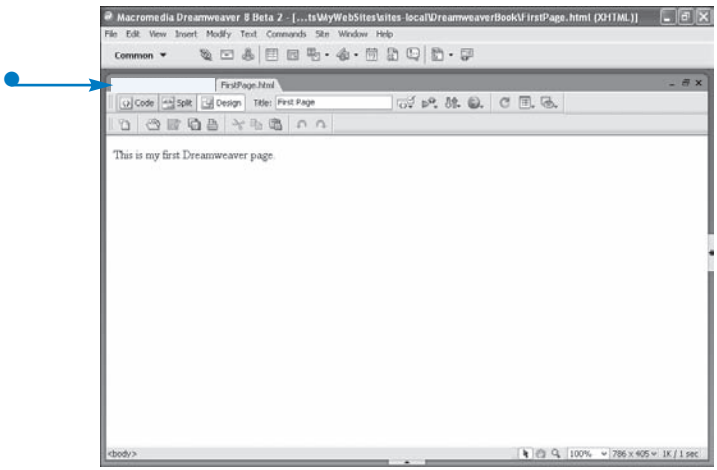
   The Open dialog box appears.

2. Click here and navigate to the file.
3. Click the filename.
4. Click Open.



Dreamweaver opens the selected Web page file in the Document window.

- The names of open files are shown in tabs because the Document window is maximized.



Resize the Document Window

If you work with the Web page maximized, you can see more of the page at once, enabling you to more easily design and build the Web page. Sometimes, however, you prefer to design a Web page to be viewed in a browser window of a specific size, such as a palm pilot size or the size that best displays your graphics. You can set the Document window to a specific size, so that you can design the Web page for the correct size window.

On the status bar at the bottom of the Document window, a button shows the window's current size, such as 768 x 405. You can click this button to change the window size. When you click the button, a list of sizes appears. You can select a size or, if none are appropriate, click Edit Sizes to change a size or add a new size. The sizes shown are the inside dimensions of the browser window, without borders. The monitor size appears in parentheses.

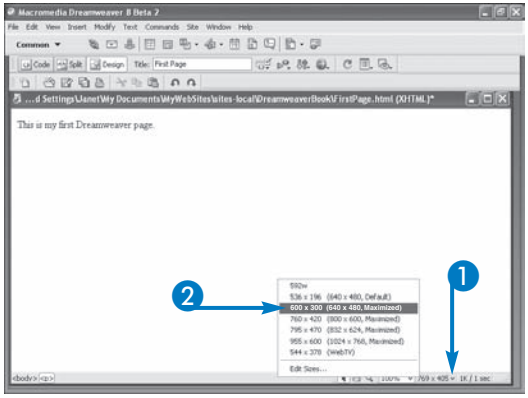
You cannot change the size of the Document window when it is maximized. As with any window, you can click the Maximize button in the upper right corner of the window to maximize and restore the window. You can also, as with any window, resize the window by dragging the edges.

Resize the Document Window

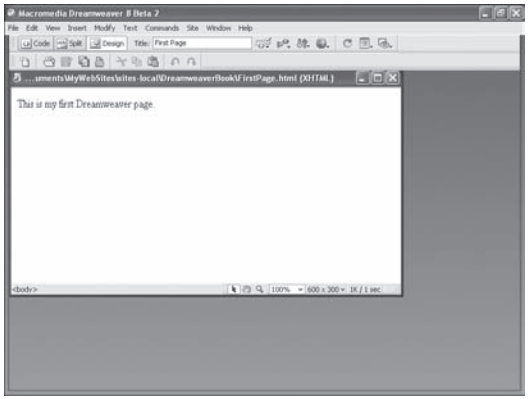
1. Click the resize button.

Note: *If the size choices are all grayed out, the window is maximized. Click* ▣ *to unmaximize the window.*

2. Click a size.



Dreamweaver resizes the Document window.



Change the Document Window View

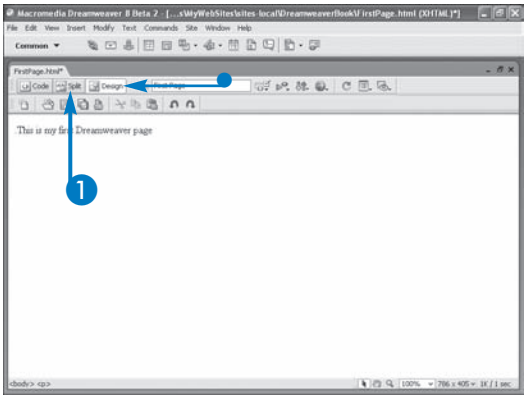
Dreamweaver provides two modes in which you can develop your Web page: Design view and Code view. In Design view, you work in an editor that displays the Web page almost as it will be seen in the Web browser window. You can insert elements such as tables and images, drag the elements around to place them, and format them. The Dreamweaver editor writes the HTML, CSS, JavaScript, and other source code needed by the browser to display the Web page. Alternatively, Dreamweaver allows you to work in Code view, where you can edit the source code directly.

You can use Dreamweaver to build a Web page without knowing HTML. Dreamweaver writes the code files for you. If you are an HTML expert, however, you may prefer to work directly with the source code. The Dreamweaver source Code editor provides features that assist you in working with code.

Dreamweaver also provides a mode in which you can work in both Design view and Code view. Dreamweaver splits the Document window into two sections, showing both views at once. Changes made in one section are reflected in the other section.

Change the Document Window View

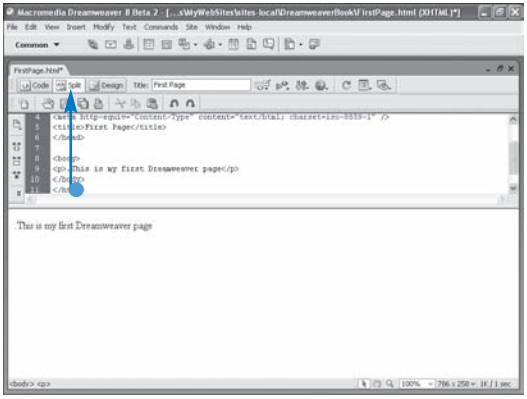
- The Design button is highlighted because the Document window is in Design view.



1. Click Split.

Dreamweaver splits the screen, showing the source code in the top section.

- The Split button appears highlighted now.



Using Design View

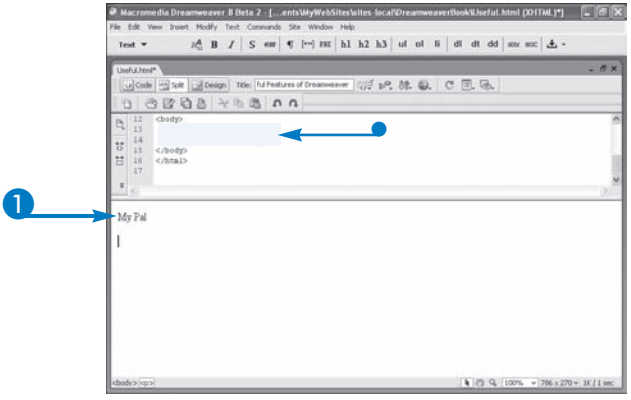
Design view allows rapid development in an environment that looks very similar to the way the Web page will look in a browser window. You can build your entire Web site in Design view without writing any code in HTML, CSS, JavaScript, or any other scripting languages. Dreamweaver recognizes the elements you insert in Design view and writes a source code file that browsers will understand. The source code file rendered by the browser looks very similar to the Web page you see in the Document window when using Design view.

As you develop your Web page in Design view, Dreamweaver writes the Web page source file. Each action you perform in Design view creates a change in the source code. If you insert a table into your Web page in Design view, the code for the table is immediately added to the source code. If you delete the table, the code is immediately removed from the source code.

Using Design View

1. Type some text and press Enter.
   - Dreamweaver writes HTML code for the text line.

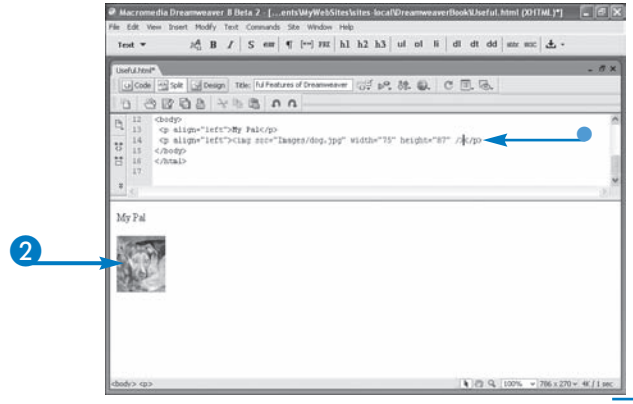
   Dreamweaver adds HTML code for an empty paragraph when you press the Enter key.



2. Insert an image.

Note: *See Chapter 5 to learn about images.*

   - Dreamweaver replaces the non-breaking space with HTML code that displays an image.



Using Code View

When you open your Web page in Code view, Dreamweaver displays the source code. The Code editor functions as most text editors do: place the cursor in the file and type code. To change or delete code, highlight the code and type over it or press Delete.

Dreamweaver provides features to assist you in Code view. Most of the features on all the toolbars work, including the Insert toolbar. An additional Coding toolbar, not displayed in Design view, is displayed on the left side of the window, with buttons for features that assist coding, such as indent, highlight invalid code, turn line numbers on and off, and others. Using toolbars and toolbar buttons is discussed in later sections of this chapter.

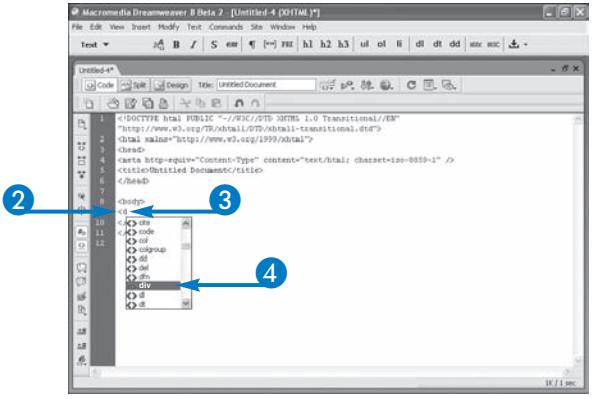
When you type certain characters, Dreamweaver displays a list box of hints. For example, when you type <, a list of available tags is displayed. When you are inside a tag, a list of available attributes for the tag is displayed. Double-click an entry in the list to insert the item into the code. You can turn off code hints in your preference settings.

Using Code View

1. Place the cursor where you want to add code.
2. Type <.

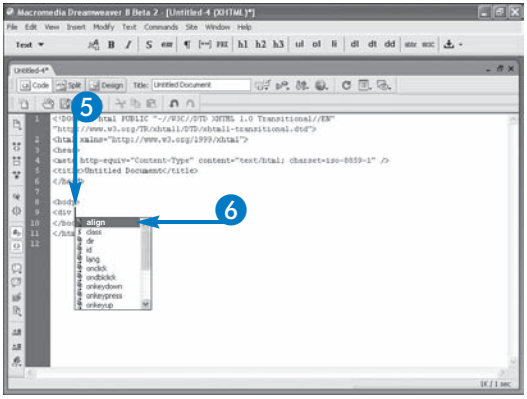
   The Hint window shows available tags.
3. Type **d**.

   The Hint window displays tags that begin with *d*.
4. Double-click div.



   The `div` tag appears in the code.
5. Type a space.

   The Hint window shows attributes for the `div` tag.
6. Double-click align.

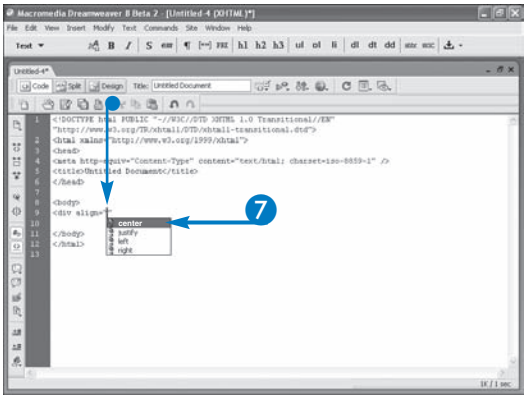


Dreamweaver adds the align attribute to the code.

- Dreamweaver displays a cursor where the `align` value goes.

The Hint window displays possible values for `align`.

7 Double-click center.



The value for `align` becomes `center`.

8 Type </.

The `div` closing tag appears.

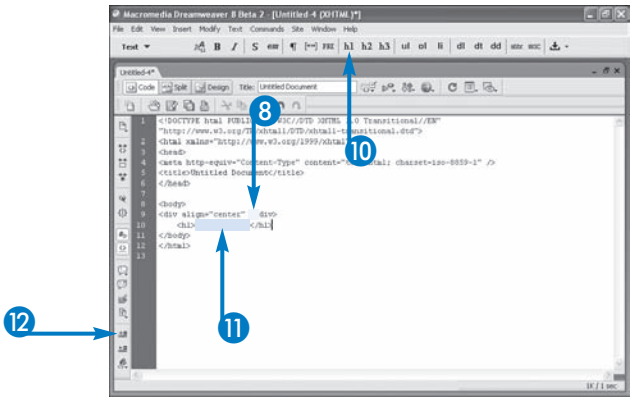
9 Press Enter.

10 Click the h1 button.

Note: *See the section "Using the Insert Toolbar" to display the Insert toolbar.*

11 Type a text line.

12 Click the Indent button ( ).



I need to see two lines of code at the same time, but they are not close together. Is there any way I can display the lines in the same window?

Yes. Dreamweaver provides a collapse code feature that can assist you. If you collapse some or all of the code between the two lines, the lines may then be close enough together to appear in the same window. You can click the Collapse Tag button ( ), which collapses an entire tag, or the Collapse Selection button ( ), which collapses the highlighted code.

When code is collapsed, Dreamweaver adds a +/– sign by the collapsed code. You can expand the code with the plus sign and collapse with the minus sign. You can restore all code with the Expand All button.

Can Dreamweaver help me find errors in my code?

Yes. Dreamweaver provides a feature that highlights in yellow any invalid code. You must turn on this feature before errors are highlighted. Click the Highlight Invalid Code button to toggle highlighting on and off. Sometimes you need to click the Refresh button before the highlighting appears.

How can I insert a comment?

Dreamweaver can insert a new comment or convert highlighted text into a comment. Click the Comment button and select a comment style. You can remove a comment with the Remove Comment button.

Using Dreamweaver Toolbars

Dreamweaver provides several toolbars to assist you with building your Web page. Having all the toolbars open provides the most functionality; however, doing so uses more space, limiting the Web page display to a smaller area.

The Menu bar resides at the top of the workspace, offering several menus that contain related menu items. For example, the File menu offers commands to open, save, import, and perform other actions on files.

Three toolbars containing buttons may be displayed. The toolbars can be shown or hidden and can be moved anywhere on the workspace. In the default configuration, the Insert toolbar is beneath the Menu bar and the Document and Standard toolbars are at the top of the Document window when a Web page is open. A Coding toolbar appears in Code view. The Insert toolbar is more complex than other toolbars. See "Using the Insert Toolbar" later in this chapter.

You can show or hide any of the toolbars, but the Menu bar is always there. To move a toolbar, click its gripper and drag it.

Using Dreamweaver Toolbars

1. Right-click on any toolbar.

   No check mark appears in front of the Insert item because the Insert toolbar is hidden.

2. Click Insert.

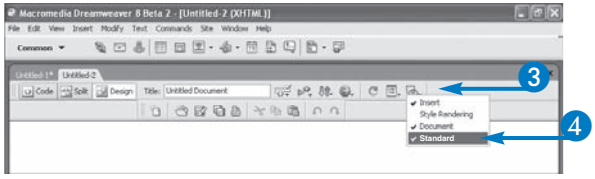
   The Insert toolbar appears.

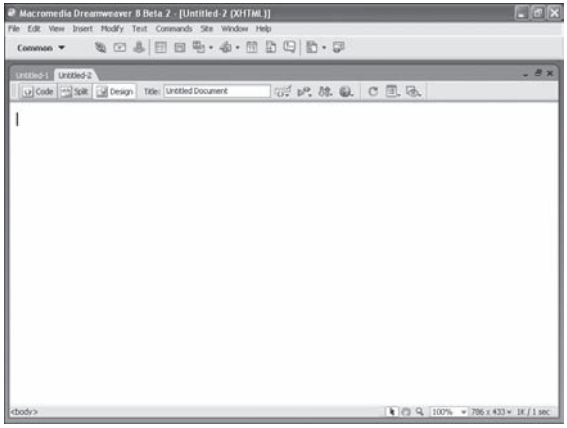
3. Right-click on any toolbar.

   A check mark appears in front of the Insert item because the Insert toolbar is showing.

4. Click Standard.

   The Standard toolbar disappears.





Using Dreamweaver Buttons

The Dreamweaver interface provides buttons on several different toolbars. Some buttons perform an action when clicked. However, some of the buttons, which show a small down arrow on the button icon, are menu buttons.

Menu buttons on the Insert toolbar and menu buttons on the other toolbars behave somewhat differently. Buttons on most toolbars have a single function. When clicked, the button either performs an action or, if it is a menu button, displays a menu. Menu buttons on the Insert toolbar, however, can both perform a function and display a menu.

Menu buttons on the Insert toolbar have two sections — a larger section on the left that displays the icon, and a smaller section on the right that displays a down arrow (▾). When you click the icon, the action the icon represents is performed; when you click ▾, a menu appears.

Insert toolbar menu buttons display different icons, depending on what was selected most recently from the button menu. The icon represents the last action selected from the button menu. Each time you select a menu item, the icon changes to represent the item chosen.

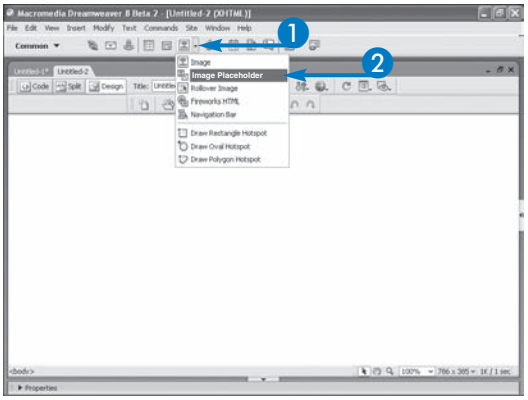
Using Dreamweaver Buttons

1. Click the button menu arrow (▾).

   The button currently shows the Image icon.

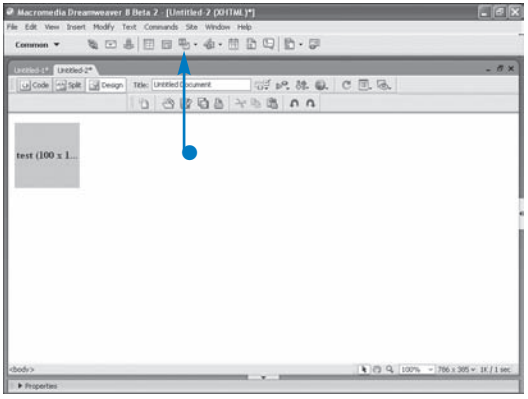
Note: *If you click on the icon, Dreamweaver performs the action represented by the icon instead of showing a menu.*

2. Click Image Placeholder.



   Dreamweaver inserts an image placeholder on the page.

   - The button icon changes to the Image Placeholder icon.



Note: *See Chapter 5 to learn more about image placeholders.*

Using the Insert Toolbar

The Insert toolbar provides many buttons that insert elements into your Web page. The Insert toolbar provides too many buttons to display on the toolbar at once. Therefore, the buttons are divided into categories (common, text, forms, HTML, application, layout, flash elements, and favorites) and one category is displayed on the toolbar at a time.

The Insert toolbar can be formatted in one of two ways: with a button that displays a menu of categories, or with tabs across the top of the toolbar that display the categories.

You can insert elements into your Web page by clicking buttons or by dragging the buttons into the Document window. The Insert toolbar contains some special dual-function buttons that change the button icon depending on which action was last selected from the button menu. Using the buttons is explained earlier in this chapter.

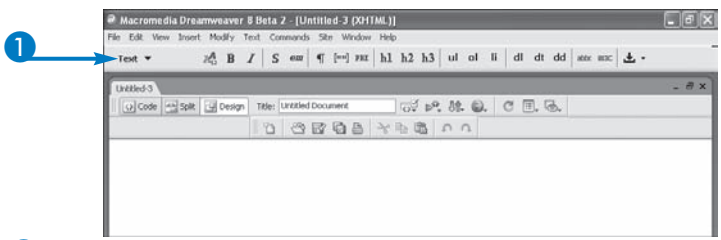
When the Insert toolbar is formatted with tabs for each category, it behaves like a panel. You can collapse and expand it by clicking the panel name — Insert. You can close it by right-clicking and selecting Close Panel Group from the menu.

Using the Insert Toolbar

Change category

1. Click the Change Category button.

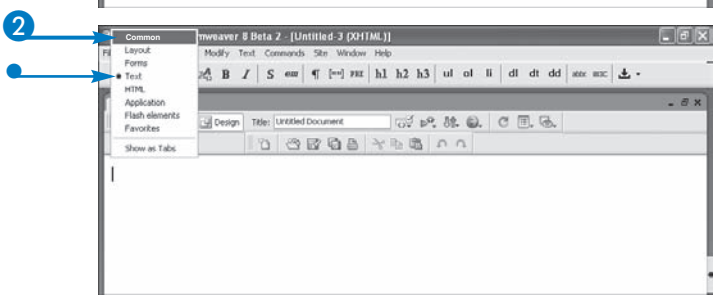
   The Text category is currently displayed.



   The Category menu opens.

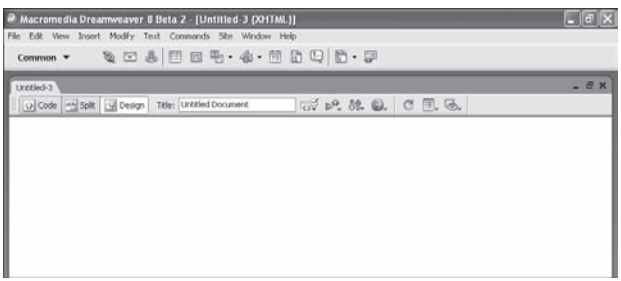
2. Click a category.

   - The bullet shows that the Text category is currently displayed.



   The display changes to the selected category.

   Here the selected category is Common.

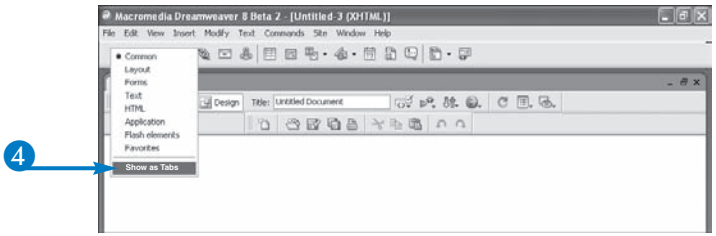


Change toolbar format

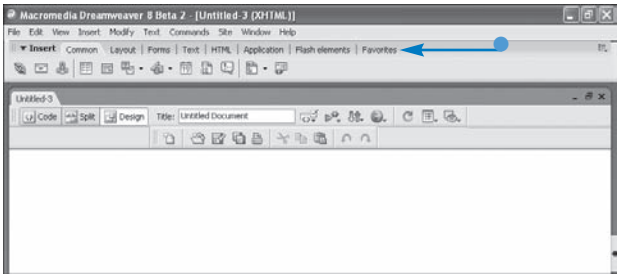
3 Click the Category button shown in Step 1.

The Category menu opens.

4 Click Show as Tabs.



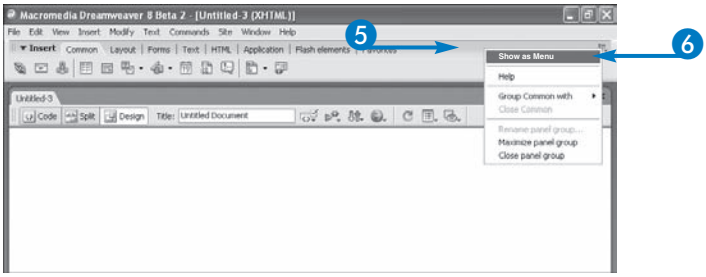
- The categories display in tabs.



5 Right-click the blue tab bar.

6 Click Show as Menu.

The tabs disappear and the Category button reappears.



I see an empty category named Favorites. What is it for?

The Favorites category is empty so you can add the buttons to it that you use most often.

To set up the Favorites category, right-click on the Insert toolbar and select Customize Favorites. In a dialog box, select each button you want and add it to your Favorites category by clicking the Add button (>>).

In the dialog box, you can also remove a button by clicking the button name in the Favorites list and clicking the Trash Can button. You can change the order by clicking a button name and clicking the up or down arrow to move it up or down in the list.

Can I move the Insert toolbar around in the Dreamweaver workspace?

Yes, if the toolbar is in the correct mode. If the toolbar is not displaying the categories in tabs across the top of the bar, you need to click the Categories button and select Show as Tabs from the menu.

When in this mode, the Insert toolbar behaves like a panel; you can move it around by clicking and dragging in the upper left corner of the toolbar. The mouse pointer changes to a cross hairs (✣). For further information on moving and docking the Insert toolbar, see the section "Move a Panel or Inspector" later in this chapter.

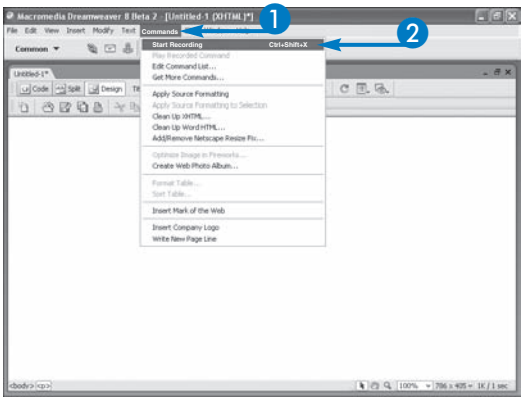
Using the Commands Menu

Dreamweaver provides the ability to execute stored commands. A *stored command* is a set of action steps. When you execute a command, the steps are executed one at a time to affect the content of the Web page. For example, Dreamweaver provides a stored command that you can use called Clean Up Word HTML. You run a command by clicking the Command menu and then clicking the command name in the menu.

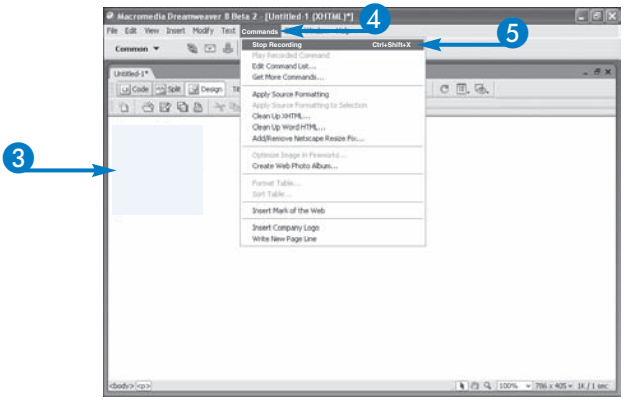
You can create your own custom commands and add them to the Command menu. You create commands from the History list, a listing of all the actions you perform in Design view in the Document window, such as adding text, adding images, adding tables, or any other action described in this book. You can select any series of steps from the History list, store them with a meaningful name, and add them to the Commands menu. Creating a command from the History list is described later in this chapter in the section "Using the History Panel."

Using the Commands Menu

Record a command

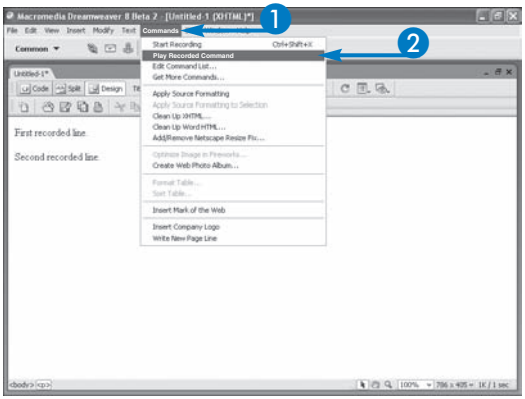


1. Click Commands.
2. Click Start Recording.
3. Perform actions that you want to repeat.
4. Click Commands.
5. Click Stop Recording.

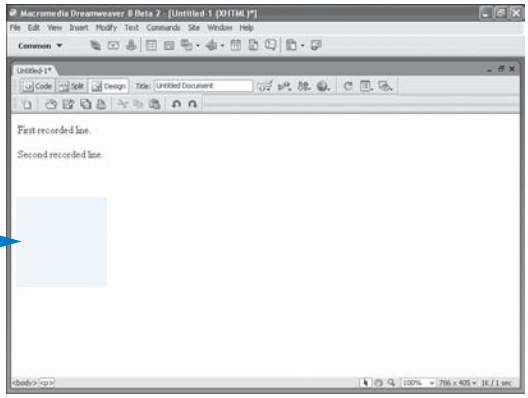


Play a recorded command

1. Click Commands.
2. Click Play Recorded Command.



- Dreamweaver replays the recorded actions.



Can I create a stored command from actions I performed in Code view?

No. Dreamweaver stores action steps from the History list only. Dreamweaver does not add action steps to the History list while in Code view. When you edit your Web page in Code view and then move to Design view, the History list simpy adds one step — Edit Source. It does not keep track of the changes you made while editing the source code in Code view.

How can I remove a command from the Commands menu?

You cannot remove Dreamweaver commands from the Commands menu. You can, however, remove the custom commands that you created in the History panel and added to the Commands menu. Click Commands, Edit Command List, click the command you want to remove, and then click Delete.

The History list stores only 50 action steps. How can I store a really long command?

You can increase the maximum number of History steps in your preference settings. Click Edit, Preferences to display the Preferences dialog box. Each type of setting has its own preference page, shown in a list down the left side of the dialog box. Click General. Toward the bottom, you find the setting for Maximum Number of History Steps. Type the number of steps you need and then click OK.

Using Panels and Inspectors

Dreamweaver provides many tools to assist with your Web development. *Panels* and *inspectors* organize tools for easy access. A panel or inspector offers a set of functions and information that assists you to perform tasks. For example, the Files panel provides the tools needed to manage your Web site files, and the Property inspector provides features for you to view and change the properties of Web page elements.

Panel groups are windows that display panels and inspectors. Most panel groups contain two or more related panels, with tabs provided for accessing different panels.

Inspectors are displayed alone in a panel group. Each panel group provides an option button at the right edge of the top blue bar; clicking the option button displays a panel-specific menu.

A panel group opens from the Window menu. Several panel groups can be open at once. Panel groups can be expanded or collapsed by clicking the name in the blue panel bar at the top of the panel group. An arrow button between the Document window and the panel group shows/hides the panel group window.

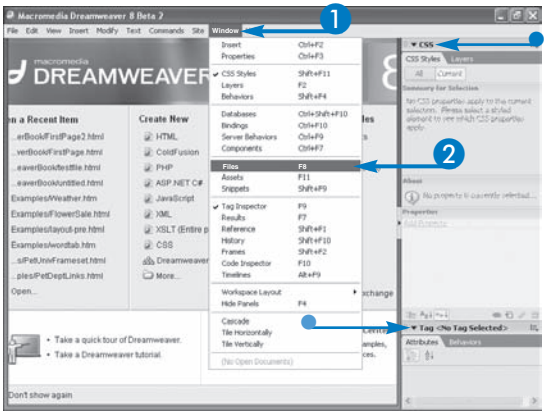
Using Panels and Inspectors

1. Click Window.

   Check marks show open panels and inspectors.

   - The CSS panel is open.
   - The Tag inspector is open.

2. Click Files.



   The Files panel group is expanded and the Files panel is open.

   The CSS panel group and the Tag inspector are collapsed.

3. Click Files.

   The Files panel group collapses.

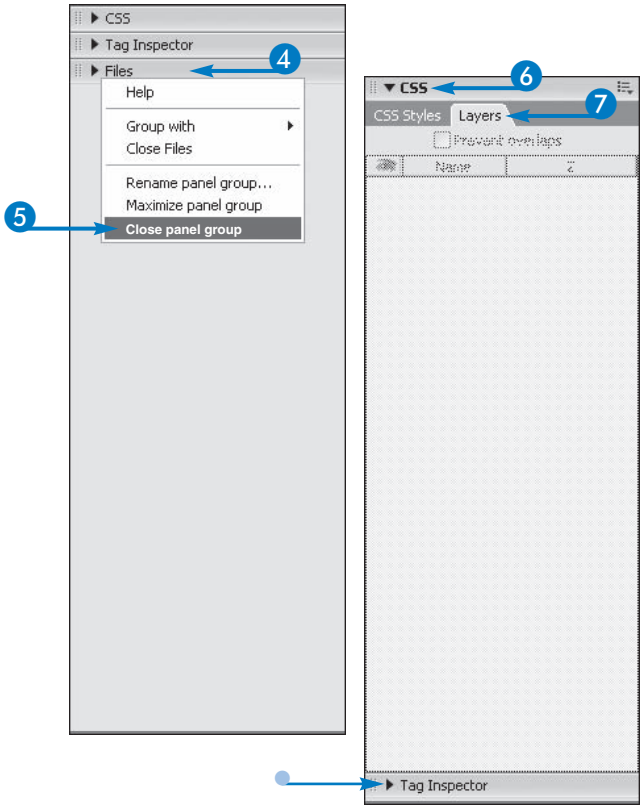
4. Right-click the Files panel group.
5. Click Close panel group.

   The Files panel group disappears.
6. Click the CSS panel group name.

   The CSS panel group expands.

   - The Tag Inspector remains collapsed below the CSS panel group.
7. Click the Layers tab.

   The Layers panel opens.



Where do panels open?

A panel opens in the location where it was last closed. When you first started Dreamweaver, you selected a workspace layout. If you never move your panels, they continue to open based on that layout — in general, tall panels on the side and wide panels on the bottom. However, if you move a panel and close it in a new location, it opens in the new location until you move it again. You can move panel groups by dragging the gripper ( ) on the left side of the panel group bar. Moving panel groups is discussed in detail in the "Move a Panel Group" section.

A panel group name and the panels in it do not make sense to me. Can I fix this?

Yes. You can reorganize and rename panel groups using the context menu that appears when you right-click the blue bar at the top of a panel group.

You can rename a group to something that makes more sense to you. Or, you can reorganize one or more panel groups. You can move a panel into another group or create a new group for the panel by selecting the Group With menu item.

Move a Panel Group

Panel groups are windows that contain related sets of functions and information, organized to assist in performing tasks. To provide the most convenient access for you, Dreamweaver makes it possible for you to place panel groups in the location that best suits your needs.

In the default workspace layouts that Dreamweaver provides, panel groups are docked in windows on the left side, right side, or at the bottom of the workspace. However, you can move the panel groups anywhere you want. You can dock them on either side of the workspace; you can move bottom panels to the top of the workspace; or, you can place a panel group anywhere in the workspace, even in the middle of the Document window.

You move a panel group by dragging its gripper, located on the left side of the blue bar at the top of the panel group. When you position the mouse pointer over the gripper, the pointer changes into a cross hairs.

To dock a panel group in a side, top, or bottom window, drag it to the area of the window until a box appears that outlines the window. Release the mouse button and the panel group pops into the window.

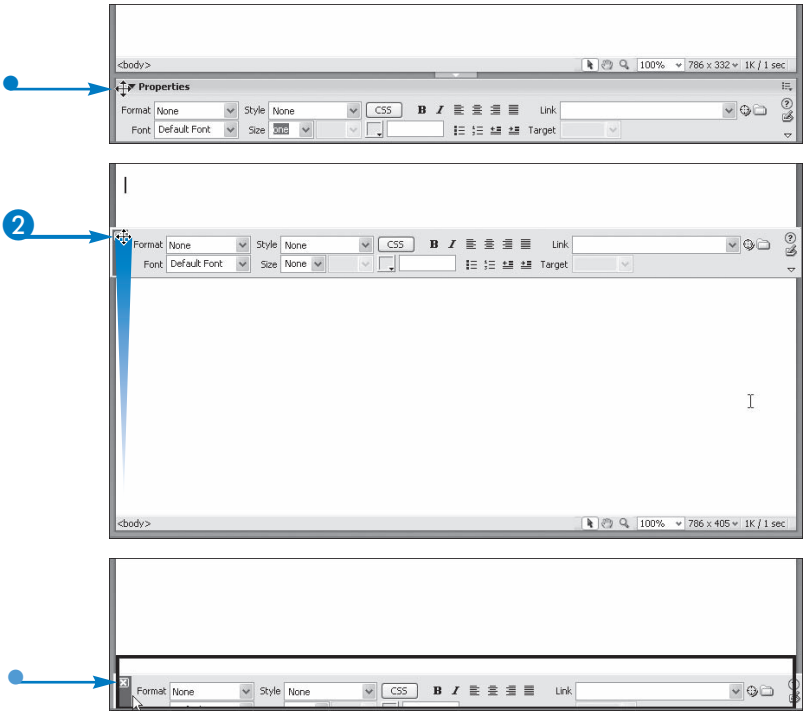
Move a Panel Group

1. Drag the mouse pointer to the left edge of the bar.
   - The mouse pointer becomes a cross hairs ( ).
2. Click and drag the panel/inspector.
3. Release the mouse button.

   The panel/inspector stays in this location.
4. Click anywhere on the panel and drag to a new location.

   Here the inspector is dragged back to the bottom window.
   - When the inspector is in the window, a dark line shows the window border.
5. Release the mouse.

   The Inspector docks in the window.



Using the Files Panel

The Files panel organizes the Web page files for your Dreamweaver sites and provides the features needed to manage the files. File organization is displayed for any Dreamweaver site, and file management functions are provided. You can create new files and folders or open existing files. You can copy, delete, rename, and move files.

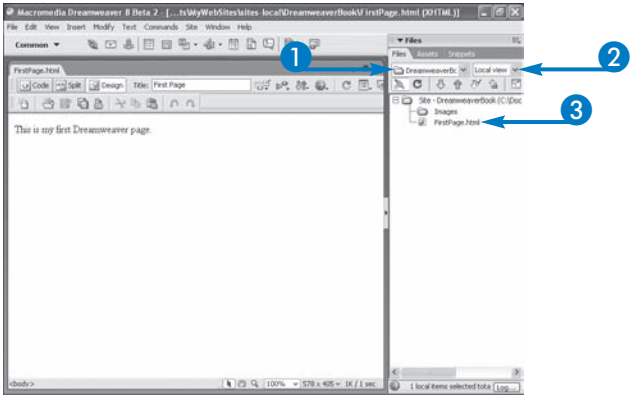
The Files panel manages both the local and remote sites. From here, you can view and manage files in both sites; you can compare files on both sites; and you can transfer files between the local and remote sites. Chapter 1 provides information on uploading and downloading files.

To open a file, double-click the filename in the Files panel. If the file is located in the remote site, Dreamweaver downloads the file to the local site and opens it. If a file with the same filename already exists in the local site, Dreamweaver asks whether you want to overwrite the current local file.

The Files panel contains the features required to check files in and out of the check-out system. Chapter 1 discusses the check-out system.

Using the Files Panel

1. Click here and navigate to the Dreamweaver site.
2. Click here and select local or remote view.
3. Double-click a filename.

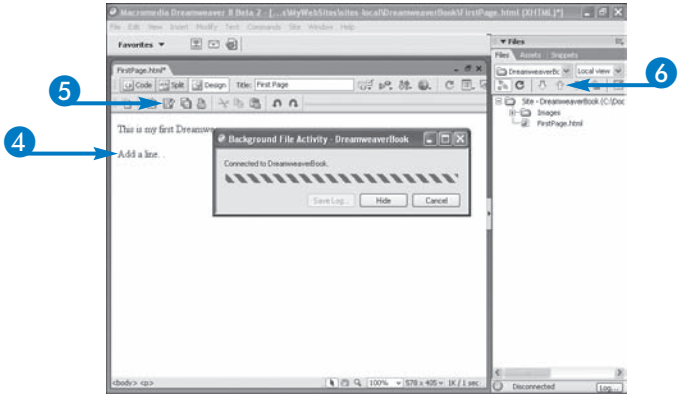


The file opens in the Document window.

4. Edit the file.
5. Click the Save button ( ).
6. Click the upload button ( ).

The File Activity window opens.

When the File Activity window closes, the file has completed uploading.



Using the Property Inspector

You can use the Property inspector to display properties of the currently selected Web page element. In general, properties correspond to the attributes of HTML tags. You open the Property inspector by clicking Properties in the Window menu. By default, the Property inspector opens at the bottom of the workspace. However, you can move it anywhere. See the section "Move a Panel Group" earlier in this chapter.

If the Web page element you clicked last is a line of text, the Property inspector displays text properties that you can change. If you click an image, the Property inspector displays different properties; it displays properties that are related to images. The existing properties are displayed for the selected Web page element and tools are provided to change the properties.

The Property inspector contains two sections. The main section always opens and displays the properties that most often need to be changed. The second section contains properties that are changed less often and opens below the main section when you click the Expand arrow located in the lower right corner.

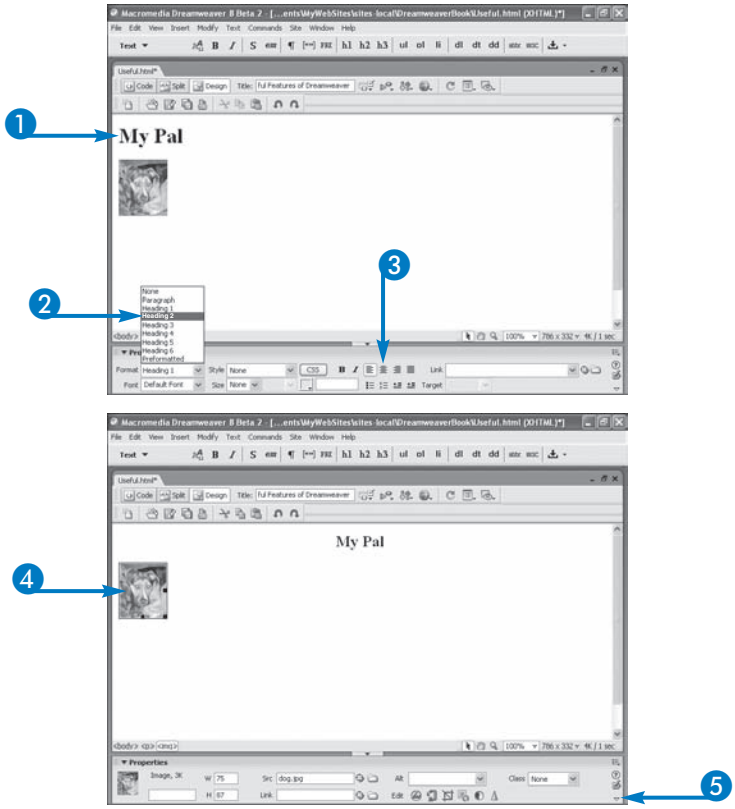
Using the Property Inspector

1. Click a line of text.

   The Property inspector displays the text properties.
2. Click ▼ and select a format.
3. Click the Center button ( ).

   Dreamweaver displays the text in the selected format and centers the line.
4. Click an image.

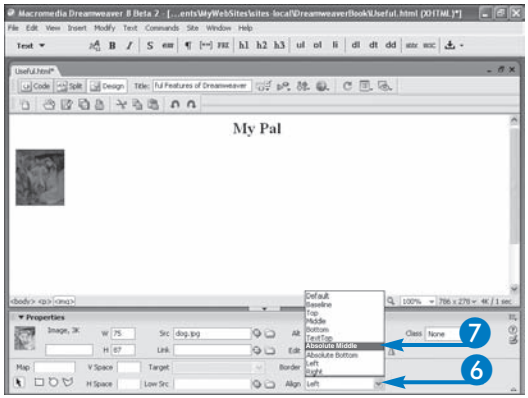
   The Property Inspector displays the image properties.
5. Click the Expand button ( ).



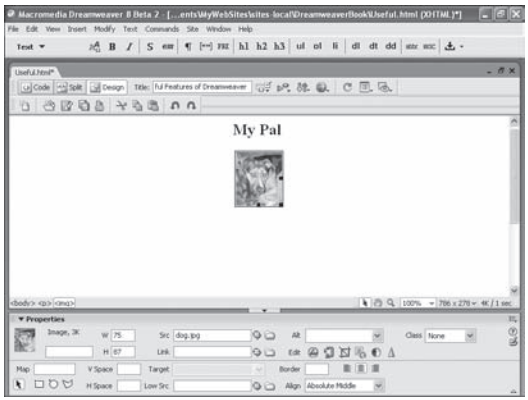
The Property inspector expands (changes to).

6 Click .

7 Click Absolute Middle.



Dreamweaver centers the image.



How long does it take for the Property inspector to change a property?

Usually, the property changes instantly, as soon as you change it in the Property inspector. If the property does not change immediately, you may need to click somewhere outside the property field you just changed. In other cases, you may need to press either the Enter or the Tab key.

The Property inspector does not display an attribute that I want to change for an element in my Web page. How do I change the attribute?

The Property inspector may not provide properties for all the attributes of a given tag. It provides only the most commonly used attributes for a tag. To access attributes not available in the Property inspector, you can edit the source code directly, using Code view.

Using the History Panel

You can quickly undo an action or a series of actions, beginning with the most recent, using Dreamweaver's History panel. You can also quickly redo action steps in the History list that you have previously undone. The History panel keeps a record of all the actions you perform on your Web page, from the time you open it until you close it, and displays the actions in a list.

You can repeat a series of steps from the History list. It can be a series of steps anywhere in the list; it does not have to be the most recent series of steps.

You can copy a series of steps from the History list of your Web page to another Web page.

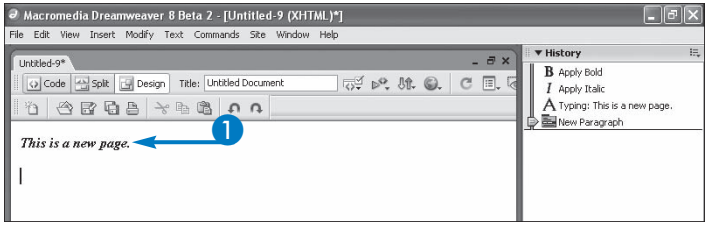
You can execute a series of stored action steps, called a *command*, which you can create in the History panel. You select a series of steps from the History list and store them, giving them a name. Dreamweaver adds the command and the command name to the menu that displays when you click the Command menu item. The command is then available any time you click the command name in the Command menu.

Using the History Panel

Create a command

1. Add and format elements in your Web page.

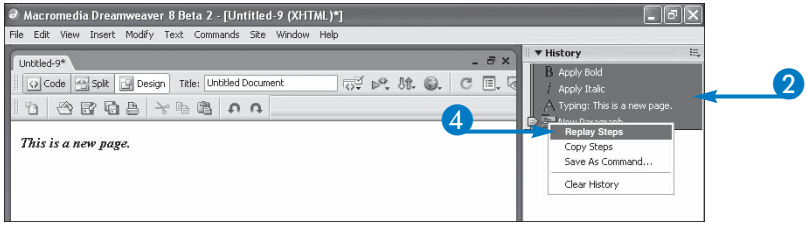
   Dreamweaver adds a step to the History panel for each action you perform.



2. Highlight the steps to save as a command.

Test the command

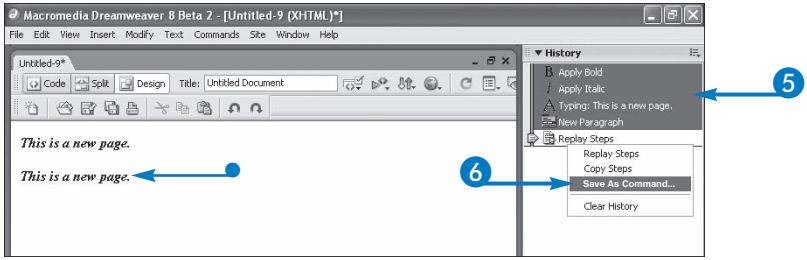
3. Right-click the highlighted steps.
4. Click Replay Steps.



   - Steps are replayed and the results appear in the Web page.

Save the command

5. Right-click highlighted steps.
6. Click Save As Command.



The Save As Command dialog box appears.

7 Type a name for the command.

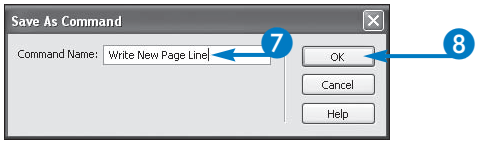
8 Click OK.

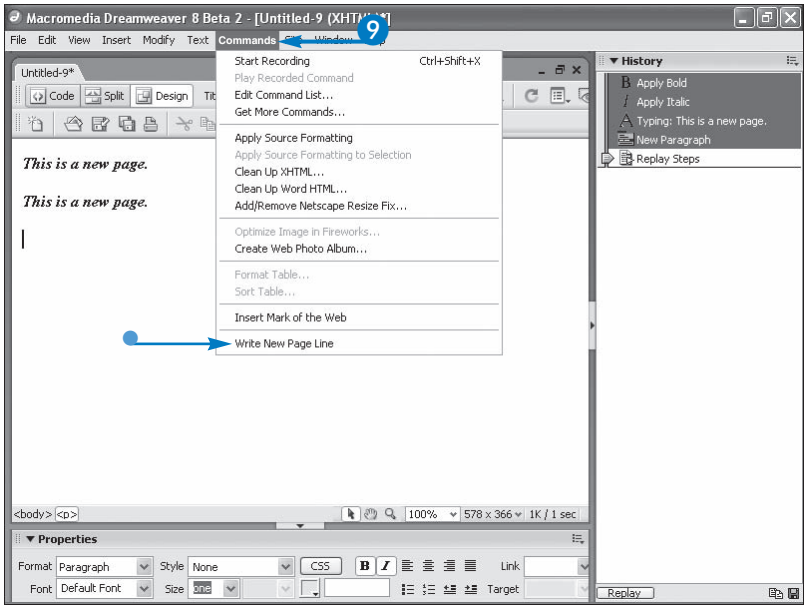
The dialog box closes and Dreamweaver saves the command.

Check that the command is added to the menu.

9 Click Commands.

- The new command appears in the Commands menu.





MASTER IT

How do I undo and redo actions using the History panel?

You can quickly undo an action step or a series of action steps in the History panel. You can also quickly redo the actions that were undone. The History panel displays a slider ( ) on the left side of the list of actions, with the pointer located at the last action in the list. You can undo steps by dragging the slider up, undoing each action in turn and graying out the action item in the history list. You can redo steps by dragging the slider down over steps that were previously undone.

How many steps does the History panel store?

The number of action steps that the History panel stores is a value you can set and change. By default, it is set to 50. The value is a preference setting that you can change by clicking Edit, Preferences. The Preferences dialog box appears, displaying a list of categories on the left-hand side. If the General category is not selected, click General. A setting labelled "Maximum number of history steps" appears near the bottom of the General dialog box. Type the number of action steps you want to be saved, replacing the current setting in the field provided.

Using the Site Map

You can get a visual representation of the structure of a site with a Site Map. A Site Map view lays out the different pages of a site in flowchart form, with arrows representing links between the pages. It also highlights pages that have broken internal links.

Initially, the Site Map displays your site two levels deep, starting with the page you define as the home page. You can modify the view by opening sublevels below individual pages, or by resetting the home page.

You can double-click a file to open it. You can add, remove, change, and check links, and preview the file in a browser by right-clicking the file and selecting from the context menu.

You can create links visually with the Site Map open. Just click a file in the Site Map and drag the point-to-file icon next to the file to a filename in the local site list.

You must set one Web page file to be your home page. If you have not, the site map will not display. To set a Home Page, right-click the file and click Set as Home Page.

Dreamweaver gives you an option of saving the Site Map as an image (BMP or PNG), which can be useful if you need to give a slideshow presentation about the site or document the site on paper. In the Files panel, click the Options button, select Files, and click Save Site Map.

Using the Site Map

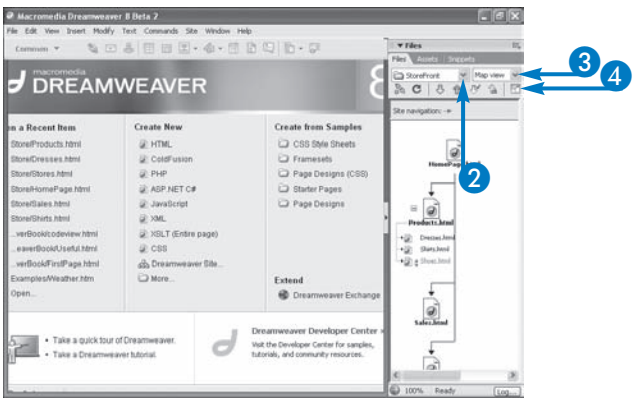
1. Open the Files panel.

Note: *See the section "Using Panels and Inspectors" to open panels.*

2. Click here and select the site.
3. Click here and select Map view.

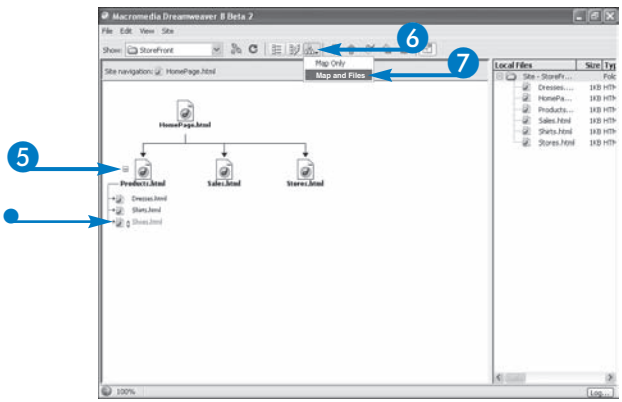
   The Files display changes to Map view.
4. Click the Expand button ( ).

   The Files panel expands.



5. Click +.
   - One filename is shown in red with a broken link icon.
6. Click the Map button ( ).
7. Click Map and Files.

   The files display beside the Map.



Set Preferences

Many of the default behaviors and appearances of Dreamweaver are controlled by settings that can be changed. For example, when no file is open, Dreamweaver shows a start page. You can change a setting so that Dreamweaver displays a blank window when no file is open. The behavior settings that you can change are called *preferences*.

Preferences are set from the Preferences dialog box. Dreamweaver organizes preferences into related groups of settings. Each group is displayed in a separate page in the Preferences dialog box. You select which type of settings you want to change from a list that includes general, code coloring, fonts, highlighting, and many others.

You can access the preference settings from the Edit menu. Individual preference settings are explained in this book in the related chapters. The preference settings for text are mentioned when discussing text formatting, and preference settings for tables are mentioned when discussing tables.

Set Preferences

1. Click Edit.
2. Click Preferences.

The Preferences dialog box opens.

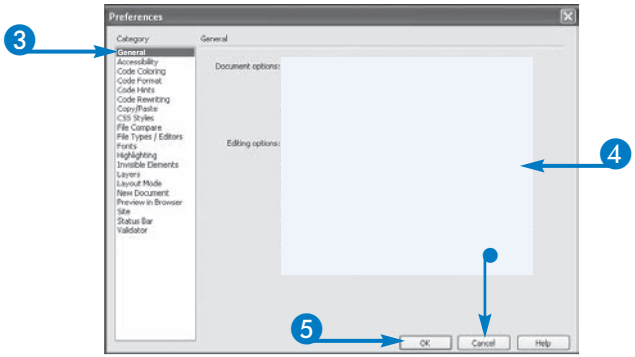
3. Click a category from the list.

   The Preferences dialog box displays a page of settings for the selected category.

4. Change settings by clicking the appropriate check box, typing a desired value, or selecting the desired item in a menu.

   - You can click Cancel if you change your mind.

5. Click OK to apply the settings and close the Preferences dialog box.



Update a Web Site

A Web site is always a work in progress. It needs new information added, existing information updated, and obsolete information removed. It needs new functionality, such as a product catalog or a blog. Most Web sites are published with the intention of adding information and functionality later.

When updating a Web site, you may want to change one file, more than one file, or all of the files on the Web site. You change the local files that need to be updated, one by one, saving each file when you have finished changing it.

When all of the changes are made, you upload (or put) the changed files to the Remote site. You can upload all the changed files at one time. You can use the Files panel to manage your Web site files.

When you upload files to the Web page, the saved local file is uploaded. If you have made changes to the file that are not saved, those changes will not be uploaded. While uploading, if Dreamweaver encounters any files that have been modified but not saved, it prompts you to select whether you want to save the file or not. If you respond "no," the unsaved changes are not uploaded.

Update a Web Site

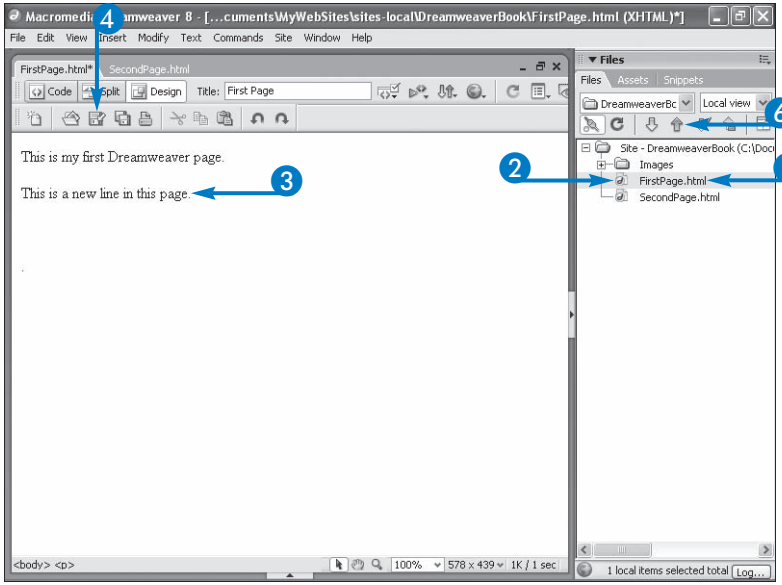
1. Open the Files panel.

Note: *See Chapter 2 to open panels.*

2. Double-click a file.

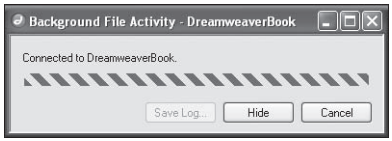
   The file opens.

3. Edit the file.
4. Click Save ( ).
5. Highlight file(s).
6. Click the Upload button ( ).



The File Activity window appears.

When the File Activity window closes, the file has been uploaded.



View Local and Remote Sites

You can view Local and Remote sites side-by-side, to compare the folder and file organization and the modification dates of the files. By examining the sites together, you can see whether the sites are the same. When you have finished changing the files to update your Web site and uploading the changed files, the files should be the same.

By viewing the sites side-by-side, you can instantly see any differences. You can see if a file exists on the Local site but not the Remote site, or if it exists on the Remote site but not on the Local site. You can also see whether a file has been modified more recently on the Local site or the Remote site.

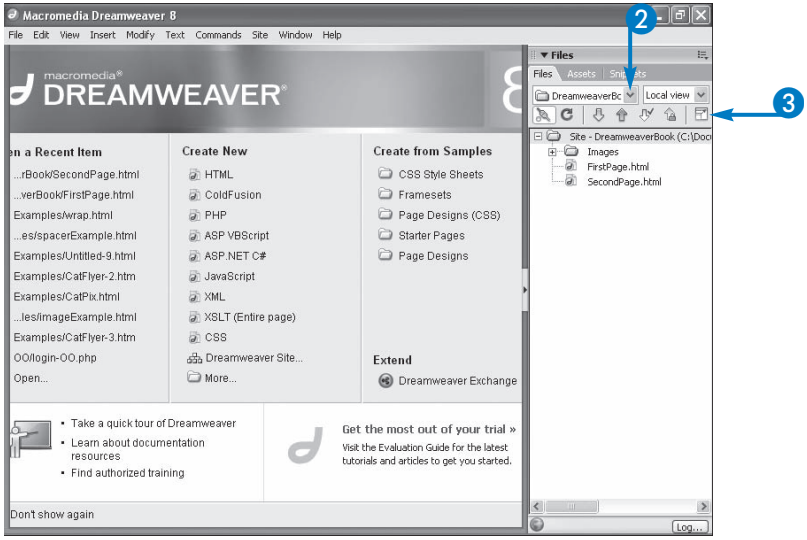
You can drag the border between the Local and Remote site windows to change the relative size of the sections. Sometimes you need to enlarge a section to see all of the information. You can also adjust the size of each column by dragging the column separator in the bar that displays the column headings. You may need to make a column wider to see all of the information or make a column narrower so that another column can be seen.

View Local and Remote Sites

1. Open the Files panel.

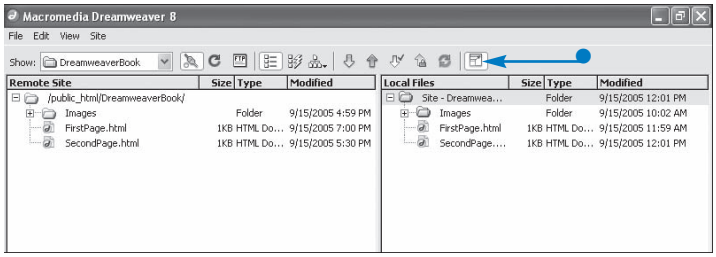
Note: *See Chapter 2 to open panels.*

2. Click here and select a site.
3. Click the Expand button ( ).



Dreamweaver displays the Remote and Local sites side-by-side.

- You can return to a normal file view by clicking again.



Synchronize Local and Remote Sites

Your Remote site is the site that your Web site visitors see. Your Local site is where you develop the Web pages before uploading them to the Remote site. When your Web pages have been updated and uploaded, the Local and Remote sites should be the same. When they are the same, the site is synchronized.

If a file on the Local site does not exist on the Remote site, or vise versa, the site is not synchronized. If a file on the Local site has been modified more recently than the same file on the Remote site, or vice versa, the site is not synchronized. There can be specific reasons why the site should not be synchronized, but in most cases your site should be synchronized.

Dreamweaver can synchronize selected files or your entire site for you. It checks for matching filenames and compares last-modified dates to determine which files need to be uploaded or downloaded to synchronize your site.

Before performing the synchronization, Dreamweaver displays the planned uploading or downloading actions. You can specify alternate actions, such as delete a file, ignore a file, or compare the contents of two files.

Synchronize Local and Remote Sites

1. Expand the Files panel.

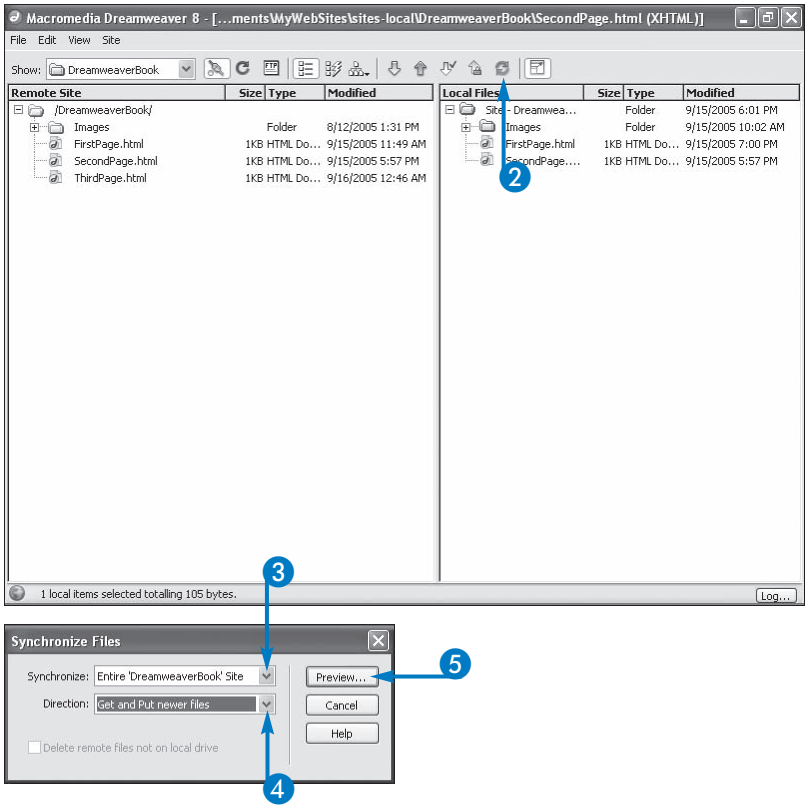
Note: *See the section "View Local and Remote Sites" to expand the Files panel.*

2. Click the Synchronize button ( ).

   The Synchronize Files dialog box appears.

3. Click here and select Entire Site.
4. Click here and select Get and Put newer files.
5. Click Preview.

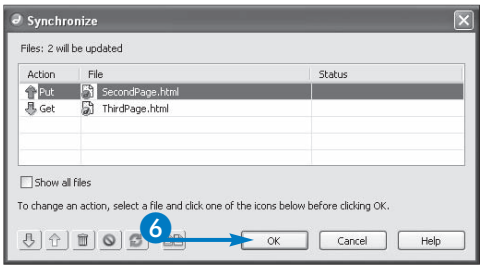
   The Synchronize preview displays.



Dreamweaver displays the actions needed to synchronize the sites.

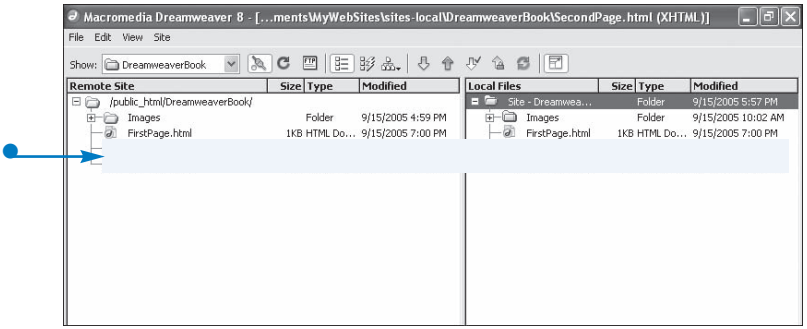
Note: *You can change the actions for any of the files using the action buttons at the bottom of the dialog box.*

6 Click OK.



Dreamweaver uploads and downloads as needed to synchronize the sites.

- Synchronized files now display the same date and time.



MASTER IT

The last-modified date on my local file is an hour earlier than the date on my remote file, but Dreamweaver wants to upload the local file when I synchronize. Why is this?

If your remote server is at a Web hosting company, the remote server may be in a different time zone. The time you see may be earlier or later when converted into local time.

What happens if I synchronize when the latest versions of all files are in both places?

Dreamweaver displays a message that tells you that no synchronization is needed.

How can I compare the contents of the local and remote versions of a file?

The Synchronize process provides a feature you can use to compare the file versions. When the file is listed in the Synchronize preview list, you can select a filename and click the Compare button.

When you click the Compare button, Dreamweaver opens an application that compares files. You need a preferences setting to specify which application Dreamweaver should open. Click Edit and select Preferences. Click File Compare. Browse to the application you want Dreamweaver to use for comparing files.

Find Files

Dreamweaver offers several options for finding and selecting files. You can select all files, select all recently modified files, or select files that were modified more recently in the Local site or in the Remote site. You can select all checked-out files if your site is using the check-out system.

You can highlight a file in the Local site and find the same file in the Remote site, or highlight a file in the Remote site and find it in the Local site. This function is very helpful when files have been misplaced.

You can also find and select the file that is currently open. The site where the file is located will be opened and the file selected. This Find function is located in the Site menu.

The selected files can all be uploaded or downloaded in one operation. Just click the appropriate button.

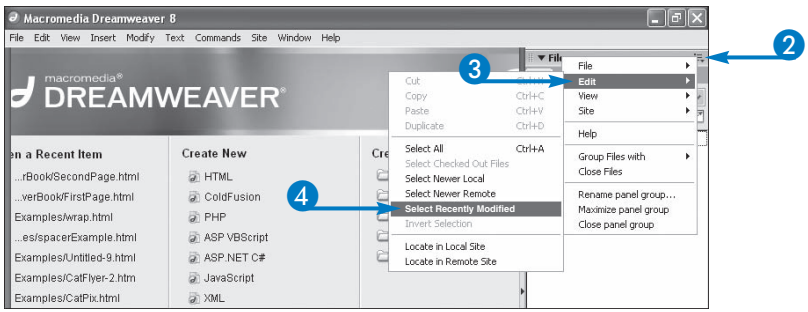
Find Files

Recently modified

1. Open the Files panel.

Note: *See Chapter 2 to open panels.*

2. Click the Options menu ( ).
3. Click Edit.
4. Click Select Recently Modified.

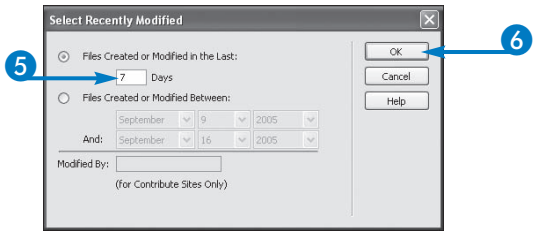


The Select Recently Modified dialog box opens.

5. Type the number of days.

Note: *You can check Files Created or Modified Between to select files between specified dates.*

6. Click OK.



- Dreamweaver selects the files that have been modified within the specified number of days.

Open file

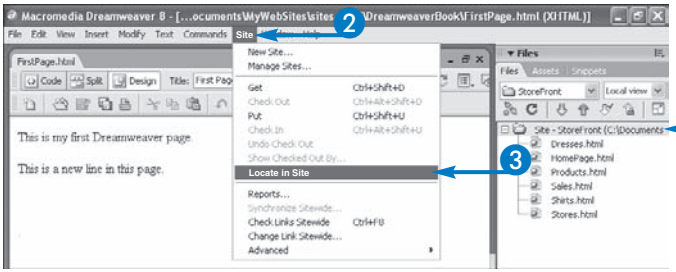
1. Open the Files panel.

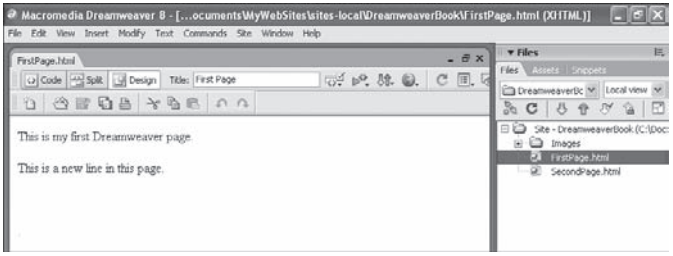
Note: *See Chapter 2 to open and close panels.*

- The panel displays the site that was open when the panel was closed.

2. Click Site.
3. Click Locate in Site.

Dreamweaver opens the site where the open file is located and selects the name of the open file.





How do I find the files that are newer in the Local site than in the Remote site?

You can do this in the Files panel. When the local files are displayed, click in the upper right corner of the blue panel bar. Select Edit and click Select Newer Local. Dreamweaver selects the files in the Local site that are newer than the same file in the Remote site.

You can select files that are newer in the Remote site with a similar process. Select Remote view from the drop-down list in the Files panel. Click , select Edit, and click Select Newer Remote. Dreamweaver selects the files in the Remote site that are newer than the same file in the Local site.

How can I find all the files that are checked out?

You can do this in the Files panel. Click in the upper right corner of the blue panel bar. Select Edit and click Select Checked Out Files. Dreamweaver selects the files that are currently checked out. The files are listed with the name of the person who checked them out.

If you do not have the check-out system enabled, the menu item to find checked-out files is grayed out.

Edit a Web Page

To edit a Web page, you open the Web page file, make the changes, and save the file. You can make any changes to the file that you need.

You can edit the Web page using either Design view or Code view in the Document window. You will recognize commands on the Edit menu and on the standard toolbar, such as copy, paste, and undo, from other software applications. These commands work just as well in either Design view or Code view. For example, if you highlight a line in Design view and press Delete, the line is deleted. If you highlight a line in Code view and press Delete, the line disappears also.

You can add any Web page elements. You can remove most Web page elements by backspacing over them or by selecting the elements and pressing Delete. You can change the properties of existing Web page elements using the Property Inspector. Chapter 2 describes using the Property Inspector. For specific information on the element you want to add or change, such as a table or a form, see the appropriate chapter.

Dreamweaver provides features specifically for editing the HTML source code. The next section in this chapter describes the code-editing tools.

Edit a Web Page

1. Double-click a Web page file.
2. Click in the Web page.
3. Click the Date button ( ).

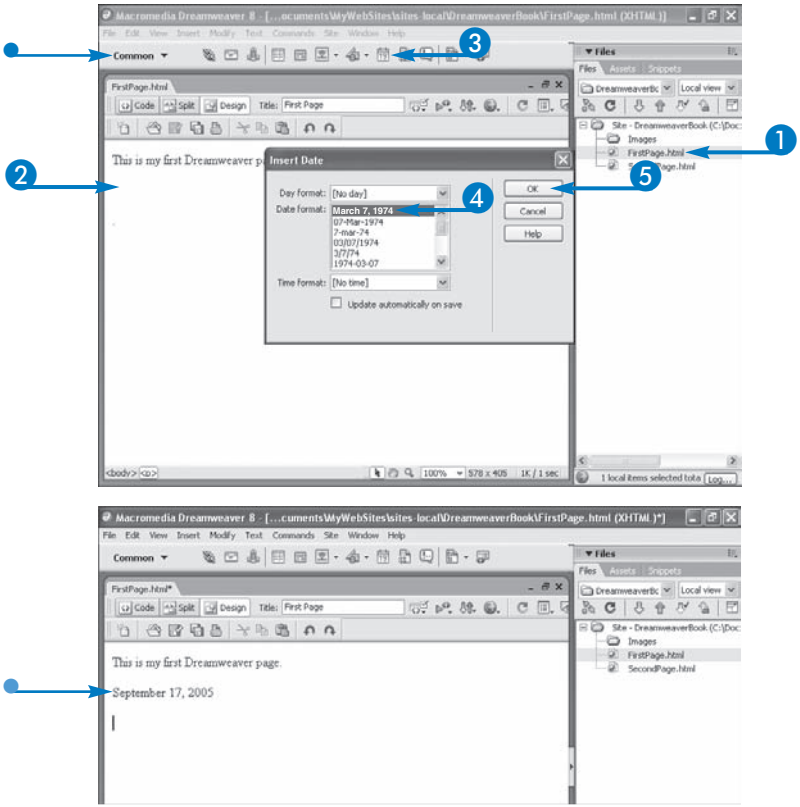
   The Insert Date dialog box appears.

   - The Common category of the Insert toolbar is displayed.
4. Click a date format.

Note: *See Chapter 4 to learn more about Date.*

5. Click OK.

   - Dreamweaver inserts the date.



Undo and Redo Changes

When making changes, you sometimes perform an action that you do not want to keep. The action may be an error, or you may have changed your mind. You can undo any action quickly in Dreamweaver by clicking the Undo button. If you change your mind about the undo, you can quickly return the Web page to its condition before the undo by clicking the Redo button.

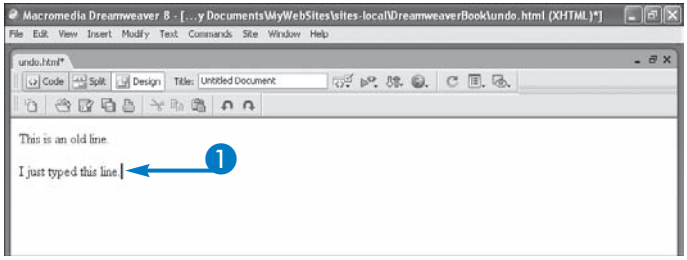
Dreamweaver can undo several actions sequentially. It first undoes the most recent action, then the action before the most recent, and so on. How many actions Dreamweaver can undo is set in your preferences. The default is 50. You can change this in the General settings dialog box. Look for Maximum number of History Steps.

In addition to clicking the buttons, you can undo and redo actions from the Edit menu. If you are unsure which action you performed most recently, the Edit menu tells you which action it will undo or redo.

You can also undo and redo actions from the History panel. You can view all the steps you have performed and select a sequence of steps to be undone with one command. Chapter 2 describes using the History panel.

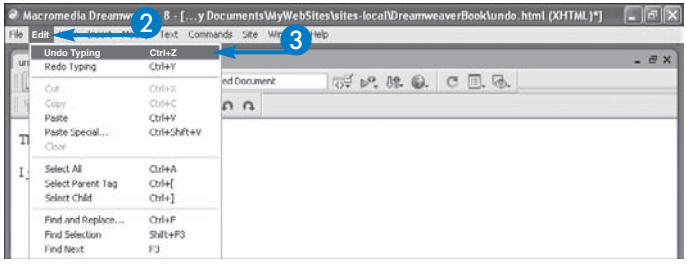
Undo and Redo Changes

1. Make a change to your Web page.

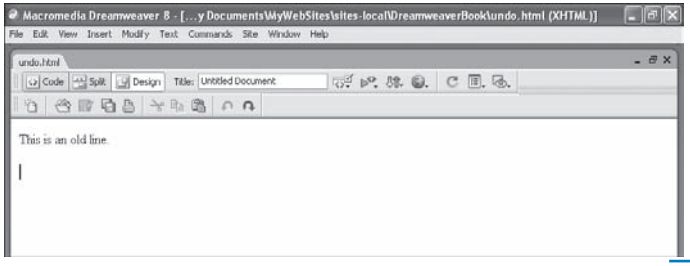


2. Click Edit.
3. Click Undo Typing.

   Here, the last change made was typing "I just typed this line."



   Dreamweaver undoes the last change.



Find and Replace Text

Dreamweaver provides the ability to find and replace text, a feature you may be familiar with from other applications, such as word processing software. With Dreamweaver, you have several options for the scope of your search. You can search for text in a selected section of text, in the current open file, in all files in the specified folder, in selected files, or in your entire Web site.

You also have options when specifying the text to be searched for. You can search for specific text or for patterns, such as all words that end in *ing*; you can match single words only or any string of text; you can search for text in a specified case or ignore case; you can search for text with spaces or ignore spaces; you can search the source code for text inside or outside of tags; and you can search for specific tags.

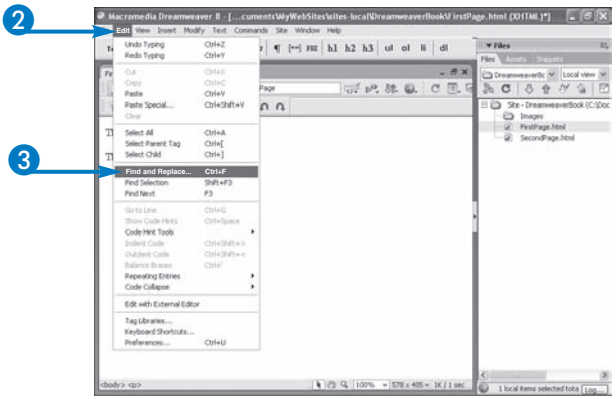
You can do a simple find or you can find and replace. When the search executes, a Search panel opens in the Results group at the bottom of the Document window, listing the lines that were found and any text that was replaced.

Find and Replace Text

1. Open a file.

Note: *See Chapter 2 to open a Web page.*

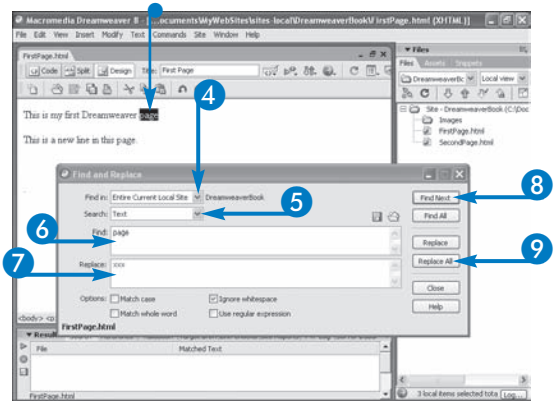
2. Click Edit.
3. Click Find and Replace.



The Find and Replace dialog box appears.

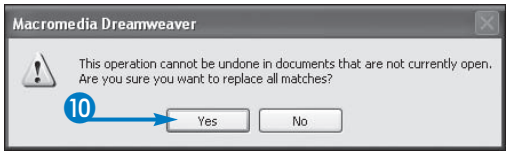
4. Click here and select Entire Current Local Site.
5. Click here and select Text.
6. Type the text to be replaced.
7. Type text to replace the current text.
8. Click Find Next.
   - Dreamweaver finds and highlights the text.

   A Search panel opens at the bottom.
9. Click Replace All.



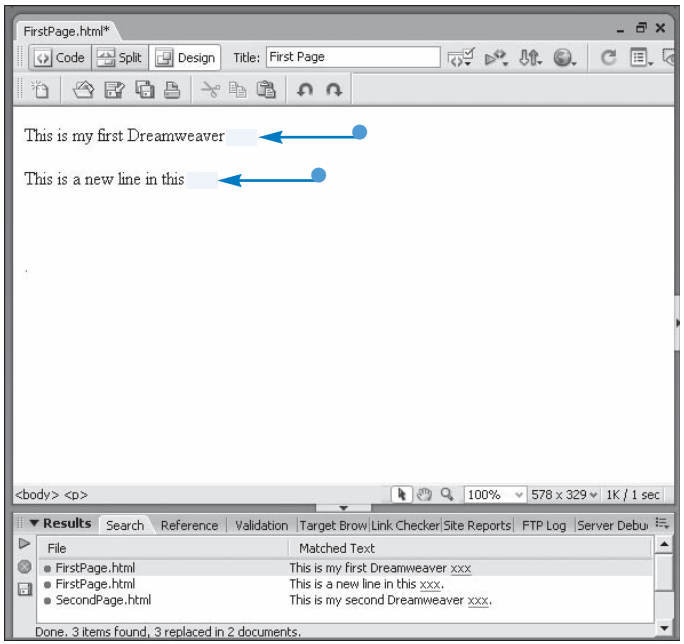
Dreamweaver displays a warning.

10 Click Yes.



- All instances of the text are replaced.

The Search panel group shows a listing of the replacements that were made.



How do I search for patterns?

To search for strings that fit a pattern rather than search for an exact value, you can use regular expressions, also called *regex*, a standard way of matching patterns used by many applications and languages. This book does not explain regular expressions. If you are not familiar with them, there are many tutorials on the Web for regular expressions, such as sitescooper.org/tao_regexps.html or www.regular-expressions.info.

An example of a simple regex is:

```
^[1-9]
```

which finds any line that begins with a number.

To use a regular expression, check the box next to "Use regular expression" and type the regex in the Find field.

Can I repeat a search without typing in the find text again?

Yes. You can repeat the previous search or you can save a search query and use it whenever you need it.

To repeat the previous search, press F3.

To save a search query, type it into the Find field in the Find and Replace dialog box. Click the Save Search button above the right side of the Find field. In the Save dialog box, type a meaningful name for the search. The file containing the query is saved with the extension .dwr.

To use a saved search pattern, click the Retrieve search button in the Find and Replace dialog box and click the filename of the search query you want to use.

Edit Source Code

You can edit the source directly in Code view. The Code view editor functions as most text editors do: Place the cursor in the file and type code. To change or delete code, highlight the code and type over it or press Del. Using Code view is discussed in more detail in Chapter 2.

Dreamweaver provides two major editing tools to assist you in editing the source code in Code view: the Tag Chooser for inserting tags and the Tag Editor for editing tags. The Tag Chooser is useful when you cannot remember a needed tag. It offers a list of tags you can insert. The Tag Editor is useful when you cannot remember a needed attribute for a tag. It assists you to change values for the attributes of a tag.

When you insert a tag, Tag Chooser opens and offers a categorized list of tags you can enter and then, when you choose a tag to insert, the Tag Editor opens so you can set values for the attributes. When you edit an existing tag, the Tag Editor opens, showing the current values of the attributes so you can change any that need changing.

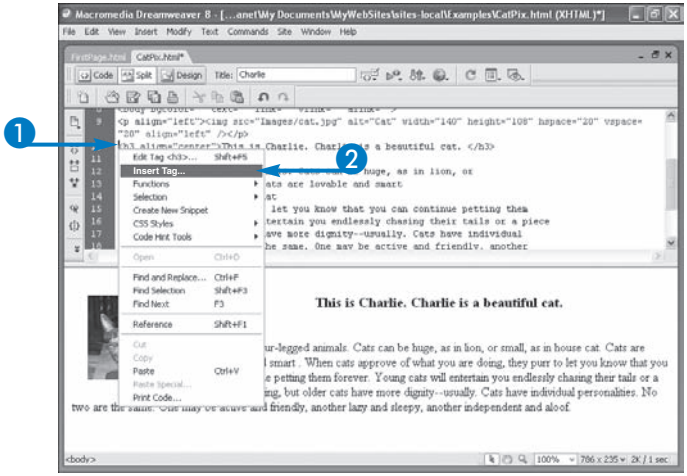
Edit Source Code

1. Right-click where you want to insert the tag.

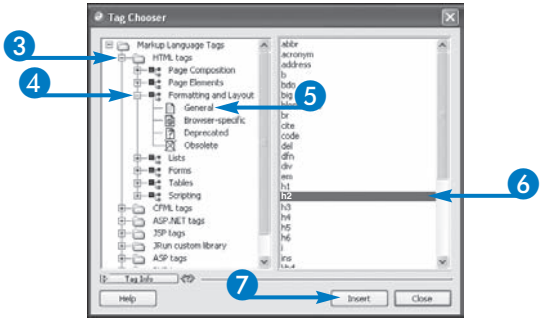
Note: *In this example, an h2-formatted header is added to the Web page by editing the source code.*

2. Click Insert Tag.

   The Tag Chooser appears.

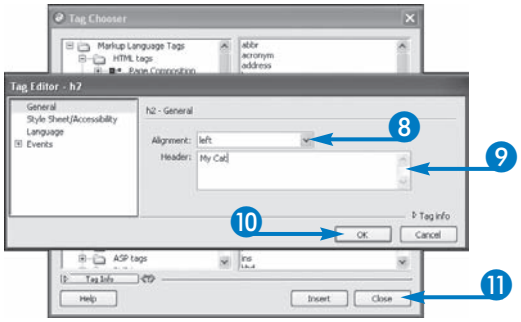


3. Click +.
4. Click +.
5. Click General
6. Click the h2 button.
7. Click Insert.

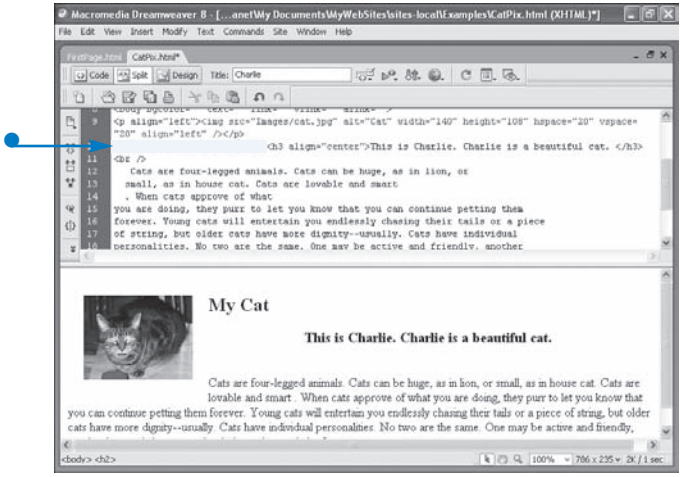


The Tag Editor appears.

8. Click here and select an alignment.
9. Type the header text.
10. Click OK.
11. Click Close.



- Dreamweaver inserts the tag.



Do I need to know the hex value for a color to set it in the source code?

No. If you are using one of the major colors for which all browsers recognize the color name, such as red or green, you can use just the word, as follows:

```
bgcolor = "red"
```

If you do not know whether the color has a name, or what the name is, you can use Dreamweaver's color picker to select a color. Right-click where you want the color value to go. Select Code Hints Tools and click Color Picker. The Dreamweaver color picker displays a color grid where you can click the color you want.

Can I view the source code without being in Code view?

Yes. You do not need to assign part of the Document window to Code view, making the Design view window smaller. Instead, you can use the Code inspector (by clicking Window, Code Inspector), which opens in a floating window that you can move anywhere on the Dreamweaver workspace. Thus, you have the entire Design view window with a code window floating on top of it. At any time, you can collapse the Code Inspector panel group by clicking its name so that it is out of your way.

Change Tag Attributes with the Tag Inspector

Dreamweaver provides the Tag Inspector to quickly change a tag. You can access the Tag Inspector from either Design view or Code view. The Tag Inspector provides a list of all the attributes available for a tag and the current values of the attributes. You can change the values for any attribute.

The Property Inspector offers similar functionality in a different format. However, the Property Inspector does not offer all of the attributes for a tag, only the most common attributes. The Property Inspector lists all of the attributes available for a tag in the HTML code.

In addition, the Property Inspector does not use the HTML names for the attributes. Dreamweaver organizes and names properties in a way that is clear to you even if you have no HTML experience. The Tag Inspector lists the HTML attribute names that are used when writing HTML source code. For example, the H and W fields in the Property Inspector are the height and width attribute in the Tag Inspector. Also, the Property Inspector provides a field labeled "link," but the Tag Inspector does not. Changing an image to a link requires enclosing the entire `<img>` tag in `<a>` tags; there is no link attribute for the `<img>` tag.

Change Tag Attributes with the Tag Inspector

1. Open the Tag Inspector.

Note: *See Chapter 2 to open and close inspectors.*

2. Click the element to be changed.

   You can click in either the Design or the Code view.

   In this example, the heading "This is Charlie. Charlie is a beautiful cat," is being reformatted.

   - The Tag Inspector displays the tag in the top blue bar.

3. Click +.

   The list of attributes is displayed and the + changes to -.

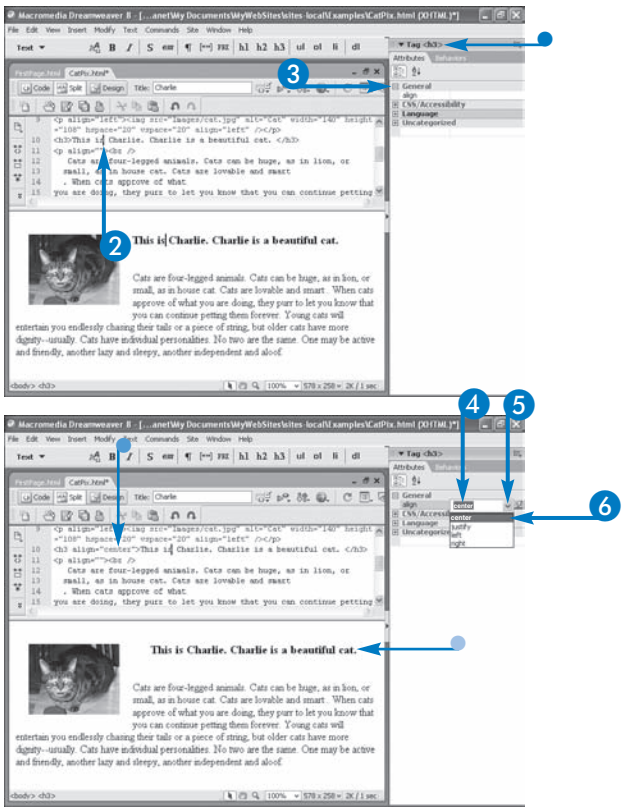
4. Click the value field in the list.

   A drop-down list appears.

5. Click ▼.

6. Click a value for the attribute.

   - The source code changes.
   - The Design view shows the changes.



Edit a Tag in Design View

If you are familiar with HTML, you may occasionally want to quickly edit a tag while working in Design view. The Quick Tag Editor was designed for this purpose.

When you click an element in your Web page, the status bar at the bottom of the Document window shows the tags that surround the element. You can access the Quick Tag Editor by right-clicking the tag in the status bar. The tag opens in an editing box, displaying the current tag with all its attributes, which you can change.

You can change the attributes by editing the tag in the box. To replace a value, highlight it and type over it. To remove a value or attribute, highlight the text and press Delete.

To edit attributes that have a set of values, such as `align`, you can click in the current value to see a list of possible values; double-clicking a value replaces the current value with the list. The edit box stays open so that you can change more attribute values if needed.

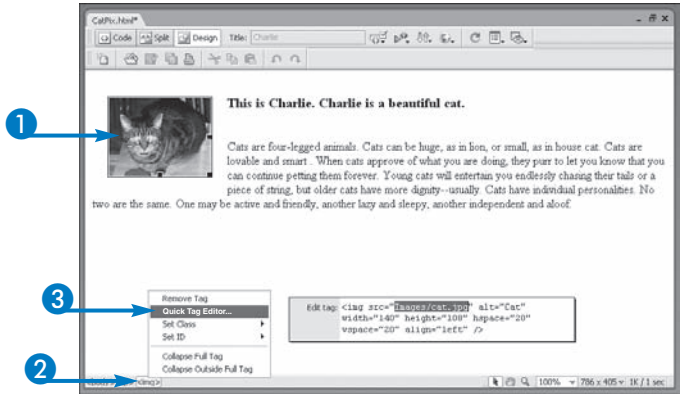
To close the tag editing box, click anywhere outside the box.

You can move the editing box to a convenient, out-of-the-way location: click and drag the brown section on the left side of the editing box.

Edit a Tag in Design View

1. Click the image.
2. Right-click the image tag.
3. Click Quick Tag Editor.

   The Edit box opens containing the tag.



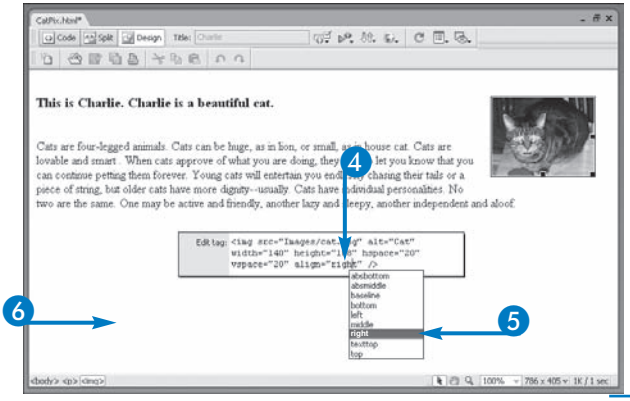
4. Click the `align` attribute value.

   A list of values appears.
5. Double-click a value.

   The new value is added to the tag.

   The Web page changes.
6. When finished editing the tag, click the Web page.

   The Edit tag box closes.



Search for Tags

Dreamweaver assists you to search the source code for specific tags and their attributes. You can find specific tags with specific attributes. When you find the tags, you can also remove them or change them. You can change the value of an attribute or add or remove an attribute. You can also remove or change the contents of a tag — the text between the opening and closing tag, such as:

```
<p>Hello</p>
```

"Hello" is the content. You can remove the content or replace the content.

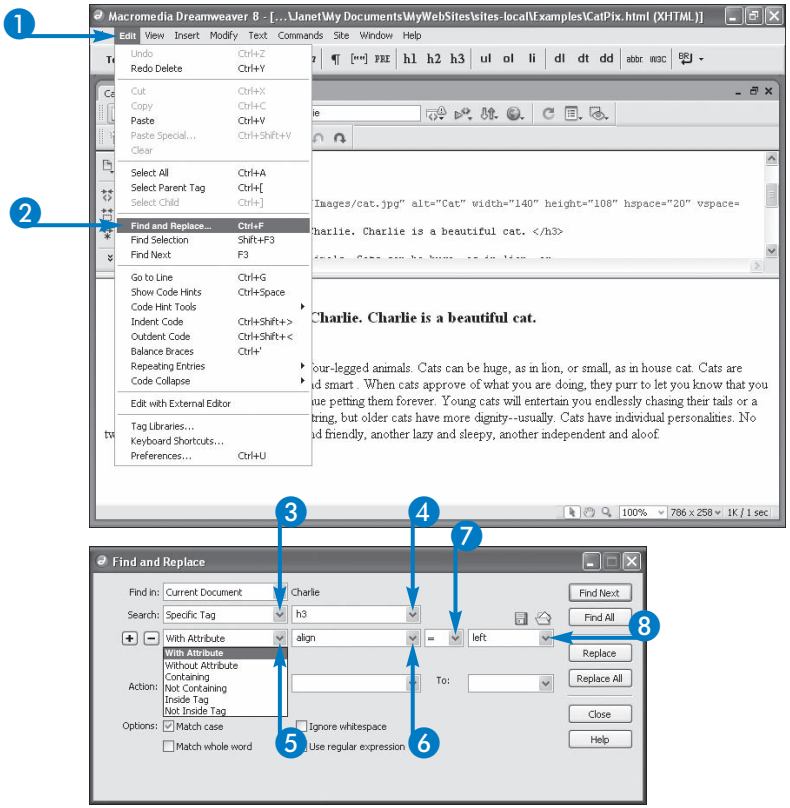
To find tags, click Edit and click Find and Replace. In the Find and Replace dialog box that opens, select Specific Tag in the Search field. The dialog box changes to display different fields. You need to select the tag you want to search for. You can also select a specific attribute setting so that Dreamweaver finds only the tags with the specified attribute setting.

If you want to search for more than one attribute, click + and another set of attribute fields appears.

You have several actions you can take when the search is successful. You can choose Replace Tag and Contents, Remove Tag and Contents, Set Attribute, and several others. When you select an action, the appropriate fields appear.

Search for Tags

1. Click Edit.
2. Click Find and Replace.



3. Click here and select Specific Tag.
4. Click here and select a tag.
5. Click here and select a condition.

   In this example, With Attribute will find only tags with the specified attribute.
6. Click here and select an attribute.
7. Click here and select an operator.
8. Click here and select a value for the attribute.

9 Click here and select an Action to perform when the tag is found.

Set Attribute is selected.

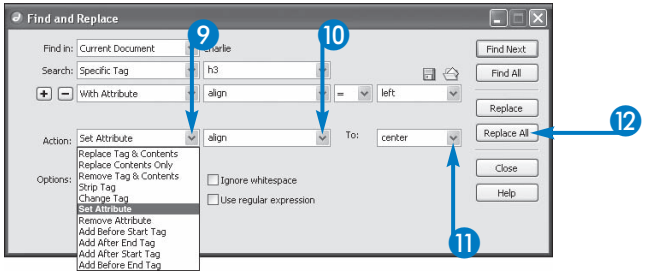
10 Click here and select an attribute to set.

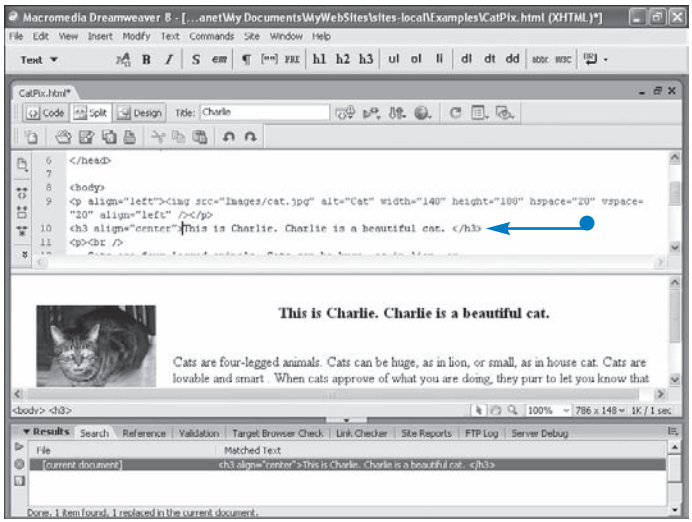
11 Click here and select a value for the attribute.

12 Click Replace All.

- Dreamweaver finds all h3 tags with an `align` attribute set to `left` and changes the value to `center`.

The Search panel shows the actions taken.





How can I search for the content of a tag?

You can search for the contents of a tag by selecting Containing, rather than With Attribute, from the dropdown list in the first field on the second line of the search specifications. Select Text or Specific Tag from the dropdown list in the second field. Then, type text (if you selected text) or a tag (if selected Specific Tag) into the third field in the same line. For instance, if you are searching for a `<title>` tag and you select Containing and select text and type **Boo**, Dreamweaver would find the following tag:

```
<title>Boo hoo </title>
```

= for the second field and type text into the third field. You can also select Not Containing.

Can I specify more than one condition when searching for a tag?

Yes. You can specify several attributes and/or contents. After you complete the three fields on the condition line for one condition, you can click the plus sign at the beginning of the condition line and a new condition line appears. You can then complete the fields in that line to set a second condition. You can repeat this until you have all the conditions you need.

You can also remove conditions by clicking the minus sign to the left of the condition line.

Using the Reference Panel

Dreamweaver provides a set of reference materials that you can search for information on the tags and attributes you need to use. The information is displayed in the Reference panel that opens in a window at the bottom of the Document window.

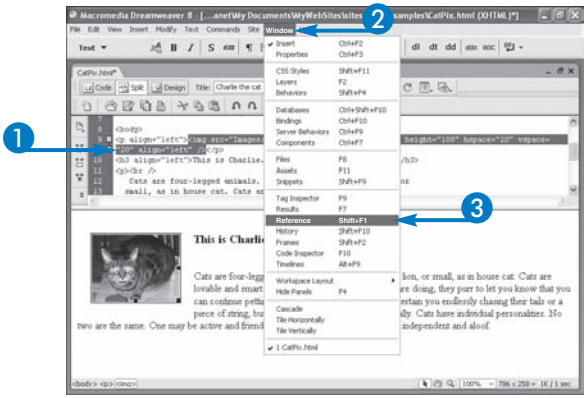
If a tag is selected when you open the Reference panel, the information for the selected tag is displayed. You can select a different tag and its information will be displayed.

A set of books from which you can select information appears in the drop-down list.

In each information section displayed for an HTML tag, you find an example section containing one or more lines of sample code. Clicking a sample line highlights the sample code. Right-click the highlighted code and click Copy. You can then right-click in the Code view window and click Paste to insert the sample line into your code.

Using the Reference Panel

1. Click in a tag.
2. Click Window.
3. Click Reference.



The Reference panel opens.

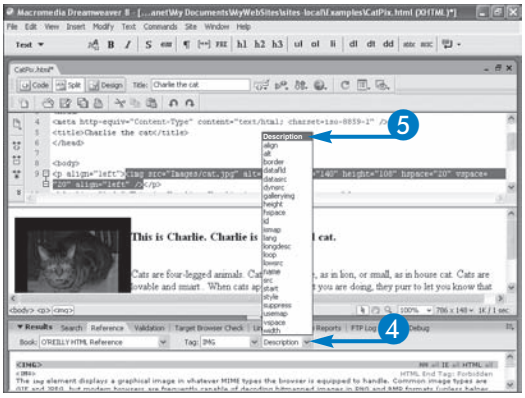
The description of the selected tag opens.

Note: *You can click the Tag drop-down arrow and select a different tag.*

4. Click ▼.
5. Select an attribute.

Dreamweaver displays a description of the attribute.

If you select Description, instead of an attribute, Dreamweaver displays the description of the tag.



Troubleshoot File Transfers

When you set up a Dreamweaver site (see Chapter 1), you test the connection to your Remote site. If the test fails, you correct the problem at that time. Your Dreamweaver site then functions properly.

You can, however, experience problems with a site that previously was working. For example, the computer where your Remote site is located might be temporarily down. Or, the FTP server on the Remote site might be having problems.

Dreamweaver provides tools to help you when your file transfers are not proceeding as expected. Dreamweaver provides a log of each transfer and its result; the log displays helpful information when a transfer fails. Dreamweaver also provides a log of all FTP activity that is very helpful if you are using an FTP connection to your Remote site. The error messages issued by the FTP server can contain useful information.

You can access the file transfer log from the Files panel, using the Log button at the bottom of the panel. The FTP log is a panel in the Results panel group.

Troubleshoot File Transfers

File activity log

1. Upload a file.

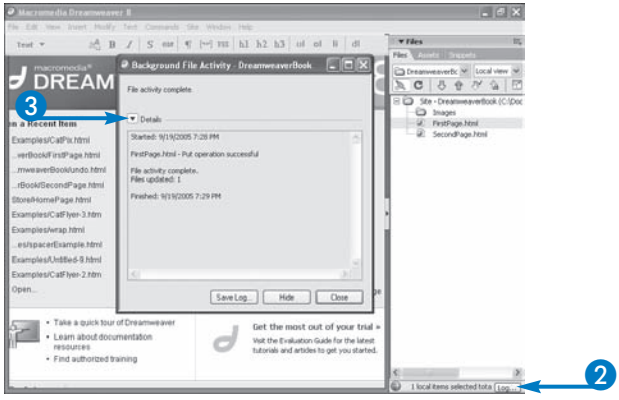
Note: *See the section "Update a Web Site" to upload a file.*

2. Click Log.

   The File Activity box opens.

3. Click ▼.

   The dialog box expands to show a log of the last file transfer.



FTP log

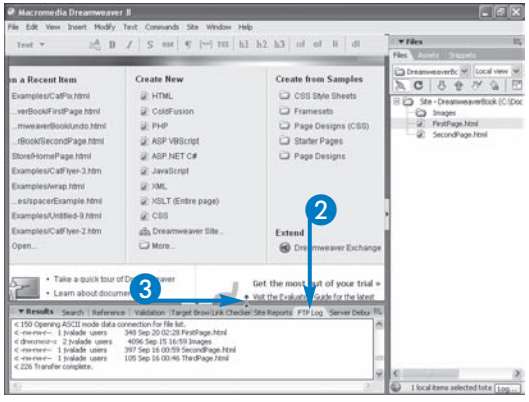
1. Open the Results group panel.

Note: *See Chapter 2 to open and close panels.*

2. Click the FTP Log tab.

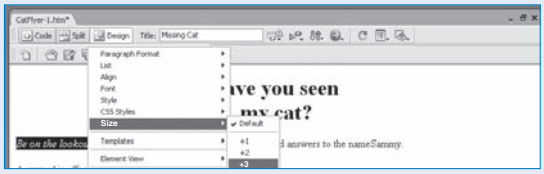
   Dreamweaver displays a listing of all FTP activity during the current session.

3. Drag the boundary to enlarge the Results group window.



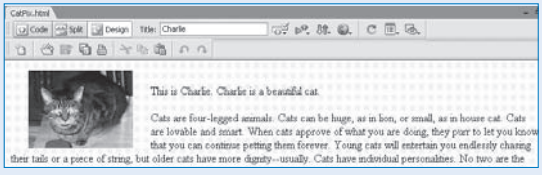
4 Adding and Formatting Text

Add Paragraphs and Headings.....70
Align Paragraphs and Headings.....71
Insert a Special Character 72
Insert a Line Break 74
Insert the Current Date 75
Change Font Style 76
Change Font Size 77
Change Font Typeface 78
Change Text Color for Selected Text 79
Change the Text Color for a Whole Page 80
Change Multiple Text Properties.....82
Create Lists.....84



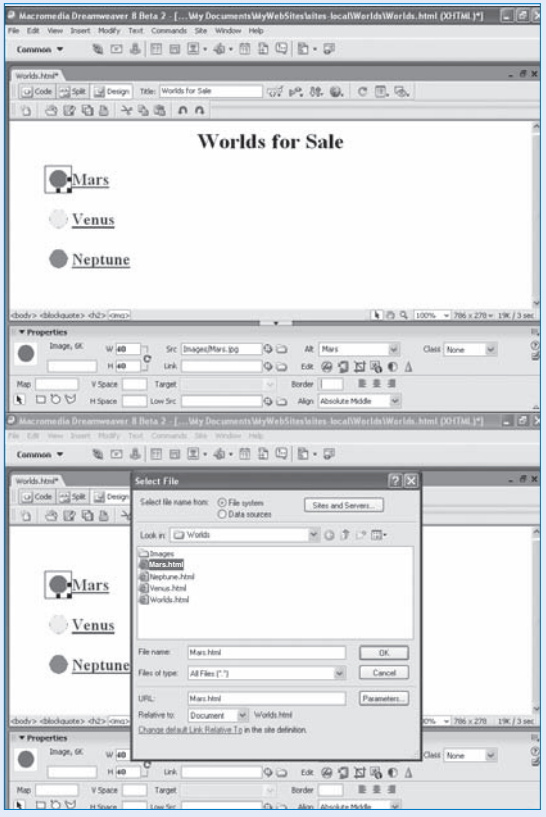
5 Working with Images

Insert and Resize Images.....86
Resize an Image in the Property Inspector 88
Align an Image on the Page 89
Align an Image with Text 90
Add Space around an Image 92
Crop an Image 93
Insert a Placeholder Image 94
Add a Background Image 95
Add a Horizontal Rule 96
Add a Spacer Image 97



6 Creating Hyperlinks

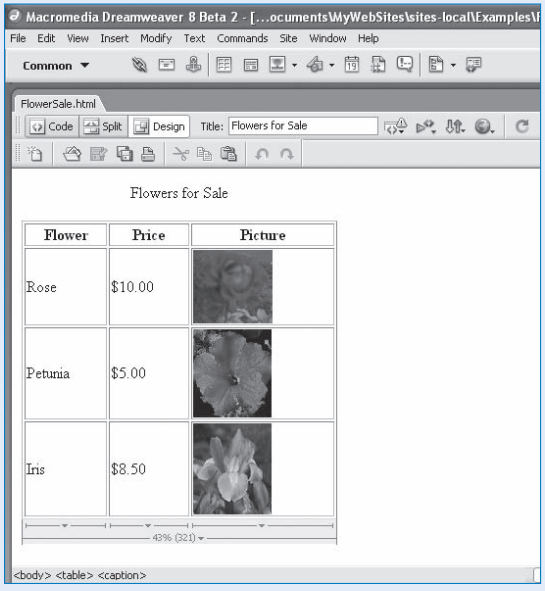
Using Hyperlinks 98
Convert Text to a Hyperlink 100
Create a Hyperlink in a Site Map 101
Convert an Image to a Hyperlink 102
Link to a Specific Place in a Document 104
Format Text Hyperlinks 106
Remove a Hyperlink 108
Change a Hyperlink 109
Change Hyperlinks Sitewide 110
Create Multiple Hyperlinks on One Image.....112
Create an E-mail Hyperlink.....114
Check Links 115



PART II
ADDING DESIGN ELEMENTS

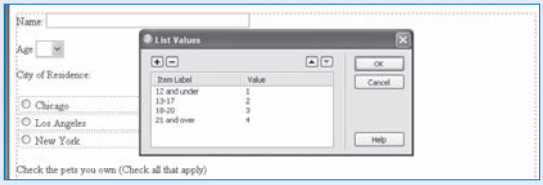
7 Creating Tables

Using Tables in a Web Page 116
Insert Content into a Table 118
Select a Table Element 120
Insert a Row or Column 122
Remove a Row or Column 123
Align a Table 124
Resize a Table 125
Resize a Row or Column 126
Split a Table Cell 128
Merge Table Cells 130
Turn Off Table Borders 131
Format Table Borders 132
Format Table Cells 134
Move Cell Content 135
Change the Table Background 136
Using Dreamweaver Table Designs 138
Sort a Table 139
Create a Layout Table 140
Import a Table 142



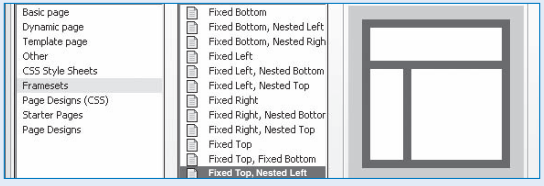
8 Creating Forms

Using Forms 144
Add a Text Field or a Text Area to a Form 146
Add Radio Buttons to a Form 148
Add Checkboxes to a Form 150
Add a List of Options to a Form 152
Add a File Uploading Field to a Form 154
Add Hidden Information to a Form 156
Add a Button to a Form 157



9 Designing with Frames

Using Frames 158
Save a Web Page with Frames 160
Using Dreamweaver Frameset Designs 162
Remove a Frame 163
Add Content to a Frame 164
Resize a Frame 166
Control Resizing of Frames 167
Name a Frame 168
Hyperlink to a Frame 169
Turn Off Frame Borders 170
Format Frame Borders 171



Add Paragraphs and Headings

Almost all web pages include some text formatted in paragraphs. You can insert paragraphs by positioning your cursor in the design window of Dreamweaver and typing the text. Pressing the Enter key ends the paragraph and inserts a blank line after the paragraph. Dreamweaver adds the following HTML to your web page source code:

```
<p>Paragraph text</p>
```

The example web page for this chapter displays a notice about a lost cat, containing the following three paragraphs:

```
Have you seen my cat?

Be on the lookout for a missing cat. He's white with long hair and answers to the name Sammy.

A reward is offered for the return of Sammy.
```

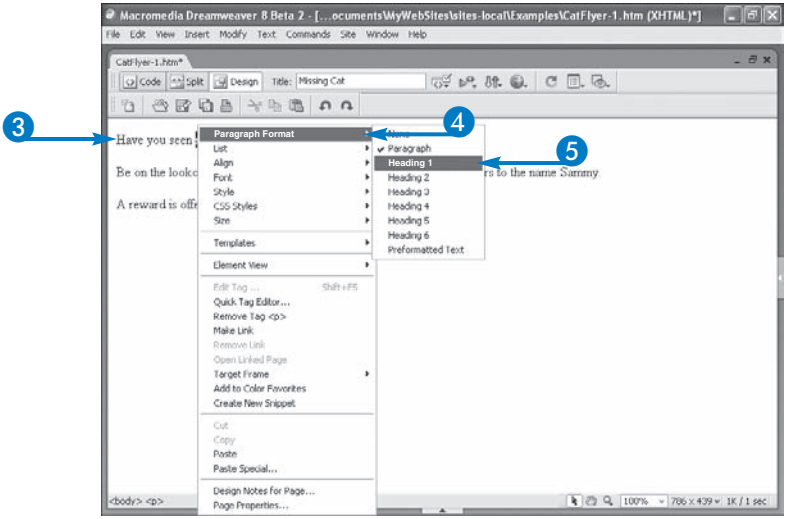
When text is added to the Web page, it receives the default text properties — font, size, alignment, and so on. You can change the properties and formatting of the text, as shown throughout this chapter.

You can define any paragraph to be a heading. Dreamweaver changes the HTML tags in the source code from <p> tags to heading tags, such as <h1> or <h2>, as shown in the following example:

```
<h1>Text</h1>
```

Add Paragraphs and Headings

1. Click in the design window and type the paragraph text.
2. Press Enter at the end of each paragraph.
3. Right-click the paragraph you want to format.
4. Select Paragraph Format.
5. Click Heading 1.



The paragraph style changes from Paragraph to Heading 1, with larger and darker text.

Align Paragraphs and Headings

You can set the alignment of a paragraph or heading, aligning it left, right, or center. Left is the default. Setting Right alignment moves the text flush to the right margin of the Web page. Setting Center alignment centers the text an equal distance from the right and left margins of the Web page.

You can set the alignment of a paragraph to Justify. This setting aligns the paragraph with both the left and right margins, adding extra spaces in the line so that it ends flush with the right margin. Newspapers, magazines, and some books (not this one) justify their text.

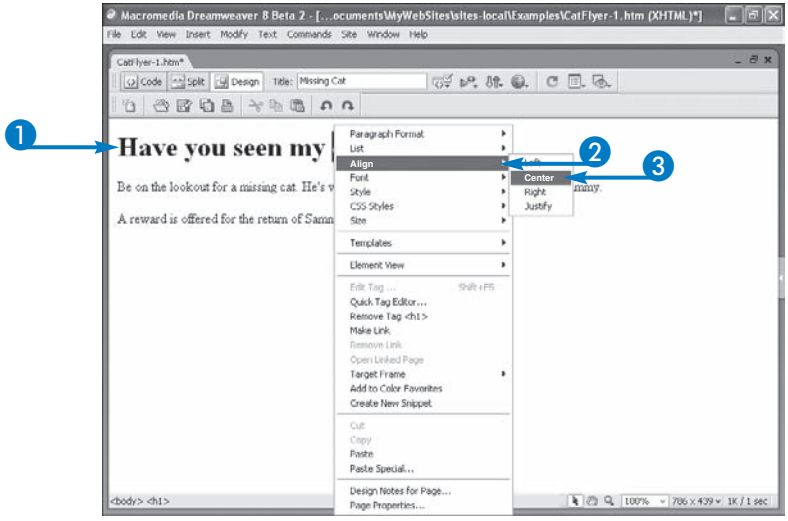
When you press Enter at the end of a paragraph, the next paragraph is given the same alignment. That is, if you center a paragraph or heading, the paragraph following the centered paragraph is also centered. You must change the alignment of the new paragraph if you do not want it to be centered.

Dreamweaver adds an `align` attribute to the paragraph or heading tag to set the alignment, such as the following:

```
<h1 align="center">This is a test
heading</h1>
```

Align Paragraphs and Headings

1. Right-click the paragraph you want to align.
2. Highlight Align.
3. Click Center.



Dreamweaver centers the heading text.

Insert a Special Character

You sometimes need to display special characters in your Web page. Some special characters, such as mathematical symbols or foreign language elements, cannot be typed from your keyboard. Some characters have special meaning to the browser when added using the keyboard, such as < and >, so the characters need to be encoded to appear correctly on the Web page. Dreamweaver assists you to insert special characters into your Web page when you cannot type them on the keyboard.

Special characters, called *entities*, appear in your HTML source code as follows:

```
&code;
```

The *code* can be letters or numbers, such as `nbsp` for nonbreaking space, `copy` for copyright sign (©), `#4033` for exclamation point (!), and `#4063` for question mark (?). As shown, the *code* is preceded by an ampersand (&) and followed by a semicolon (;). For example:

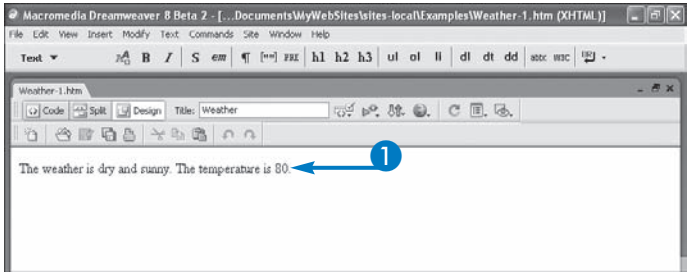
```
 
```

Most HTML books contain a table showing the codes. The numbers are the ASCII code for the characters.

You can insert special characters using the Insert menu or the Insert button on the Insert toolbar.

Insert a Special Character

1. Type the text without the special character.



2. Position your cursor where you want to insert a special character.

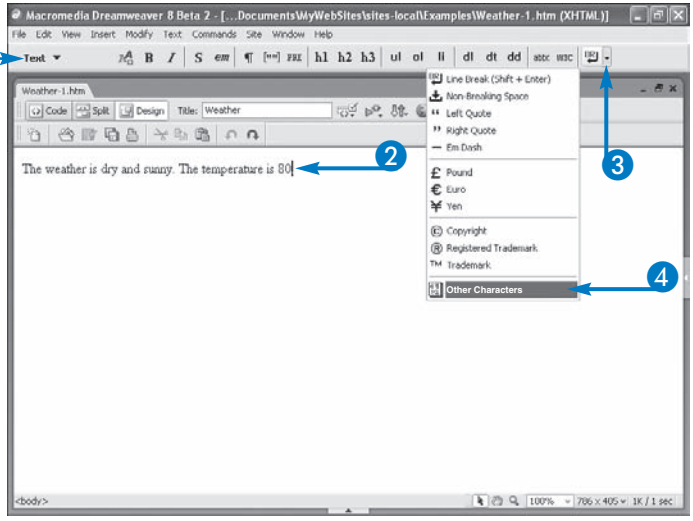
   Here, the cursor is positioned between *80* and the period.

3. Click the Submenu down arrow ( ) .

   - The text category of the Insert toolbar is open.

Note: *Different icons appear on this button, representing the most recent selection made from this button menu. In this case, a line break icon ( ) appears because the last selection from the button menu was a line break.*

4. Click Other Characters.



The Insert Other Characters dialog box appears.

5 Click the special character.

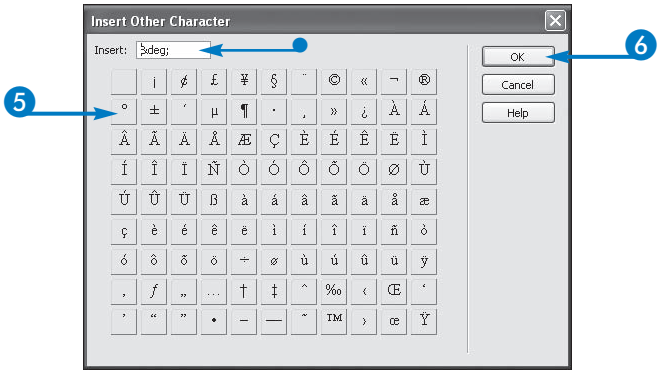
This example features the degree character.

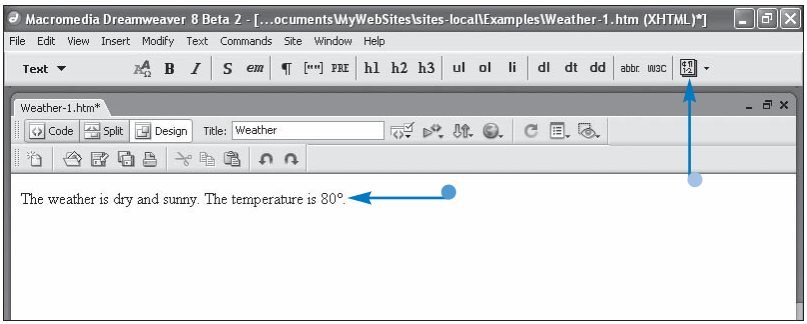
- The HTML entity appears here.

You can type the code directly into the top field for the special character you want to insert.

6 Click OK.

- Dreamweaver inserts the special character.
- The button on the Insert toolbar now shows the Character Table button ( ) because Other Characters is the last selection you made from the submenu.





How can I make HTML tags display in the text of my Web page?

When the browser encounters a < or a > in your HTML code, it interprets them as HTML tags, not as characters to be displayed. For example, if the browser encounters <p> in the HTML code, it starts a new paragraph, but does not display the <p>.

If you want to display HTML tags on your Web page, you can open the Insert Other Characters table and type the entity into the top field. The entity for < is < and the entity for > is >.

How do I add extra space on my Web page? No matter how many spaces I type, the browser just displays one space.

You cannot type a string of spaces on your keyboard to add extra space. You must enter a string of HTML entities for nonbreaking spaces. Each entity is displayed as a space in the Web page.

You can insert a nonbreaking space from the submenu that displays when you click the special characters button on the Insert bar.

How do I insert an en dash (–) or em dash (—) into my page text?

The Insert Other Characters table lets you insert both characters. You can also insert them by inserting the entity `–` or `—`.

Insert a Line Break

You can insert a line break anywhere in your Web page. A line break ends a line and starts a new line of text, but does not add extra space before starting the new line. A line break is an alternative to pressing Enter to end the paragraph, which adds extra space after the end of the paragraph. Line breaks are useful for displaying content such as addresses and poetry.

You can use line breaks with nontext elements as well. Putting a line break between images, tables, or form fields can ensure that the elements stay close together, which can help you fit more information onto a Web page.

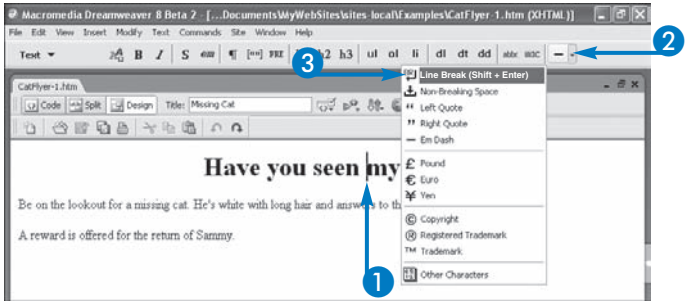
Inserting line breaks inside a paragraph does not affect the alignment of the text inside the paragraph. For example, if you right-align paragraph text and add a new line break, the text before and after the break stays right-aligned.

You can easily add lots of vertical space on your page by adding multiple line breaks. The amount of space added with each break you insert depends on the size of the text right before the first break.

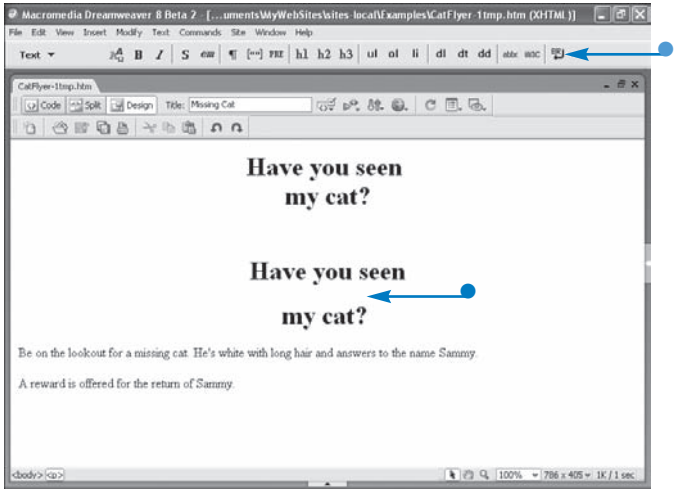
Insert a Line Break

1. Position your cursor where you want the line to break.
2. Click [·].

   An icon representing the last selection made from this button menu is shown on the Insert toolbar — in this case, the dash button ([—]).
3. Click Line Break.



Dreamweaver inserts a line break.



- If you had pressed the Enter key instead of inserting a line break, the result would include a blank line.
- The button on the insert bar now shows ([BR]) because it is the last selection you made from the button menu.

Insert the Current Date

Dreamweaver provides a feature that inserts the current date into your Web page, saving you the time and effort of determining and typing the date yourself.

The Dreamweaver date feature assists you to format the date in one of several common date formats, such as July 13, 2005, 13-Jul-2005, or 07/13/2005. You may choose to include the day of the week as Thursday, Thu, or thu — with or without a comma after the day. You can also include the time, in either 12-hour or 24-hour notation.

You can save the date as permanent text or as text that updates to the current date every time you save the Web page. When you save a permanent date, the date is added to your HTML source code as a paragraph, as follows:

```
<p>Date</p>
```

However, if you indicate that you want the data to update every time you save the file, the date is added to your source code as follows:

```
<p>
 <!-- #BeginDate format:IS1 -->2005-07-13<!--
#EndDate -->
</p>
```

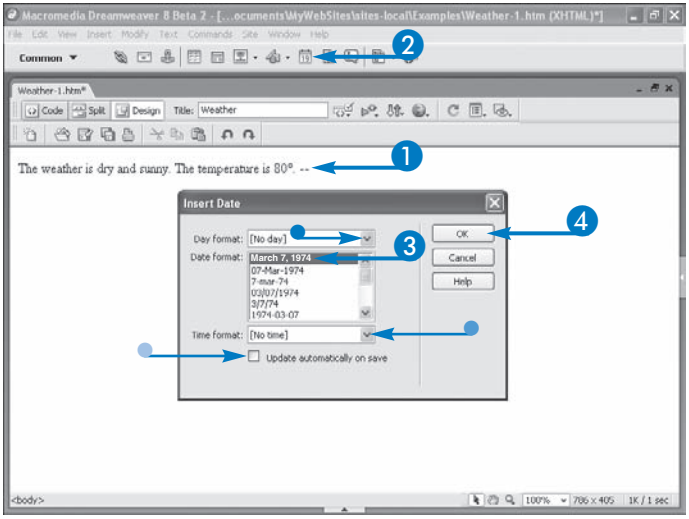
Paragraph tags are added. The date is stored using JavaScript that updates the date when the file is saved. See Chapter 12 for more on JavaScript.

Insert the Current Date

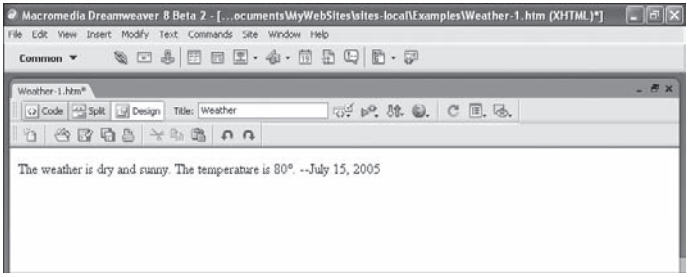
1. Place the cursor where you want to insert the current date.
2. Click the Date button ( ) on the Common Insert toolbar.

   The Insert Date dialog box appears.

   - You can click here and select a day format.
3. Click a format for the date.
   - You can click here and select a time format.
   - If you want the date to update when the file is saved, check the box.
4. Click OK



Dreamweaver adds the current date to your Web page.



Change Font Style

You can apply individual formatting to any text on your page — a character, a word, or a paragraph. Dreamweaver provides an HTML-based Style menu item to facilitate formatting text.

Bold and Italic are two of the most commonly used formatting selections on the Style submenu. The Strong and Emphasis styles have the same visual effect as the Bold and Italic styles, respectively. By default, Dreamweaver uses the `<strong>` or `<emphasis>` HTML tags when you format text to be Bold or Italic. You can change this behavior in your Preference settings. See Chapter 2 for more about setting Preferences.

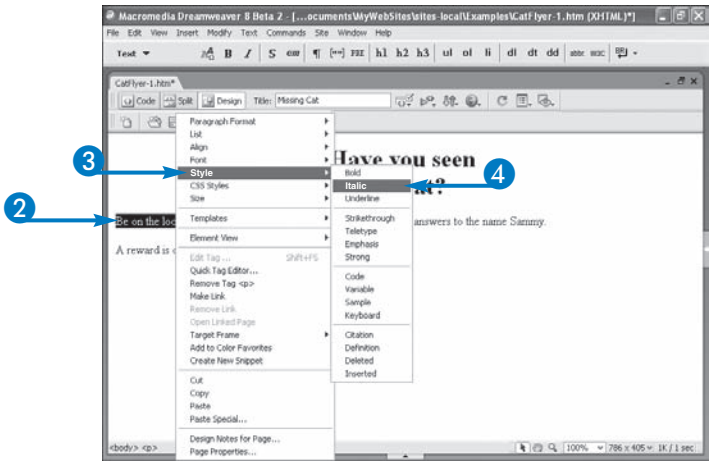
Other styles are available. The Teletype style displays text in a typewriter-style font. Underline does just what you would expect, and Strikethrough crosses out text on your page.

You can combine text styles to create more complicated effects. For example, a line of text can have Bold, Italic, and Underline styles applied to it all at once.

Change Font Style

1. Highlight the text to be formatted.
2. Right-click the highlighted text.
3. Click Style.
4. Click Italic.

Note: *The Italic style has a shortcut button (I) on the Text Insert toolbar.*



Dreamweaver italicizes the highlighted text.

Change Font Size

Font size settings range from 1 to 7. The number is not an actual measurement, such as point size, but is instead a relative measure that browsers recognize. The actual size of the text displayed depends on the browser. The default text size for many browsers is the absolute number 3. You can set the size to a different absolute number or you can set a relative size, making the text larger or smaller than the current size.

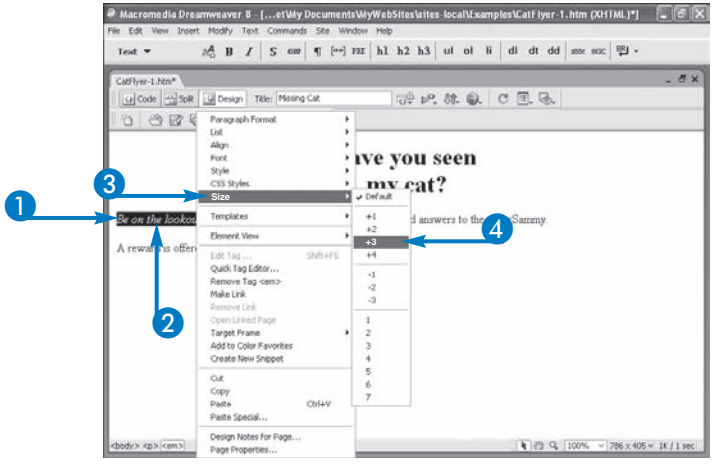
Font size can be set in the HTML source code using a `<font>` tag or a CSS style. Chapter 11 provides more details on CSS. CSS is the preferred method, because the `<font>` tag has been deprecated in the HTML standards. Most browsers accept the `<font>` tag and render it properly, but it is better to use CSS styles. If your Dreamweaver preferences (discussed in Chapter 2) are set to "use CSS instead of HTML tags," you must use CSS to change the font size (discussed in Chapter 11). The Dreamweaver Text➔Size submenu, and other submenus that change the font size using the `<font>` tag, are inactive. If you turn off the CSS setting, you can use the Size submenus.

Some users set the font size in their browsers to suit their specific needs. For example, visually impaired users might set their font size quite large. You run the risk of annoying Web site visitors, such as visually impaired users, if you arbitrarily change their font size, such as setting the font size on your Web site quite small.

Change Font Size

1. Highlight the text to be formatted.
2. Right-click the highlighted text.
3. Select Size.

   Default is checked because the text is now in the default size.
4. Click +3.



Dreamweaver enlarges the highlighted text.

Change Font Typeface

You can specify a font typeface. When displaying a Web page, the browser uses the specified typeface if that typeface is available on the user's computer. If it cannot find the specified typeface, the browser displays the page using the default. You can also specify a general typeface, such as serif or sans-serif, and the browser will use the corresponding default to display the type. For example, if you specify serif the browser might use Times New Roman as its default serif font.

Dreamweaver sets typeface in the HTML source code using a `<font>` tag or a `<span>` tag, depending on whether your Dreamweaver preferences (discussed in Chapter 2) are set to "use CSS instead of HTML tags." Because the `<font>` tag is deprecated, CSS is a better method. If your CSS preference is turned on, Dreamweaver adds the following to the HTML source code:

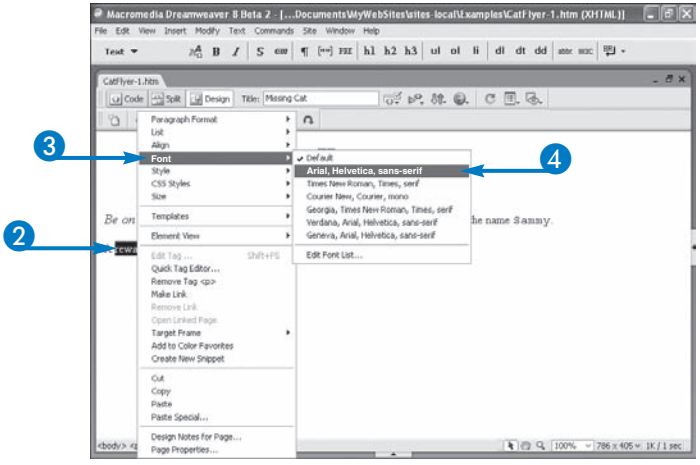
```
<span class="style1">Text</span>
```

Dreamweaver also adds the code that creates the class "style1." See Chapter 11 for information on CSS and classes. If your CSS preference setting is not turned on, or if your source code already includes `<font>` tags, Dreamweaver adds the following:

```
<font face="Courier New, Courier,
mono">Text</font>
```

Change Font Typeface

1. Highlight the text to be formatted.
2. Right-click the highlighted text.
3. Click Font.
4. Click a font.



Dreamweaver changes the selected text to the new font typeface.

Change Text Color for Selected Text

You can change the color for part of the text on your Web page, such as characters, words, or paragraphs. Dreamweaver provides an easy-to-access palette of Web-safe colors that you can apply to selected text. *Web-safe* means the colors display accurately no matter what browser, platform, and monitor setting the viewer uses.

You can also choose the color of your text by entering the color's hexadecimal code. *Hexadecimal codes* are six-digit combinations of letters and numbers that define the amount of red, green, and blue that is mixed to produce a color. The Dreamweaver color dialog box provides fields for you to type the three two-digit hexadecimal codes for the amount of red, green, and blue that will combine to produce the color you want.

To ensure that the text is readable, make sure the text color contrasts with the background color or background image of your Web page. To adjust the background color or image, see Chapter 5.

Dreamweaver sets text color in the HTML source code using a `<font>` tag or a `<span>` tag, depending on whether your preferences (discussed in Chapter 2) are set to "use CSS instead of HTML tags." Because the `<font>` tag is deprecated, CSS is the better method.

Change Text Color for Selected Text

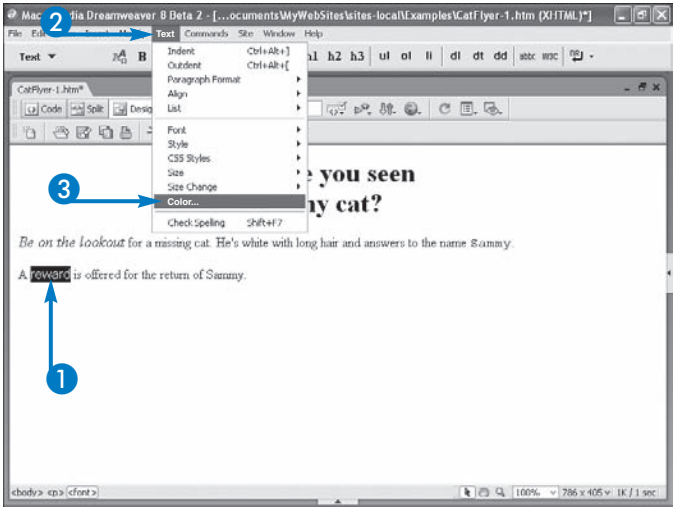
1. Highlight the text that needs its color changed.
2. Click Text.
3. Click Color.

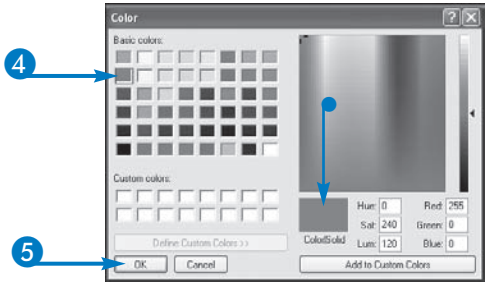
   The Color dialog box appears.
4. Click a color in the Basic colors section.
   - The selected color appears in the color box.

Note: *You can click in the color gradient or type the hex code, but the chosen color may not be Web safe and may not appear the same on all monitors.*

5. Click OK.

   The selected text changes color.





Change the Text Color for a Whole Page

You can change the text color of a Web page. The default color for text on a Web page is black. When you want users to read a great deal of information from your Web page, black on white is the most readable combination and the easiest on your visitors' eyes. Other combinations can make your Web page more appealing and interesting, but be sure that there is enough contrast between the text and the background so that viewers can read the text.

Dreamweaver changes the text color for your Web page by adding a `text` attribute to the `<body>` tag in your HTML source code, as follows:

```
<body text="#999999">
```

or by adding a CSS class called `body` to the `head` section of your HTML source code, as follows:

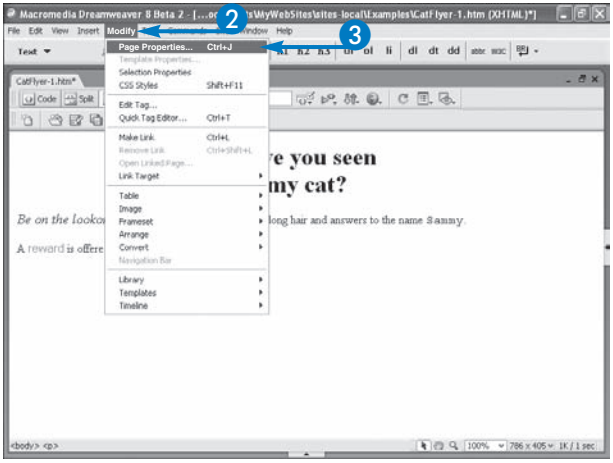
```
body {
        color: #999999;
}
```

Which method Dreamweaver uses depends on whether your preferences (see Chapter 2) are set to "Use CSS instead of HTML tags" or not. In most cases, you define a body class to specify the appearance of your body content. However, when you plan to use the default body settings except for one or two attributes, you can use those one or two attributes with your `<body>` tag.

Change the Text Color for a Whole Page

1. Open a Web page.
   - Here, the word *reward* is displayed in a different color — red.

2. Click Modify.
3. Click Page Properties.



The Page Properties dialog box appears.

4 Click the Text box.

You can type a color hex code into the Text field.

Note: *To learn about hex codes, see the tips at the end of this section.*

5 Click a color box.

- A color box and the hex code for the color are displayed.

6 Click Apply.

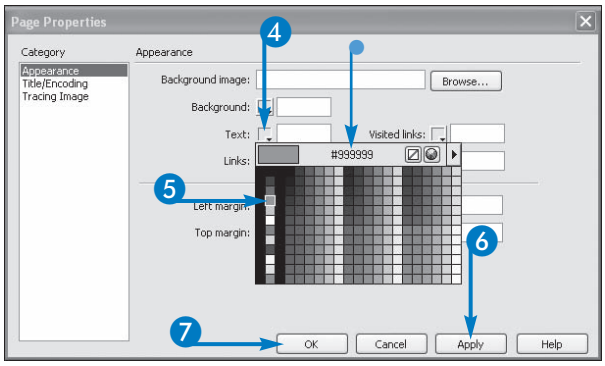
The text changes color. You can click a new color and Apply repeatedly.

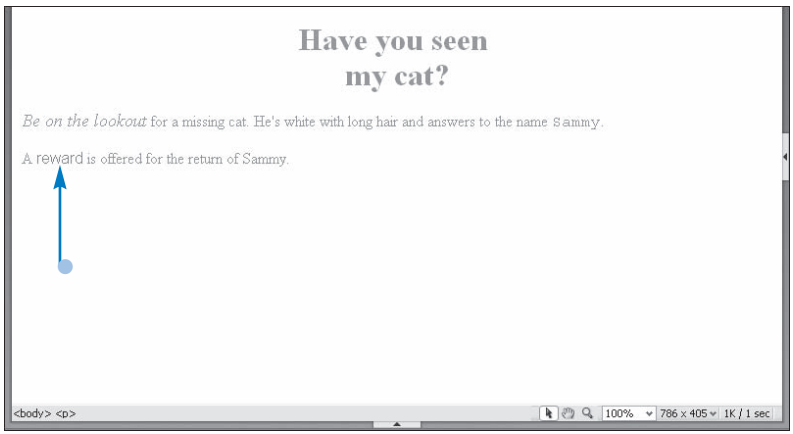
- Click the Default button (▨) to return to the default color.

7 Click OK.

Dreamweaver changes the color of the text in the Web page.

- The word *reward* does not change color. Its color was already set differently than the rest of the text, so it retains its color attribute.





What are hexadecimal codes for colors?

The hex code is a 6-digit number that represents the amount of red, green, and blue that combines to make a color. The first two digits are red, the second two are green, the last two are blue.

Hexidecimal numbers range from 0–F. 00 represents no color; FF represents the darkest color. Thus, 000000 is black, and FFFFFF is white. Some common colors are FF0000 (bright red), 00FF00 (bright green), 0000FF (bright blue), FFFF00 (yellow), CCCCCC (light gray), and 9900FF (purple).

What are Web-safe colors?

Sometimes a color you specify in your HTML code is not available on the user's monitor. The browser then displays the closest color it can. The color may be somewhat different than you expect or may be fuzzy.

You can avoid any possible problems by using only the 216 colors available in the standard color map — the Web-safe colors. Web-safe colors are especially important for PDA or cell phone displays. The standard color map includes combinations of six values: 00, 33, 66, 99, CC, and FF.

How can I select Web-safe colors in Dreamweaver?

When you set a color in Dreamweaver, such as text color or background color, you click in a box to select a color. Dreamweaver displays a palette containing all the Web-safe colors, as shown in step 5. Click a color in the grid to select the color you want.

Change Multiple Text Properties

If you want to change several properties of the same text, you can make the changes at one time using the Property inspector. The Property inspector is a window you can open below the Design window. The Property inspector shows the current settings for the design elements on your Web page and allows you to change the settings. Chapter 2 provides instructions for opening the Property inspector.

Many Web pages format text using the `<font>` HTML tags. However, the `<font>` tag is deprecated in the HTML 4 and XHTML standards. Although it still functions perfectly well in most browsers, it may not function in the future. At this time, it is wiser to format text using CSS (Cascading Style Sheets). You can set which type of formatting you want to use in your Dreamweaver preferences. (Preference settings are discussed in Chapter 2.) Select Edit➔Preferences➔General and check the box for Use CSS instead of HTML tags.

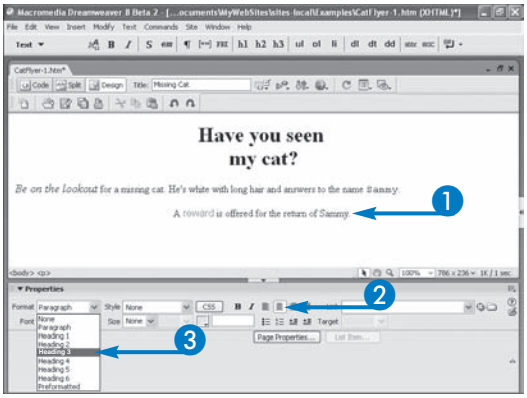
If you find yourself making similar format changes repeatedly, you are probably doing more work than necessary. You can use CSS (discussed in Chapter 11) to store styles and apply them as needed.

Change Multiple Text Properties

1. Click anywhere in the text.
2. Click the Center button ( ).

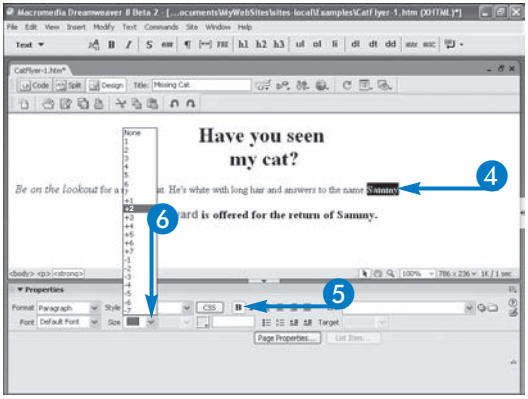
   Dreamweaver centers the paragraph.
3. Click here and select a new text format.

   Dreamweaver applies the new format.



4. Highlight a word.
5. Click the Bold button ( ).
6. Click here and select a new text size.

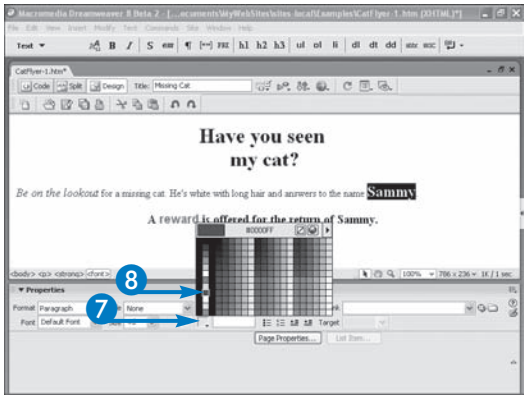
   Dreamweaver enlarges the word and applies bold formatting.



7. Click the Color box.

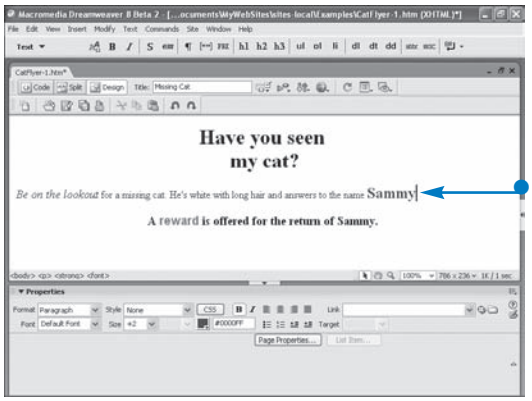
   A color box and the hex code for the color are displayed.

8. Click a color in the color cube, such as blue.



- The selected word changes color.

Because the cursor is on the word *Sammy*, the color text box now shows blue, the hex code for blue is displayed, and Size shows +2.



Are all the formatting options available in the Property inspector?

No, a few more text formatting options are available in the Text menu. Click Text on the Menu bar to see additional options.

Which shortcuts can I use to highlight text in the Dreamweaver design window?

Ctrl+A selects all the text on a page.

Double-clicking selects a single word.

Triple-clicking selects a paragraph.

Shift-clicking selects all text between the previous single-click and the shift-click.

Shift+arrow means that, with your cursor in a highlighted text section and your Shift key held down and an arrow key pressed, the highlighted section extends in the direction of the arrow.

How can I remove a format when I make a mistake?

For the formats you selected from a menu, such as font, color, or size, redisplay the menu and select the format that was in effect before you changed it, a different format altogether, or none for the default.

For formats you selected by clicking a button, such as Bold, Italic, or a paragraph alignment, the buttons are toggles. For example, click the Bold button (B) to bold the highlighted text; click the Bold button again to unbold the text.

Create Lists

Lists are an important design element in Web pages. In this section, you create a list to display information about your missing cat. The list displays the information from the second paragraph of the Missing Cat flyer used as an example previously in this chapter.

You can create ordered lists (items are numbered and indented) or unordered lists (items are bulleted and indented). Unordered lists are useful for organizing elements that need to be grouped but in no particular order. Bulleting a series of items makes information stand out on a text-heavy page. Ordered lists are useful for displaying sequential items, such as driving directions, test questions, or recipes.

List items can be single words or long passages. You can *nest* lists, which means you can place a list inside another list. When nesting unordered lists, Dreamweaver uses a different style of bullet for the nested list; when nesting ordered lists, the nested list is indented and its numbers start with 1.

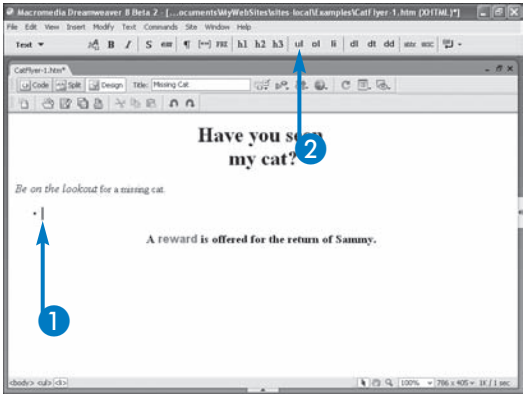
The HTML tags that start and end a list are `<ul>` and `</ul>` (unordered) and `<ol>` and `</ol>` (ordered). Within the list tags, each item is enclosed in `<li>` and `</li>` tags.

Create Lists

Create unordered list

1. Position the cursor where you want to create a list.
2. Click the ul button (ul) on the Text Insert toolbar.

   A bullet is displayed, followed by a cursor.

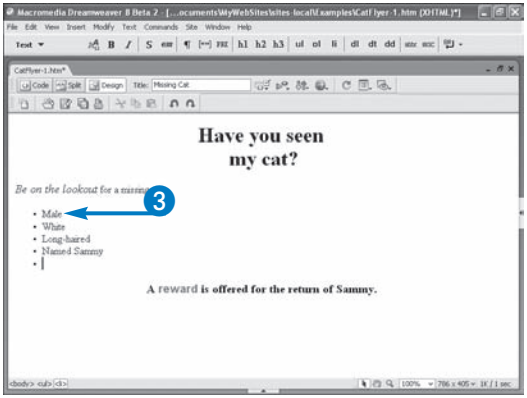


3. Type the first item of your list and press Enter.

   The next bullet appears, waiting for the second list item.
4. Type the remaining items in your list, pressing Enter after each item.

   An extra bullet is displayed after you type the last item.
5. Press Enter immediately after the trailing extra bullet.

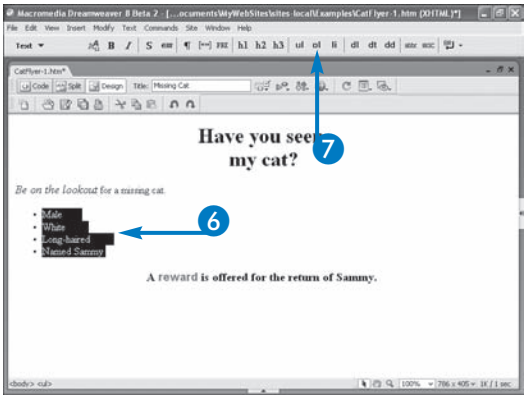
   Dreamweaver removes the extra bullet.



Convert to ordered list

6 Highlight all the items in the list.

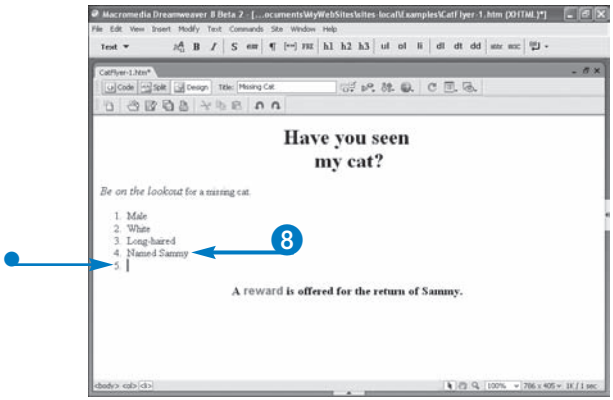
7 Click the ol button (ol).



The unordered list is reformatted into an ordered list, with numbered items.

8 Move your cursor to the end of the last list item and press Enter.

- A new line number is added to the end of the list, followed by a cursor where you can type item number 5.



MASTER IT

How do I modify the bullets in my unordered list?

You can modify the bullet style by highlighting a list item and clicking Text, List, and then Properties. A dialog box enables you to select different bullet styles for your unordered list.

How do I modify the numerals in my ordered list?

You can modify the numerals by highlighting a list item and clicking Text, List, and then Properties. A dialog box enables you to select different numbering schemes, including Roman numerals (upper- and lowercase) and alphabetical styles. It also lets you begin a list with a number other than 1 (the default) or reset the count in the middle of the list.

How do I add extra space between my list items?

By default, Dreamweaver single-spaces your list items. To add more space, insert line breaks at the end of each item.

How do I create differently colored bullets?

When you create your list using Dreamweaver commands, you cannot change the color of the bullets — you are stuck with black. But you can create custom images to serve as bullets in an image editor and then insert them as Web page images. See Chapter 5 for information on inserting images.

Insert and Resize Images

You can add images to your Web page to make it more attractive or to illustrate ideas. Images may be used as hyperlinks, opening another Web page when the user clicks the image. See Chapter 6 to learn about creating hyperlinks.

Web page images must be in a format that Web browsers can display. The three main formats used for Web images are JPEG, GIF, and PNG. Each image can have alternate text to assist users who cannot view the image identify what the image depicts. The alternate text is displayed by text-only browsers or spoken by voice-recognition software.

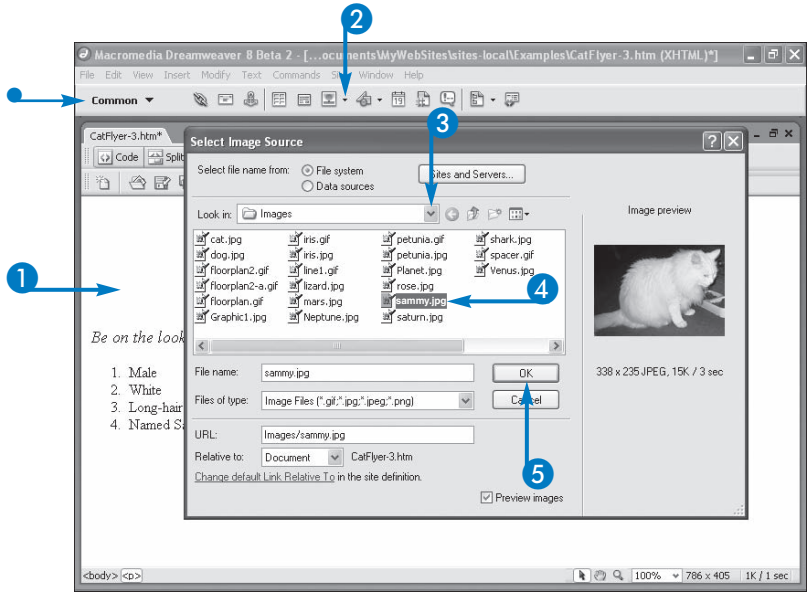
You can resize an image by clicking the image and then dragging a *handle*, the square black boxes that appear on the edges and one corner of an image. The side handle makes the image narrower or wider, and the bottom handle drags the image taller or shorter. The corner handles change both height and width at the same time. The height-to-width ratio does not stay the same if you click and drag the mouse; if you need to keep the same height-to-width ratio, you must Shift-click and drag. To resize more precisely, use the Property inspector, as described in the next section. Resizing the image only changes its display size in the Web page, not the image file itself.

Insert and Resize Images

Insert an image

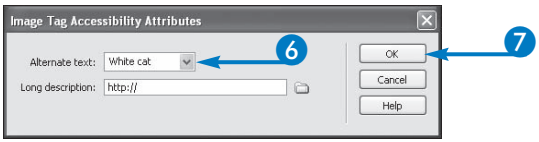
1. Click the Web page where you want to insert the image.
2. Click and select Image.
   - The Common category must be open.
3. Click here and navigate to the image file.
4. Click the filename.
5. Click OK.

   The Image Tag dialog box appears.



6. Type alternate text for the image.
7. Click OK.

   Dreamweaver inserts the image.



Resize an image

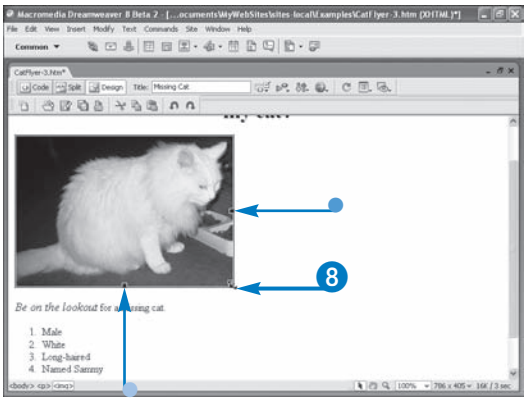
8 Resize the image by dragging the handles.

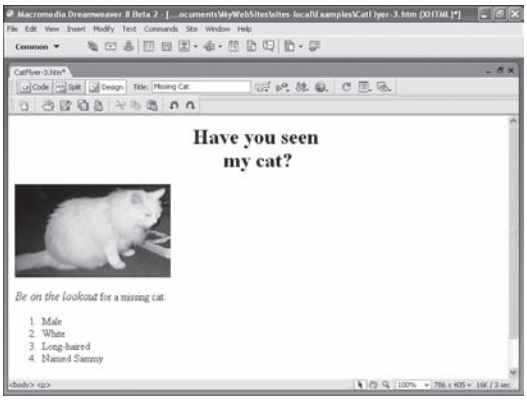
changes to ↕ when it is over a handle.

- Drag this handle to resize the image horizontally.
- Drag this handle to resize the image vertically.

Drag a corner handle to resize the image both vertically and horizontally.

Dreamweaver resizes the image.





MASTER IT

Which image format should I use?

Different types of images work best in different formats. In general, two types of images are displayed on Web pages — line drawings, such as maps or cartoons, or photographic images.

Drawings, and other images with a few solid colors, are often GIF files. The PNG format was designed to replace the GIF format. PNG files have no patent restrictions and are generally smaller than GIF files. However, GIF files are always used for animated files because PNG does not support animation.

JPEG is the most common format for photographs. The PNG format can display photographic images with high quality, but the JPEG format generally produces a smaller file size.

Why is the size of the image file important?

When users type a URL, the Web page is downloaded and displayed in their browser. If the download takes a long time, the waiting user can lose interest and jump to another, faster page. The smaller the Web page, the faster it downloads. The right side of the status bar in the Document window shows the total size of your Web page.

I want to change the color of a car in my image. Can I use Dreamweaver for that?

No. Dreamweaver does not have image-editing capabilities. If you want to change the content of an image file, you need image-editing software, such as Photoshop, CorelDRAW, or Paint Shop Pro.

Resize an Image in the Property Inspector

You can set the exact width and height of an image with the Property inspector. When you click an image, the Property inspector shows the image properties, including the current image height and width. You can change the current dimensions to any image size you want.

The height and width can be specified in pixels or in a percentage of the Web page. To set the height or width in pixels, type a number in the height or width field. To set a dimension as a percentage, type a percent sign after the number, such as **20%**.

When specifying a new height and width, you usually want to keep the same ratio of height to width. Otherwise, the image can be distorted. For example, suppose an image is currently 200 pixels tall and 200 pixels wide. If you change the width to 400, the image proportions change and the image will probably look very odd.

You can see a small refresh button ( ) beside the height and width fields. When you click the button, Dreamweaver resets the dimensions to the original image size.

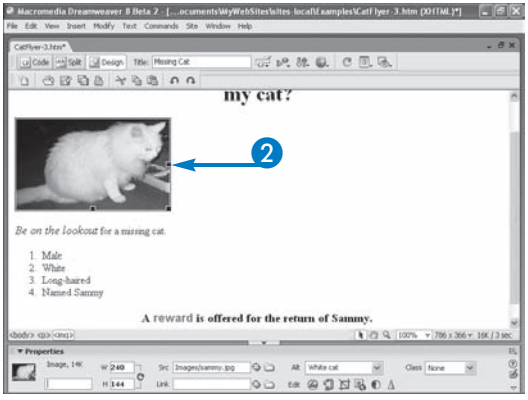
Resize an Image in the Property Inspector

1. Open the Property inspector.

Note: *See Chapter 2 to open the Property inspector.*

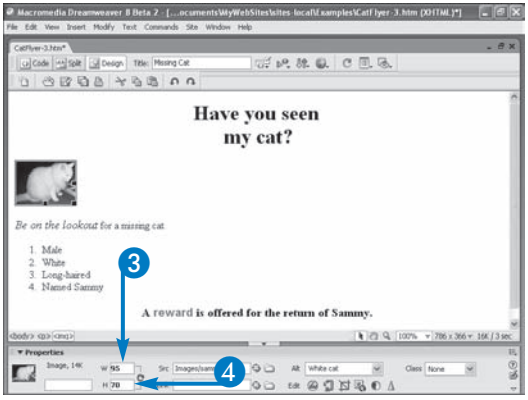
2. Click the image.

   The Property inspector shows the properties for the image.



3. Type a width.
4. Type a height.

   Dreamweaver resizes the image.



Align an Image on the Page

An image can be displayed on the Web page either in a paragraph by itself or with text next to or wrapped around the image. An image without text beside it can be positioned on the left side, the right side, or the center of the page. See the section "Align an Image with Text" to align images with text.

Images are aligned using the Property inspector. To align an image alone, click one of the three align buttons — Left, Center, or Right. Do not use the drop-down list labeled Align, displayed below the three align buttons. This drop-down list is used to align images with text, as described in the next section.

Dreamweaver aligns an image in its own space on the Web page by aligning the paragraph that contains the image, using the same code used to align a text paragraph. You probably recognize the three align buttons. The Property inspector displays the same three buttons to use when aligning text.

For example, to center-align the paragraph, Dreamweaver adds an `align` attribute to the `<p>` tag, as follows:

```
<p align="center"><img src="Images/cat.jpg"
/></p>
```

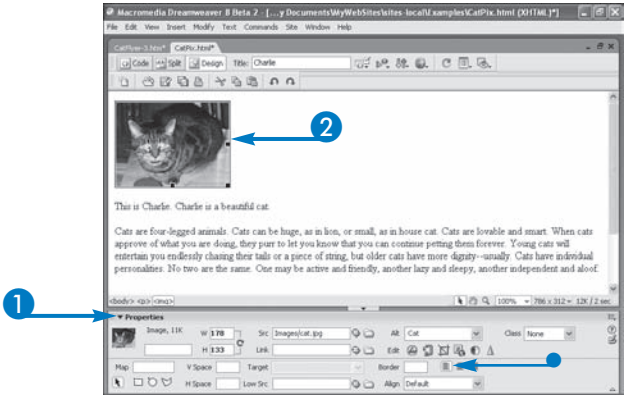
If you center an image that is not contained in a paragraph, Dreamweaver encloses the image in `<div>` tags and adds an align attribute to the `<div>` tag.

Align an Image on the Page

1. Open and expand the Property inspector.

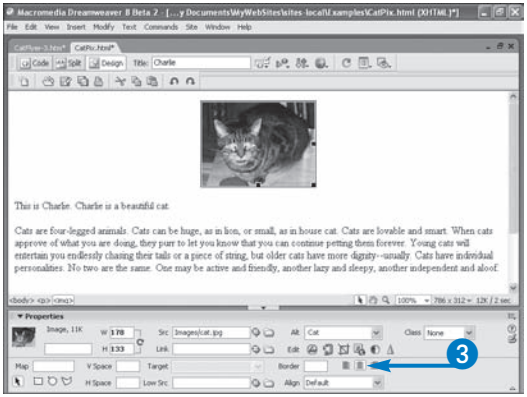
Note: *See Chapter 2 to open the Property inspector.*

2. Click the image.



3. Click the Align Center button ( ).

   Dreamweaver centers the image and highlights the Align Center button.



Align an Image with Text

An image can be displayed on the Web page in a paragraph by itself or with text next to or wrapped around the image. Aligning images with text is discussed in this section. Aligning an image without text beside it is done by aligning the paragraph and is discussed in the previous section of this chapter.

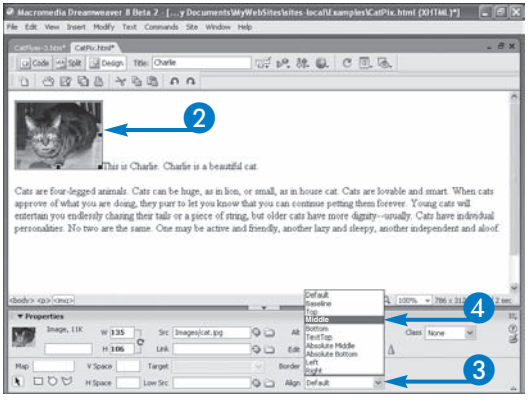
You can align a Web page image with one line of text. The image and the line of text must be in the same paragraph. In other words, do not press Enter between the image and the line of text. You can align the text with the top, middle, or bottom of the image. Dreamweaver offers other options, such as absolute middle, but not all browsers recognize the additional options. For example, Internet Explorer recognizes only the standard options of top, middle, and bottom.

You can align the image to either the left or right margin and allow the text to flow, or *wrap*, around it. When you wrap the text, the text following the image moves up beside the image. The text continues beside the image and wraps around the bottom of the image.

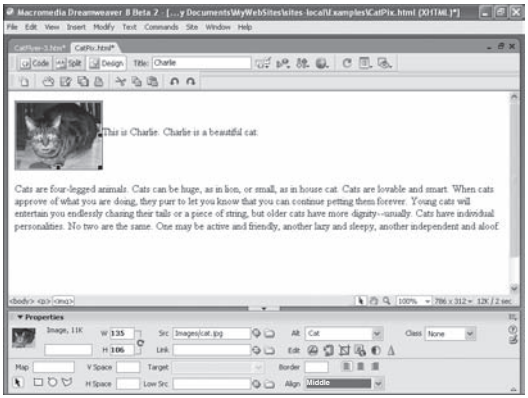
Align an Image with Text

One line of text

1. Include an image and text in the same paragraph.
2. Click the image.
3. Click ⌄.
4. Click Middle.

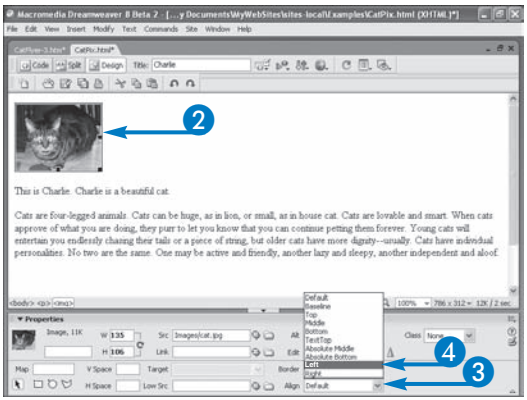


The text aligns with the middle of the image.

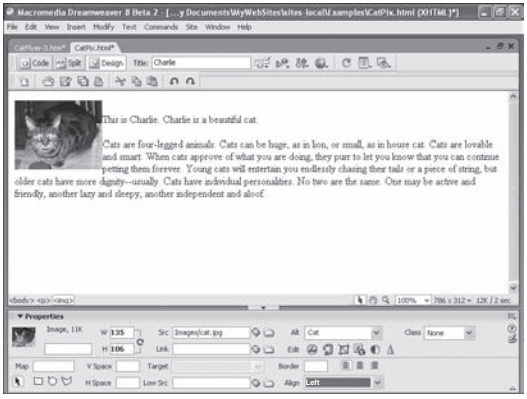


Wrap text

1. Type text below the image.
2. Click the image.
3. Click ▼.
4. Click Left.



Text moves up to wrap around the image.



Can I wrap text around two images?

Yes. You can align one image Left and another image Right. The text flows down the middle between the two images, and then wraps around the bottom of both images.

Can I wrap text around both sides of an image?

Not with an Align option. However, you can achieve a similar effect by formatting your page differently. For example, you can format your page as a table with three columns, with the image in the middle column.

Can I align a section of text, such as one paragraph, beside the image, rather than having only one line or having all the text, as shown in the example in this section?

Dreamweaver does not provide an option that does this. However, you can add code in the Code window that serves this purpose.

Add the following code after the text that you want beside the image:

```
<br clear="left" />
```

In the Dreamweaver Design window, the text following this code still wraps beside the image. However, when you preview the file in a browser, you see that the text after the `<br>` tag is displayed below the image.

Add Space around an Image

By default, the text appears next to an image without any white space between the image and the text. The Web page appears constricted and crowded. Web pages are more attractive with white space between images and text.

Dreamweaver provides settings that you can use to add white space around the image. You can add a specified amount of space on the sides and a different amount of space on the top and bottom of the image.

The horizontal space setting (labeled H space in the Property inspector) adds space on both sides of the image, moving the image away from the margin, as well as moving the text away from the image.

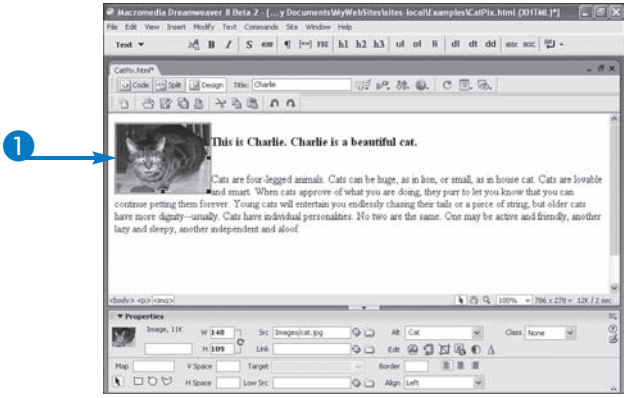
The vertical space setting (labeled V space in the Property inspector) adds space at both the top and bottom of the image. The space added at the top moves the image down with respect to the text beside it. A large vertical-space setting can cause the text to start higher on the page than the image.

You can also add a border around an image to set it off from the text. However, the border surrounds the space around the image, leaving the text directly next to the border. To add a border, type a value in the Border field in the Property inspector.

Add Space around an Image

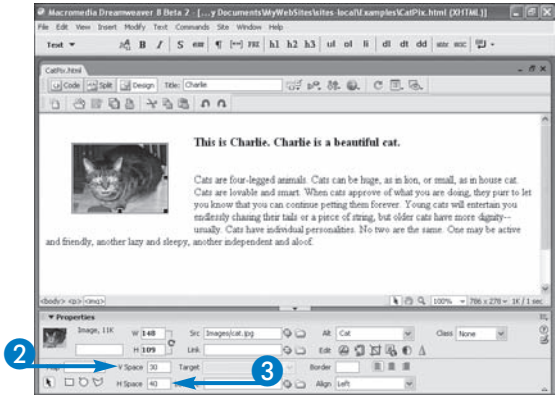
1. Click the image.

   The Property inspector displays the image properties.



2. Type a value for the vertical space.
3. Type a value for the horizontal space.

   Dreamweaver inserts space around the image.



Crop an Image

Often an image is larger than you need, containing unwanted objects and background areas. By removing the extra area from the image, you emphasize the essential parts of the image. You also reduce the size of the image file, which speeds up the download of the Web page. Cutting away nonessential areas of an image is called *cropping*.

Dreamweaver can crop an image for you. You frame the area you want to keep and crop the image to include only the framed area. The cropped image is a normal image: you can resize, move, align it with text, and perform any other Dreamweaver actions designed to manage and display images.

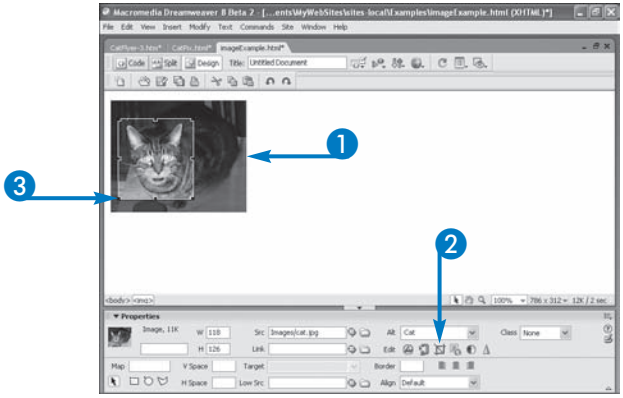
When Dreamweaver crops an image, the image file is changed permanently. Be sure to keep a backup of the image file before you crop it, just in case you make an error. Also, when you crop it, you can undo that action, returning the area of the image that was removed. However, after you save the image file and leave Dreamweaver, you can no longer undo the crop. The image is permanently changed.

Crop an Image

1. Click the image.
2. Click the Crop button ( ).

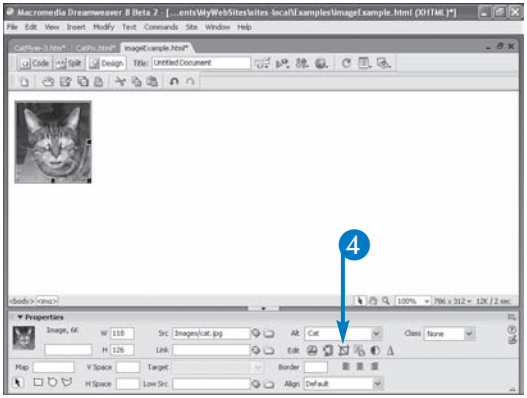
   If a notification box pops up, warning you that you are about to permanently alter the image, click OK.

   A frame appears around the image.
3. Drag the handles to frame the desired area.



4. Click again.

   The outside area of the image is discarded.



Insert a Placeholder Image

When designing and building your Web page, you may not yet have the finished images. Someone else may be creating them or you may not have found the right image yet. However, to really design your Web page, you need the images. Dreamweaver provides the placeholder image for this purpose.

A *placeholder image* has all the properties of an image, except it does not contain the content of the image. You can insert the placeholder image where you plan to insert the finished image. You can resize the image and move it. You can add borders and white space. You can align it on the page or with a line of text. You can wrap text around it. You can treat it as if it were the finished image while working out your design.

Dreamweaver inserts a placeholder image using the `<img>` tags, the same tags used to insert an image. The `src` attribute is left blank, as shown below, which results in the empty placeholder image:

```
<img src="" alt="cat" name="cat" width="150"
height="150" />
```

Other image attributes are used so that you can resize, move, and otherwise treat the image as if it were an image with content.

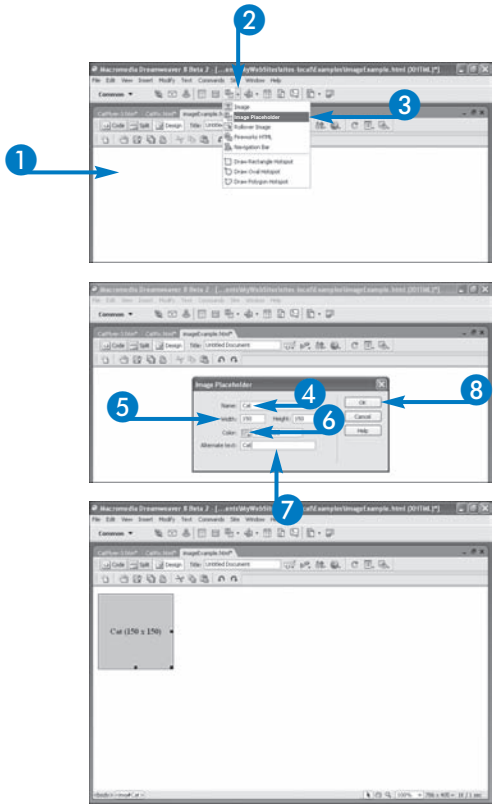
Insert a Placeholder Image

1. Click in the Web page where you want to insert the placeholder image.
2. Click .

   The Common category is open on the Insert toolbar.
3. Click Image Placeholder.

   The Image Placeholder dialog box opens.
4. Type a name for the image.
5. Type a width and height.
6. Click the Color box and select a color.
7. Type alternate text.
8. Click OK.

   Dreamweaver inserts an image placeholder.



Add a Background Image

You can use an image rather than a solid color as the background of your Web page. Dreamweaver enables you to specify an image file in your local folder, or on the Web, to serve as the background image.

An image that is the exact size of your screen or larger fills the background with the single image. When you specify an image for the background that is smaller than the size of the screen, the image repeats until the background space is filled, which is called *tiling*. You need to consider the background space carefully. Visitors to your Web site are likely to have monitors and resolutions of varying sizes.

Consider the background image carefully. A background image that is too similar in color to the text color or too busy may interfere with the visitor's ability to read the text or see other objects on the Web page. Also, the background image, like any other image, needs to download to display in the browser. A background image can greatly increase the size and therefore the download time of a Web page.

Add a Background Image

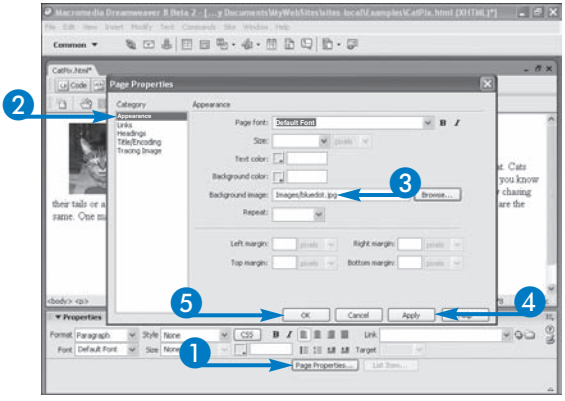
1. Click Page Properties.

   The Page Properties dialog box opens.

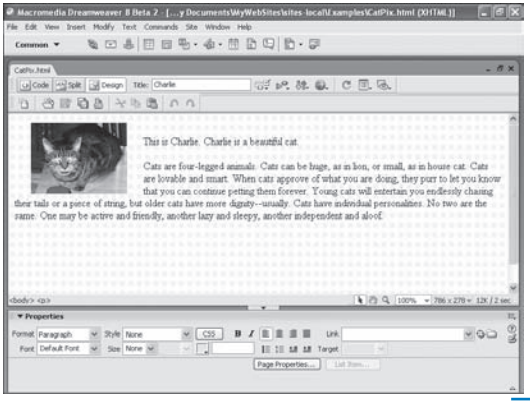
2. Click Appearance.
3. Type the path to the background image file.
4. Click Apply.

   The background is displayed.

5. Click OK.



Dreamweaver displays the tiled background image.



Add a Horizontal Rule

You can add horizontal lines, known as *horizontal rules,* to your Web page to separate sections of content. Horizontal rules are part of HTML, and are displayed using a tag, not a separate image file.

The browser determines how to display a horizontal rule. Most browsers display a thin black line that extends from one margin to the other. The line is usually displayed with shading, which makes it appear three dimensional.

You can change the formatting of the horizontal rule with the Property inspector. You can specify the width in pixels or as a percentage of the Web page's width. You can change the height and the alignment of the line. You can also remove the shading, so that the line appears solid.

Even though you can format the color of the horizontal rule, not all browsers display it in color. Some popular browsers, such as Internet Explorer, support the color attribute. Dreamweaver does not provide a color option, so you must format the color by entering a `color` attribute via the Code window, as follows:

```
<hr color="red">
```

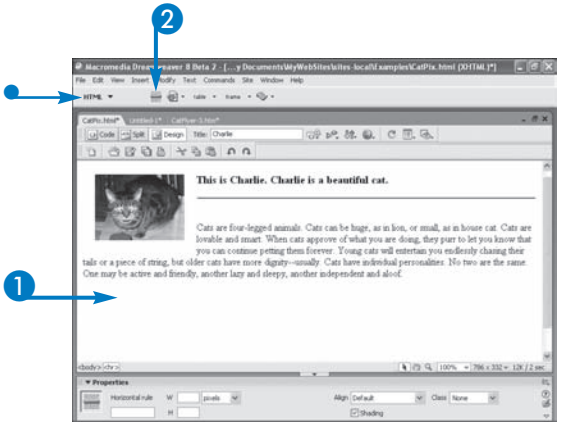
Add a Horizontal Rule

1. Click where you want the rule inserted.
2. Click the Horizontal Rule button.
   - The HTML category is displayed.

Note: *See Chapter 2 to specify categories on the Insert toolbar.*

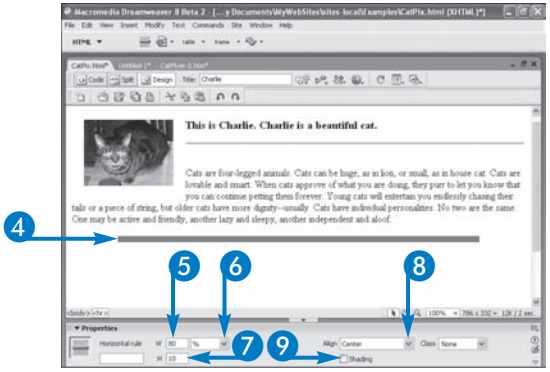
Dreamweaver inserts the rule.

3. Repeat Steps 1 and 2 to add additional rules.



4. Click a rule.
5. Type a width value.
6. Click here and select pixel or %.
7. Type a height.
8. Click here and select an alignment.
9. Click Shading (☑ changes to ☐).

Dreamweaver displays the format changes as you make them.



Add a Spacer Image

A *spacer image* is an invisible image that is used to add space on a Web page. The image is a 1-x-1-pixel transparent image. When adding the image to the Web page, you can set its width and height to the size of the space that is needed. GIF transparent images are preferred over PNG transparent images because GIF is smaller.

Spacer images are often used in tables to force a column to a desired width. Dreamweaver automatically adds a spacer image when you create an autostretch column in a table layout. See Chapter 7 for information on tables.

Once a spacer image is selected, it can be resized, moved, and aligned with the Property inspector, just like any other image. If you cannot find the invisible image, you can click it in the Code view to see its properties in the Property inspector.

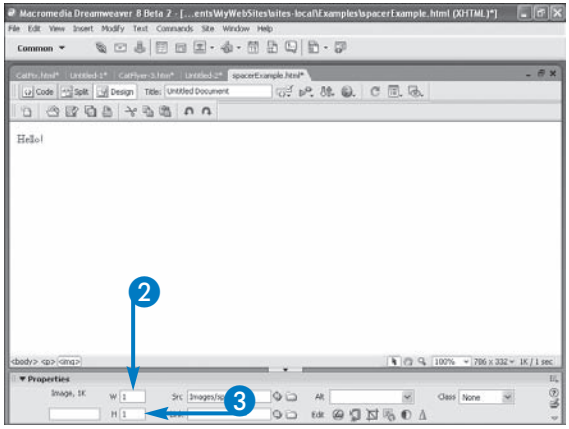
You specify the location of your spacer image in your Preferences, in the Layout dialog box. If you do not set up your own spacer image, Dreamweaver creates one the first time you use a feature, such as when creating a table layout that requires a spacer image. Dreamweaver changes the Preference setting when it saves the spacer image.

Add a Spacer Image

1. Insert the spacer image.

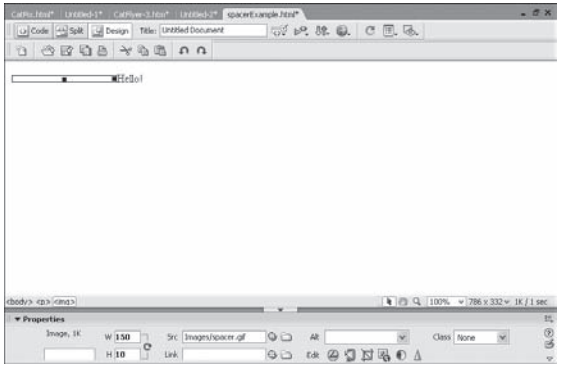
Note: *See the section "Insert an image" to inserting images.*

The image is too small to see its outline.



2. Type a width.
3. Type a height.

The image outline and handles become visible.



Using Hyperlinks

Hyperlinks, or links, are the clickable elements on a Web page that transfer a user to another Web page or file. In Dreamweaver, you select a text string or an image in your Web page to be a link. You then specify the destination, which is the page or file that appears when someone clicks the link.

The destination can be another Web page on your Web site, a Web page on a different Web site, or a file in another format that is not a Web page, such as a PDF file, an image file, or a multimedia file. The destination page or file can appear in the current browser window or in a new browser window.

A hyperlink can be defined relative to the current document, to your Web server document root, or to the WWW by using a complete URL.

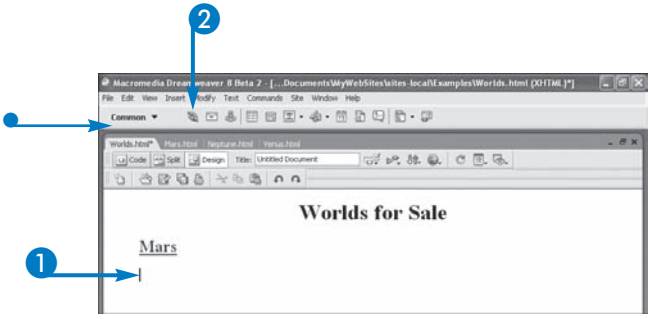
Links that lead nowhere are a common problem on the Web. Dreamweaver keeps track of your links to prevent broken links. When you change the organization of your Web site, Dreamweaver can update your links, assisting you to check your links at any time to make sure they are valid.

Using Hyperlinks

1. Click where you want to insert the link.
2. Click the Link button ( ).

   The Hyperlink dialog box appears.

   - The Link button is in the Common category.



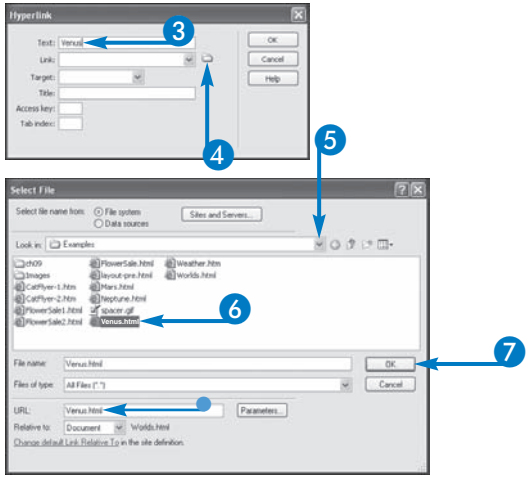
3. Type the text for the link.
4. Click .

   The Select File dialog box appears.

5. Click here and navigate to the folder containing the Web page that is the destination for the link.
6. Click the filename for the destination page.

   - If you want to link to a page on another Web site, type its URL, such as `http://janet.valade.com`, here.

7. Click OK.



- The selected filename appears in the Link field.

If you typed a URL, that URL appears in the Link field.

8 Click OK.

Dreamweaver adds the link to the Web page.

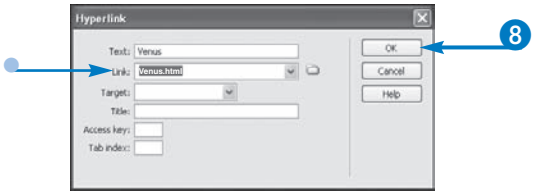
9 Format the link text.

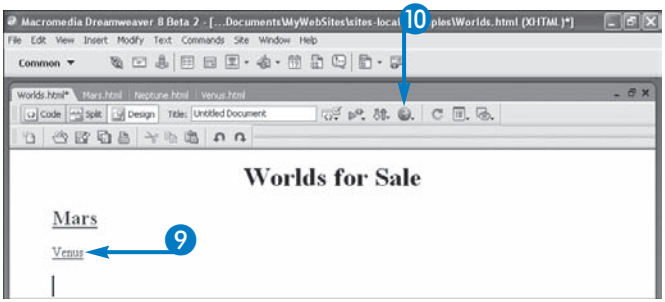
Note: *See Chapter 4 to format text.*

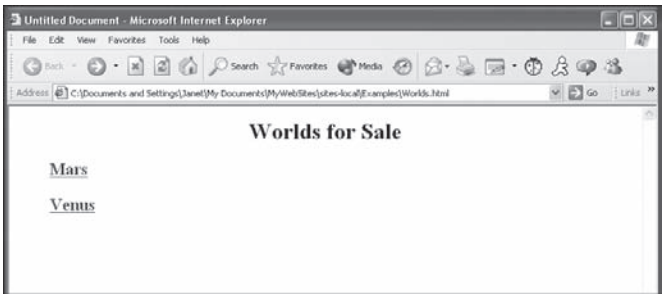
10 Click the Preview button ( ) to test the link.

Links do not function in the Document window.

The links connect to the destination Web pages in a browser.







Can I use files that are not Web pages as the destination files for links?

Yes. You can specify other types of files, such as PDFs, image files, or multimedia files, as the destination file for links. The browser attempts to open the file in the appropriate software. If the Web site visitor's computer does not know which software should open the file or does not have the appropriate software installed, the browser prompts the user with a choice of actions, such as saving the file.

How do I open the link destination file in a new browser window?

The Target field in the Hyperlink dialog box allows you to select where the file is going to open when the visitor clicks the link. By default, the file opens _self, which is the same browser window in which the link was clicked. You can specify _blank to open the file in a new browser window.

Other options in the Target drop-down list are related to frames. See information about frames in Chapter 9.

I see a field named Title when creating a link. What is this field?

You can set a title for the file to which you are linking. Browsers can use this title for various things. Many browsers, such as Internet Explorer, display the title in a tool tip when the mouse pointer passes over the link in the Web page. Many browsers also use the title when bookmarking the link.

Convert Text to a Hyperlink

You can convert text in your Web page into a hyperlink. Dreamweaver converts any text that you highlight into a link. You can convert a word in the middle of a document, a heading, items in a list, and any other text.

You can link to another page on your Web site, a page on another Web site, or a file that is not a Web page.

Your links should stand out so that your Web site visitors can tell instantly that they are links. They should also indicate clearly what type of information, image, or other file is going to appear when the link is clicked.

Hyperlinks in the HTML file are coded with <a> tags. A typical link looks like the following:

```
<a href="Mars.html">Mars</a>
```

Dreamweaver adds the code to the source file when you insert a link.

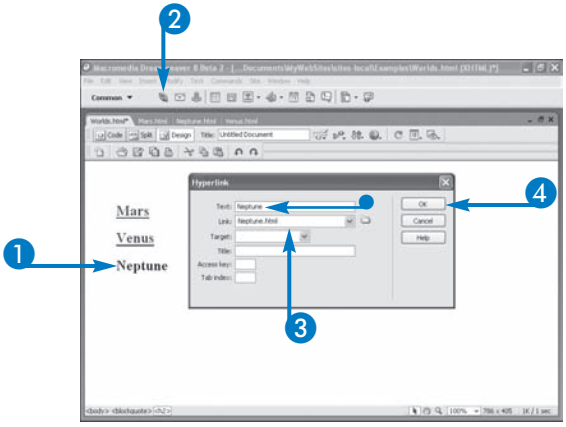
You can convert highlighted text to a link from the Modify or Insert menu, from a context menu, or from the Common category of the Insert toolbar.

Convert Text to a Hyperlink

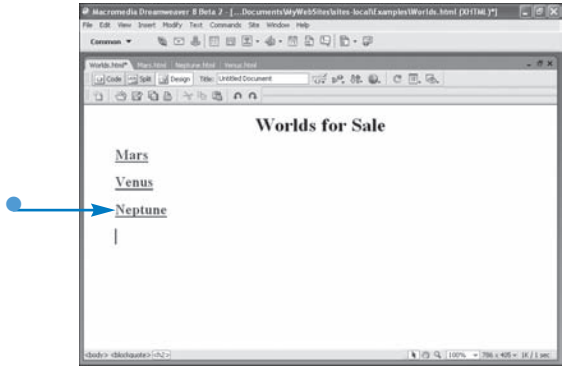
1. Highlight the text that you want to make into a link.
2. Click .

   The Hyperlink dialog box appears.

   - The highlighted text appears in the Text field.
3. Type the link destination file in the Link field.
4. Click OK.



- Dreamweaver converts the text into a link.



Create a Hyperlink in a Site Map

Dreamweaver assists you to quickly create a hyperlink by drawing it in the Site Map view. The Site Map is a visual representation of your Web site, showing the links between files and identifying broken links. Using the Site Map is discussed in Chapter 2.

In the Site Map view of your Web site, you can create a link by drawing a link from one file to the destination file. When you click a file in the Site Map, a point-to-file icon ( ) appears beside the file. You can click and drag from this icon to another file in the Site Map or to a file in the list displayed in the Files panel. The new link is added to the Site Map immediately.

Dreamweaver creates a link in the first file that connects to the second file — the destination link file. Dreamweaver appends a hyperlink to the end of the first file, with the filename as a text link. You can move and/or reformat the link text later if needed.

Create a Hyperlink in a Site Map

1. Display your Web site in Site Map view.

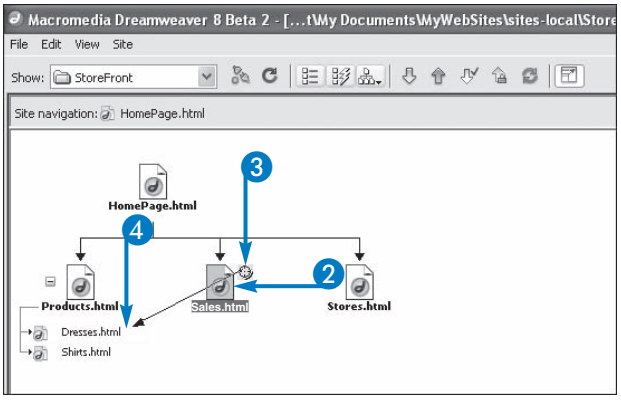
Note: *See Chapter 2 to use a Site Map.*

2. Click the file that you plan to link from.

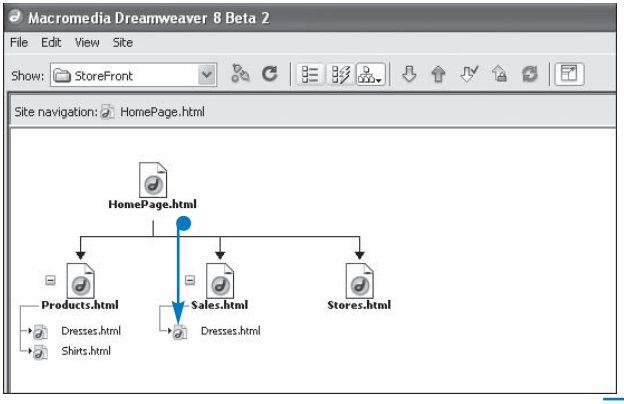
   A appears by the file.

3. Click and drag from to the destination file.

4. Release the mouse button when the pointer is over the destination file.



- Dreamweaver creates a link in the selected file to the destination file.



Convert an Image to a Hyperlink

You can create image hyperlinks as well as text hyperlinks. Image hyperlinks behave the same as text hyperlinks. Colorful image hyperlinks can draw more attention than text hyperlinks.

You select an image in your Web page to be a link. You then specify the destination, which is the page or file that appears when someone clicks the image.

When the mouse pointer passes over a hyperlinked image in a Web browser, the pointer changes shape. This is one way that hyperlinked images are distinguished from regular images on a Web page.

The stylized navigation buttons you see on many Web pages are usually image files that have been hyperlinked to other pages on the site. You can build such buttons in an image editor such as Adobe Photoshop or Macromedia Fireworks, and then insert them into your page and define them as hyperlinks.

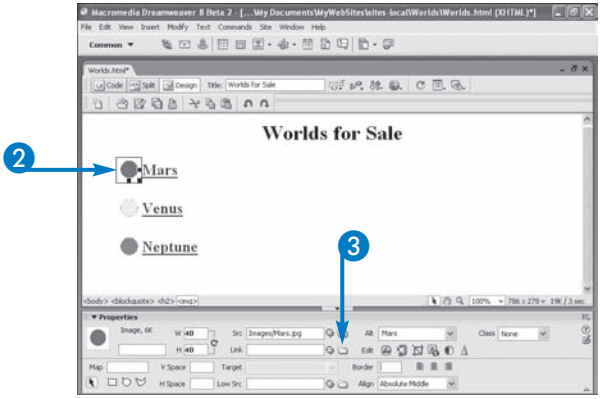
Image hyperlinks can be useful when you want to display very large images on your site. You can make small versions of your image files, called *thumbnails*, which download quickly and give viewers a hint of what the image is. You can then hyperlink those thumbnails to the large versions of the image files.

Convert an Image to a Hyperlink

1. Open the Property inspector.

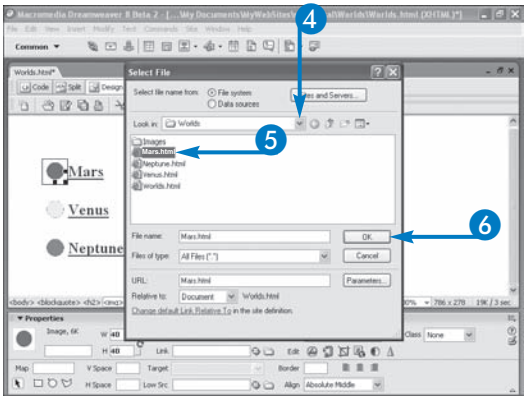
Note: *See Chapter 2 to open the Property inspector.*

2. Click the image that you want to convert to a link.
3. Click .



The Select File dialog box opens.

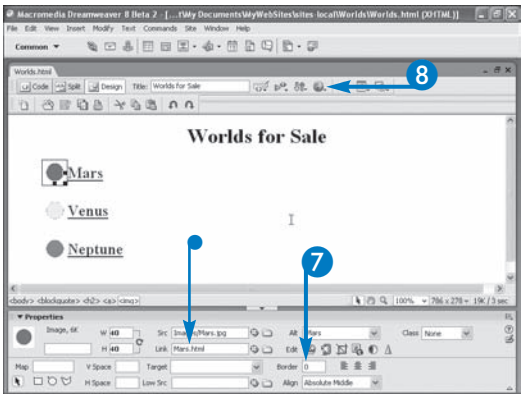
4. Click here and navigate to the destination file folder.
5. Click the destination file.
6. Click OK.



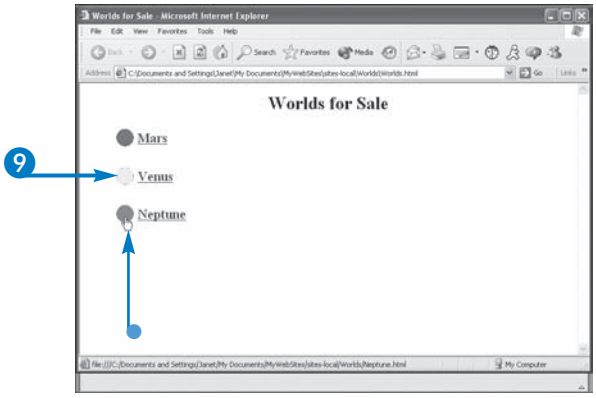
- The link destination file appears in the Link field.

7. Type **0** (zero).
8. Click .

   Links do not function in Dreamweaver Design view.



9. Click the links to test them.
   - changes to when you position it over a clickable image.



A blue line appears around my image links. How can I make the blue line disappear?

By default, a blue line appears around images that are hyperlinks. It is the equivalent of the blue line under a text hyperlink. The blue line helps visitors recognize that the image is a link.

The blue line around the image can be very unattractive. You may choose other methods for identifying the image as a link. To remove the blue line, set the Border field in the Property inspector to 0 (zero).

Can I create an image link to a Web page on another Web site?

Yes. When the Select File dialog box is open, type the complete URL to the Web page you want to link to into the URL field. A complete URL looks something like the following:

`http://janet.valade.com`

I notice a next to the Link field in the Property inspector when I click an image. Can I draw a link from that icon to a file?

Yes, you can. If you open the Files panel, all the files in your Web site are listed. You can click the and drag from there to a file in the Files panel. Dreamweaver creates a link for the image to the file.

Link to a Specific Place in a Document

For some purposes, you need to create a link that links to a specific place in a Web page instead of just opening at the top of a Web page. For example, you may want to display a long document in a Web page and want to provide a table of contents that links to different sections.

In order to link to a specific location, the destination file needs to contain a marker, called a *named anchor*, that you can link to. If you know the name of the named anchor, you can link to it — whether it is in your own Web page or someone else's. A named anchor is designated by *filename*.html#*anchorname*, or just *#anchorname* if it is in the same Web page as the link.

Named anchors are commonly used for long alphabetized lists, such as an index or a glossary. Instead of requiring users to scroll through the entire alphabet, you can create a list of letters that link to the alphabetic location in the file. Users can click the letter link to jump to the alphabetic section containing the word they are looking for.

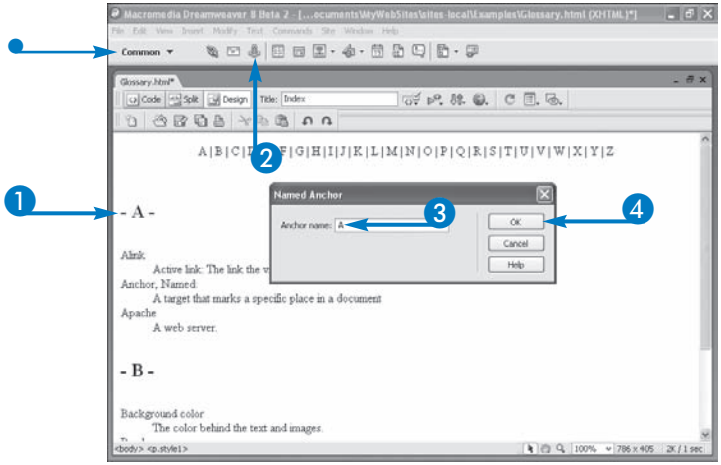
Link to a Specific Place in a Document

1. Click in the Web page where the named anchor should go.
2. Click the Anchor button ( ).
   - The Common category of the Insert toolbar is open.

   The Named Anchor dialog box appears.
3. Type the anchor name.
4. Click OK.

   Dreamweaver inserts the named anchor.
   - Dreamweaver inserts an anchor icon.

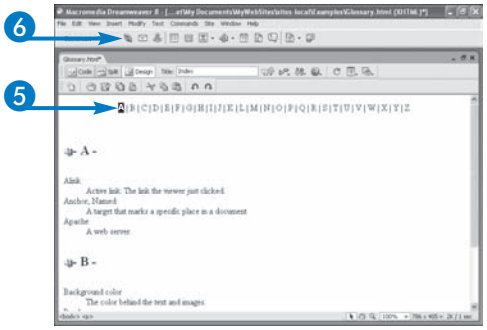
   Repeat Steps 1 to 4 until you have inserted all the named anchors you need.



5 Highlight the text.

6 Click .

The Hyperlink dialog box appears.



7 Type the names of the destination file and the named anchor.

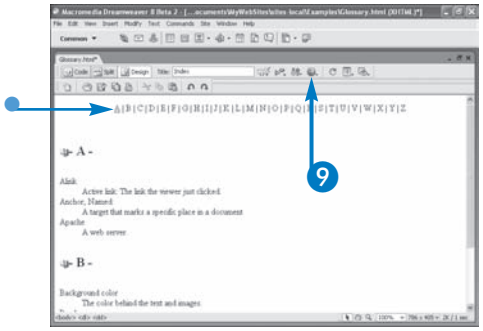
A number sign (#) precedes the name of the named anchor.

8 Click OK.

- Dreamweaver changes the highlighted text into a link to the named anchor.

9 Click to test the links.

Links do not function in the Document Window.



Can I see the actual Web page design without the anchor icons?

Yes. The anchor icons represent the named anchors, which are invisible Web page elements. The icons are useful so that you know the anchors are there. However, if you want to see your page design without the icons, you can hide them.

Click on the Document toolbar. Click Invisible Elements to hide the anchor icons. If other invisible elements are represented by icons, they also disappear. Other invisible elements might be comments and line breaks, depending on which invisible elements are set to display. Click Edit, select Preferences, and click Invisible Elements to see and/or change which invisible elements display.

What does the HTML code for a named anchor look like?

Named anchors use the `<a>` tags, just as other hyperlinks do, but with different attributes than hyperlinks. The named anchor code looks similar to the following:

```
<a name="A" id="A"></a>
```

The code includes `name` and `id` attributes, but not the `href` attribute that is normally used for links.

Format Text Hyperlinks

By default, hyperlinks are blue and underlined. You can change the color and style of the link so that they match the visual style of the text and images on your Web page. Changing link colors also enables you to emphasize important links. You can select a link color by choosing from a palette of colors, specifying a color by name, or specifying a hexadecimal code.

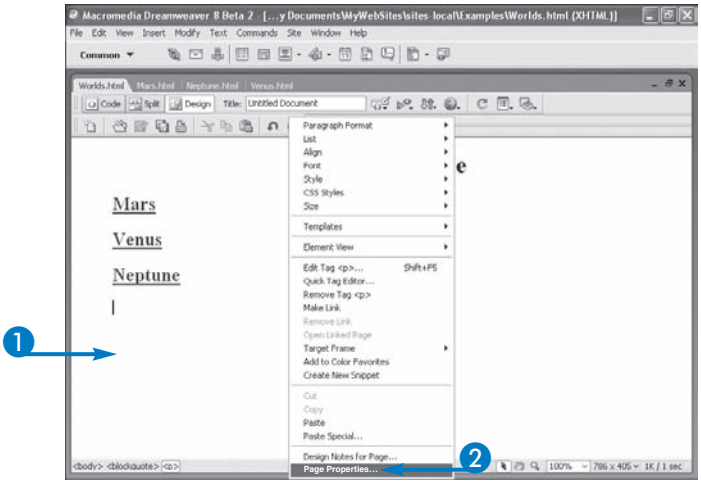
A link can be in one of three states — unvisited, visited, or active, with a color setting for each state. A link turns the active color when someone clicks it. You can use different colors for the three settings, or set all three to the same color so that a link never changes color.

You can set the font style and size of your links, as well as format them as bold and/or italic. You can set your links to be underlined or not underlined.

You can format your text links to match your Web page. They do not need to be blue and underlined. However, if they blend into the general design too well, visitors may not recognize that the links are there.

Format Text Hyperlinks

1. Right-click in the Web page.
2. Click Page Properties.

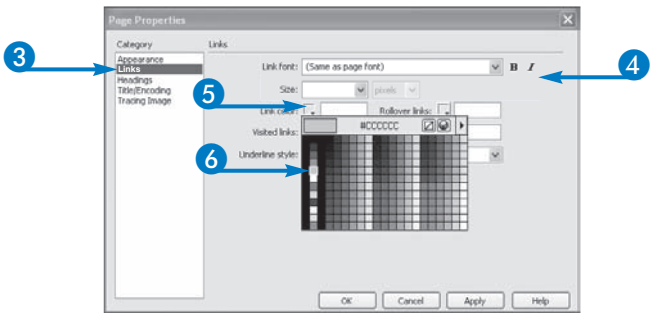


The Page Properties dialog box appears.

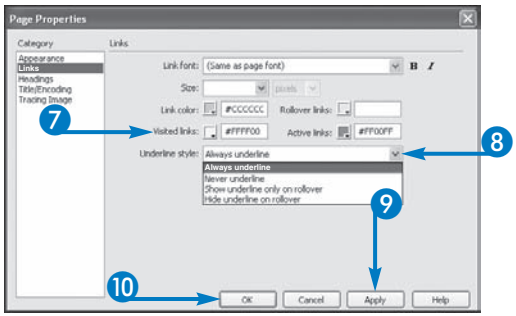
3. Click Links.
4. Change the font style or size if desired.
5. Click the Link color box.

   Dreamweaver displays the Color grid.
6. Click a color.

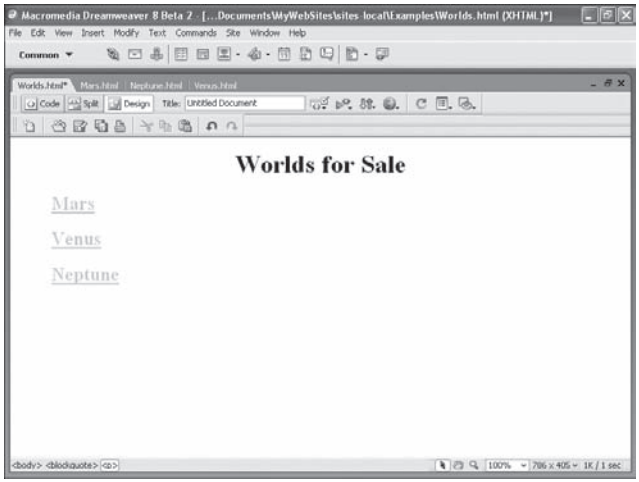
   Light Gray is clicked here.



7. Click the color box for Visited links and/or Active links and click a color.
8. Click ▼ and select an underline style.
9. Click Apply.
10. Click OK.



Hyperlinks appear in the newly specified color.



Can I create invisible links?

Yes. If you set the link color to the same color as the background behind the link, the link appears invisible. You can set any or all of the link types — unvisited, visited, or active — to be invisible.

What are visited links?

Visited links are the links that a visitor to your Web page has already clicked. The browser knows which links the visitor has visited because the browser stores all the visited pages in the history file. The browser checks the history file to know when to set a link to the color of a visited link.

How does the browser know which colors to display the links in?

The `<body>` tag attributes can define the link colors. The tag has three attributes — link (unvisited), vlink (visited), and alink (active) — that can be set to a color. For example, the following body tag sets the link color and the vlink color:

```
<body link="red"
vlink="green">
```

CSS can also be used to set colors for the three link attributes. Chapter 11 discusses CSS.

Remove a Hyperlink

Just as you can convert text or an image into a hyperlink, you can convert a hyperlink back into plain text or a normal image. You may have created the hyperlink in error or changed your Web design, requiring you to remove the hyperlink.

When Dreamweaver removes the hyperlink, it does not remove the text or image. It just removes the hyperlink. The text or image remains; it just no longer links to a Web page or file.

You cannot remove several links at one time. Each link must be removed individually.

Dreamweaver removes the hyperlink by removing the HTML link code that surrounds the text or image. A link looks something like the following:

```
<a href="Mars.html">Mars</a>
```

Dreamweaver removes the link by removing the <a> tags, leaving the text or image code that was surrounded by the <a> tags, as follows:

```
Mars
```

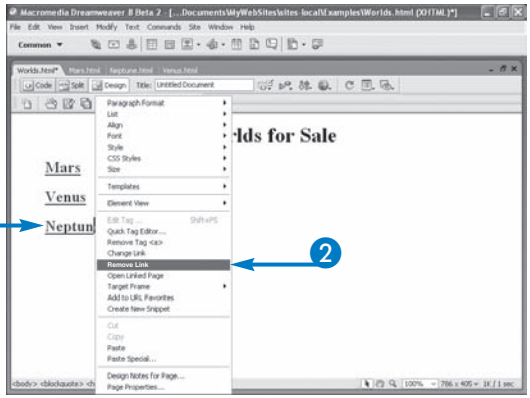
You can, of course, remove the link by deleting the text or image entirely. You can select the link and press Del or use any other method of deleting content from your Web page.

Remove a Hyperlink

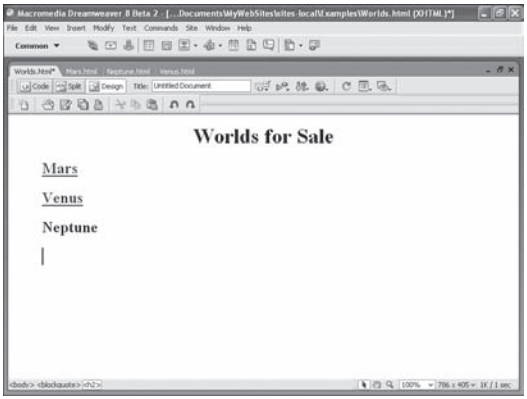
1. Right-click a link to remove.

   A context menu opens.

2. Click Remove Link.



The text is no longer a link.



Change a Hyperlink

A hyperlink can be changed. The most common reason to change a hyperlink is that it is broken: The file that it links to does not exist. Perhaps the link was created in error. More likely, the name of the file that the link points to has changed or the file has been moved. You can change the name of the link destination file.

Dreamweaver keeps track of the hyperlinks in your Web site and warns you about broken links. When you display your Web site files in Site Map view, the broken links are displayed in red to alert you to the possible problem. At any point, you can instruct Dreamweaver to run a link check (described in the section, "Check Links," in this chapter) to make sure your links are all valid. Dreamweaver checks the links for your entire site and lists any broken links.

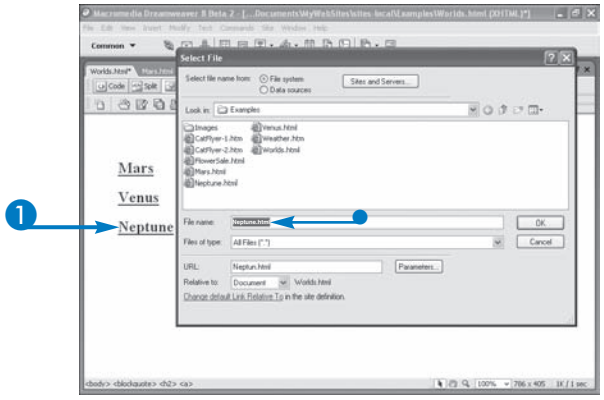
Broken links are a common problem on Web sites. It is a good idea to check your links often. It is particularly important to check the links on a large Web site that has more than one developer building and changing Web pages. It is easy for one developer to make changes that break another developer's links.

Change a HyperLink

1. Right-click the link to be changed and select Change Link.

   The Select File dialog box opens.

   - The existing filename appears here.

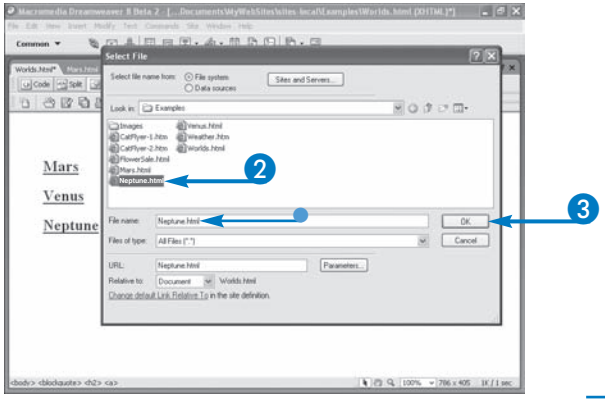


2. Click a filename.

   - The File name field shows the selected filename.

3. Click OK.

   The link destination is changed.



Change Hyperlinks Sitewide

When you move or rename a file, all the links that link to the file must be changed to reflect the new name or location. In most cases, you do not need to change the links yourself. Dreamweaver automatically updates all links to a file when it is moved or renamed. By default, Dreamweaver prompts you, showing you the files with links to the file that was renamed or moved and providing you with Update and Don't Update buttons.

Sometimes, however, you need to change your hyperlinks yourself. For example, you may want to link to a new or different file, even though the current link is still valid. Dreamweaver provides the ability to change hyperlinks across all the files on your Web site. With one command, you can change a link everywhere it exists.

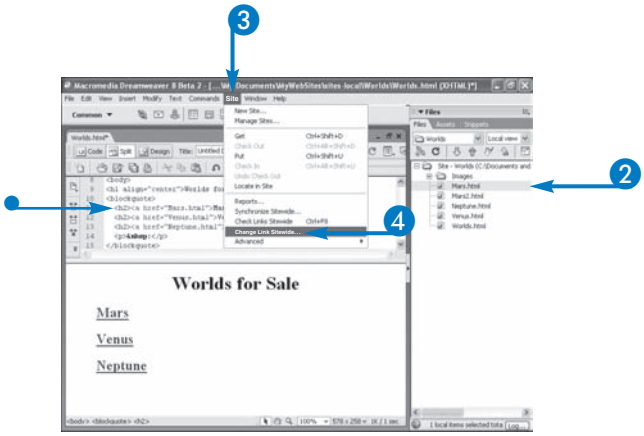
Dreamweaver searches for the link you want to change in all the files in the Web site that is currently open in the Files panel. If the Files panel is not open, Dreamweaver searches the Web site that was last open in the Files panel. It changes the links it finds based on the information you provide in the Change Link Sitewide dialog box.

Change Hyperlinks Sitewide

1. Open the Files panel.

Note: *See Chapter 2 to open and close panels.*

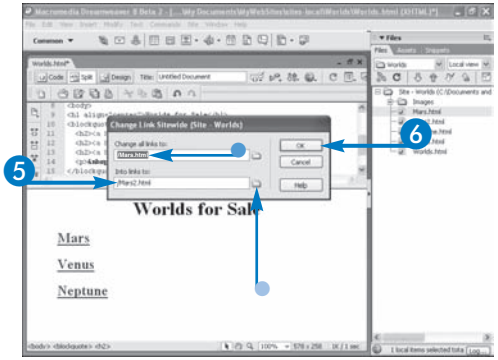
2. Click the destination file that you want to change.
   - One link in the open file links to the selected file.
3. Click Site.
4. Click Change Link Sitewide.



The Change Link Sitewide dialog box opens.

- The Destination file is shown in the Change field.

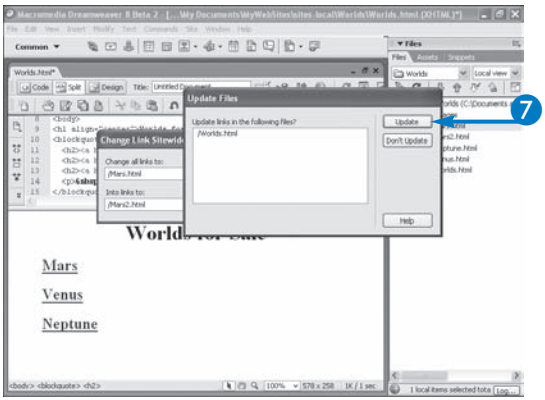
5. Type the new destination filename.
   - You can click here to navigate to the new destination file.
6. Click OK.



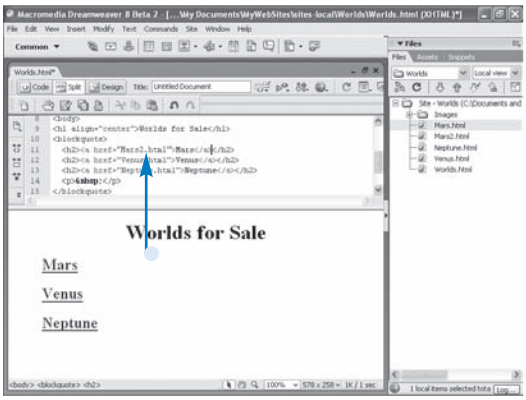
The Update Files dialog box appears.

All the files that link to the destination file are listed.

7 Click Update.



- Dreamweaver changes the link to the destination file.



Does Dreamweaver always update links to the file when a file is renamed or moved?

As long as you rename or move the file using the Files panel, Dreamweaver updates your hyperlinks. If you rename or move the file outside of Dreamweaver, using the operating system or another application, Dreamweaver does not know the file was renamed or moved and the links are not updated. However, when you view your site in Map view, the links are marked as broken because the filename they link to can no longer be found.

Can Dreamweaver update all the links when I rename or move a file without prompting me?

Yes. Dreamweaver's update behavior is determined by one of your preference settings. The default setting is to prompt before updating. You can set it to always update without prompting.

To change the settings, click Edit and select Preferences. Click General. A setting in the top section is "Update links when moving files," which presents a drop-down box from which you can select Prompt, Always, or Never.

Why is the Change Links To field blank, even though a file is open?

The Change All Links dialog box does not get its information from the open file. It gets its information from the Files panel. If no filename is selected in the Files panel, the Change Links To field is blank. To have a filename display automatically in the field, click a filename in the Files panel. Otherwise, type in the filename or the link destination file. Dreamweaver then searches for the filename in all the links in all the files on your Web site.

Create Multiple Hyperlinks on One Image

A type of image that is linked to more than one destination page or file is called an *image map*. Different areas of the image are linked to different destination files. One common use for an image map is to create a geographical image with different locations linked to different information. For example, a map of the United States might be an image map with each state linked to a different Web page with state-specific information.

Specifying an image map in HTML is fairly complicated. In the `<img>` tag, you define the image as an image map. You then use `<map>` tags to define the image map. The `<map>` tags enclose a set of `<area>` tags that specify the hotspots using mathematical coordinates. Dreamweaver provides tools that greatly simplify the procedure. You click and drag with shape tools to define the hotspots and link the hotspots to destination files in the Property inspector. Dreamweaver writes the HTML code, determining and filling in the coordinates that define the hotspots.

Each image map needs a unique name. You can have more than one image map in a single Web page. If you do not provide a name for an image map, Dreamweaver names them Map, Map2, Map3, and so on.

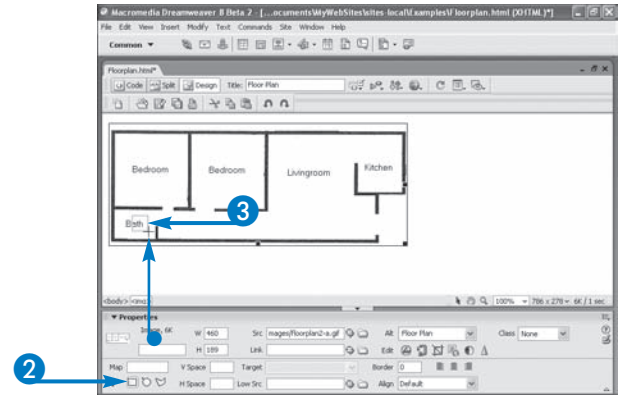
Create Multiple Hyperlinks on One Image

1. Open and expand the Property inspector.

Note: *See Chapter 2 to open and expand the Property inspector.*

2. Click the Rectangle tool ( ).
   - changes to +.
3. Drag a rectangle and release.

   Dreamweaver creates a hotspot.

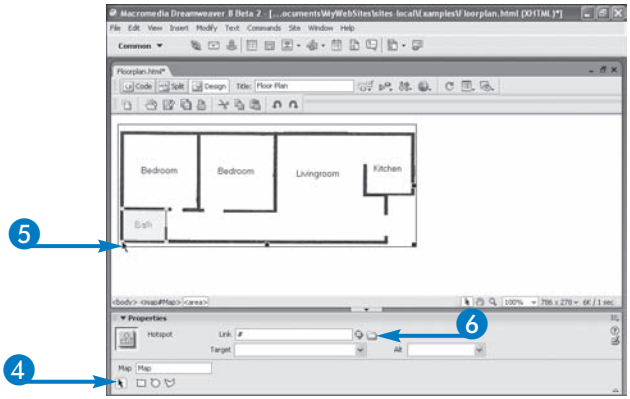


   The Property inspector displays the properties for the hotspot.

4. Click the black pointer ( ).
5. Drag the hotspot handles to the desired shape and size.

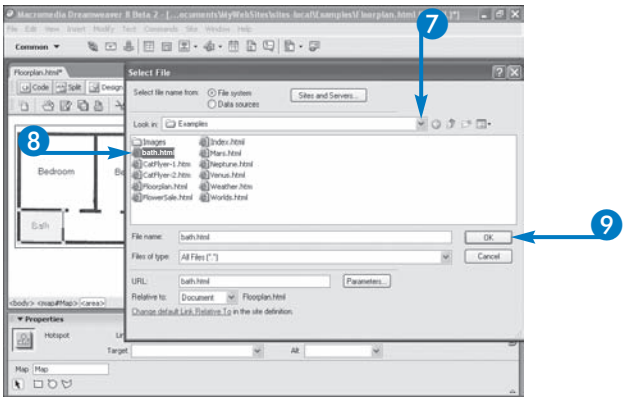
   The hotspot is displayed in blue.

6. Click .

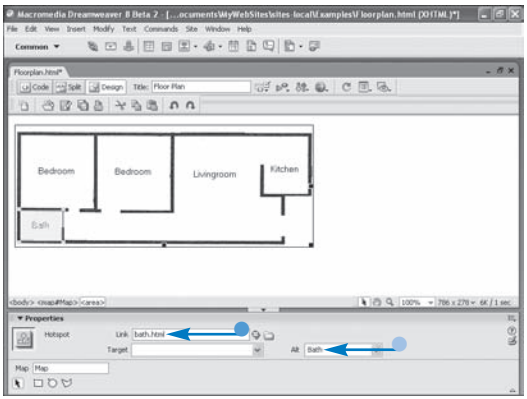


The Select File dialog box appears.

7. Click here and navigate to the folder containing the link destination file.
8. Click the destination file.
9. Click OK.



- The link destination filename appears in the Link field.
- You can type alternative text for the hotspot here.



MASTER IT

I see a circle and a rectangle tool for creating hotspots. What is the other tool with the odd shape?

The Polygon tool. You can use it to make irregularly shaped hotspots, with as many corners and sides as needed.

To use the Polygon tool, click it and then click the image once for each corner. A small blue square (or handle) appears wherever you click, marking a corner. When you mark a third corner, the lines fill in to make a triangle. However, if you click another corner, the triangle changes to a four-sided figure, and so forth.

When you have as many corners as you need, click the black arrow tool. You can then drag the corners to make any shape you need.

How can I change an image map?

You can move a hotspot anwhere in the image map. Just click the arrow tool in the Property inspector and then click and drag the hotspot.

You can change the size of a circular or rectangular hotspot. Click the arrow tool and click the hotspot. Its handles appear. Click and drag any of its four handles to resize the hotspot.

You can change the shape of a polygon hotspot. Click the arrow tool and click the hotspot. You can click and drag its handles to change the shape. You can add handles by clicking an edge of the shape. You can then click and drag the handle(s) you just added.

Create an E-mail Hyperlink

You can create hyperlinks that launch the user's e-mail application. These are useful when you want to give your viewers a way to send you feedback about your site or request more information about your products or services. The e-mail application automatically opens a new message window, with the To: e-mail address filled in.

When you define an e-mail link, you specify the e-mail address of the intended recipient, for example, `webmaster@mysite.com`. This address is automatically placed in the To: field when the e-mail window opens.

The HTML code for an e-mail link is similar to the code for other types of links. An `<a>` tag is used to create the link, just like other types of links. However, the link contains a keyword, mailto, that tells the browser to handle the link by opening e-mail software. For example, an e-mail link might be coded as follows:

```
<a href="mailto:janet@valade.com">Contact
me</a>
```

When someone clicks the "Contact me" link, his e-mail software opens a send message window and fills in janet@valade.com in the To: field of the e-mail window.

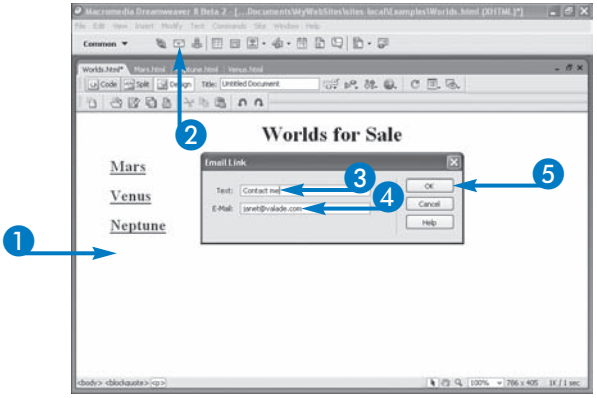
Create an E-mail HyperLink

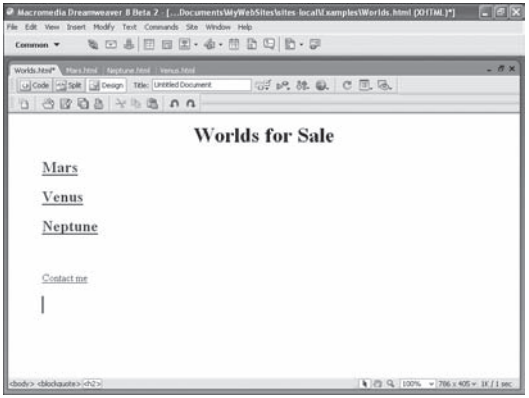
1. Click in the Web page where you want to insert the e-mail link.
2. Click the E-mail button ( ).

Note: *The Common category must be displayed on the Insert toolbar.*

3. Type the link text that will appear in the Web page.
4. Type the e-mail address here.
5. Click OK.

Dreamweaver inserts an e-mail link.





Check Links

Dreamweaver can check your links to determine whether they are valid. It checks for broken links (links to files that do not exist) and for orphans (files in your Web site that no other files link to). It cannot check links to files on other Web sites, just on your own Web site. Dreamweaver provides a list of links to outside Web sites, but it does not check whether the links are valid.

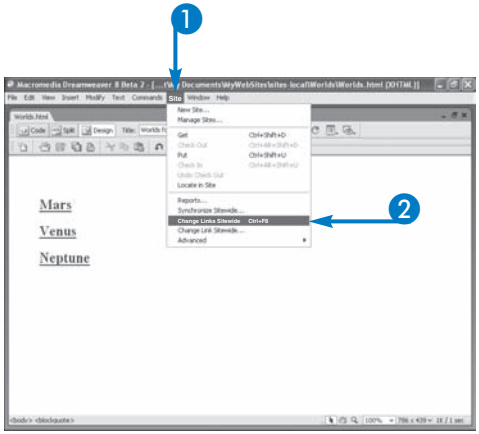
When Dreamweaver runs a link check, it lists the broken links and orphans in the Link Checker panel in the Results panel group at the bottom of your screen. You can double-click a filename listed in the Link Checker panel to open it and fix the broken links.

The Link Checker panel provides a Run button ( ) that displays a menu. You can select whether to check just the open file, all files in the Web site, or selected files. You can save the report in a text file.

A status bar at the bottom of the Results panel provides a summary of the link check. It reports how many total links, broken links, and orphans were found.

Check Links

1. Click Site.
2. Click Check Links Sitewide.



The Link Checker panel opens at the bottom and lists all broken links.

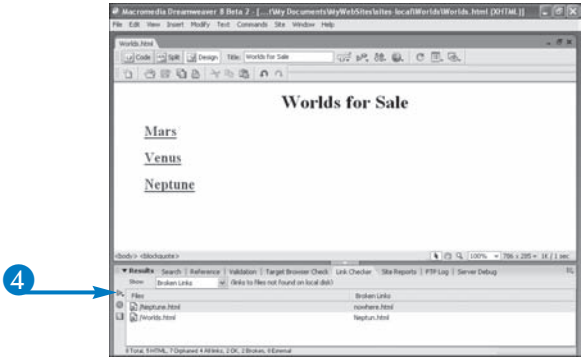
3. Fix broken links.

   Correct filenames and/or paths, or remove the links for files that have been removed.

Note: *See the section "Change a Hyperlink" to learn what causes broken links.*

You can double-click a filename in the Link Checker panel to open the file.

4. Click to recheck links.



Using Tables in a Web Page

HTML tables offer you a flexible tool for organizing and positioning information on your Web page. A table is a collection of cells, organized into rows and columns. Cells contain data, such as text, numbers, or images. Most tables have column and/or row *headers* that describe the data in the row or column. Tables are important for the display of tabular data.

First you create the table, and then you insert information into the table cells. Dreamweaver provides many features you can use to create HTML tables and insert information into the cells. You can change the appearance of the table and its content at any time, either when the table is empty or when it contains information.

Tables are also used frequently to manage the overall layout of page content. For example, you can use a table to create a narrow side column, where you can organize navigation links, next to a larger area where you can put the main content of the page. Cascading Style Sheets (CSS) (Chapter 11) and frames (Chapter 9) are another way to organize the layout of your page.

Using Tables in a Web Page

Insert a table

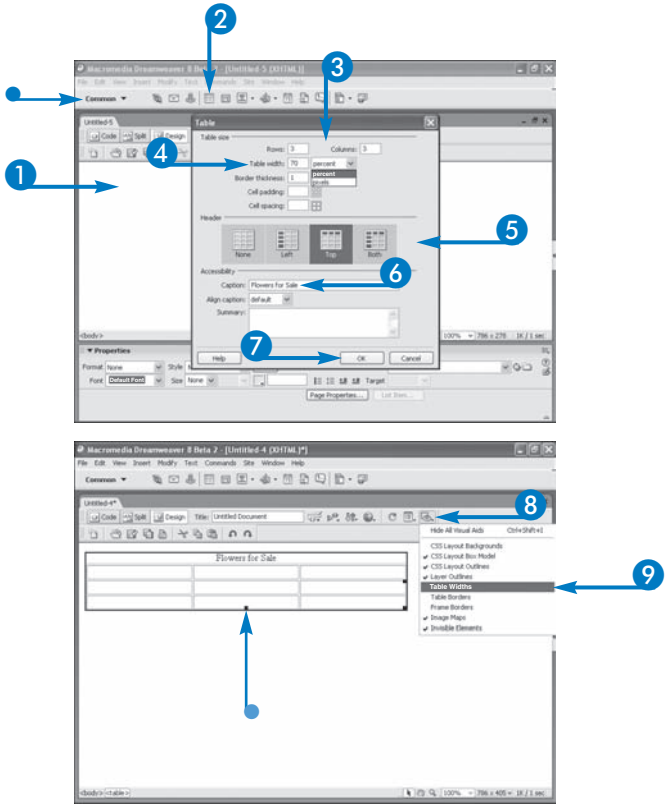
1. In Design view, click where you want to insert the table.
2. Click the Table button ( ).
   - The Common toolbar must be open.
3. Type the number of rows and columns you want.
4. Type a width and select the units of measure, in this case, 70 percent.
5. Click a header location.
6. Type a caption.
7. Click OK.

Resize a table

Dreamweaver adds the table to your Web page.

- The table handles show because the table is selected.

8. Click the View Options button ( ).
9. Click Table Widths.

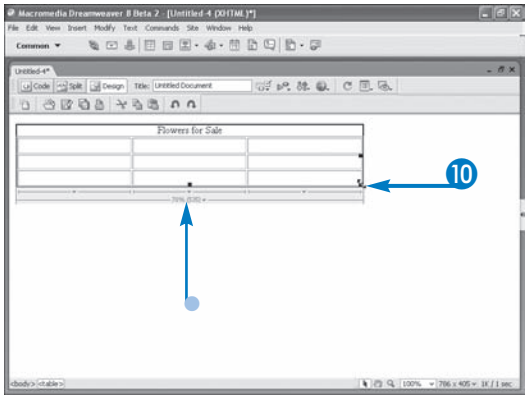


- Dreamweaver shows the table width.

The table in the screenshot is 70% of the screen width, or 535 pixels.

10 Click and drag a table handle.

becomes ↕ when over the handle.



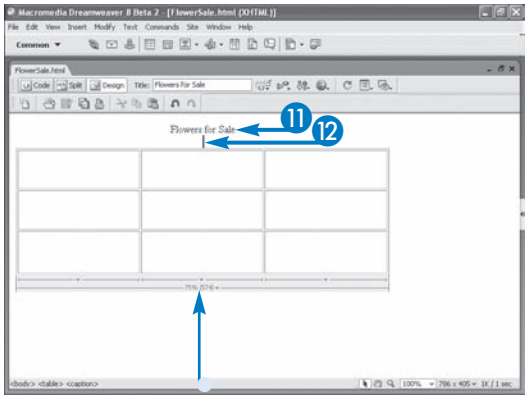
The table changes size.

- The table width changes to 75%.

11 Click at the end of the caption.

12 Press Enter.

Dreamweaver adds a blank line below the caption.



How do I use tables to layout my Web page?

Create a table that contains the sections you want on your Web page. For example, you might want a narrow navigation section on the left and a large section on the right for the content of the page. Create a table that is 100% of the width and height of the page. The table should have one row, with a narrow left cell and a wide cell that takes up the remaining width of the browser window. Then, insert the navigation links into the left side cell and the content into the right side cell.

Dreamweaver provides a layout mode that assists in designing your pages using tables. See "Create a Layout Table" later in this chapter.

In this section, the table has prominent borders. Will these borders look odd if I use tables for layout?

The borders you see in this section are the default border when you insert a table. In most cases, you do not want to see borders like this on a Web page that uses a table for layout. It is not really a problem, however, because you can format the borders; you can turn them off totally. You can also format them so they are different styles, widths, and colors. See sections later in this chapter for information on changing borders.

Insert Content into a Table

Tables are designed to hold and display data so that the information is clear. The data in a table is organized in horizontal rows and vertical columns. The intersection of a row and a column is called a *cell.* Most tables have column and/or row headers that describe the data in the row or column.

You first create the table and then insert information into the table cells. You can insert almost any type of data into a cell, including images, links, or forms. You can even insert a table into a table cell, which is called *nesting.*

To insert content into a cell, click inside the cell and then insert the information. You can type information in a cell; you can use the Insert menu to insert many types of information; or you can use the buttons on the Insert toolbar. In general, you insert information such as text or images into a cell in the same way you insert the information into the Web page. For more on inserting information into cells, see the chapter for the specific type of data you want to enter, such as images or links.

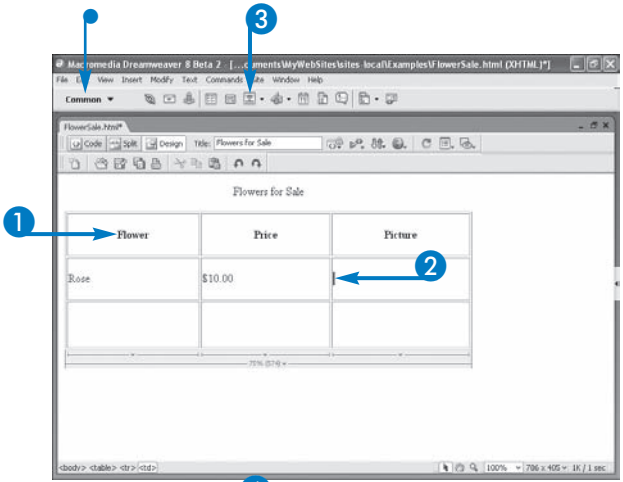
Insert Content into a Table

1. Click in a cell and type content.

   The top row is centered and bold because it is a header row.

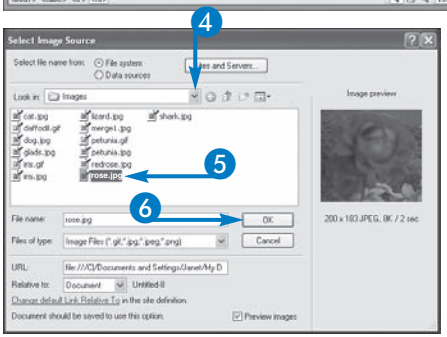
   By default, Dreamweaver left-aligns body cell content.

2. Click a picture cell.
3. Click and select Image.
   - The Common Insert toolbar must be open.



   The Select Image Source dialog box appears.

4. Click here and navigate to the folder where the image is stored.
5. Click the image filename.
6. Click OK.



Dreamweaver inserts the image into the table cell.

The cell height increases to make room for the image.

7. Click and drag image handles to resize the image.

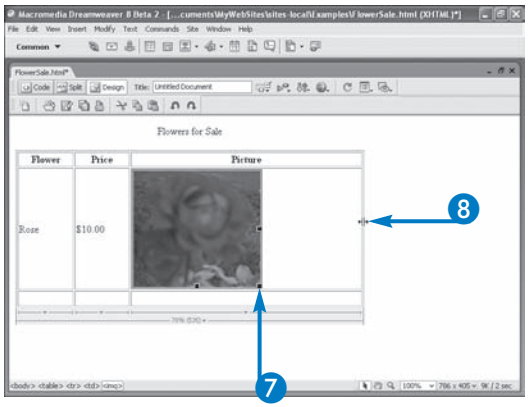
Note: *See Chapter 5 to resize images.*

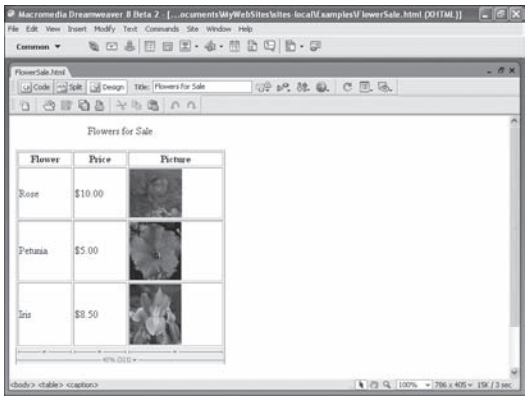
8. Click and drag a border to resize the table.

changes to the Drag Border icon ( ) when it is over a border.

Images and table change size in response to border movement.

9. Continue inserting content until all content has been inserted.





Do I have to insert content into every cell in my table?

Although blank cells are technically allowed by the HTML standards and browsers can display blank cells, empty cells sometimes cause problems. In some cases, the empty cell's dimensions are affected. In other cases, cell borders display differently for empty cells than for cells with content.

When Dreamweaver creates an empty cell, such as when it first creates a table, it does not leave the cell totally blank. It inserts a nonbreaking space into the cell, coded as ` `. (Chapter 4 describes inserting a nonbreaking space.) Then, when you add content to a cell, Dreamweaver replaces the nonbreaking space with your cell content.

How are tables represented in the HTML code?

The `<table>` tags surround the table code. Inside the `<table>` tags, `<tr>` tags surround each row and `<td>` tags surround each cell. Thus, the code for a table looks something like this:

```
<table>
  <tr>
    <td>Row 1, Cell 1</td>
    <td>Row 1, Cell 2</td>
  </tr>
  <tr>
    <td>Row 2, Cell 1</td>
    <td>Row 2, Cell 2</td>
  </tr>
</table>
```

Select a Table Element

Tables are very flexible. You can format and resize various elements of the table independently of other elements. For example, different columns can be different sizes. Different rows can have different background colors. You can even split a cell into several cells or merge two or more cells into a single cell.

Dreamweaver provides many features to assist you with formatting your table elements and producing a table that fits in your Web page design. In order to use these features, you need to select the table element that you want to format. You can format the entire table, a row, a column, a single cell, or a block of cells.

This section shows how to select table elements. In general, more than one method is available to select a table element, but only one is shown.

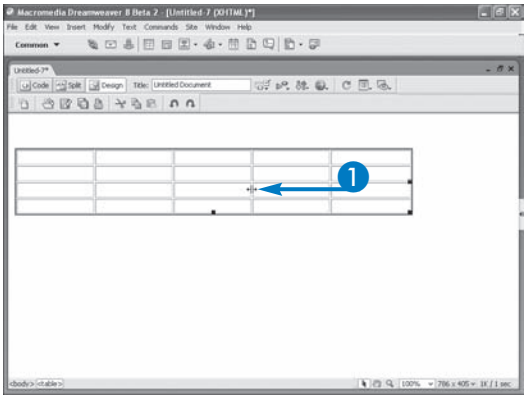
When an element inside the table is selected, such as a row or a cell, you must click outside the cell before you can select the table. That is, if a column, row, or cell is selected and you click a border to select the table, the selection does not change. You need to click outside the table first, and then click the border to select the table.

Select a Table Element

Select table

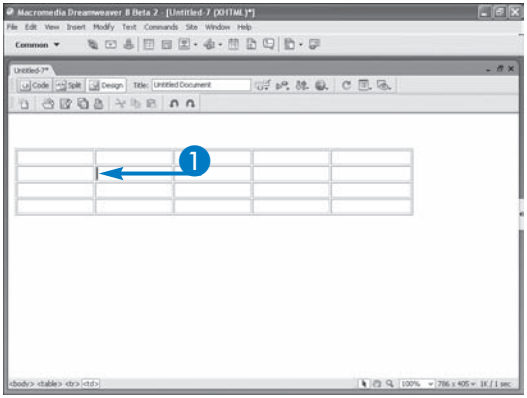
1. Click any cell border.

   becomes ↔ when over a border.



Select a cell

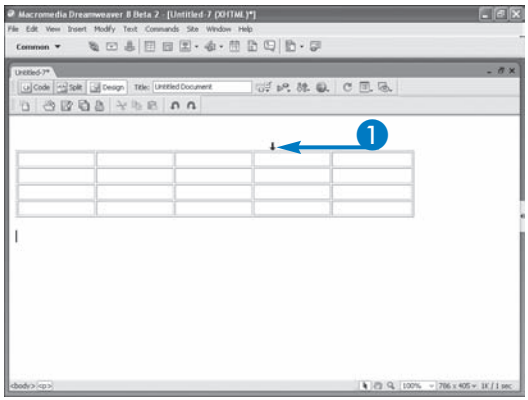
1. Click inside the cell.



Select a row or column

1. Click the beginning of a row or column.

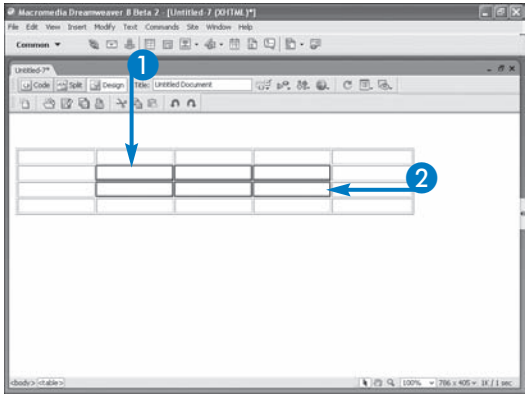
   becomes a selection arrow (↓) when over the beginning of a row or column.



Select a block of cells

1. Click inside the first cell in the block.
2. Shift-click inside the last cell in the block.

   Dreamweaver selects all cells between the first click and the Shift-click.



MASTER IT

Is there another method for selecting the entire table?

Yes, more than one. A common way of selecting the table is to click the upper left corner of the table. The mouse pointer changes to the table selection pointer ( ) when it is over a point where you can select the table, such as the upper left corner of the outside table border. You can also select the table immediately above or below the table, where the mouse pointer becomes . Remember that the caption is part of the table, so clicking above a table would mean clicking above a top caption.

You can also select the table by clicking a cell, clicking Modify, selecting Table, and clicking Select Table.

Sometimes when tables become complex, especially with nested tables, the table structure is not always clear. Is there a way to display the entire structure?

Yes. Dreamweaver highlights all the cells in the table for you. Place your mouse pointer on an outside border of the table and then press the Ctrl key. When the Ctrl key is down, all the cells are displayed.

Insert a Row or Column

You can add a row onto the end of your table or you can insert a row or column into the middle of a table. Dreamweaver provides features to allow you to add rows and columns.

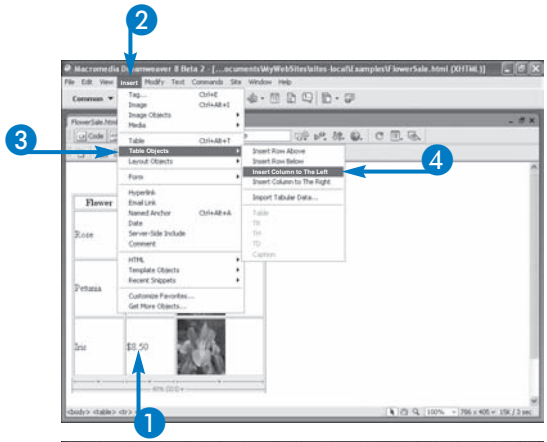
To add a single row to the bottom of your table, click at the end of the data inside the last cell in the table and then press Tab. Dreamweaver adds a new row to the end of the table and moves the cursor into the first cell of the new row.

To insert a row or column into the middle of the table, you need to use a menu — either the Modify menu or the Insert menu. This section shows how to use the Insert menu.

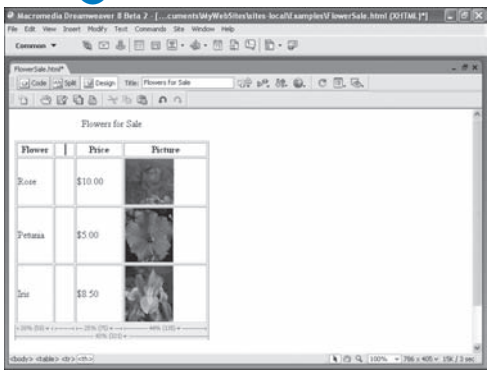
If you add columns in your table, the columns resize so that all the columns fit in the current table width. Dreamweaver resizes the existing columns to make room for added columns as long as it has room to do so. However, if there is no room left in the table when you add a column, the table expands to make room for it. Whenever you add a row, the height of the table expands and the row is added without changing the height of the existing rows.

Insert a Row or Column

1. Click the cell where you want to add a row or column.
2. Click Insert.
3. Select Table Objects.
4. Click Insert Column to the Left.



Dreamweaver inserts a column to the left of the selected column.



Remove a Row or Column

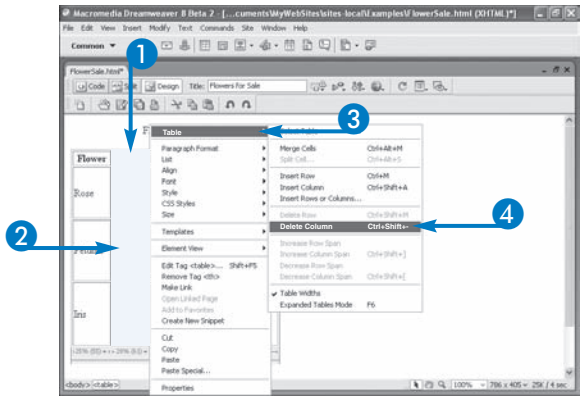
You often need to delete a row or a column. You might need to change the structure of your table by removing a column. You might need to remove a row of data because it is incorrect. You might need to remove a Web page section to change your design when using a table to layout your Web page.

You can remove an empty row or column, or one that contains content. When you remove a row or column, you remove both the row or column and all the content in the row or column. The column is gone and the remaining columns expand to take up the space that was formerly occupied by the deleted row or column.

The simplest way to remove a row or column is to select it and press Del. You can also remove a row or column using a menu. This section shows how to remove a row or column using the menu displayed when you right-click the selected row or column. You can also remove a row or column using the Modify menu.

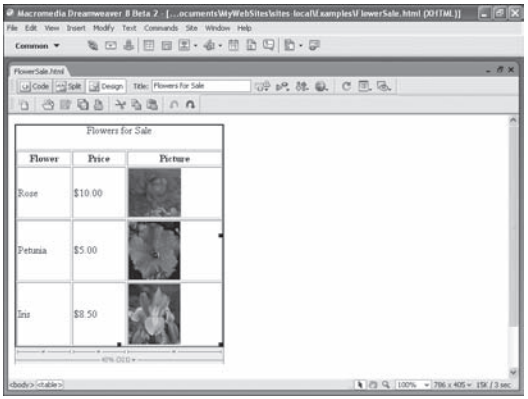
Remove a Row or Column

1. Select a row or column.
2. Right-click in the selected row or column.
3. Click Table.
4. Click Delete Column.



Dreamweaver removes the column.

The remaining columns fill in the empty space.



Align a Table

When Dreamweaver creates a table, it adds the table to your Web page using the default left alignment. With the default alignment, the table aligns with the left margin. Any text following the table is displayed below the table. All tables are created with the default behavior, which means no alignment attribute is used with the `<table>` tags.

You can change this behavior by setting alignment to left, center, or right. When you set an alignment, Dreamweaver adds an `align` attribute to the `<table>` tag, which changes both the alignment of the table and its behavior with respect to text.

If you set the alignment to Left, the table is aligned with the left margin and any text following the paragraph is displayed on the right side of the table, not below it. If you set the alignment to Right, the table is aligned with the right margin and any text following the paragraph is displayed on the left side of the table, not below it. Setting a Center alignment both centers the table on the Web page and displays any text below the table, not beside it.

Align a Table

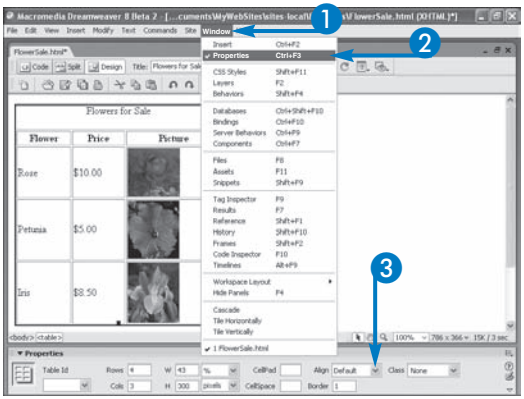
1. Click Window.
2. Click Properties.

   The Property inspector opens.

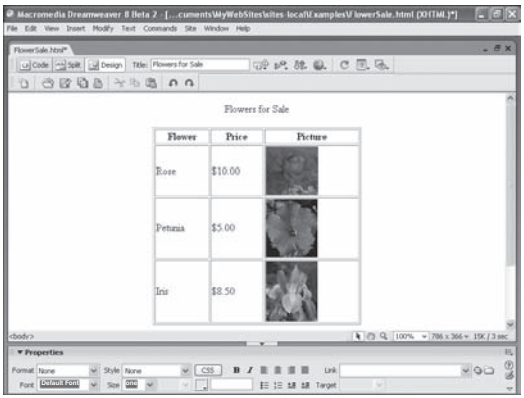
Note: *See Chapter 2 to use the Property inspector.*

3. Click here and select Left, Center, or Right.

   Center was selected in this example.



Dreamweaver applies the chosen alignment to the table on the Web page.



Resize a Table

When Dreamweaver creates a table, it assigns the height and width specified in the Create Table dialog box. When content is inserted, the table resizes to fit the content. If the content is larger than the designated width or height, the table expands to accommodate the content and ignores the designated width or height. If the content is smaller, the specified width and height define the size of the table.

You can resize the table by clicking a table handle and dragging it. If you click and drag the border rather than a table handle, you resize only the column or row, not the table. You can also resize the table using the Property inspector.

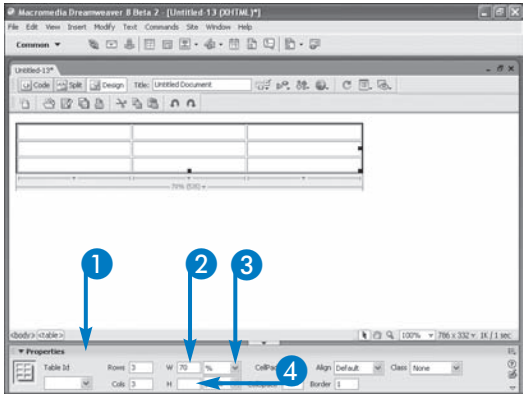
You can specify the width and height in pixels or as a percentage of the browser window. You specify pixels or percentages in the Table dialog box when Dreamweaver creates the table. You can change from pixels to a percentage or vice versa in the Property inspector. If you are not changing the size, only converting from one measurement to another, you can use one of the buttons in the lower left corner of the expanded Property inspector to convert from pixels to a percentage or a percentage to pixels.

Resize a Table Using the Property Inspector

1. Open the Property inspector.

Note: *See Chapter 2 to open and close the Property inspector.*

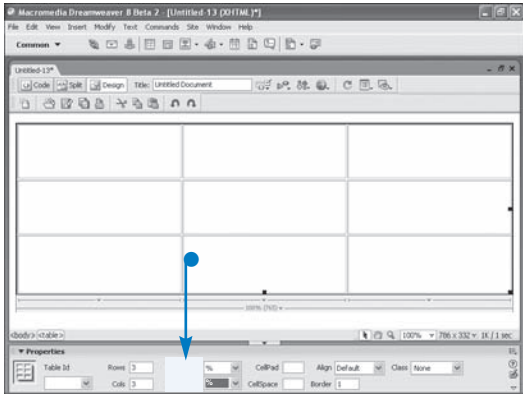
2. Type a value for the width.
3. Click here and select %.
4. Type a value for the height.



Dreamweaver resizes the table.

- New width and height values appear here.

The cells resize proportionally.



Resize a Row or Column

The rows and columns of a table resize based on the height and width of the table and the size of the cell content. When Dreamweaver creates a table, it specifies the height and width of the table and adds the specified number of rows and cells, distributed proportionally. When you add content to a cell, the row or column expands if necessary to make room for the cell content.

You can resize a row or column by clicking and dragging the row or column border. If you click and drag the border, not the table handles, the column or row resizes, rather than the entire table resizing.

You can specify the width and height in pixels or as a percentage of the table. You specify pixels or a percentage in the Table dialog box when Dreamweaver creates the table. If you want to change from pixels to a percentage, or vice versa, you must use the Property inspector. If you type a number into the width or height field, Dreamweaver accepts it as pixels. If you want to specify a percentage, type a percent sign after the number, such as 50%.

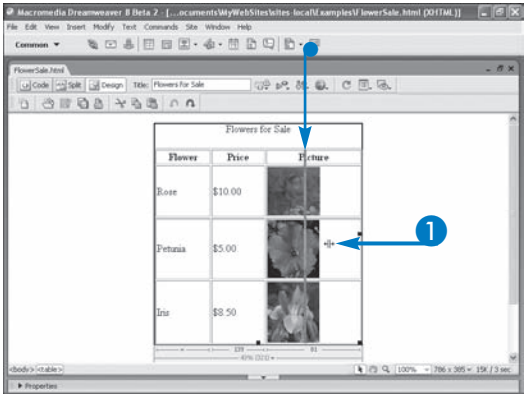
Resize a Row or Column

Resize by dragging

1. Click and drag an inner border of a column.

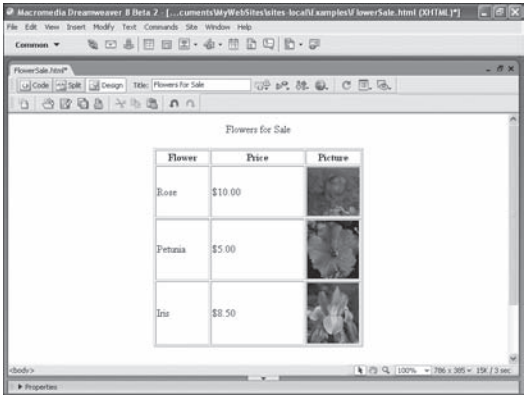
   becomes ↔ when over border.

   - The border stops moving to the right when the rightmost column matches the width of the image.



Dreamweaver resizes the column.

The column remains large enough to hold the image.



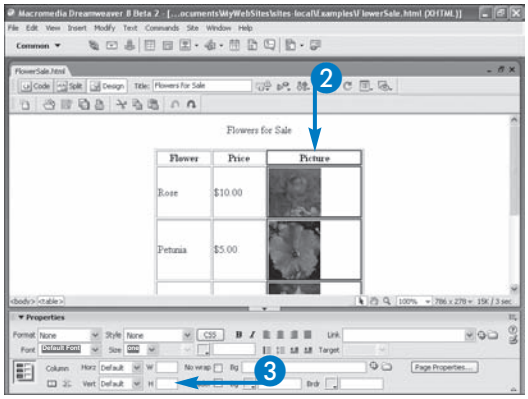
Resize with the Property inspector

1. Open the Property inspector.

Note: *See Chapter 2 to open and close the Property inspector.*

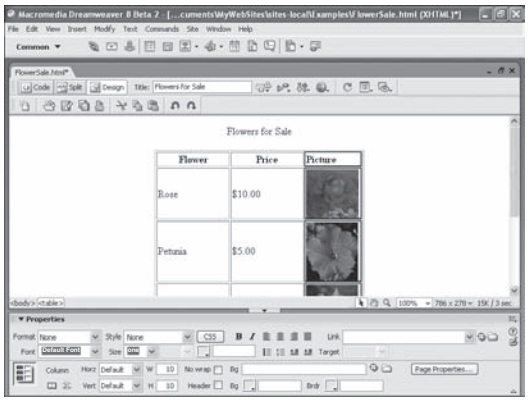
If the bottom section is not open, click ▽.

2. Select a row or column.
3. Type a value for the width and/or height.



Dreamweaver resizes the row and column.

Note: *Even though the width and height specified are quite small, the column and row remain large enough to contain the image.*



Can I convert an entire table from pixels to percents at one time?

Almost. You can convert all the widths at one time and you can convert all the heights at one time. So, you can convert the entire table with two clicks.

Select the table. Open the Property inspector and expand it. In the lower left corner, you can see four buttons that convert from pixels to percents and from percents to pixels. Click the appropriate button: converts all widths to pixels, converts all widths to percents, converts all heights to pixels, and converts all heights to percents.

Suppose I don't like the look of my table after I have set column widths and row heights. Can I remove the widths and heights?

Yes. Of course, you can always undo a few changes, one at a time, with Undo. However, if you want to remove all the changes and start over, you can. The Property inspector provides two buttons — one that removes all widths ( ) and one that removes all heights ( ).

When you remove the heights and widths, Dreamweaver removes the width and height attributes from the `<table>` and `<td>` tags. Without height and width attributes, columns and rows become the smallest size that can hold the cell content.

Split a Table Cell

You can create a more elaborate arrangement of cells in a table by splitting one or more cells. Splitting a cell turns the cell into two or more cells. You can split the cell vertically or horizontally.

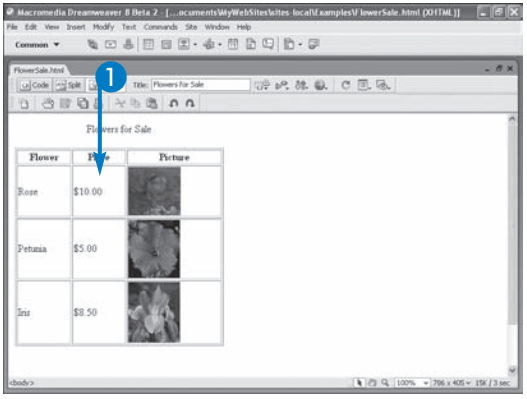
You can split a cell into as many cells as you want. If you specify more cells than the existing cell has room for, it expands to make room for all the cells you specify.

When you split a cell that has content, the content is moved into the leftmost cell for a vertical split or the top cell for a horizontal split. No content is lost.

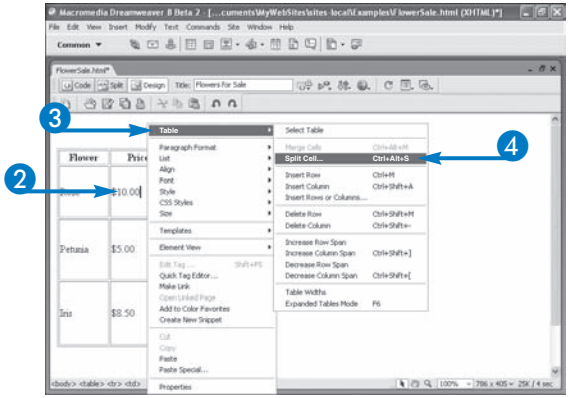
You can split a cell using a menu or the Property inspector. This section describes splitting a cell using the submenu that displays when you right-click the cell. You can also split cells from the Modify menu. The Property inspector provides a Split Cell button that you can use. The button is in the expanded section of the Property inspector. If you do not see the button when you open the Property inspector, click ▽ to expand the Property inspector.

Split a Table Cell

1. Click the cell to be split.

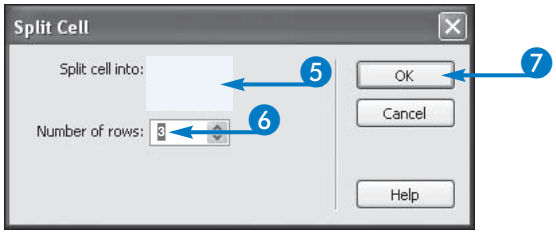


2. Right-click the selected cell.
3. Click Table.
4. Click Split Cell.



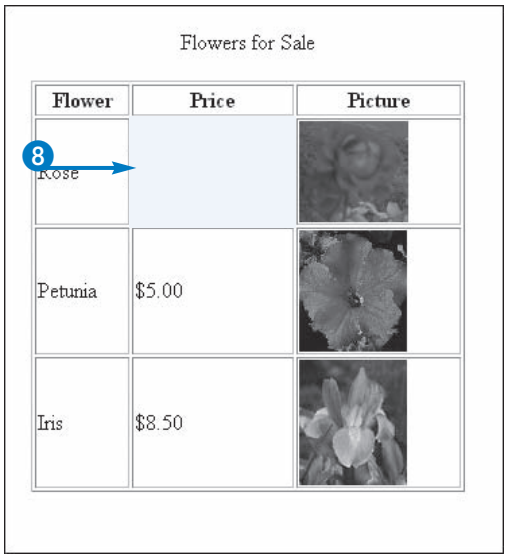
The Split Cell dialog box appears.

5. Click Rows or Columns (○ changes to ◉).
6. Type the number of rows or columns.
7. Click OK.



The selected cell is split into three rows.

8. Type content into each new cell.



How does Dreamweaver split a cell?

Dreamweaver changes the HTML code for the table when it splits a cell. Dreamweaver splits a cell into two rows by adding a row to the table, with `<tr>` tags, and redefining the unsplit cells as cells that span the two rows, using `rowspan=2`. When Dreamweaver splits a cell into two columns, it adds an extra cell to the row, using `<td>` tags, and redefines the unsplit cells as cells that span the two columns, using `colspan=2`.

Can I split more than one cell at a time?

No. If you have more than one cell selected, the Split Cell menu item is grayed out and the Split Cell button in the Property inspector does not function. So, even if you need to split several adjacent cells in the same manner, you must split them one at a time.

Merge Table Cells

Sometimes a table requires a cell that spans two other cells. One common use of this structure is to display more than one level of headings. You might have two levels of headings — a higher level heading that contains categories and a lower level that displays two headings in the category. For example, you might have a heading "Furniture" with two columns under it — one with the heading "Beds" and one with the heading "Chairs."

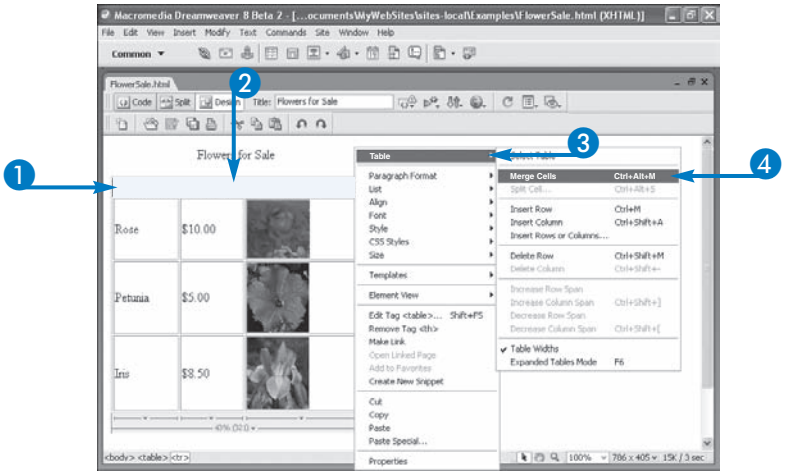
You can create a cell that spans two or more other cells by merging cells. If the cells contain content, the content from all the cells is retained in the merged cell. No content is lost.

You can merge a cell using a menu or using the Property inspector. This section describes merging a cell using the submenu that displays when you right-click the selected cells. You can also merge cells from the Modify menu. The Property inspector provides a Merge Cells button ( ) that you can use. The button is in the expanded section of the Property inspector. If you do not see the button when you open the Property inspector, click to expand the Property inspector.

Merge Table Cells

1. Select the cells to merge.

   Here the three header cells are selected.
2. Right-click in one of the selected cells.
3. Click Table.
4. Click Merge Cells.



Dreamweaver merges the three cells into one cell.

The text is kept in the one merged cell and, because the text is centered in the single cells, it is also centered in the merged cell.

Turn Off Table Borders

You may not want the table borders showing on your Web page. In particular, if you are using tables to layout your Web page, you seldom want the table borders to show.

With borders turned off, Web page visitors do not see your tables and do not know the tables are there. You can use different backgrounds or background colors for different table elements to show the different sections of the Web page; or, use a single background color or image to hide the sections. The background color for a cell is set using the Property inspector. Changing the background color of table elements is explained later in this chapter.

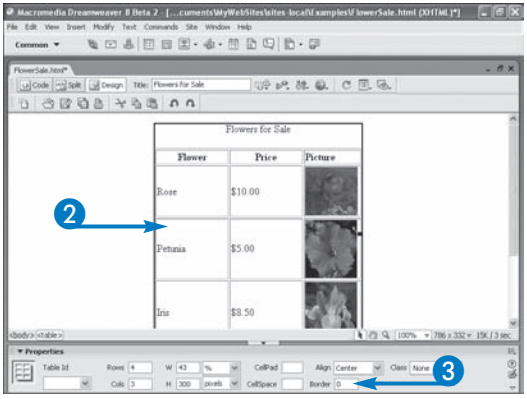
Sometimes when you turn the table borders off, the table contents can look too crowded. You can provide separation between your rows, columns, or cells by adding space between cells or between the cell border and the content of the cell. See the section "Format Table Cells," later in this chapter.

Turn Off Table Borders

1. Open the Property inspector.

Note: *See Chapter 2 to open and close the Property inspector.*

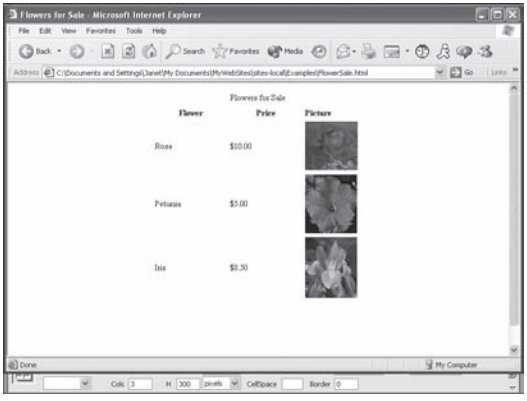
2. Select the table.
3. Type **0** in the Border field.



The borders disappear.

4. Click File and select Preview in Browser.

The browser displays the Web page without table borders.



Format Table Borders

You can modify the appearance of your table borders to make them complement the style of your Web site content. You can change the color of the borders and the width of the outside borders.

You can change the color of the table borders in the Property inspector. A setting for the border color appears when a table or table element is selected. You can set the borders for a table and all borders are the same color. You can also set the border color for a column, row, or cell individually, setting different elements to different colors.

You can change the border colors using the Property inspector. You specify the color of the borders just like you do the color of Web page text or the page background — by selecting from a pop-up color palette or by specifying the color name or hex code. Changing background colors is discussed in Chapter 5.

If the table characteristics for your site are left unspecified, most browsers display table borders in gray, with a width of one pixel.

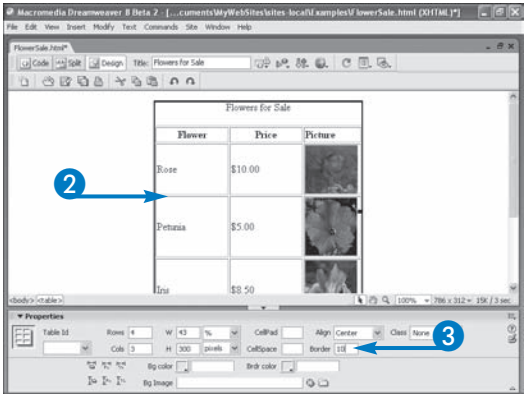
Format Table Borders

1. Open the Property inspector.

Note: *See Chapter 2 to display the Property inspector.*

2. Select the table.
3. Type a value for the border width.

   Dreamweaver widens or thins the table border in response to the value you entered.

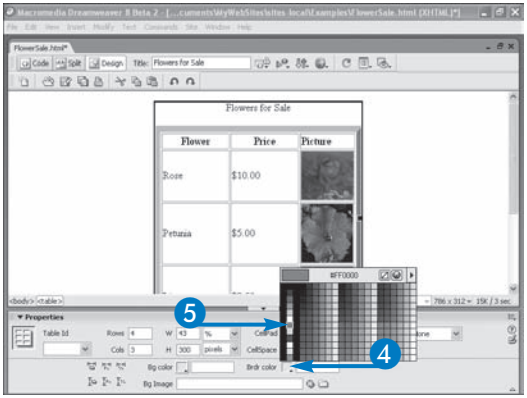


4. Click the Border color box.

   The color grid appears.

5. Click a color.

   Here, red is clicked.

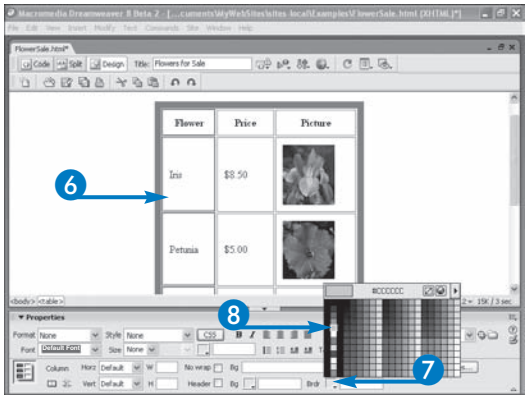


The borders become red.

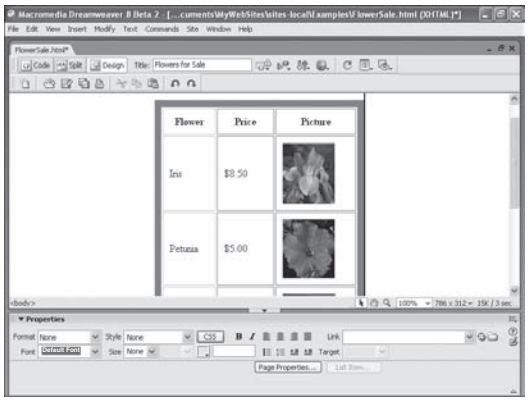
6. Select a column.
7. Click the Border color box.

   The color grid appears.
8. Click a color.

   Here, light gray is clicked.



Dreamweaver changes the column borders to light gray.



MASTER IT

How can I change the color of the space between the cells?

The space between the cells is part of the table background. The color displayed between the cells is the color of the table background. You can change the table background (described later in this chapter) to the color you want between the cells. This changes the color of all the spaces between all the cells.

I want the space between cells to be different colors for different columns. Is there any way I can do that?

You cannot do that by formatting the cell borders. You might create the look of different colored spaces between columns by inserting narrow columns between the columns containing content. The narrow columns simulate cell spacing. Change the cell spacing to 0 to eliminate the existing spaces between cells. You can set the background color of your simulated cell spacing to the colors you want.

Can I change the color of a border between two cells without changing the color of the other borders of either cell?

No. You cannot change the color of individual borders of cells. If you change the border color for a cell, all the borders of the cell change color. The borders between cells are really two borders — one from each cell. If you change the color of one cell, all its borders change color, including half the border you can see between the changed cell and its neighbor.

Format Table Cells

Each cell in a table functions as a small Web page. The cell content displays as it would in a Web page. Consequently, you can format the cell content the same way you format the content of your Web page: formatting the text size, font style, text color, text alignment, and so on.

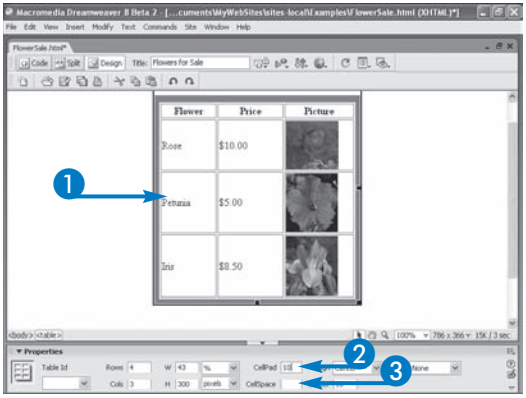
In addition, table cells can be formatted using two settings specifically for tables. You can set the space between cells, called *cell spacing*, and the amount of space between the cell borders and the table content, called *cell padding*. Cell spacing and padding are set at the table level for all cells. You cannot specify different spacing or padding for different cells.

Both types of settings are changed using the Property inspector. If you click a cell, the cell properties open. You can change the settings for the cell content using the methods described in Chapter 4. If you select the table, the table properties open and you can change the cell spacing and padding.

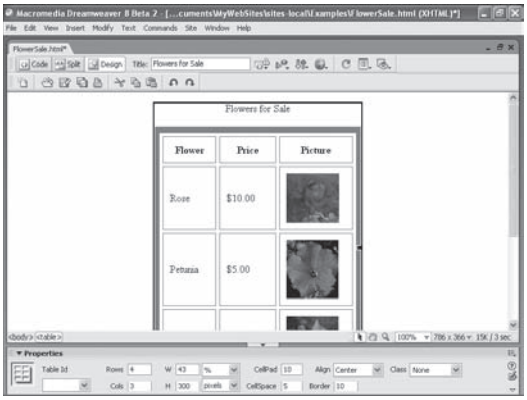
When the cell properties are open, the Page Properties button is available. You can click it and set the page properties as described in Chapter 4. However, the properties set for the page apply to the entire table, including the headers, not just to a single cell.

Format Table Cells

1. Click a border to select the table.
2. Type a value for the cell padding.
3. Type a value for the cell spacing.



Dreamweaver formats the cells with the specified pixels of cell padding and spacing between cells.



Move Cell Content

While designing your Web page, you may design and redesign your tables several times. When redesigning a table, you may want to move some of the contents from one cell to another. Moving cell contents is easy in Dreamweaver. You can move cell contents by cutting and pasting, using the same methods available in many other software applications.

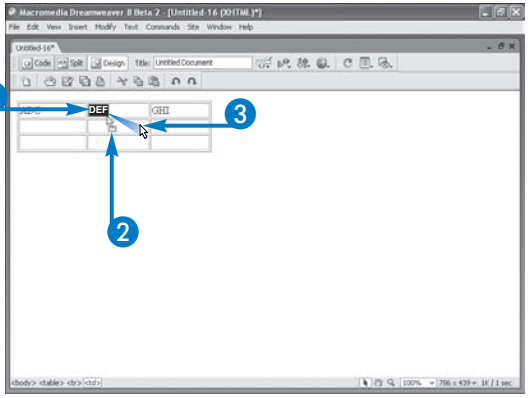
Dreamweaver also lets you drag cell content from one cell to another. You can drag all or part of a cell's content. You can move content into an empty cell or to a cell that contains content.

When content is moved to another cell, it retains its existing format, such as size, font, and so on. It does not change its format to match the format of content already in the target cell.

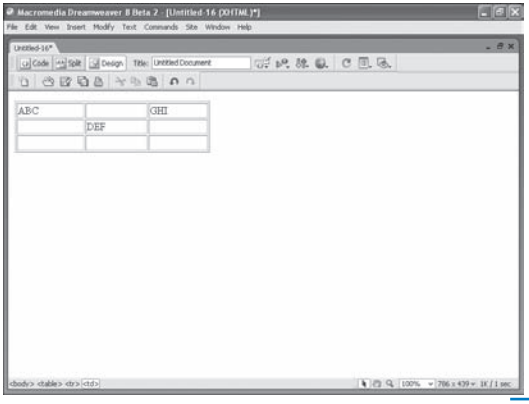
Move Cell Content

1. Highlight the cell contents you want to move.
2. Click highlighted cell content.

   changes to .
3. Drag the content to a new cell.



Dreamweaver moves content to a new cell.



Change the Table Background

You can change the background of table elements so that your table matches your Web page design. You can change the background of the entire table, a column, a row, or a cell or block of cells.

The background of a table element can be a solid color or an image. When you specify an image for the background that is smaller than the size of the background, the image is inserted repeatedly until the space is filled, which is called *tiling*.

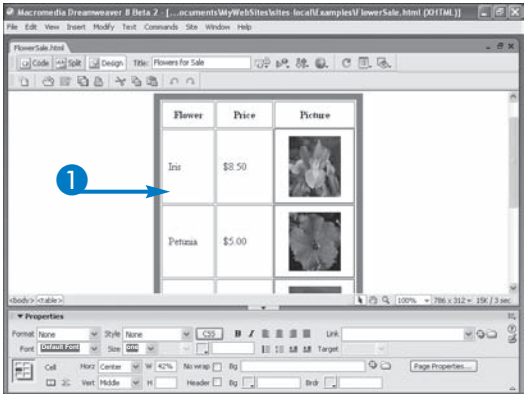
If you specify a background image that is larger than the size of the background, the cell does not expand to make room for the image. Only the section of the image that fits in the cell shows in the background, starting with the upper left corner of the image. Any part of the image that does not fit in the cell does not display at all.

You can specify both a background color and a background image. In this case, the image is placed on top of the background. In most cases, you cannot see the background color when you also specify an image. However, a GIF image can be made transparent, meaning the background color underneath the image shows through the image.

Change the Table Background

1. Select a cell or block of cells.

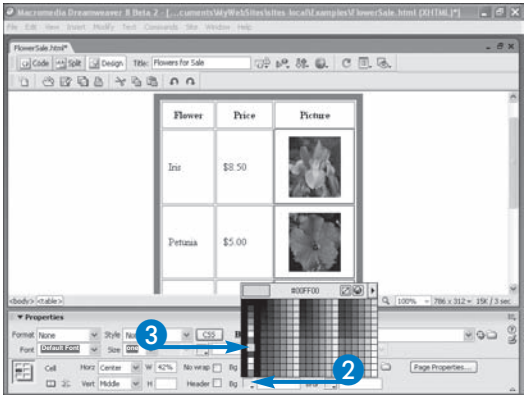
Note: *See the section "Select a Table Element" to select cells.*



2. Click the background color grid box.
3. Click a color.

   Here, green is selected.

   The background of the selected cells changes to the color you chose.



4 Click .

The Select Image Source dialog box appears.

5 Click here and navigate to the folder containing the image file.

6 Click the image file.

- A preview displays.

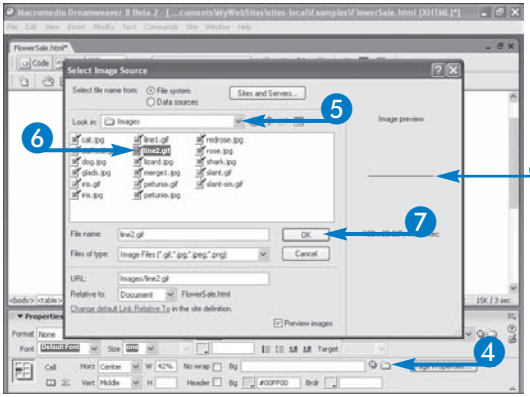
Here, the image is a single horizontal line with a transparent background.

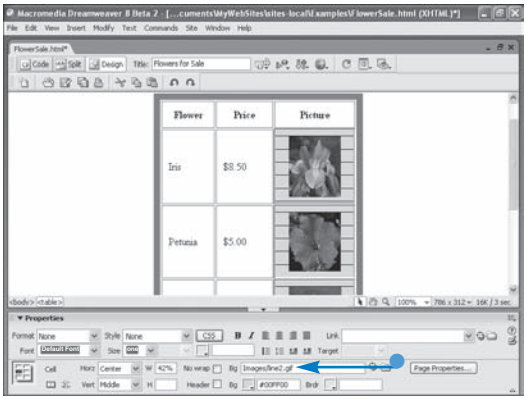
7 Click OK.

The image file tiles to fill the background of the selected cells.

The background cell color shows through the image because the image is transparent.

- The Property inspector shows the path/filename of the image file.





How do I tell Dreamweaver to make the background image transparent?

Dreamweaver does not change the image. Dreamweaver only inserts an image into the designated place in the Web page. Dreamweaver may also resize the image. It does not, however, alter the image itself, other than to display it larger or smaller.

You use your graphics software, such as Photoshop, to create and/or edit the image. Most graphics software can make the background of a GIF image transparent.

How can I format my table rows to have alternating background colors?

Dreamweaver provides a command that assists you to format your table with alternating colors. After your table is completed, you can apply a format. Click Command, Format Table. A dialog box opens that allows you to select predefined color schemes or to create your own. See the section "Using Dreamweaver Table Designs," later in this chapter, for further information.

Using Dreamweaver Table Designs

Using color in your backgrounds can make your table more attractive. Some more complex color schemes, such as alternating colors on every row or every two rows, improve the look of your Web page. In addition, some tables are more easily understood with alternating colors that help the eye to move from cell to cell in the same row.

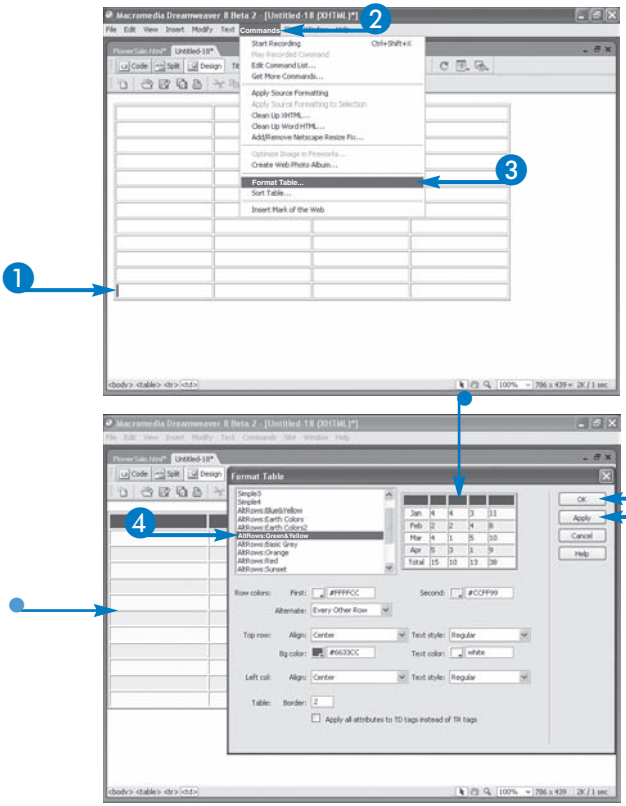
When you have a large table, perhaps hundreds of rows, formatting each row separately can be daunting.

Dreamweaver provides a feature that assists you to apply an alternating color design to your entire table by changing settings in a dialog box.

You can set the colors to alternate every other row, every two rows, every three rows, or every four rows. You can also set the top row or the first column to another background color, and bold, italicize, or change the text color so that your headings can stand out.

Using Dreamweaver Table Designs

1. Click in a table.
2. Click Commands.
3. Click Format Table.



The Format Table dialog box appears.

4. Click a design.
   - The dialog box shows a preview.

Note: *You can change any design colors or formatting using the fields and color boxes.*

5. Click Apply.
   - Dreamweaver applies the format design to the table.
6. Click OK.

Sort a Table

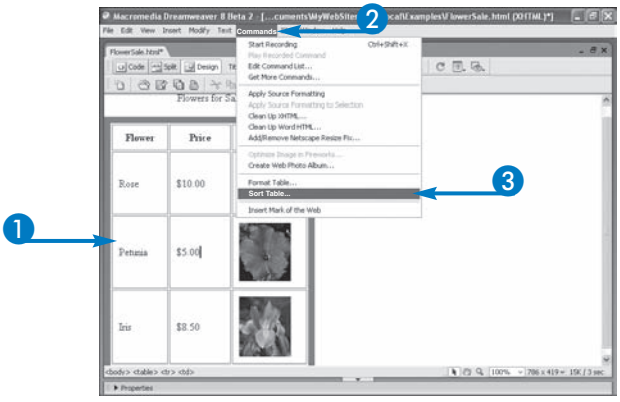
Table contents may be in an undesirable order. For example, data is often entered into a table in the order it is received, but the final table needs to be in alphabetical order. Dreamweaver can sort a table for you.

Dreamweaver provides several options for sorting. You can sort the table based on either one or two columns. You can select any column as the primary sort column and any other column as the secondary sort column. You can sort alphabetically or numerically in either column, or in both columns. You can sort in the ascending or descending direction.

Dreamweaver also lets you specify how the first row or the headers are handled. By default, Dreamweaver does not include the first row in the sort, nor does it sort the headers. However, you can check options that tell Dreamweaver that you want to include the first row or the headers in the sort.

Sort a Table

1. Create or open a table with data to be sorted.
2. Click Commands.
3. Click Sort Table.

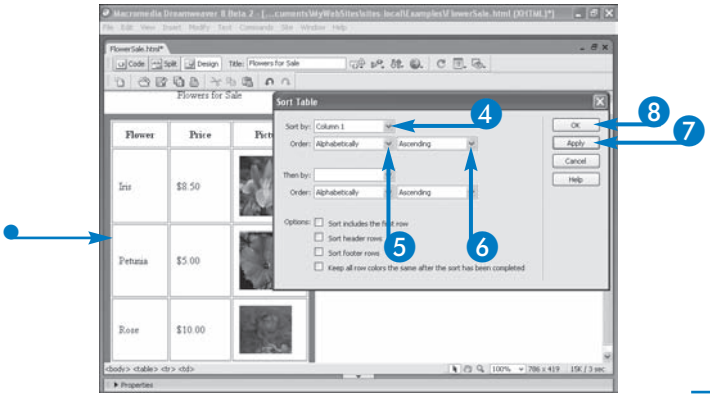


The Sort Table dialog box appears.

4. Click here and select a column to sort on.
5. Click here and select type of sort.
6. Click here and select sort direction.

Repeat steps 3 to 5 for a second sort column if needed.

7. Click Apply.
   - Dreamweaver sorts the table.
8. Click OK.



Create a Layout Table

HTML tables are used frequently to organize a Web page, with table cells serving as containers for the contents of the Web page. Creating a layout table for a Web page is so common that Dreamweaver provides a special layout mode for creating layout tables. Layout mode provides tools that help you to draw your table and its cells on your Web page.

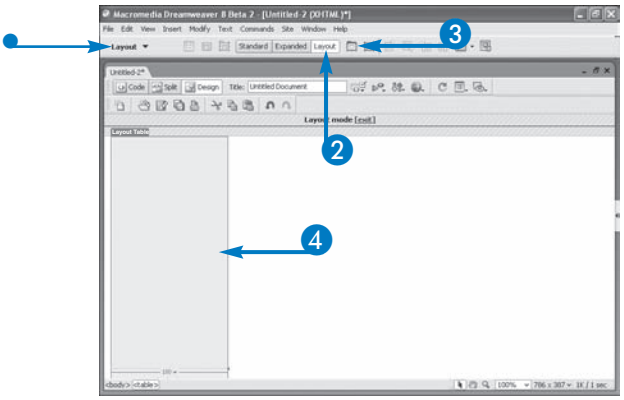
Layout mode provides buttons that let you create rectangular sections on your Web page. A common design method dictates that you draw one layout table that encompasses the entire Web page, and then draw cells inside the layout table. However, you can use more than one layout table. If you draw a cell in the Web page directly, without a layout table, Dreamweaver automatically creates a layout table and creates the cell inside the table.

Layout cells come in two types: *fixed width* and *autostretch*. Fixed width cells are defined in pixels and remain the same width, even when the browser window shrinks or expands. Autostretch cells expand to the edge of the window, changing size when the browser window changes size.

Create a Layout Table

1. Open a new Web page.
2. Click the Layout button.
   - The Layout Insert toolbar must be open.
3. Click the Create Layout Table button ( ).

   is now a + when you move it over the Web page.
4. Click and drag a rectangular layout table on the Web page.

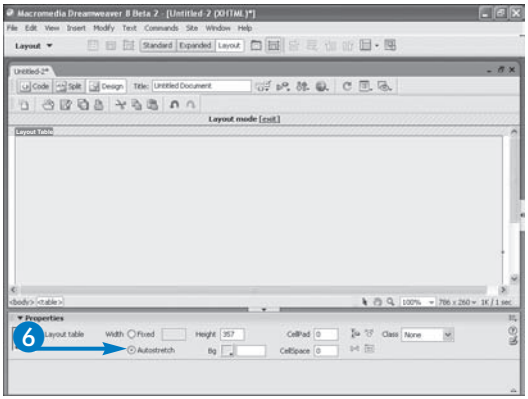


5. Open the Property inspector.

Note: *See Chapter 2 to open and close the Property inspector.*

6. Click Autostretch (changes to).

   The layout cell expands to fill the entire Web page.



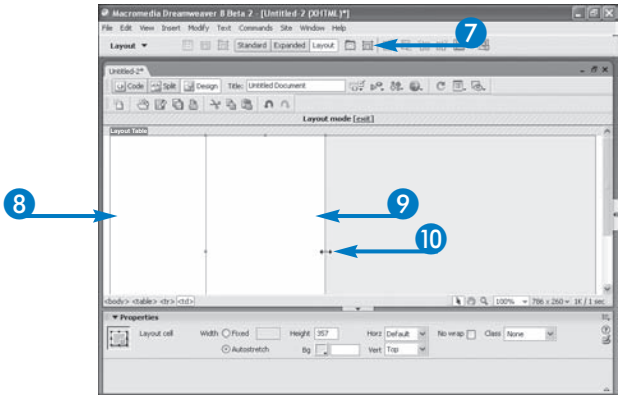
7 Click the Create Layout Cell button ( ).

8 Click and drag a rectangular cell.

9 Repeat step 8 until you create all the sections for your Web page.

10 Click and drag the right cell handle.

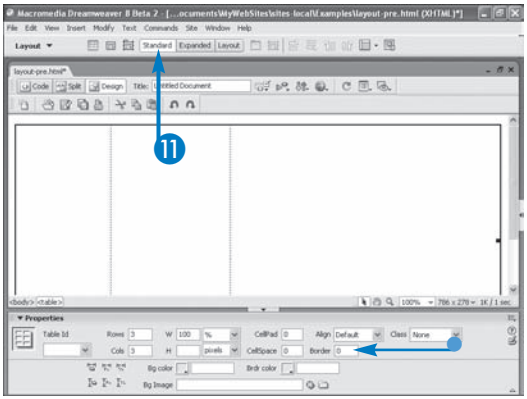
The cell does not expand beyond the layout table edge.



11 Click Standard.

Dreamweaver displays the table in standard mode.

- Layout tables are created without borders.



Can I quickly create a layout table that encompasses the entire Web page?

Yes. Click the Layout Cell button ( ) and draw a cell. Dreamweaver automatically creates a layout table that covers the entire Web page before creating the layout cell. Then, Dreamweaver creates the layout cell inside the layout table.

Can I nest layout tables?

Yes. You can nest layout tables inside other layout tables. However, you cannot insert a layout table into layout cells.

You can draw both layout tables and layout cells within a layout table, but none of the objects may overlap. Dreamweaver does not allow you to draw overlapping layout tables or cells.

Dreamweaver prompted me about using a spacer. What is a spacer?

Dreamweaver uses a spacer image to maintain the width of a cell when necessary. Spacer.gif is a transparent, 1-pixel image. Dreamweaver adds it with a width and height defined to reserve the space. In a layout table, Dreamweaver uses spacer.gif to maintain fixed-width cells so they do not become smaller.

Import a Table

You may want to import table data that was created in another application, such as Excel, into your Web page. Dreamweaver has an import command that you can use to do this. When you have a large amount of data, importing it saves many hours of typing.

If your table is in a Word or Excel document, written in an Office version newer than Office 97, you can import it directly. On the File menu, choose Import. Click Word Document or Excel Document. If your data is in another application, you can import the table by outputting the table as a delimited text file and importing the text file into Dreamweaver.

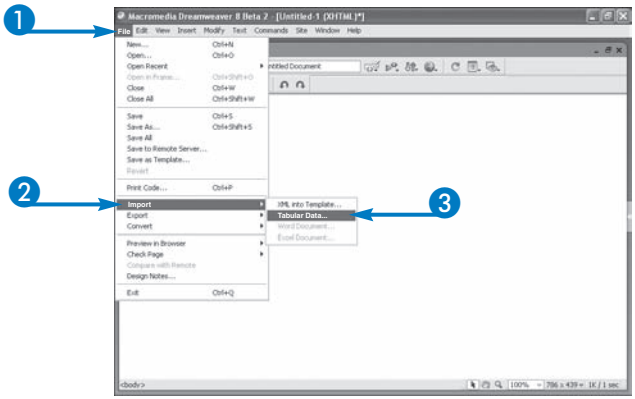
For Dreamweaver to import it, the text file must be formatted in rows with a character, called a *delimiter*, separating each item of data in the row. Frequently, a tab is used to separate the cell data in each row, making it a *tab delimited* file. However, you can use another character as a delimiter. A tab delimited text file looks like this:

```
ABC<tab>DEF<tab>GHI

<tab>123<tab>

QQQ<tab><tab>XXX
```

The <tab> in the above lines refers to pressing the Tab key, not typing the characters as shown. Some cells are empty in the above data. For example, the second row begins with a <tab>, which means the first cell is empty.

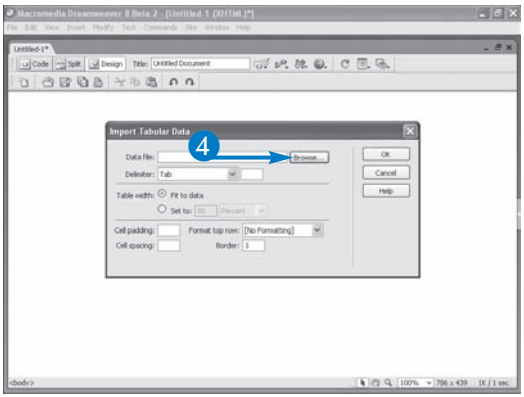
Import a Table

1. Click File.
2. Select Import.
3. Click Tabular Data.



The Import Tabular Data dialog box appears.

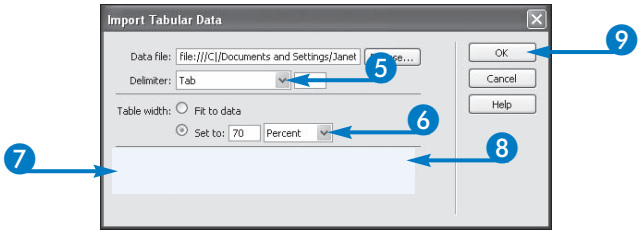
4. Click Browse and navigate to the file to be imported.

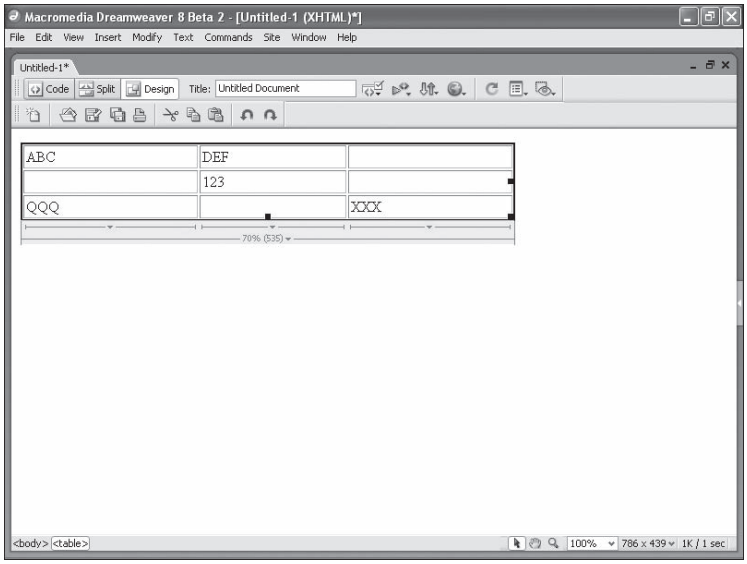


Dreamweaver displays the path to the file.

5. Click here and select the delimiter character.
6. Click the type of table width desired.
7. Fill in data for the padding, spacing, and top row.
8. Select formatting for the top row if it is a header.
9. Click OK.

Dreamweaver inserts the table from the delimited text file.





Can I bring a table from Dreamweaver into another application?

You can move your Dreamweaver table into another application via a delimited text file. Dreamweaver can save your table into a delimited text file. Many other applications, such as Excel, can open and read a delimited text file, recreating the table that exists in your Dreamweaver Web page.

To create the delimited text file, click File, select Export, and click Table. The Export file dialog box opens and you can select which character you want to use as a delimiter, such as a tab or a comma. Click Export to create the delimited text file.

When I try to cut and paste a table from MS Word 97 into Dreamweaver, the table data is inserted as text, not as a table. How can I copy a Word 97 table into Dreamweaver?

Office versions 97 and earlier cannot be imported directly into Dreamweaver using the Import command. One simple way to copy a table from Word or Excel 97 into Dreamweaver is to save the document containing the table in HTML format. You can then open the saved HTML file in Dreamweaver and use any Dreamweaver features on the table, such as copying and pasting the table from this file into another file open in Dreamweaver.

Using Forms

Often you want to collect information from visitors to your Web site. For example, if a customer purchases a product on your Web site, you need a name, address, and other information so you can ship the product and charge the customer. You can collect this information using HTML forms: the visitor fills in the information and submits the form.

To create a form, you first create a basic container and then add the components of the form, such as text fields, radio buttons, and submit buttons (also called *form objects*). This chapter discusses creating HTML forms on your Web page.

When the visitor clicks the submit button, the information in the form is sent to the Web server. However, neither HTML nor the Web server have the functionality needed to process the form information. You must use a program in another language, such as PHP or ColdFusion, to process the form information. When you create the form, you designate the name of a program that will process the information. The Web server sends the form information to the appropriate language processor, which runs the designated program. Using these languages with Dreamweaver is discussed in Section IV.

Using Forms

1. Open the Property inspector.

Note: *See Chapter 2 to open and close the Property inspector.*

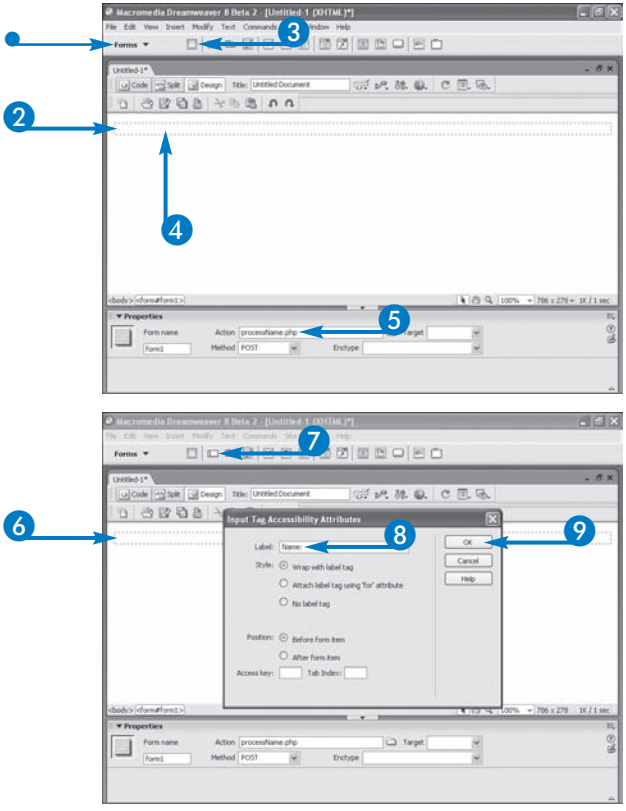
2. Click in the Web page where you want to insert the form.
3. Click the Form button ( ).
   - The Forms category of the Insert toolbar is open.

   Dreamweaver outlines the form in a red dotted line.
4. Click the form outline.

   The Property inspector shows form properties.
5. Type the name of the program you want to process the form information.
6. Click inside the form.
7. Click the Text field button ( ).

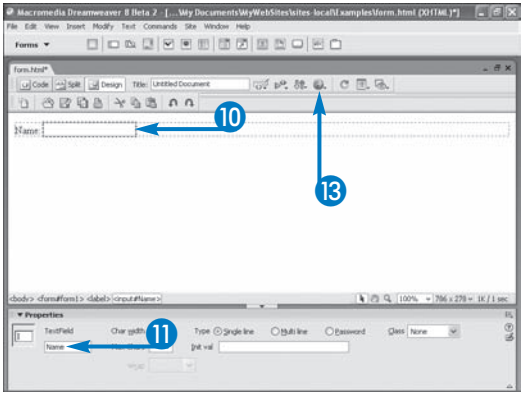
   The Input Tag Accessibility Attributes dialog box appears.
8. Type a label for the text field.
9. Click OK.

   Dreamweaver adds the text field inside the form.



10. Click the text field.
11. Type a name for the field.
12. Add as many form elements as desired.
13. Click .

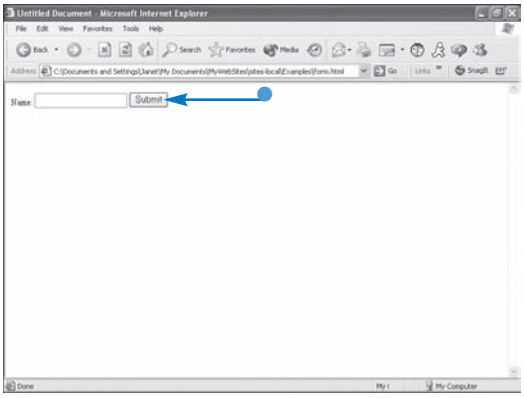
Note: *Forms do not function in Dreamweaver.*



The browser displays the form.

- When a user clicks the Submit button, the program typed in step 5 runs.

If you have not yet set up the processing program, you can check only the form appearance.



When I insert a form, I see nothing in the Dreamweaver Document window. Is something wrong?

The form itself is invisible. The browser displays only the elements inside the form. Dreamweaver can show or hide invisible elements.

Dreamweaver displays the form by outlining it with a red, dotted line. To see the outline of the form, you need to show invisible elements. You can click View, select Visual Aids, and click Invisible Elements. Or you can click the Visual Aids button ( ) and click Invisible Elements.

Which Elements are required in a form?

Well, technically, nothing is required. However, if the form is empty, it does not perform any function. At the least, your form needs a Submit button and one data element — either a field that collects user information or a hidden field.

Are forms a security issue on Web sites?

Any Web site element that allows users to send data to your application is a potential security issue. Malicious text sent via your forms can damage your Web site. The program that processes the form information must screen and filter it carefully. You need to read about security issues related to the language in which your form processing program is written.

Add a Text Field or a Text Area to a Form

Text fields allow users to type in information. Most text fields appear as a one-line field and allow users to type a limited amount of information. Larger text fields, which allow users to type many lines of information, are called *text areas.*

You give your text field a name. This name allows the program that processes the form information to access the information in the form field. Dreamweaver gives the field a default name, which you should change to something that describes the information to be collected in the field. You can also specify a label (text that appears in the Web page to identify the purpose of the field) and a value (text that appears in the field when the browser displays it).

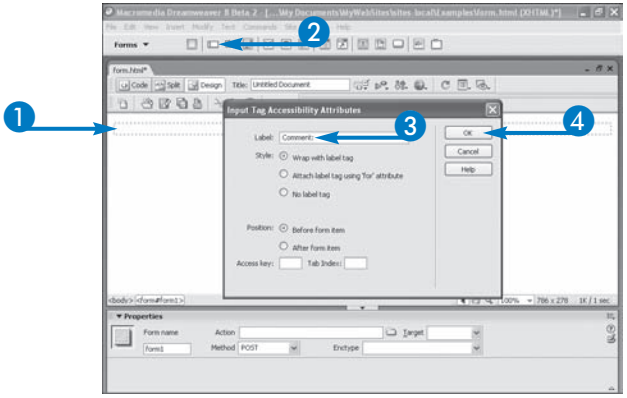
When you add a text field, you specify how many characters or lines the user is allowed to type into the field. The user can enter fewer than the limit, but not more. Specifying a maximum number of characters adds some security to the form, limiting the number of malicious characters that someone who wants to damage your Web site, your hard disk, or your visitor's computer can enter. You can also specify the width of the field to define the appearance of the field.

Your can specify that the field is a password. When the browser displays a password field, it does not display the characters the user types. Instead, it displays a string of asterisks.

Add a Text Field or a Text Area to a Form

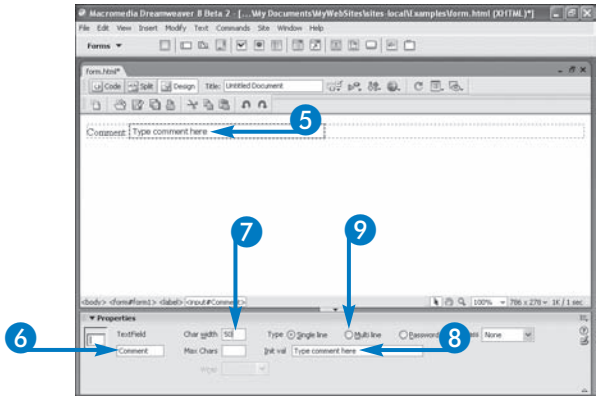
1. Click inside the form.
2. Click .

   The Input Tag Accessibility Attributes dialog box appears.
3. Type a label for the text field.
4. Click OK.



5. Click in the field.

   The Property inspector displays the field properties.
6. Type a name.
7. Type a width.
8. Type a value.
9. Click Multi line (changes to).

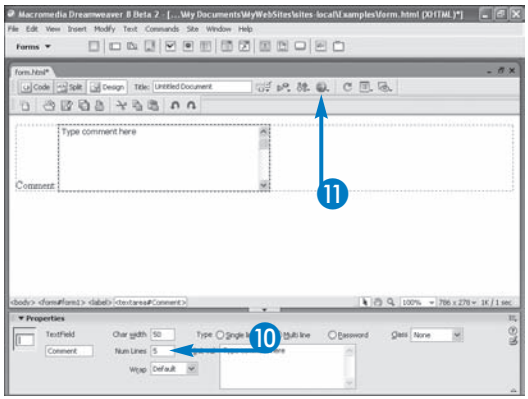


The Text field changes to a multi-line field.

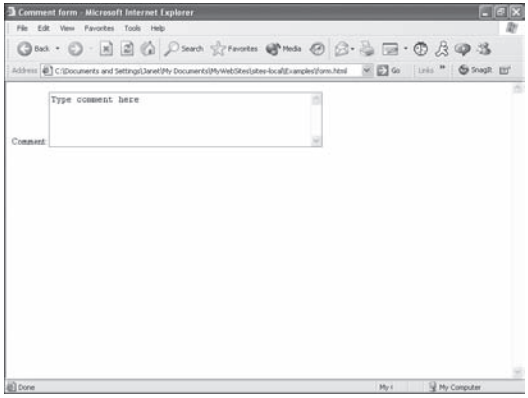
Note: *You can insert a multi-line text area directly by clicking the Text Area button ( ).*

10 Type the number of lines.

11 Click to preview the form in a browser.



The browser displays the form with one multi-line text area.



What happens if I specify a maximum number of characters that is more than the width of the field.

The width of the field is independent of the maximum number of characters the user can type in the field. The width of the field is the size of the field that appears in the browser window. It defines the physical size of the field that the user sees. For example, you might want to specify all the fields to be the same width because it looks nice.

The maximum characters is independent of the width. If the width is shorter than the maximum characters, the field scrolls to allow users to keep typing when they reach the end of the field.

What does the Wrap setting shown in the Property inspector for a multi-line text field do?

Wrap refers to how the text is handled when it reaches the edge of the field. Default allows the browser to determine how to wrap the text.You can set Wrap to off, virtual, or physical.

The Off setting turns off word wrapping. The text just continues on in a single line. Users must add the line breaks by pressing Enter.

The Virtual and Physical settings both automatically wrap the text in the text field window. However, the Virtual setting sends the text to the form processing program in a single line, without the line break information, and the Physical setting sends the line break information with the text.

Add Radio Buttons to a Form

Radio buttons allow users to make choices in a form. Radio buttons appear in the form as circles that the user can click. Radio buttons are usually added in a set. The user can click only one button in the set. If the user clicks one and then clicks the second, the first radio button is no longer selected. If you want the user to be able to select more than one item in a set of items, use checkboxes, described in the section of this chapter called "Add Checkboxes to a Form."

Radio buttons, like other elements on a form, have a name. To define a set of radio buttons, all the buttons in the set receive the same name. Dreamweaver can add either a single radio button or a set of radio buttons.

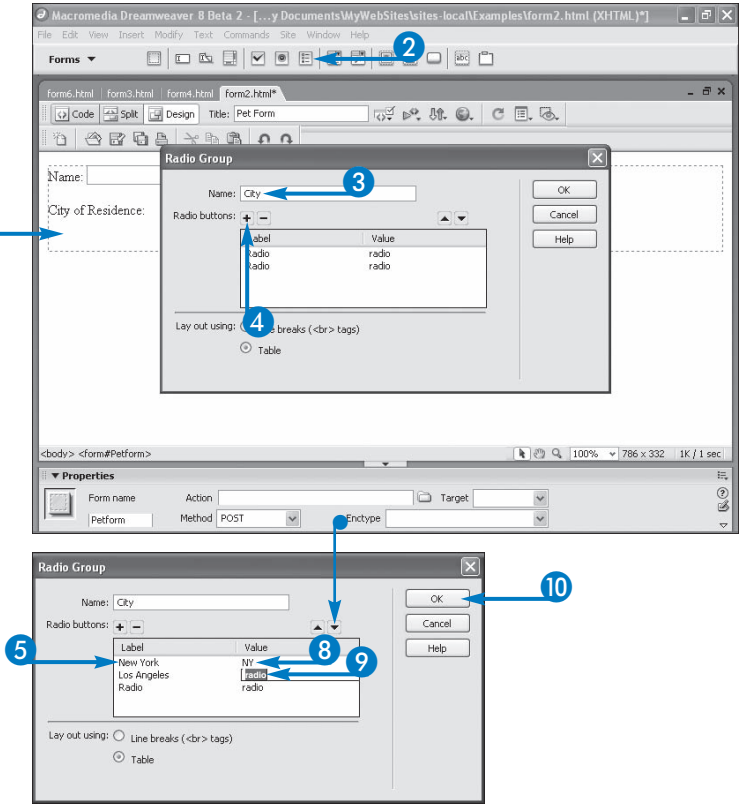
Each radio button is given a label. The label appears beside the radio button in the Web page so that the user knows which one to click. For example, labels might be "Male" and "Female."

Each radio button is given a value. The value is passed to the form processing program when the form is submitted. The form processing program uses the radio button name to access the value.

Add Radio Buttons to a Form

1. Click the mouse on the form where you want to add the radio buttons.
2. Click the Radio Group button ( ).

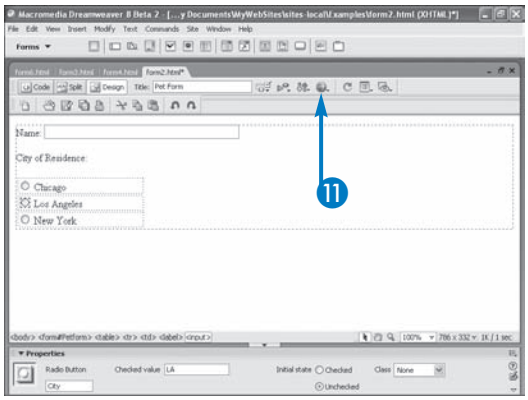
   The Radio Group dialog box appears.
3. Type a name for the group.
4. Click or until the right number of items appears in the Radio Buttons list.
5. Click the first "Radio" under Label.
6. Type the value you want to appear in the Web page.
7. Click the first "Radio" under Value.
8. Type the value you want to be passed in the form for this radio button.
9. Repeat steps 5 to 8 for each radio button.
   - Click and to move items up or down in the list.
10. Click OK.



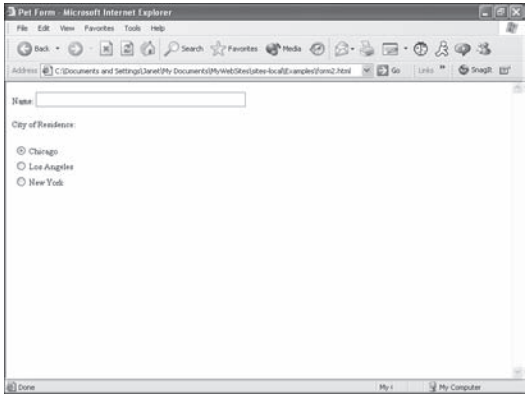
Dreamweaver adds the radio group to the form.

11 Click .

Buttons do not function in Dreamweaver.



The browser displays radio buttons.



Does the value need to be the same as the label for a radio button?

The value and the label are often the same, but they are not required to be the same. For example, a set of radio buttons might have the labels "Male" and "Female." The values can be the same; however, if you want, you could set the values to "M" and "F" or "1" and "2."

How can I sort a set of radio buttons?

You can sort them manually while you are entering the set in the Radio Group dialog box. Select a line and click the up or down arrow in the right corner above the list to move the line up or down.

If you add your radio button group in a table, as shown in this section, you can then format the group using any table functions. Chapter 7 describes tables. To sort the buttons, you can select the table and use the Sort Table command found in the Commands menu.

Add Checkboxes to a Form

Checkboxes allow users to make choices in a form. Checkboxes appear as boxes that the user can check on the form. Each checkbox is an independent element — a yes or no choice. If the user checks the check box, the information for the checkbox is submitted with the form. If the user does not check the box, no information for the checkbox is submitted with the form. Thus, users can check as many boxes in a list of boxes as they want. If you want the user to be able to select only one choice, use radio buttons, described in the section "Add Radio Buttons to a Form."

Checkboxes, like other elements on a form, have a name. Dreamweaver gives each checkbox a default name, which you can change using the Property inspector.

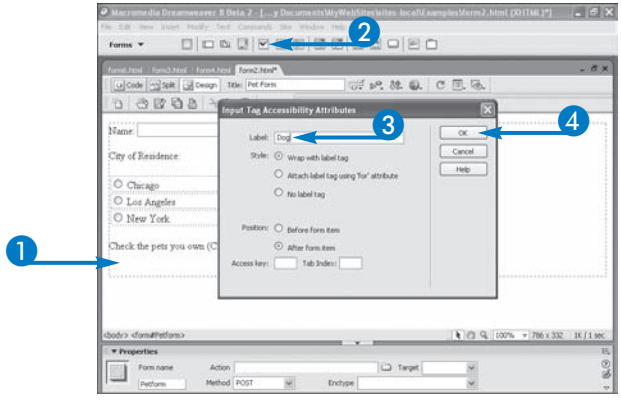
Each checkbox is given a label. The label displays beside the checkbox in the Web page so that the user knows which one to click. For example, labels might be "Dog" and "Cat."

Each checkbox is given a value. The value for each checked checkbox is passed to the form processing program when the form is submitted. The program uses the checkbox name to access the value. The value can be any combination of letters or numbers that you want. Often the value is the same as the label, but it doesn't need to be.

Add Checkboxes to a Form

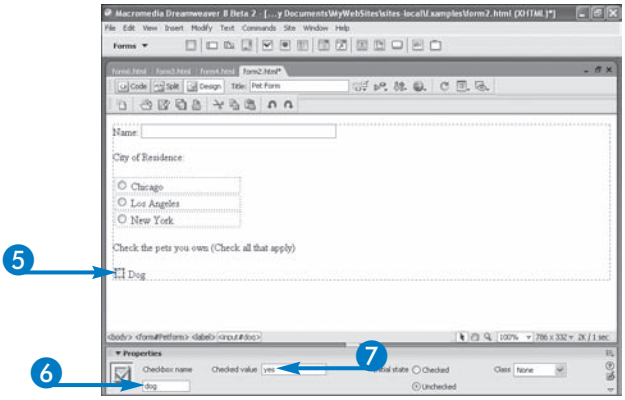
1. Click where you want to insert a checkbox.
2. Click the Checkbox button.

   The Input Tag Accessibility Attributes dialog box opens.
3. Type the text that you want to appear beside the checkbox.
4. Click OK.



Dreamweaver places the checkbox on the form.

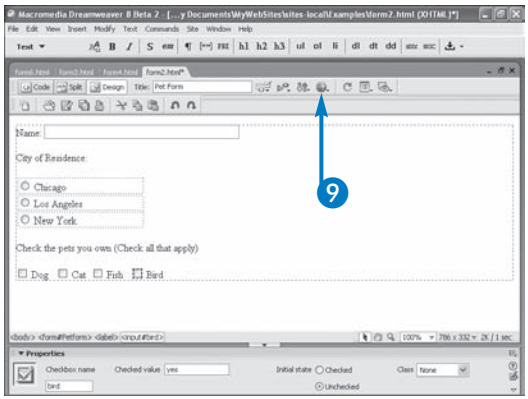
5. Click the checkbox.
6. Type a name for the checkbox.
7. Type a checkbox value.
8. Repeat to add all needed checkboxes.



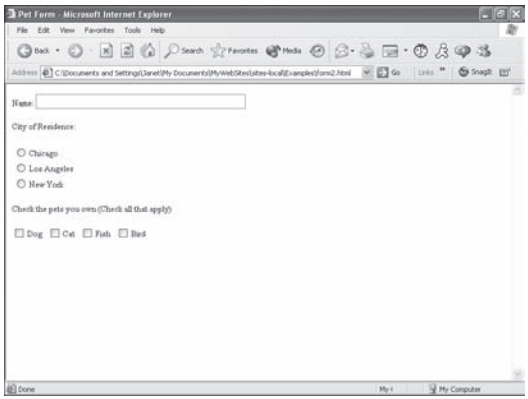
Dreamweaver displays all checkboxes.

9 Click .

Checkboxes do not function in Dreamweaver.



The browser displays the checkboxes.



Does the value need to be the same as the label for a checkbox?

The value and the label are not required to be the same. For example, a checkbox might have the label "Dog." You can set the value to `dog`; however, the value could also be set to `yes`, `1`, or any other value.

What happens if I give the same name to a set of checkboxes?

The program that processes the form information will not be able to access all the information. The program uses the name to access the value. If it receives more than one value with the same name, the program cannot handle all the values. In most cases, the program will only be able to process the last value received.

Can I display the label before the checkbox instead of after it?

Yes. The location of the label is determined in the Input Tag dialog box when you add the checkbox. By default, After Form Item is selected. You can check Before Form Item to change the label location.

Add a List of Options to a Form

Lists allow a user to select options. A list can present many choices, using a small amount of space in the form. Dreamweaver can add two types of lists: a menu and a list. A *menu* type of list is a field with a down arrow beside it. When a user clicks the arrow, a list of choices appears. The user can select only one choice. A *list* type of list is a field with a scroll bar. The user can scroll through a list of options. A list can be defined to allow only one choice or more than one choice.

Lists, like other elements on a form, have a name. Dreamweaver gives each list a default name, which you can change. The program that processes the form information accesses the information using the list name. A list can also have a label, which is displayed beside the list.

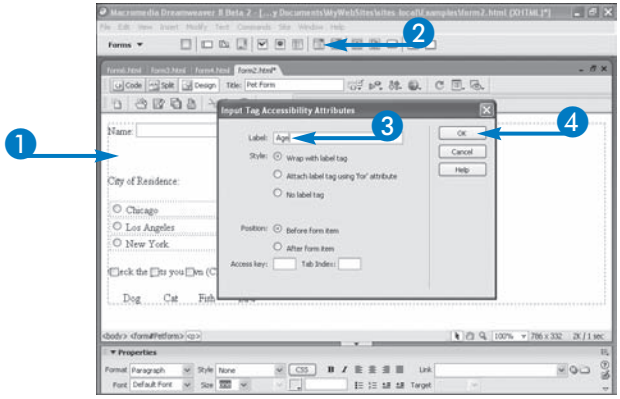
Each option in the list has a value. The value for the selected item(s) is passed, when the Submit button is clicked, to the program that processes the form information. If the list allows multiple selections, all values for the choices selected are passed to the program in a string with commas separating the choices.

Each option in the list is given a label. The label appears in the list box.

Add a List of Options to a Form

1. Click in the Web page where you want to insert the list.
2. Click the List button ( ).

   The Insert Tag Accessibility Attributes dialog box appears.
3. Type a label for the drop-down list.
4. Click OK.

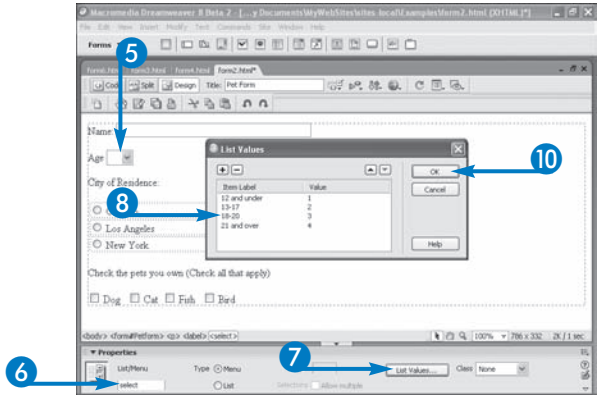


Dreamweaver adds an empty drop-down list.

5. Click the list.
6. Type a list name.
7. Click the List Values button.

   The List Values dialog box appears.
8. Click an item label or value to type in a new label or value.
9. Repeat until all the items you want in your list are in the list box.

   Click ⊞ to add an item if needed.

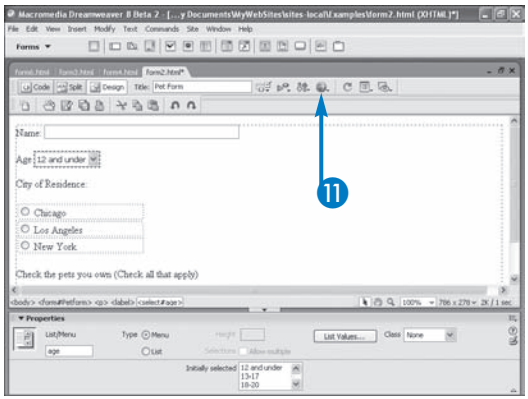


10 Click OK.

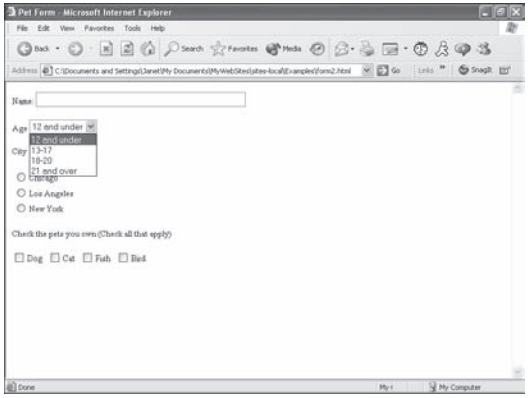
Dreamweaver adds the items to the drop-down list.

11 Click .

The list does not function in Dreamweaver.



The browser displays the drop-down list.



Can I specify the width of a list?

No. The list is as wide as its widest option, plus the width of the drop-down arrow or the scroll bar.

To change the width, you can make the options in the list shorter or longer. To make the list wider, you can add spaces to the end of the longest option, but not by inserting regular spaces with the space bar. You must insert non-breaking spaces. The dialog box does not accept non-breaking spaces, so you must insert them directly into the code in Code View. Non-breaking spaces are discussed in Chapter 4.

What are the settings that appear when I select List, instead of Menu, in the Property inspector?

A Dreamweaver List has two options that a Dreamweaver Menu does not have. First, you can set the height of the list. The browser displays the number of lines you set, with a scroll bar to see the remaining options.

The second setting for a list is the number of selections setting. A list can allow either one selection or many selections. In the Property inspector for the list, you can set whether you want users to be limited to one selection or not.

Add a File Uploading Field to a Form

You can allow users to upload files to your Web site. Many applications require users to upload files, such as uploading documents to a company intranet, uploading resumes and job announcements to a job site, or uploading images to albums.

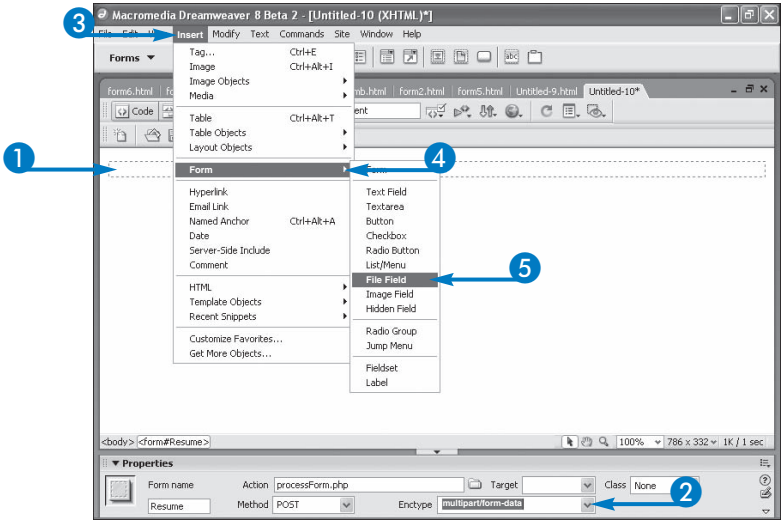
Files can be uploaded via a form. Dreamweaver provides a File Uploading field that you can add to a form. The field appears in the browser with a Browse button beside it. When the user clicks the Browse button, a Choose File window opens. The user can navigate to the file to be uploaded. The path to the file selected by the user is displayed in the File Uploading field. When the user clicks the submit button, the file is uploaded.

The program that processes form information manages the file uploads. It accepts the file and stores it in the appropriate location. Allowing anonymous users to upload files can be a security risk. The uploaded file might be a program written by a bad guy with ill intentions. The files need to be managed carefully and stored where they can do no harm.

In order to upload a file, the form enctype must be multipart/form-data, and the form method must be POST.

Add a File Uploading Field to a Form

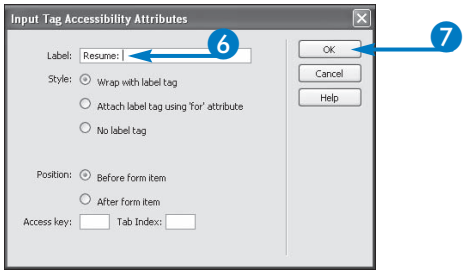
1. In Design view, click in the form.
2. Click here and select multipart/form-data.
3. Click Insert.
4. Click Form.
5. Click File Field.



The Input Tag Accessibility Attributes dialog box appears.

6. Type a label for the File Uploading field.
7. Click OK.

Dreamweaver places a file uploading field on the form.



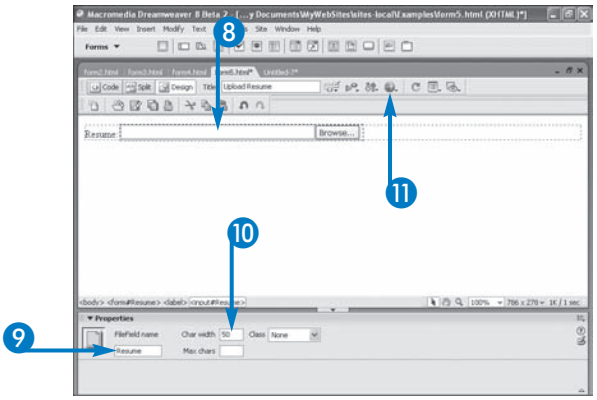
8 Click the file field.

The Property inspector displays the file uploading field properties.

9 Type a name for the file uploading field.

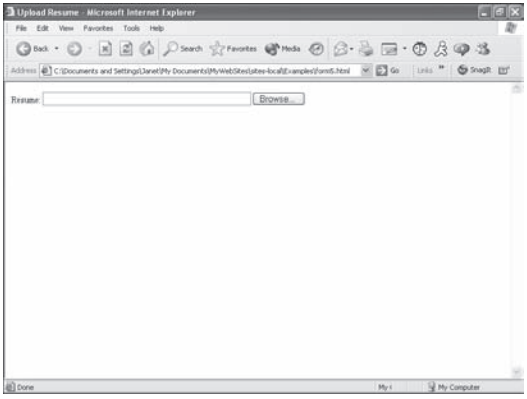
10 Type a width.

11 Click .



The browser displays the file uploading field.

Clicking the Browse button opens the Choose File dialog box.



What is the default for the maximum characters allowed and the width of the field?

The default value for maximum characters the user is allowed to type is unlimited. Users can type as many characters as they want. You are advised to set a limit. For a file field, the limit needs to accommodate a reasonable-length file path.

The default value for width depends on the browser. Many set the length at 20 characters.

What happens if I specify a maximum number of characters that is more than the width of the field?

The width of the field is independent of the maximum number of characters the user can type in the field. The width of the field is the size of the field that displays in the browser window. If the width is shorter than the maximum characters allowed, the field scrolls to allow users to keep typing when they reach the end of the field. Be sure the maximum characters allowed setting is enough to allow a fairly long file path.

Add Hidden Information to a Form

You can add information to a form that will not be displayed by the browser. A hidden form field allows you to add information to the form for your own purposes. For example, you might want to identify the form or you might add information to be used only by the program that processes the form. However, information in hidden form fields is not secret. The information is included in the HTML source to the Web page and can be viewed by any user who clicks View, Source in their browser.

When you add a hidden field to a form, Dreamweaver, as with other form elements, gives it the default name of hiddenField. You can change the name to something more meaningful. The program that processes the form information accesses the information using the name.

You can add a value to the hidden field in the Property inspector. The name and the value are sent together to the program that processes the form information. In HTML code, the hidden field looks similar to the following code:

```
<input name="Form" type="hidden" id="Form"
value="1075" />
```

A hidden field is an invisible object in the form. Dreamweaver inserts a marker where the hidden field is located. To see the marker, you need to show invisible elements. You can click the Visual Aids button and then click Invisible Elements.

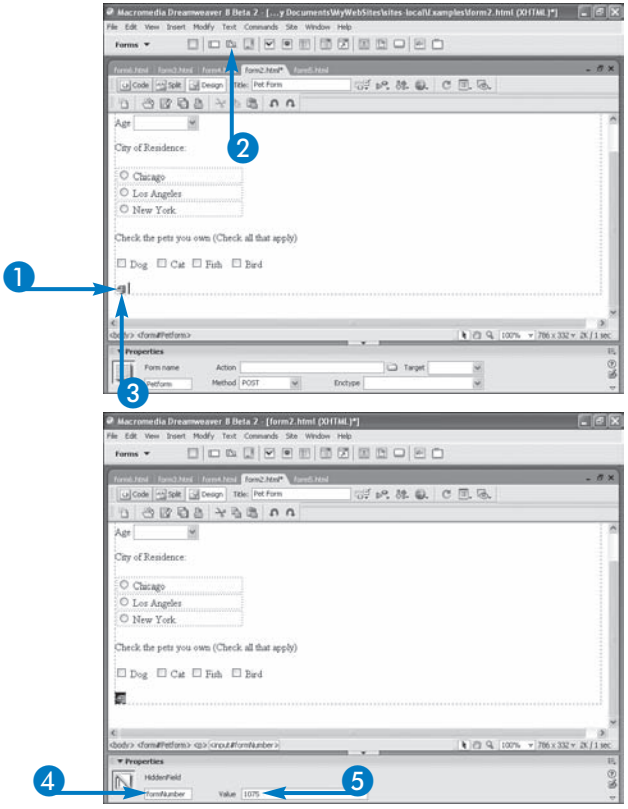
Add Hidden Information to a Form

1. In Design view, click in the form.
2. Click the Hidden Field button ( ).

   Dreamweaver inserts a marker to show that the hidden field is there.
3. Click the marker.

   The Property inspector displays the Hidden Field properties.
4. Type a name for the hidden field.
5. Type a value for the hidden field.

   When the browser displays the form, the hidden field is invisible.



Add a Button to a Form

You can add one or more buttons to a form. Buttons are used to submit or reset forms. At the very least, each form needs one Submit button. The information in the form cannot be collected unless the user submits the form by clicking this button.

Dreamweaver lets you create two types of buttons: a Submit button and a Reset button. The Submit button sends the information from the form to the program that processes the form information. When a user clicks a Reset button, the form is reset, not submitted. The user sees a new, blank form.

A button is given a name. Dreamweaver gives the button a default name, which you can change in the Property inspector.

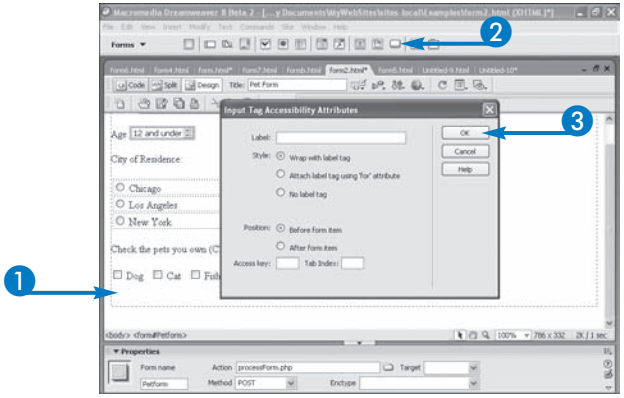
A button has a value. You can type the value in the Property inspector. The value is the text that appears on the button when the browser displays the form. The value is also sent when the form is submitted. The processing program can access the button value using the button name.

You can add more than one Submit button to a form. For example, you might want to add a Submit Order and a Cancel Order button to a form. The processing program might perform different actions, depending on which button is clicked.

Add a Button to a Form

1. In Design view, click in the form where you want to insert the button.
2. Click Insert Button ( ).

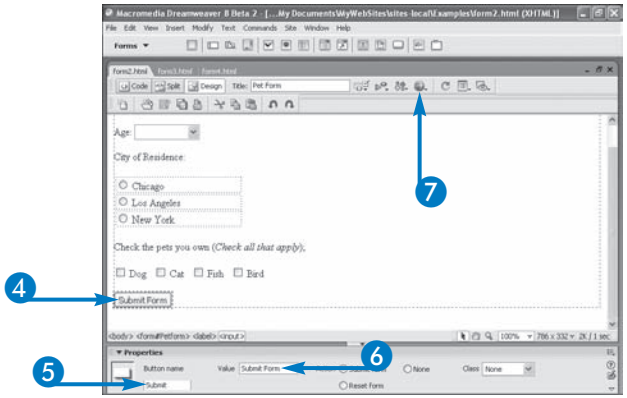
   The Input Tag Accessibility Attributes dialog box appears.
3. Click OK.



   Dreamweaver places a button on the form.
4. Click the button.

   The Property inspector displays the button's properties.
5. Type a name for the button.
6. Type a value for the button.

   The value appears on the button.
7. Click to test the button.



Using Frames

You can divide your browser window into two or more sections, called *frames*, and display a separate HTML document in each frame. Thus, you can change the content in one frame without changing the content of other frames. The most common use for frames is to provide navigation and/or banner frames that remain on the screen as the user moves from page to page in the main content frame. This section creates a page with three frames: a narrow top banner section, a narrow left-side navigation section, and a main content section.

Frames require several HTML files. One file, called the *frameset*, contains the HTML code that describes the frames the browser will display. The frameset file is an empty structure. A separate HTML file for the content of each frame is also required. Dreamweaver organizes the files for you and assists you to create, edit, and save all the files needed for the Web pages.

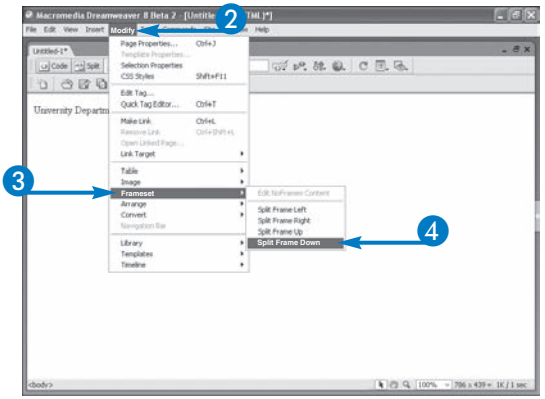
Before browsers supported CSS, frames were used on many Web pages to organize page content. However, as browser support for CSS becomes more widespread, the popularity of frames decreases. Frequently, you can provide the same Web page using CSS that you can with frames. Chapter 11 discusses CSS.

Using Frames

1. Open a Web page that contains some content.

Note: *You can also add frames to an empty Web page.*

2. Click Modify.
3. Select Frameset.
4. Click Split Frame Down.

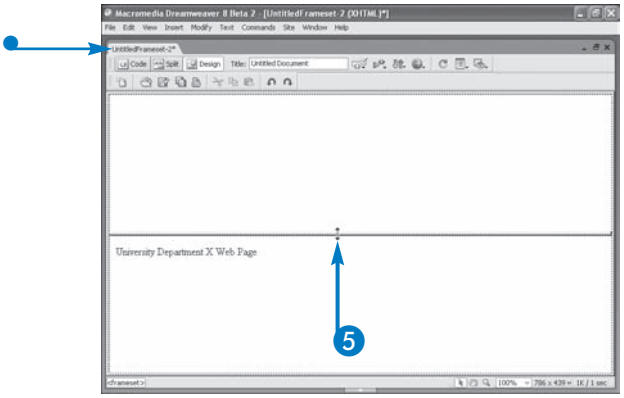


The page is split into two frames, keeping the content in the lower frame.

- The filename changed to Frameset.

5. Click and drag the border until the frame is the desired size.

changes to ↕ when positioned over the frame border.



6 Add content to the top frame.

Note: *See the other sections in this chapter to add content.*

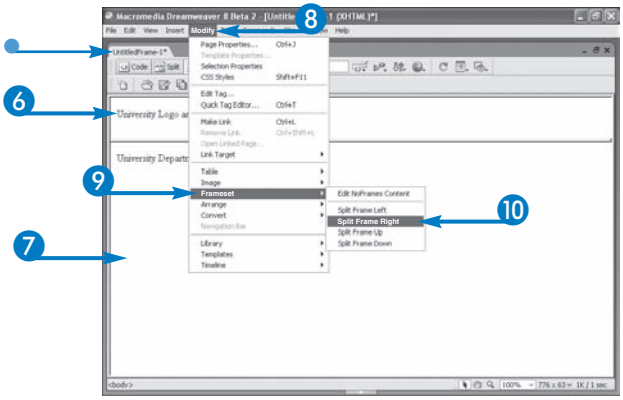
7 Click in the bottom frame.

- The filename changes.

8 Click Modify.

9 Select Frameset.

10 Click Split Frame Right.



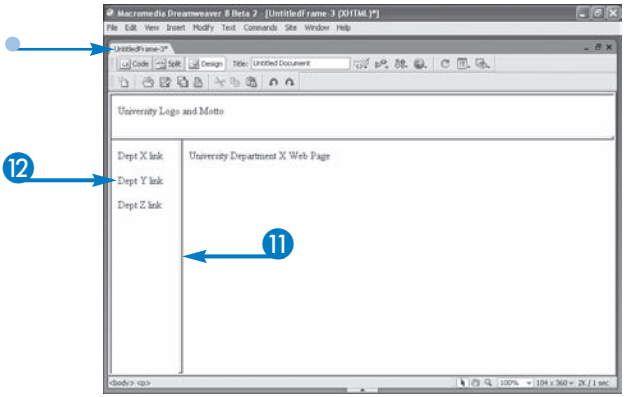
The bottom frame splits into two frames, keeping the content in the frame on the right.

11 Drag the vertical frame border to size the left frame.

12 Add content to the left frame.

- The filename changes to the left frame filename.

Note: *Each time you change frames, the file being edited changes.*



What is the quickest way to create a frame?

You can quickly create a frame by dragging the outside border of the Design Window. First, turn on frame borders, even if your current Web page has no frames. To turn on frame borders, click View, select Visual Aids, and click Frame Borders. (You can also turn on frame borders by clicking the View Options button on the document toolbar.) You now see a dark line around the outside of the page. Position your cursor over the dark line, slowly, until it turns into a double-ended arrow. Click and drag the dark line away from the edge to make a new frame.

You can remove a frame by dragging the border back to the edge of the Design Window.

Are there disadvantages to using frames?

Yes, several. Search engines cannot organize and display the framed pages. Some search engines choose not to index frames at all because of the problems. In addition, visitors sometimes cannot bookmark the page they want; they can bookmark only the main page. Some browsers do not support frames well: printing can be a problem.

Jumping directly into a framed page, such as from a search engine, often does not work and results in a scrambled page. Also, because framesets require several organized files, the page display is more often broken than with unframed pages, and is often totally unusable when broken.

Save a Web Page with Frames

A Web page with frames requires several files. A frameset file contains the frame organization information, such as the number, location, size, names, and so on. In addition, an HTML file for each frame contains the code that displays the contents of each frame. As soon as you create a frame in your Web page, Dreamweaver creates a frameset file that contains the frame organization information. Dreamweaver also handles the files for each frame.

You can select any component of your Web page. You select the frameset by clicking the frame border. You select a frame by clicking inside the frame. When you select a component on your Web page, Dreamweaver opens the correct file. That is, if you select the frameset, Dreamweaver opens the frameset file. If you select one of the frames, Dreamweaver opens the HTML file that contains the contents of the selected frame.

Frame documents are opened with the name Untitled, like other documents, as described in Chapter 1. Frame documents are named either UntitledFrameset or UntitledFrame. Dreamweaver does not automatically save the files. You need to save and name each file. If the frameset is selected, the File menu includes a Save Frameset As command; if a frame is selected, you will find a Save Frame As command.

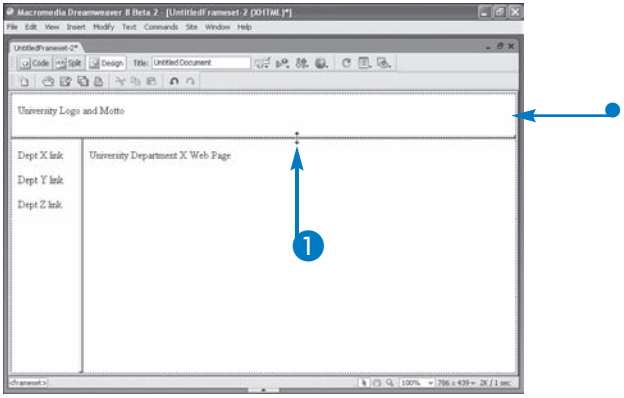
Save a Web Page with Frames

Save a frameset

1. Click the frame border.

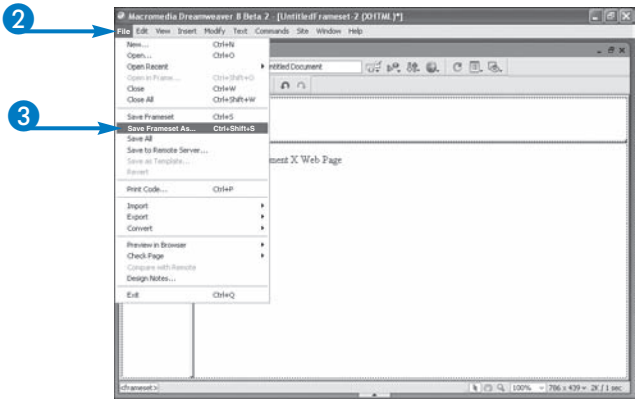
   becomes ↕ when it hovers over the frame border.

   - Dreamweaver selects the frameset and outlines it in a dashed line.



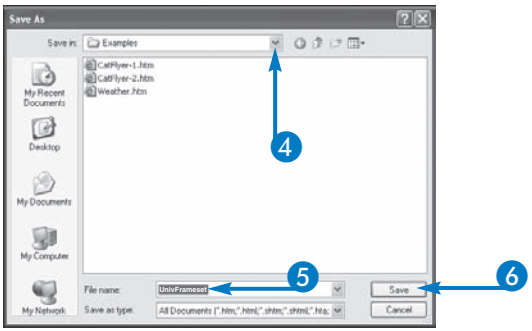
2. Click File.
3. Click Save Frameset As.

Note: *Frameset appears in the File menu only when the frameset is selected.*



The Save As dialog box appears.

4. Click here and navigate to a Dreamweaver site.
5. Type a name for the frameset file.
6. Click Save.

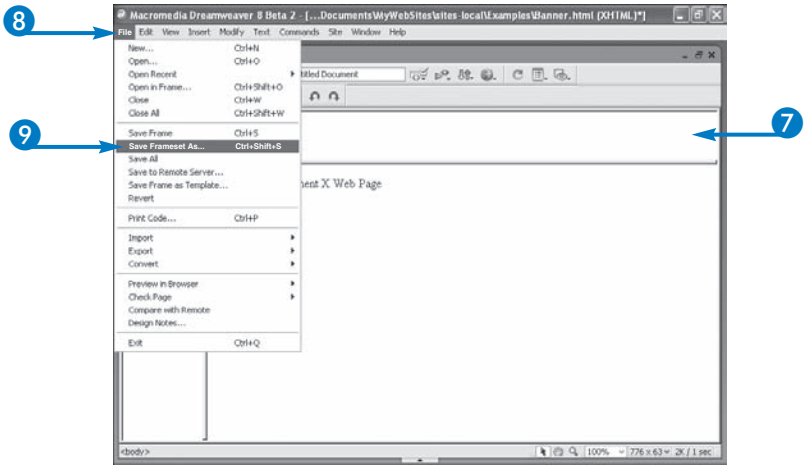


Save frames

7. Click in a frame.
8. Click File.
9. Click Save Frame As.

The Save As dialog box appears.

10. Type a filename and click Save.
11. Repeat steps 7 to 10 for each frame.



Do I always have to save the files one at a time?

No. There is a command on the File menu called Save All. When you click Save All, Dreamweaver checks the files for changes and selects each changed file in turn — the frameset and each frame file — and saves each file. If any file has not yet been saved, Dreamweaver opens the Save As dialog box so you can enter a name for the file being saved, saving the file as Untitled if you do not enter a filename. You can watch Dreamweaver select each frame in turn while it performs a Save All.

Do I have to save the frameset and the frame pages in the same folder?

No. In most cases, storing all the files in the same folder is more convenient, but it is not required. The frame tag uses a `src` attribute to locate the frame file that defines the frame contents, as follows:

```
src="frame1contents.
html"
```

The `src` attribute can include a path, so the file can be located anywhere.

What does the frameset file look like?

The frameset file uses the tags `<frameset>` and `<frame>` to organize the Web page frame structure. The `<frameset>` and `</frameset>` tags enclose a set of `<frame>` and `</frame>` tags, one set for each frame on your page. The frame tags include attributes that specify the source of the frame contents, as follows:

```
<frame src="frame1
contents.html">
```

Frame tags also include attributes for height, width, border specifications, and other attributes.

Using Dreamweaver Frameset Designs

Dreamweaver comes with several predefined framesets that you can use to create Web pages with frames. Using such ready-made designs can save you time and keep the pages within your site consistent.

Dreamweaver provides frameset design documents with different frame structures, including *nested* frames. Nested frames have frames inside of frames. When you select a Dreamweaver frameset, a frameset opens with the page divided into frames. You can change the frameset — resizing frames, changing borders, changing frame backgrounds, and so on — until it suits you perfectly. Then you save the frameset in the local site folder of your Dreamweaver site, as described earlier in this chapter.

The provided document is an empty frameset. It structures the Web page into frames but does not contain any content in any of the frames.

Using Dreamweaver Frameset Designs

1. Click File and select New.

   The New dialog box appears.

2. Click Framesets.
3. Click a frameset layout.

   This example shows Fixed Top, Nested Left being selected.

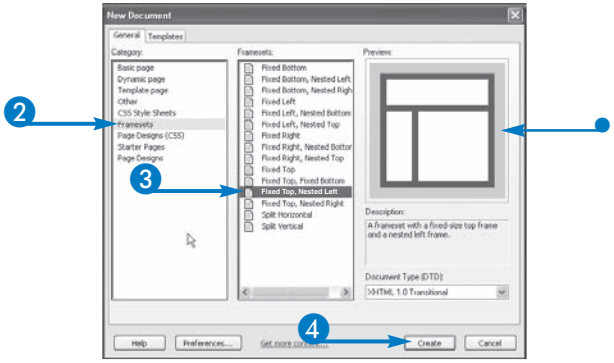
   - A preview and description of the selected frameset design appears.

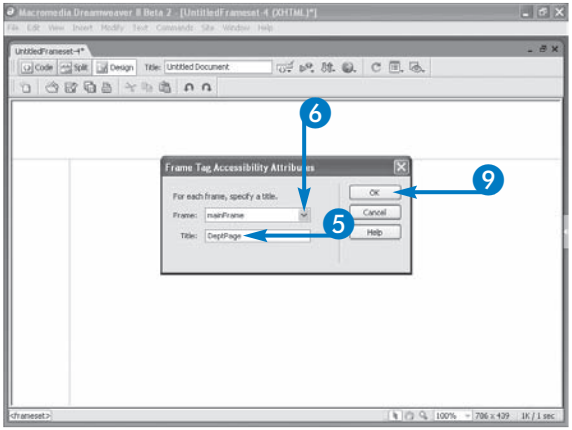
4. Click the Create button.

   The Frame Tag Accessibility Attributes dialog box appears.

5. Type a title for the frame currently selected in the dialog box.
6. Click here, and select another frame.
7. Type a title for the selected frame.
8. Repeat steps 6 and 7 until all frames have titles.
9. Click OK.

   The dialog box disappears. The new frameset is open.





Note: *The frameset is untitled because it is unsaved. Saving the frameset is described previously in this chapter.*

Remove a Frame

While designing and developing your Web page, you often need to remove a frame to change your design. If you use one of Dreamweaver's frameset designs, you may want to modify it by removing a frame. You can remove a frame in Dreamweaver by clicking and dragging the frame border to the edge of the Document window.

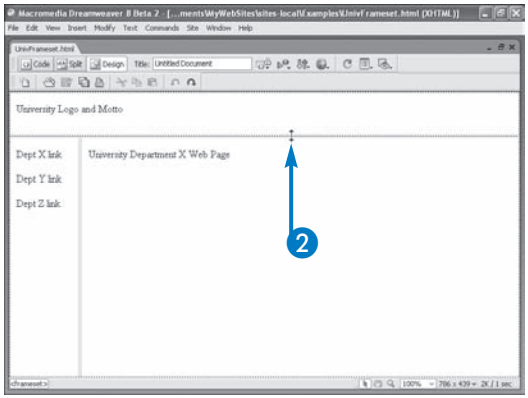
Removing a frame does not delete the file that is currently open in it if that frame file has been saved. If you remove a frame that has not been saved or has unsaved changes, the content or changes are not saved.

If you remove a frame from a two-frame site, the remaining frame is a frame inside a frameset. This is not the same as having the page open by itself because a frameset still encloses the page. If you want to get rid of the frameset, you need to close the Document window and open the content in a regular, unframed window.

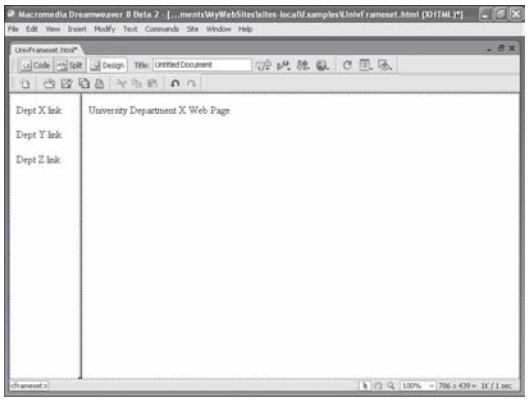
Remove a Frame

1. Open a Web page that contains frames.
2. Drag the frame border toward the edge of the page (in this case upward) until the frame is completely closed.

   becomes ↕ when it is over the frame border.



The top frame is removed. This page now has only two frames.



Add Content to a Frame

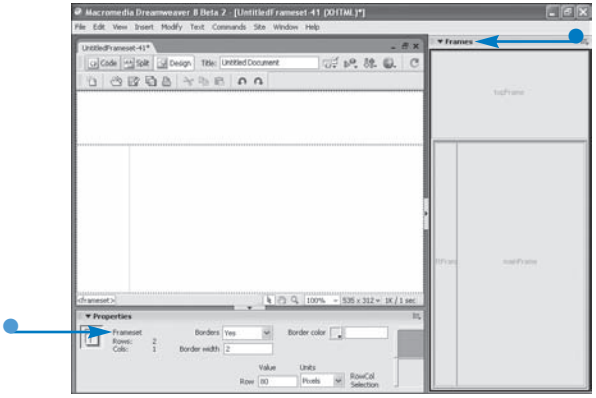
Each frame displays its own independent Web page, stored in a separate HTML file. You must save a Web page file for each frame. The frameset file contains a `<frame>` tag for each frame that specifies the name of the HTML file to be displayed in the frame. The HTML code in the frame file displays the same Web page that would display on a Web page without frames.

You can build the content of a frame in the Design Window, using any of the methods described in this book, and save the frame file. Or, you can load an existing Web page file into a frame, as shown in this section.

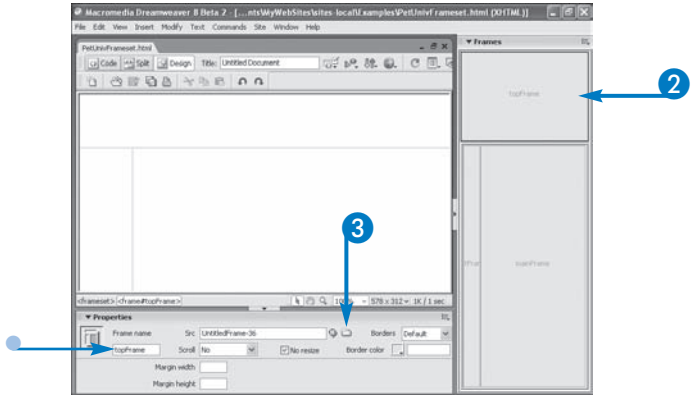
Working with frames is easier if you work with the Property inspector and the Frames panel open. (The Property inspector and panels are discussed in Chapter 2.) The Frames panel shows the frame organization of the Web page, which is sometimes difficult to see clearly, especially if you have borders turned off (borders are discussed later in this chapter). In the Frames panel, you can click a frame to select it or click the outside border to select the frameset. The Property inspector changes to show the properties for the selected frame or frameset.

Add Content to a Frame

1. Open or create an empty frameset.
   - The Frames panel shows the frame structure.
   - The frameset is selected, shown by the solid line in the Frames panel and the information in the Properties inspector.

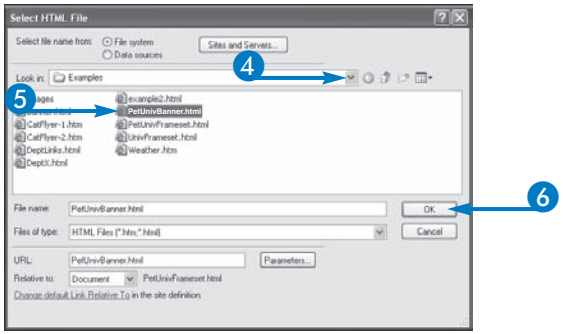


2. Click the top frame in the Frames panel.
   - The Property inspector displays information about the selected frame.
3. Click .



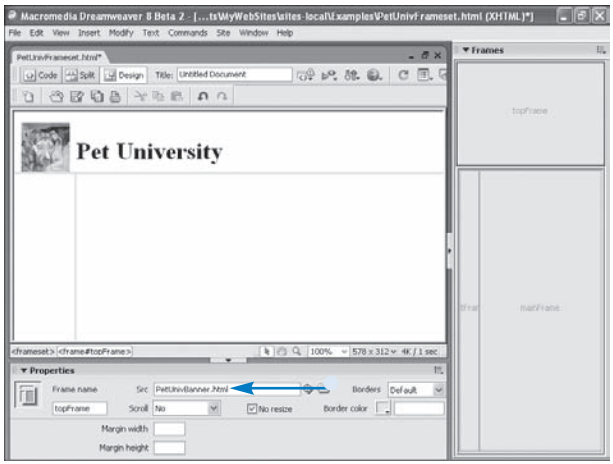
The Select HTML File dialog box appears.

4. Click here and navigate to the folder containing the HTML file.
5. Click the filename.
6. Click OK.



The HTML page opens in the top frame.

- The path to the source HTML file appears in the Property inspector.



When I change or add content in the design window, do I need to save it?

Yes. The content for each frame is saved in a separate HTML file. When you make changes in a frame, you need to save the frame file in order to save the changes. If you fail to save the frame file, the changes are lost. To save the frame, select the frame in the Frames panel, click File, and select Save Frame. If you have not saved the frame previously, Dreamweaver prompts you with a Save As dialog box.

How does the browser know where to display the frames on the page?

The `<frameset>` tag specifies how many frames are in the page, with `rows` and `cols` attributes specifying the number of rows and columns and their size.

The example in this section has three frames. The top banner frame is one row (80 pixels tall). The bottom row contains two nested columns — the navigation column (20 percent) and the main content column (701 relative, which is the remaining space in the column).

The frameset defines the structure as follows:

```
<frameset rows="80,*" cols="*" ...
  <frame name="Banner" ...
  <frameset rows="*" cols="20%,701*"
    <frame name="leftFrame" ...
    <frame name="mainFrame" ...
  </frameset>
</frameset>
```

Resize a Frame

You often want to resize your frames, trying different designs and sizing to fit content. You can resize your frames approximately by dragging frame borders. If you want to set precise measurements, you must use the Property inspector.

Frame size can be set with one of three measurements: pixels, percentages, or relative sizes. A pixel (a physical measurement) defines the same size frame regardless of browser window size. When the pixel frames add up to be larger or smaller than the window, the browser adds pixels to or removes pixels from each frame equally until the frames fit the window.

Percentages (a proportion of the browser window) define frame size relative to window size. A 20-percent frame in a small browser window may not have room for the frame content. Relative measurements also change with window size. A relative measure lets you specify a frame with respect to the other frames in the window.

When different frames in a frameset are defined using different types of units, frames defined using pixels are sized first, followed by frames defined using percentages, and frames using relative values are sized last. Thus, you can define two frames — a pixel frame and a relative frame — and the relative frame uses all the remaining space.

Resize a Frame

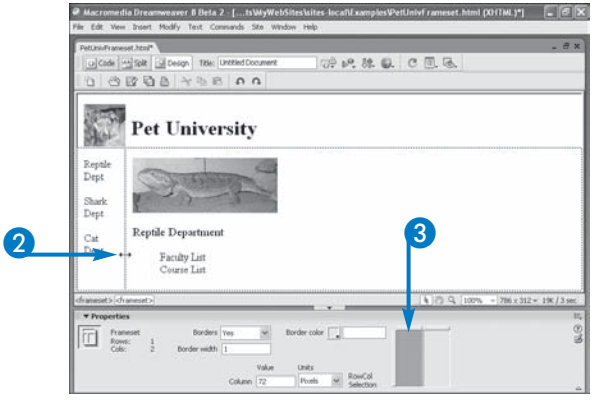
1. Open the Web page and the Property inspector.

   If the Property inspector does not provide all the property settings shown here, click ▽ in the lower right corner to expand it.

2. Click a vertical frame border.

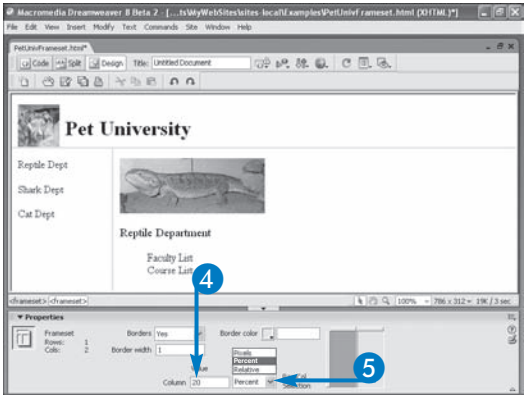
Note: *To resize a row, click a horizontal frame border.*

3. Click the column you want to resize.



4. Type a column value.
5. Click here and select Percent.

   The left column resizes to 20 percent and the right column resizes to fit the remaining 80 percent.



Control Resizing of Frames

The default behavior of most browsers lets users resize frames by clicking and dragging the frame borders. The shape of the cursor changes when positioned over a frame border in the browser window, indicating that the frame can be resized. You may want to turn resizing off if your page layout depends on the size of your frames. You can keep users from changing the dimensions of your frames and causing the content to become disorganized. Or, you might want to allow resizing on some frames but not on others.

In Dreamweaver, you can change this default behavior so that users cannot resize frames and thereby distort the design of the frameset. The setting does not prevent you from changing the size of frames in Dreamweaver. You can always click and drag in the Dreamweaver Document window. The resize setting affects the behavior only when the page is opened in a browser. For more about changing frame dimensions, see the section "Resize a Frame."

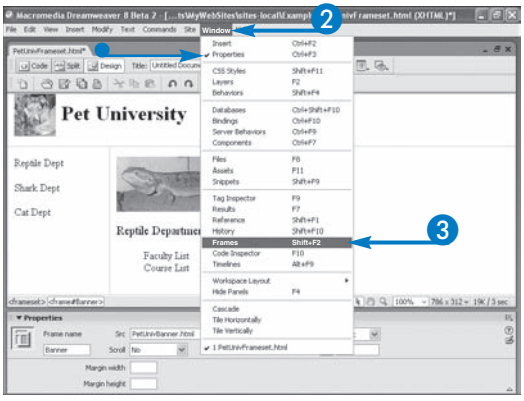
Unless resizing has been disabled, a user can resize borders in some browsers (such as Internet Explorer), even when borders have been turned off. A user can click and drag where the two frame edges meet.

Control Resizing of Frames

1. Open a Web page containing frames.
2. Click Window.
   - The check mark indicates that the Property inspector is open.

Note: *See Chapter 2 to open the Property inspector if it is not already open.*

3. Click Frames.

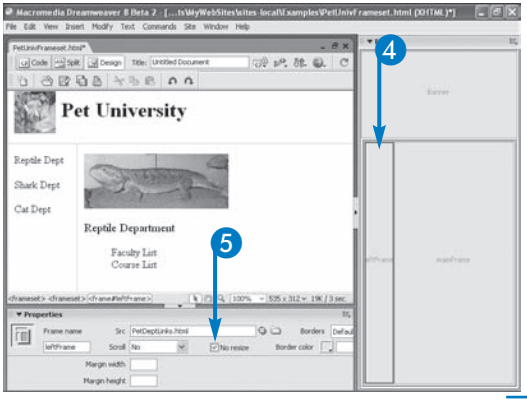


The Frames panel opens.

4. Click the left frame in the Frames panel.

The Property inspector displays properties for the selected frame.

5. Click No resize (☐ changes to ☑).



Name a Frame

You may need to refer to a frame when creating your Web page content, such as when using hyperlinks or JavaScript scripts. For example, one common use of frames is to provide a navigation panel in a narrow frame on the left of the Web page. Hyperlinks provide the navigation. However, the link target page is not intended to open in the left panel that contains the link: the target page is intended to open in the larger right panel. You need to direct the browser where to open the link's target page.

You can refer to a frame by its name. When you create your frameset manually, your frames are created without names. You need to name them before you can refer to them. When you create your frames using a Dreamweaver frameset design, Dreamweaver automatically gives your frames generic names, such as topFrame, leftFrame, and mainFrame. You may want to rename your frames to reflect the type of content that is inside of them, such as SideNav and Footer, to help you identify the frames.

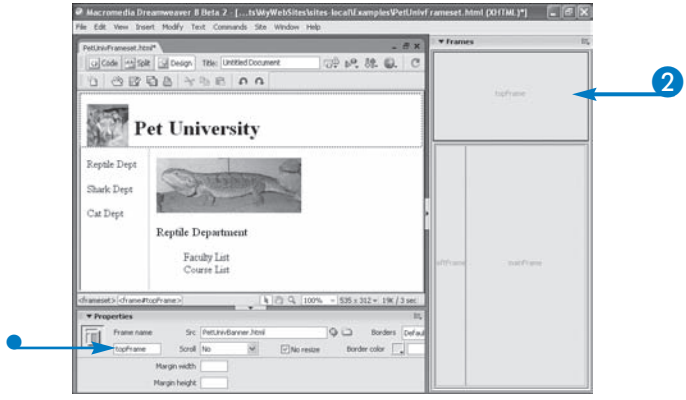
Name a Frame

1. Open the page, the Frames panel, and the Property inspector.

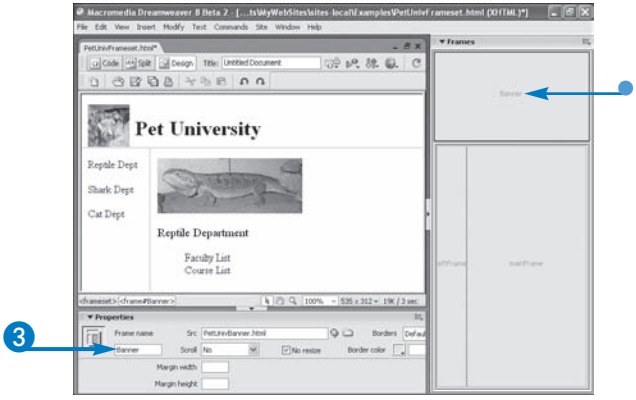
Note: *See Chapter 2 to open elements of the Dreamweaver interface.*

The Frames panel shows the current names.

2. Click a frame in the Frames panel.
   - The name appears in the Property inspector.



3. Click here and type a new name.
4. Press Enter.
   - The new name shows in the Frames panel.



Hyperlink to a Frame

You can use hyperlinks in your frames. Unless you specify otherwise, when the user clicks a link, the new page opens in the same frame. However, often you want the new page to open in a different frame. For example, a common use of frames is to provide a navigation panel. You want the user to click a link in the narrow navigation panel in the left frame and have the new page open in the main content frame, not in the navigation panel frame.

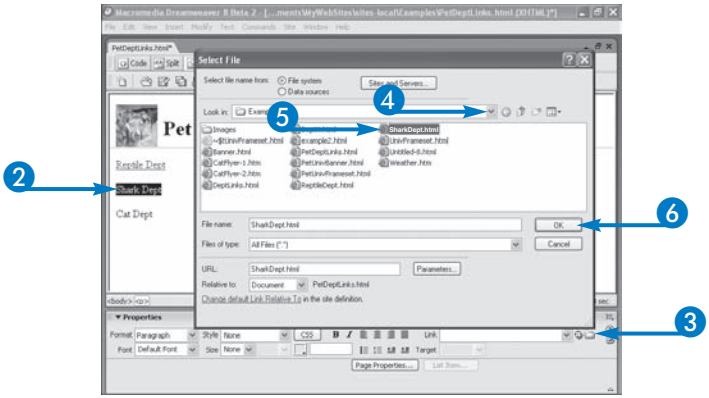
You can specify where the new page is to open by specifying the name of the frame as the target of the hyperlink. If the frame does not have a name, you must name it. To name a frame, see the section "Name a Frame."

If you do not specify the target of a hyperlink in a framed site, the hyperlink destination opens in the same frame as the hyperlink. If you specify a target name that does not exist, most browsers open up a new window and load the hyperlink destination inside of it.

Hyperlink to a Frame

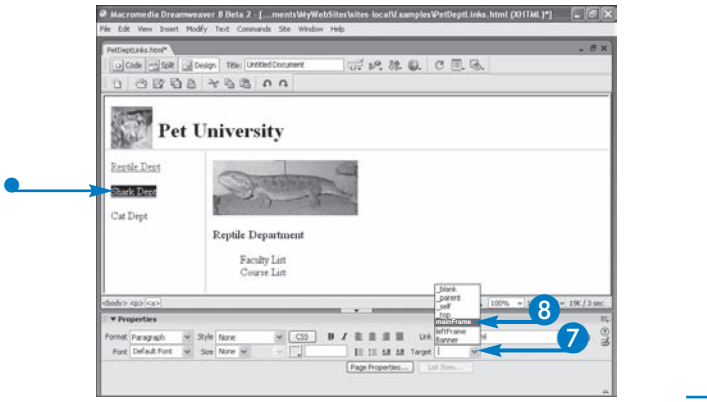
1. Open a Web page containing frames and the Property inspector.
2. Highlight the text you want to be a link.
3. Click .

   The Select File dialog box appears.
4. Click here and navigate to the frame file.
5. Click the filename.
6. Click OK.



   - Dreamweaver converts the selected text to a link.
7. Click .
8. Click the name of the frame where you want the new page to open.

   In this example, mainFrame is selected so the link will open the new page in the frame named mainFrame.



Turn Off Frame Borders

You may want no frame borders showing on your Web page. Pages are often more attractive without frame borders. In some cases, you may want to disguise the fact that you are using frames. You can turn the frame borders off using the Property inspector.

With borders turned off, users do not see your frames and do not know the frames are there. If you want to further disguise your frames, you can set the pages inside your frames to the same background color, so that they blend at the edges. The frames then look like one solid page. Or, you may not like the look of the borders but want to keep the frames distinct. You can use different backgrounds or background colors for different frames to show the different sections of the Web page. The background color for a frame is set just as it is set for a Web page, by clicking the Page Properties button that appears when the frame contents are selected. Chapter 4 describes setting page properties.

Sometimes when you turn the frame borders off, the frame contents can look too crowded. You can provide separation between your frames using the Margin Width and Margin Height settings in the Property inspector.

Turn Off Frame Borders

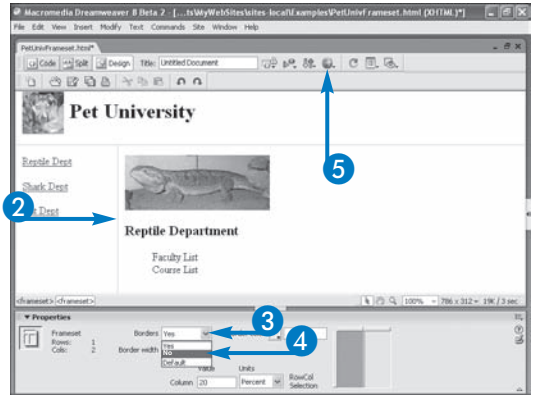
1. Open a Web page containing frames and the Property inspector.

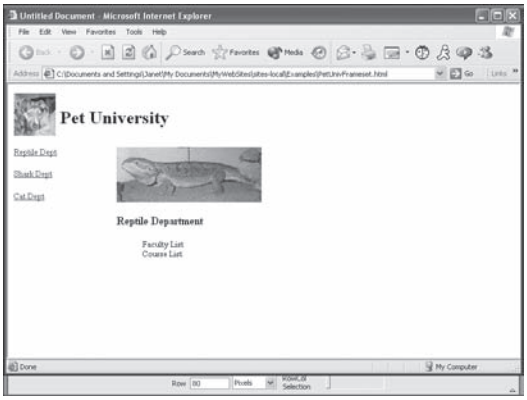
Note: *See Chapter 2 to open elements of the Dreamweaver interface.*

2. Click a frame border to select the frameset.
3. Click .
4. Click No.

   Dreamweaver turns off frame borders.
5. Click .

   The browser displays the Web page without frame borders.





Format Frame Borders

You can modify the appearance of your frame borders to make them complement the style of your Web site content. You can change the color and the width of the frame borders.

You can change the color of the frame borders in the Property inspector. A setting for the border color appears when either a frame or the frameset is selected. If you set the frameset to a color different than the setting for a frame, the frameset color overrides the frame color setting.

You specify the color of borders just like you do the color of Web page text or the page background — by selecting from a pop-up color palette or by specifying the color name or hex code. Changing background colors is discussed in Chapter 5. Remember that in addition to complementing the current content in the frames, the border should also match the hyperlink pages that open in your frames.

If the frame characteristics for your site are left unspecified, most browsers display frames borders in brown or gray, with a width of two pixels.

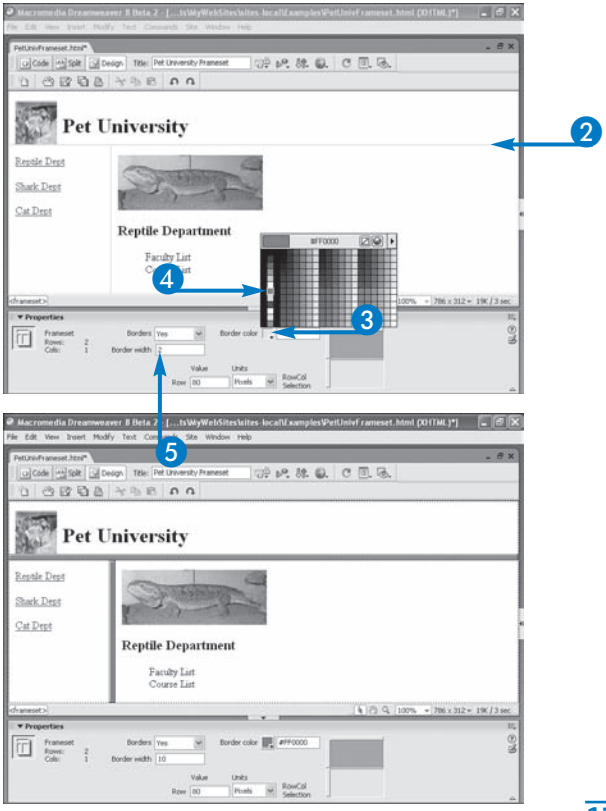
Format Frame Borders

1. Open a Web page containing frames and the Property inspector.
2. Click a frame border to select the frameset.
3. Click the Border color selection box.

   The color grid opens.
4. Click a color.

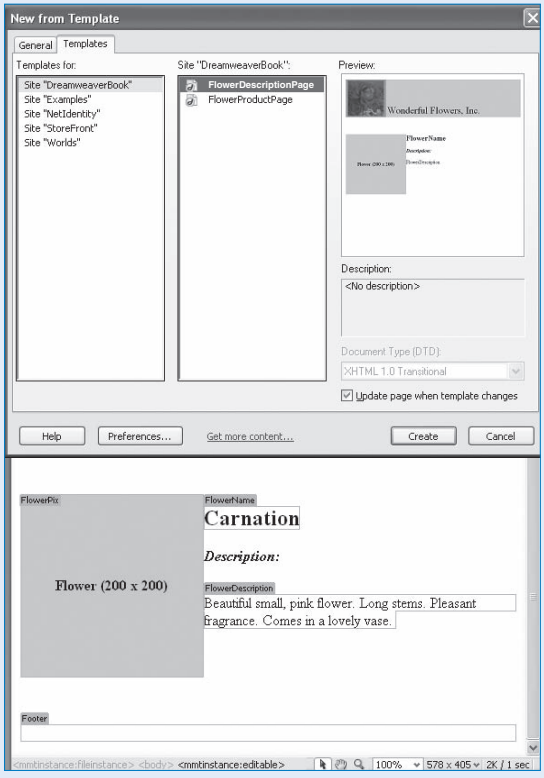
   In this case, red is selected.
5. Type a width in pixels for the border.

   Dreamweaver applies the new border width and color.



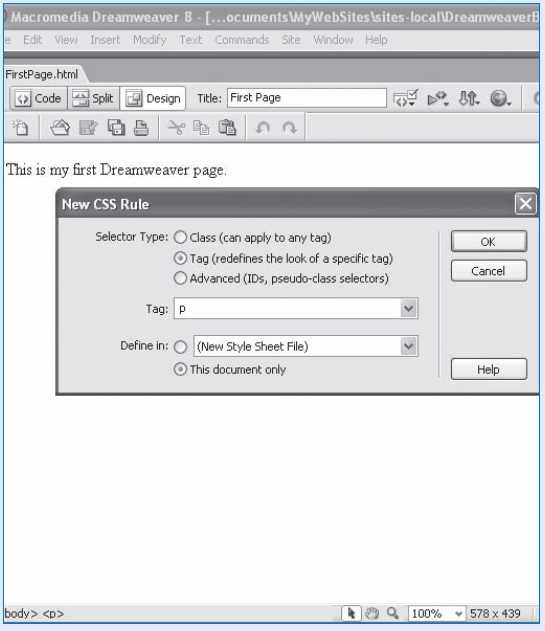
10 Setting Up Reusable Web Page Elements

Using Snippets, Libraries, and Templates 174
Store a Snippet 176
Insert a Snippet.....178
Edit a Snippet 179
Create a Library Item 180
Insert a Library Item.....181
Update a Library Item 182
Create a Template 184
Create a Web Page Based on a Template 186
Update a Template 188
Add a Repeating Region to a Template 190
Using a Repeating Region in a Web Page....191
Create a Repeating Table in a Template 192
Create Nested Templates.....194



11 Formatting with Style Sheets and Layers

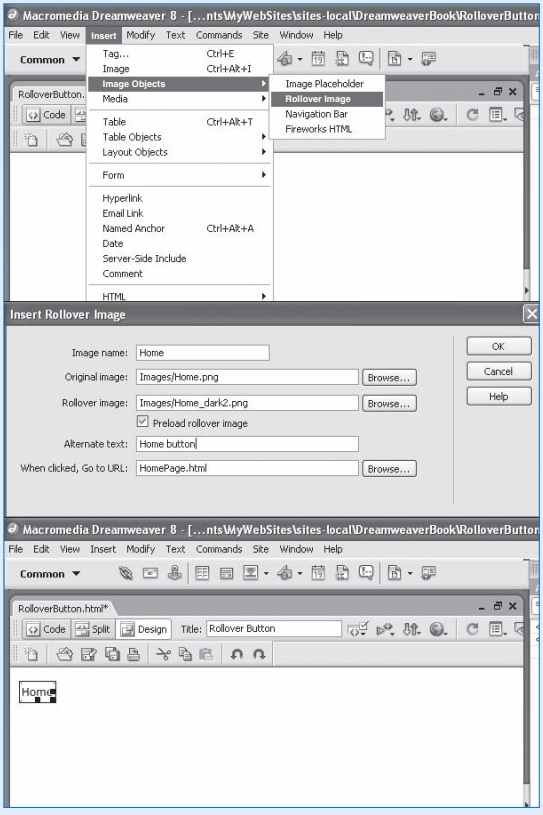
Introducing CSS and Layers 196
Create a Class Style 198
Apply a Class Style 200
Edit a Class Style.....201
Change a Style in the Styles Panel 202
Create a Style for an HTML Tag.....204
Create an External Style Sheet.....206
Attach an External Style Sheet.....208
Export Embedded Styles 209
Create a Layer.....210
Add Content to a Layer 212
Add a Background Color to a Layer 213
Move a Layer 214
Position and Size a Layer 215
Make a Layer Invisible.....216
Align Layers 217
Change the Stacking Order of Layers 218
Convert Layers to Tables.....219



PART III
ADVANCED DREAMWEAVER FEATURES

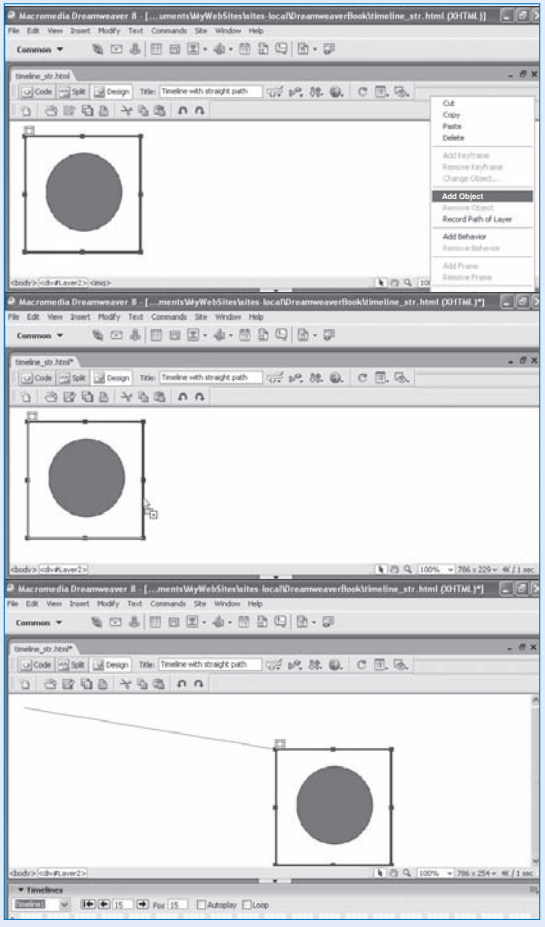
12 Attaching Behaviors to Web Page Elements

Using Dreamweaver Behaviors 220
Change an Action 222
Change an Event.....223
Remove an Action.....224
Change the Order of Actions 225
Add a Rollover Image to an Image 226
Insert a Rollover Image Link.....228
Create a Status Bar Message 230
Open a Customized Browser Window.....232
Validate a Form.....234
Display Web Pages Based on Browser Type 236
Create a Popup Message 237



13 Animating a Web Page with Timelines

Introducing Timelines.....238
Introducing the Timelines Inspector 239
Create a Straight-line Animation 240
Create a Curved-line Animation 242
Remove a Frame, a Keyframe, or an Animation 243
Create an Animation by Dragging a Path 244
Change Layer Properties in Timelines 246
Change Animation Speed 248
Trigger an Animation with a Behavior.....250



Using Snippets, Libraries, and Templates

Many Web pages require you to repeat Web page elements. You may want to repeat the same header on many pages, provide your company name and address on many pages, or use a specific form element frequently. Dreamweaver provides features that allow you to save a Web page element and enter it repeatedly, wherever it is needed. Snippets, libraries, and templates all help you reuse Web page elements.

A *snippet* is a stored section of code that can be inserted in any Web page. A library is a repository of elements for a specific Web site. Snippets can be inserted into any Web page on any Web site, and libraries are connected to a specific Web site, for use only in one Web site.

A *template* is a pattern for a Web page. For example, you can set up a template that has a header and footer, with each containing content. You can then use the template as a base for a new Web page, saving you the work of adding the header and footer manually to each new page.

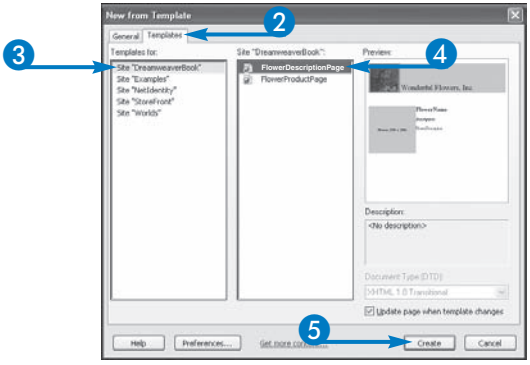
Dreamweaver provides snippets that you can use, or you can add your own. You must create your own library items and templates.

Using Snippets, Libraries, and Templates

1. Open the New File dialog box.

Note: *Chapter 1 explains how to create a new file.*

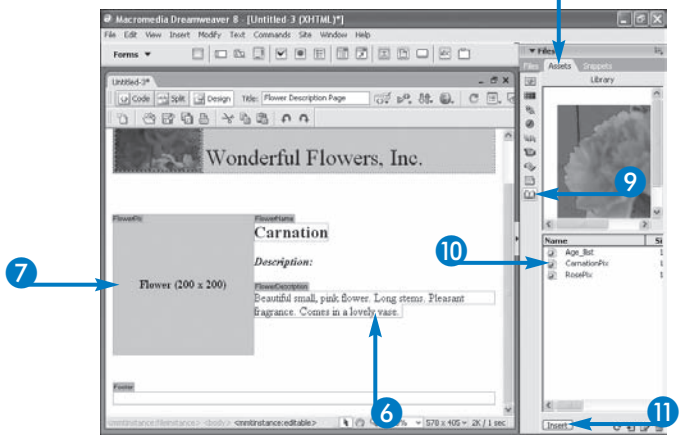
2. Click the Templates tab.
3. Click a site.
4. Click a template.
5. Click Create.



A new file opens containing the elements defined by the template.

6. Type information into the fields.
7. Click the image placeholder.
8. Open the Assets panel.
9. Click the Library icon ( ).
10. Click a library item.
11. Click Insert.

The Library item is inserted into the Web page.



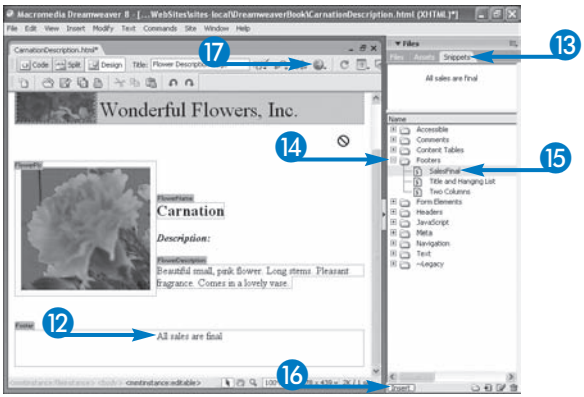
12. Click in the last field.
13. Click the Snippets panel.
14. Click + by a snippet category to expand the list.
15. Click a snippet name.

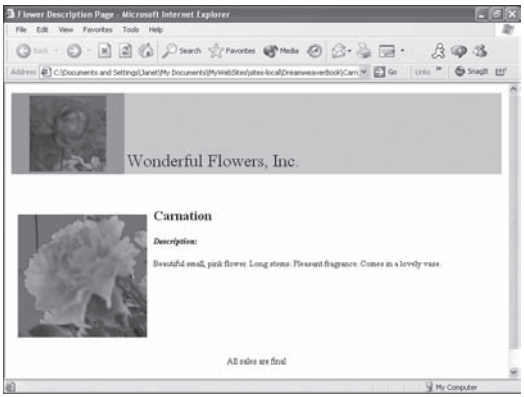
    The snippet is previewed at the top of the Snippets panel.
16. Click Insert.

    The snippet is added to the Web page.
17. Click the Preview button ( ).

    The browser displays the Web page.

    The blue tabs and other layout information in the Document window are not displayed in the browser.





MASTER IT

When I am using a template, sometimes the mouse pointer changes to a ⃠. What does this mean?

A template consists of editable regions and regions that cannot be changed. When your mouse pointer is over an editable region, its shape is normal. When the mouse pointer moves over a section of the template that cannot be changed, it becomes a ⃠.

What does a yellow outline around the Web page mean?

A yellow outline is added around a Web page in the Document window to show that you are using a template. The name of the template is displayed on a yellow tab in the upper right corner of the Web page. The yellow outline and tab do not appear in the Web page when it is displayed in a browser.

How do I know what the reusable items I am inserting are going to look like?

You see a preview of each reusable item before you actually use it. For example, when you click the Templates tab in the New File page and select a template, a preview of the selected template appears. When you select a snippet from the Snippets panel or a library item from the Assets panel, the snippet or library item is previewed above the panel.

Store a Snippet

A snippet is a section of stored code that can be inserted into any Web page. It can be as little as a line of code or as large as you need. Dreamweaver provides several snippets you can use, and you can save your own snippets.

The same set of snippets is available for all of your Web sites; snippets are not specific to a particular Web site. If you have code that you want to use on only one site, you should store it as a library item.

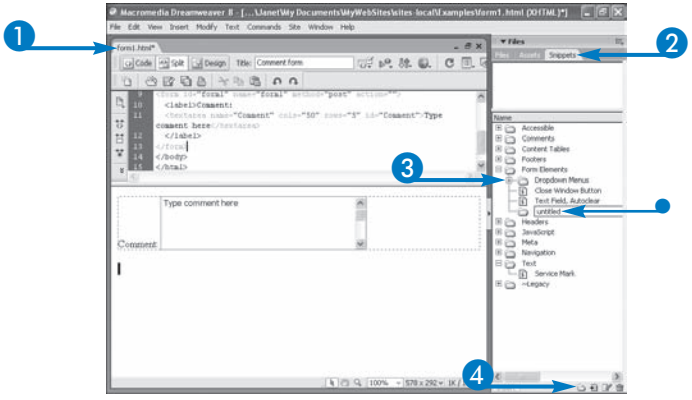
When you insert a snippet, Dreamweaver adds the snippet code to the Web page file. No connection to the inserted snippet is maintained. If you change a stored snippet, snippet code already inserted into Web page files does not change. Library items inserted in Web pages, however, do change when the saved library item is changed.

There are two types of snippets. The *insert snippet* inserts a block of code at a single location. The *wrap snippet* inserts text before and after a selected element on the page, such as a selected section of text.

You store, manage, and insert snippets from the Snippets panel in the Files panel group. Each snippet is stored in a separate file with a .csn extension.

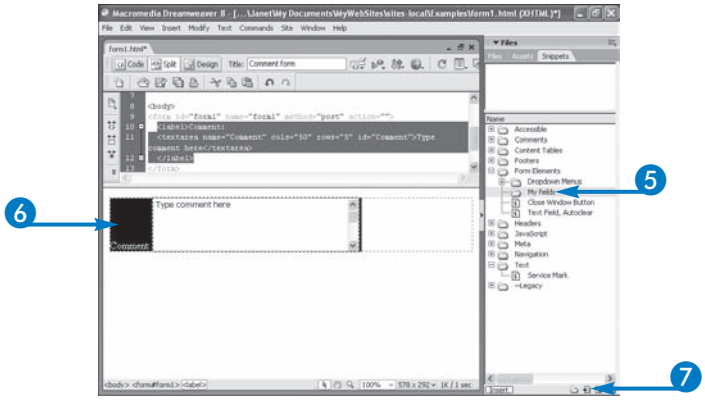
Store a Snippet

1. Open a file that contains the element to be stored as a snippet.
2. Open the Snippets panel.
3. Click a folder.
4. Click the folder button ( ).
   - A new folder is added.



5. Type a name for the new folder.
6. Highlight the element to be a snippet.

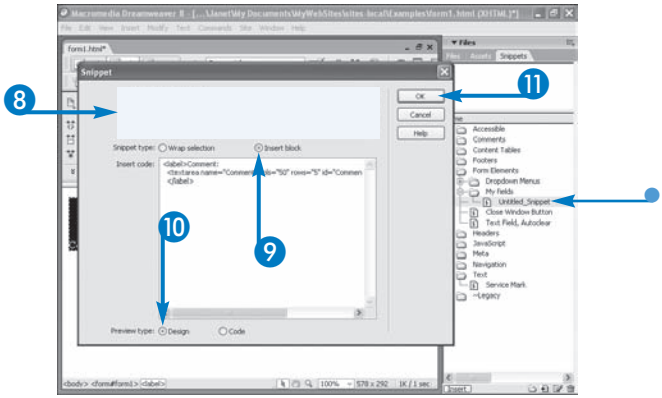
   You can highlight the element in either Design or Code view.
7. Click the Add Item button ( ).



The Snippet dialog box opens.

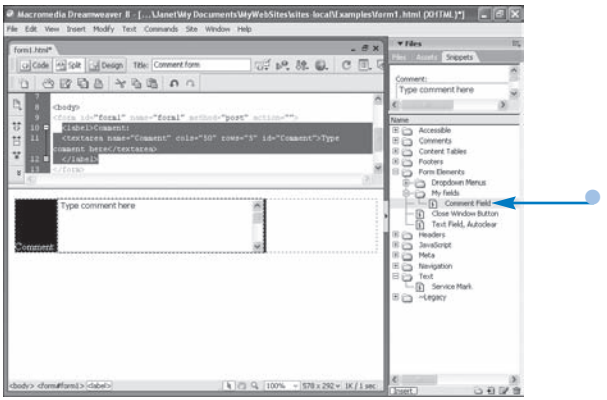
- An item for the new snippet is now listed.

8. Type a name and description.
9. Click a snippet type.
10. Click a preview type.
11. Click OK.



The dialog box closes.

- The new snippet is added to the list in the new folder.



MASTER IT

How do I save a wrap type snippet?

When you are in the Snippets dialog box, click the circle for Wrap selection. The input fields change from one input area, labeled Insert code, into two input areas. The first input area is labeled Insert before. Type the code to be inserted before the selected Web page element. The second input area is labeled Insert after. Type the code to be inserted after the selected element.

Where does Dreamweaver store the snippet files?

The snippets that come with Dreamweaver are stored in the Dreamweaver installation folder in Configuration\Snippets. The snippets you save yourself are stored in the folder for the account you are using. The account folder contains an Application Data folder with folders for many applications. In the Dreamweaver folder in your Application Data folder, you will find Configuration\Snippets, which contains the snippet files you saved.

What does Preview Type in the Snippets dialog box mean?

When you select a snippet in the Snippets panel, a preview of the snippet appears in the top section of the window. Preview Type sets the type of preview that is displayed. The preview can show the snippet as it will appear in Design view after it has been inserted, or it can show the snippet code is it will appear in Code view. You select which type of preview you want to see when you save the snippet.

Insert a Snippet

You can insert a snippet — a section of saved code — anywhere in a Web page or on any Dreamweaver Web site. Dreamweaver provides many snippets that you can insert. You can also save snippets of your own, which you can insert anywhere.

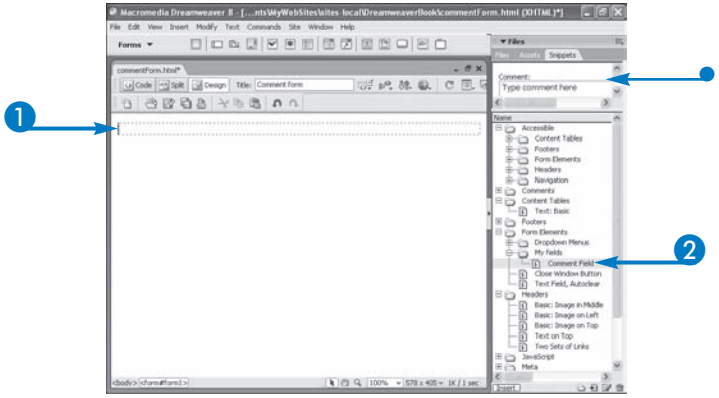
When you insert a snippet, the code is inserted into the Web page source code. The code becomes part of the Web page, with no special status. If you change a snippet, the new snippet is inserted from then on, but the change has no effect on the Web pages where the snippet has already been inserted.

Snippets are inserted from the Snippets panel in the Files panel group. The available snippets are displayed in categories. Each category is a folder. Click the plus sign (+) by the folder to display the contents of the folder. When the folder is open, the plus sign changes to a minus (–) sign. A folder can contain additional category folders and/or snippets.

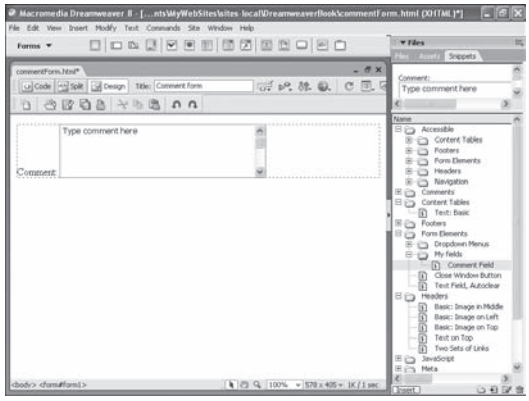
Each snippet is previewed in a window at the top of the Snippets panel. You can insert a snippet by double-clicking it or by clicking Insert at the bottom of the Snippets panel. You can click Undo ( ) to remove the snippet you just inserted.

Insert a Snippet

1. Click in the Web page where the snippet should go.
2. Double-click a snippet name.
   - The Snippets panel previews the snippet.



Dreamweaver inserts the snippet into the Web page.



Edit a Snippet

A snippet is simply a shortcut method for adding elements to a Web page. It is stored code that you can insert wherever it is needed. After the snippet is inserted, the source file contains the code snippet. Dreamweaver does not remember that the snippet was inserted. Future changes to the snippet have no effect on Web pages where the snippet was inserted.

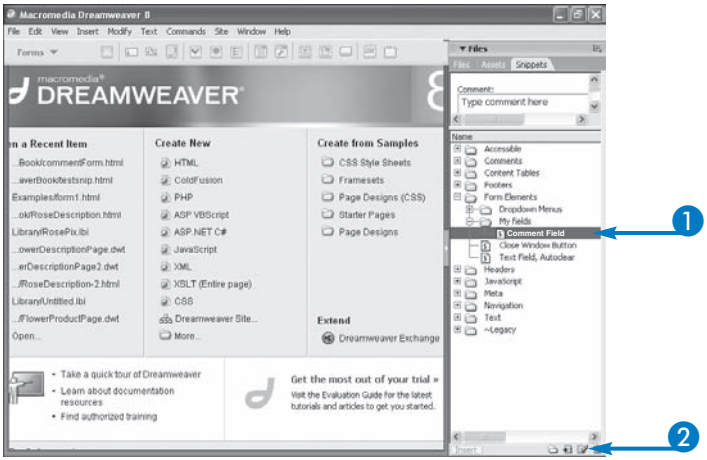
You can change a snippet by editing the source code for the snippet. When you open a snippet for editing, the Snippet dialog box opens with the snippet source code displayed in the fields. To edit the snippet, change the source code in the Snippet dialog box and save the new code.

Snippets are managed from the Snippets panel in the Files panel group. From the Snippets panel, you can open a snippet for editing. Click the snippet name and click the Edit icon ( ).

You can remove a snippet by clicking its name in the Snippets panel and then clicking the Trash Can button ( ) at the bottom of the panel.

Edit a Snippet

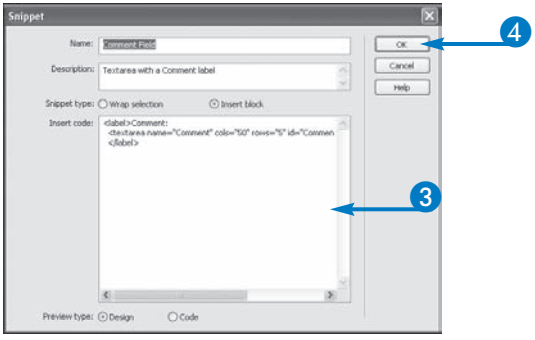
1. Click a snippet name.
2. Click .



The Snippet dialog box opens.

The current source code is displayed in the Insert code text area.

3. Edit the source code.
4. Click OK.



Create a Library Item

A library item, one type of *asset*, is a Web page element that you have created for use in your Web pages. Each site has its own library — a folder containing the library items you have saved. Library items are saved and accessed via the Assets panel.

You save a library item from an open file. Dreamweaver automatically saves the new item in the library for the site where the open file resides. You do not choose where the library item is to be saved.

In Design view, you can drag an item from the Document window to the Assets list. You can also highlight the Library item, either in Design view or Code view, and click in the Assets panel.

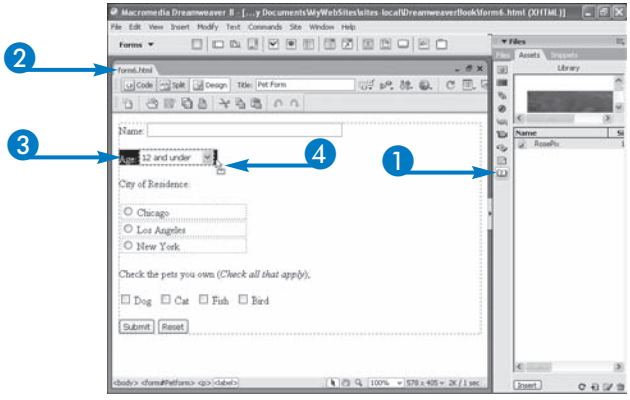
Each library item is stored in a file with an .lbi extension in a folder named Library in the local site. If no library folder exists when you save a library item, Dreamweaver creates the Library folder.

You can change a library item after it is saved. When you change it, the element can be updated in every Web page where you inserted the library item. See "Update a Library Item," later in this chapter.

Create a Library Item

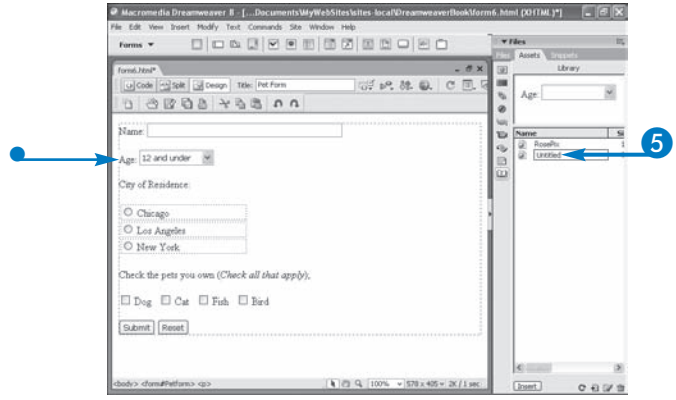
1. Open the Assets panel and click .
2. Open the file containing the item to save.
3. Highlight the item.
4. Click and hold the mouse button and drag the item to the Assets panel.

   changes to .



Dreamweaver adds the new library item to the Assets panel with a placeholder name.

5. Type a name for the new library item and press Enter.
   - The library item is highlighted in yellow to show that it is a library item.



Insert a Library Item

A library item, one type of asset, is a reusable Web page element that is specific to a Web site. Each Dreamweaver site has its own library. Each library item is stored in a file and the files are stored in a folder called Library in the local site.

Library items are inserted from the Assets panel. When you click in the Assets panel, a library opens. If you have a file open when you open the Assets panel, the library for the Dreamweaver site that contains the open file is displayed. If no file is open, clicking displays the library that was displayed the last time the Assets panel was closed.

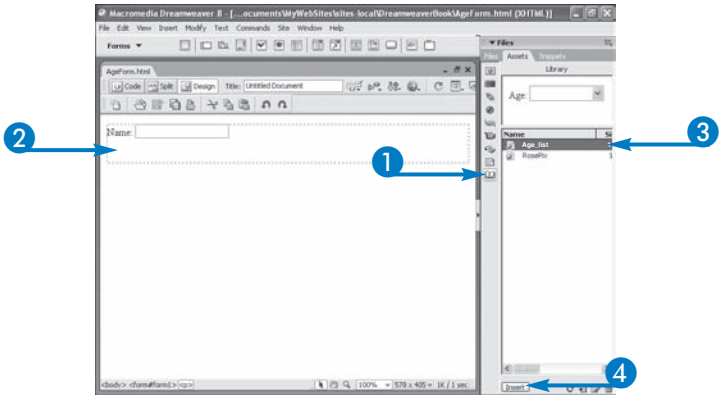
The library item is previewed in the top section of the Assets panel. You can make the preview section larger by dragging its bottom border toward the bottom of the panel.

When Dreamweaver inserts a library item into a Web page, it highlights the item in yellow so you will know it is a library item.

When you change a library item, Dreamweaver can find all the places where the library item has been inserted and update pages to match the changes made in the library item.

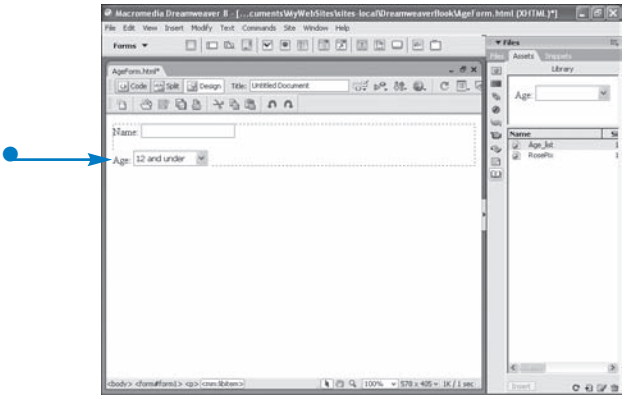
Insert a Library Item

1. Open the Assets panel and click .
2. Click the Web page where the item should go.
3. Click the library item.
4. Click Insert.



Dreamweaver inserts the library item.

- Dreamweaver highlights the inserted item in yellow to show that it is a library item.



Update a Library Item

When you change a library item, Dreamweaver can update all the Web pages where the library item was inserted to match the changes made to the item. You only need open the file containing the library item, make your changes, and save the file. When you save the file, Dreamweaver asks you whether you want to update all the files containing the item or not. Dreamweaver lists the files that contain the library item, so you can see whether you want the files to be updated.

You can update all the library items in your Web pages at once, manually, from the Modify menu. Select Library and click Update pages.

You open the library item for editing from the Assets panel. Click the library item and click . You can also double-click the library item. The file containing the library item opens in the Document window. The file is a normal file. You can make changes to the file using normal techniques.

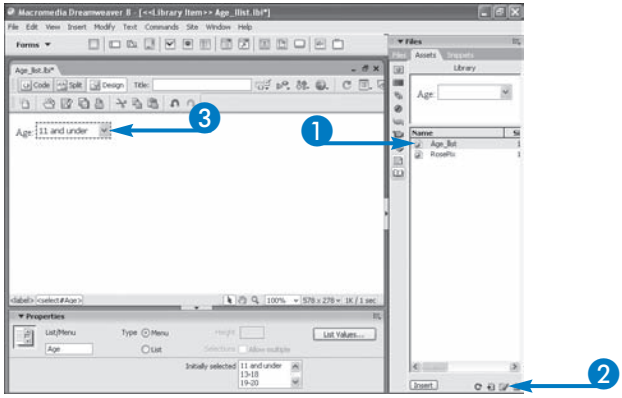
Library items cannot contain style sheets because the code for style sheets is included in the <head> section. (Chapter 11 discusses style sheets.)

Update a Library Item

1. Select a library item.
2. Click .

   The library item file opens.
3. Make changes to the library item.

Note: *Chapter 8 explains changing form fields.*

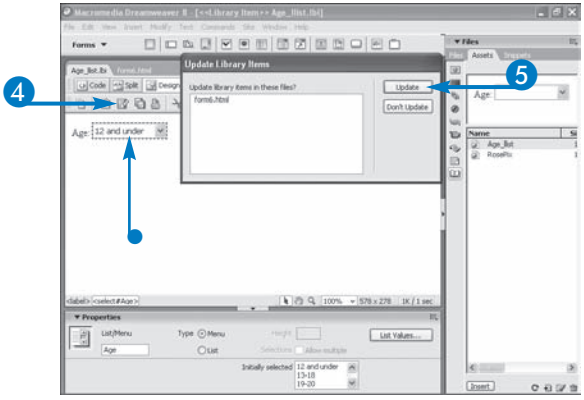


   - 11 and under is changed to 12 and under.
4. Click the Save button ().

   The Update Library Items dialog box opens.

   All the files that contain the library item are listed.

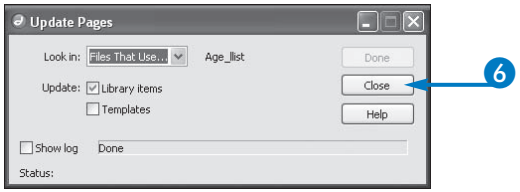
   Here, form6.html is shown to contain the library item.
5. Click Update.



The Update Pages dialog box opens.

The dialog box shows that the files have all been updated.

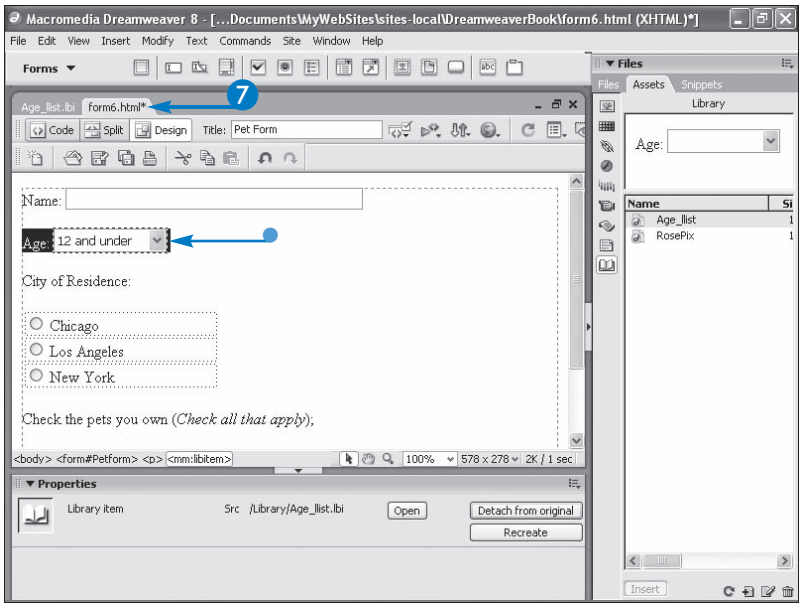
6 Click Close.



7 Open a file that contains the library item.

Here, form6.html is opened.

- The library item in the file has been updated.



How can I change an element in my Web page that is highlighted in yellow, showing that it is a library item?

Library items inserted into Web pages cannot be changed, except by changing the library item file. The Property inspector shows only a path to the library item file, rather than the normal properties.

You can change the library item to a normal Web page element that can be edited by clicking the Detach from Original button in the Property inspector. However, the element is then no longer attached to the library item and will not be updated with future changes to the library item.

How does Dreamweaver know which Web page elements are library items?

Dreamweaver inserts special comment lines before and after library items. The lines include #BeginLibraryItem and #EndLibraryItem. The comment line that marks the beginning of the library item includes the path and filename of the library item file.

When you instruct Dreamweaver to update a library item, it searches the Web site for the comments and updates the code enclosed by the comment if the library item has changed.

Create a Template

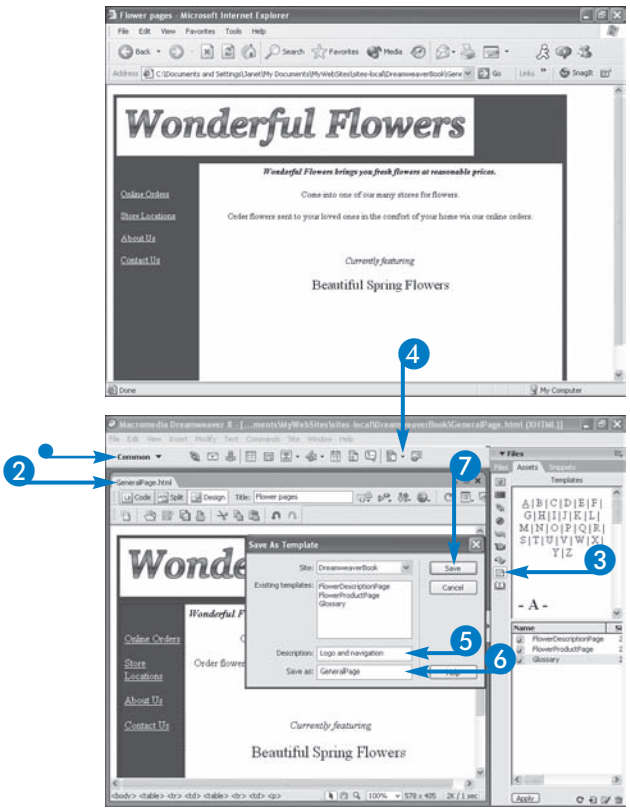
A template provides the basic design for a Web page. A template includes Web page elements that are common to several pages. When you create a new Web page based on a template, the elements in the template are included in the Web page. For example, if you have a banner with the company logo that you want on every Web page, or navigation elements that you want on each page, you can define a template that includes the elements. Then, each Web page created using the template will have the banner or the navigation pane.

Templates have locked regions and editable regions. When you create a Web page using a template, you cannot change the locked regions; you can change only the editable regions. You can always change anything in the template, but not in the pages based on the template. When you change a template, you can update all the pages based on that template with the new changes.

You create a template from a normal Web page. You save the page as a template, which locks all the elements in the Web page. You then insert the editable regions that you want the template users to be able to change.

Create a Template

1. Create a Web page that displays correctly in a browser to serve as a pattern for other pages in the Web site.



2. Open the pattern Web page in Dreamweaver.
3. In the Assets panel, click the Template button ( ).
4. Click and select Make Template.
   - The Common toolbar is open.

   The Save As Template dialog box opens.
5. Type a Description.
6. Type a name for the template.
7. Click Save.

- The template is added to the template list.

8. Remove any specific elements that you do not want on all pages.
9. Click in the Web page where you want to insert an editable region.
10. Click .
11. Click Editable Region.

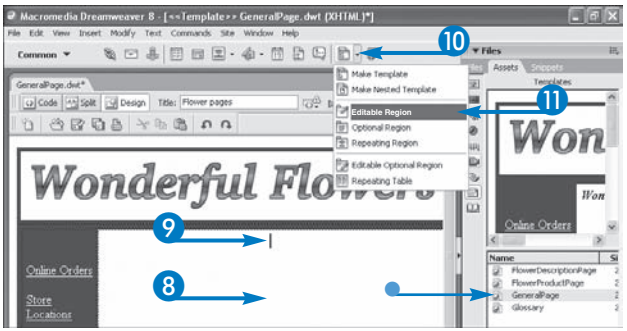
The New Editable Region dialog box opens.

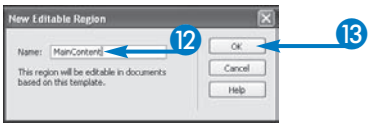
12. Type a name.
13. Click OK.

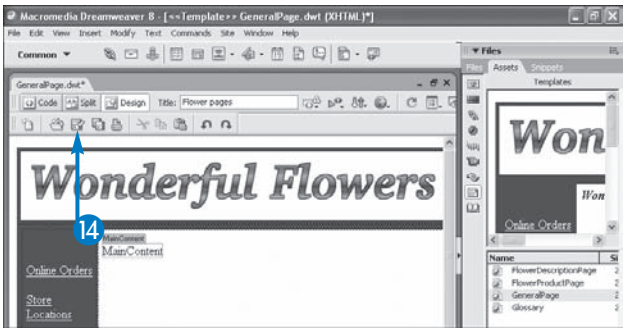
Dreamweaver adds an editable region to the template.

Add as many editable regions as desired.

14. Click .







MASTER IT

Can I change the attributes of the editable region?

The only attribute that the editable region has is its name. You can change the name in the Property inspector. With the Property inspector open, click the tab for the editable region. The name is displayed in a field. You can then change the name.

Can I change the attributes of the content of the editable region?

The editable region in a template may or may not contain content. If the region contains content, the attributes of the content, such as font or text size, can be changed and the saved attributes will apply to content the template user adds to his or her Web page. However, the template user may still change some of the attributes of the content, as long as the attributes do not affect the locked regions of the template.

The editable regions in the template contain the name of the editable region. Can I include different information in an editable region?

Yes. After the editable region is inserted, you can change what the region contains. You can remove or change the content that Dreamweaver adds to the region with normal editing techniques, such as inserting or deleting characters or selecting and overwriting the content.

Create a Web Page Based on a Template

Templates are patterns for Web pages. When you create a Web page based on a template, the Web page elements from the template are included in the new Web page; you do not need to manually add these elements yourself. When many Web pages include the same elements, such as the company logo or address, using a template saves a lot of time and work and ensures consistency.

The template has locked regions and editable regions. The new Web page that is based on the template can be changed only in the editable regions. The locked regions cannot be changed.

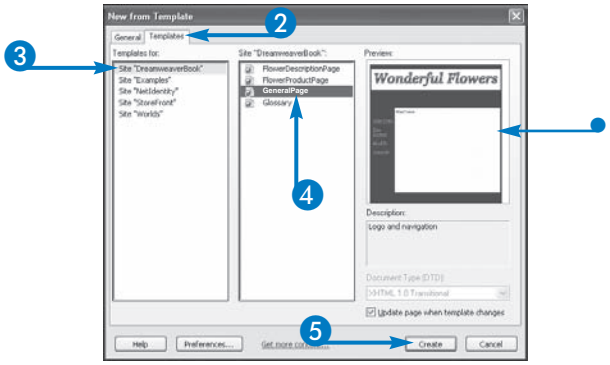
The editable regions are shown as boxes with blue tabs that display the name of the editable region. You can add and/or change things only in the editable regions. In the editable region, you can change only attributes, such as font or text color, that do not affect the locked regions.

Dreamweaver can identify Web pages that are created from a template. When the template is updated, the Web pages based on the template are also updated.

Create a Web Page Based on a Template

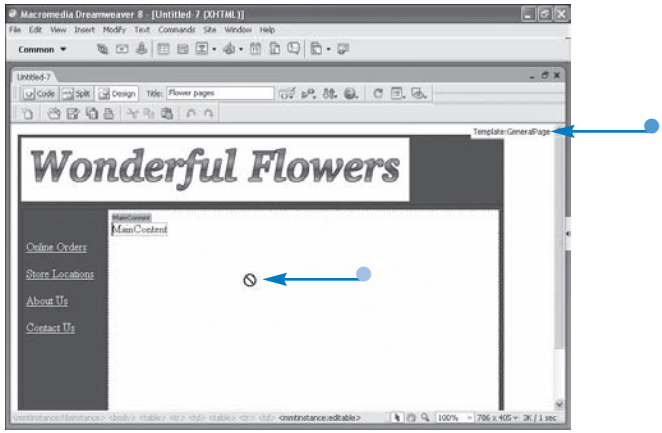
1. Click File and select New to create a new file.

   The New file dialog box opens.
2. Click the Templates panel.
3. Click the site name.
4. Click the template name.
   - A template preview is displayed.
5. Click Create.



A Web page opens that contains the elements of the template.

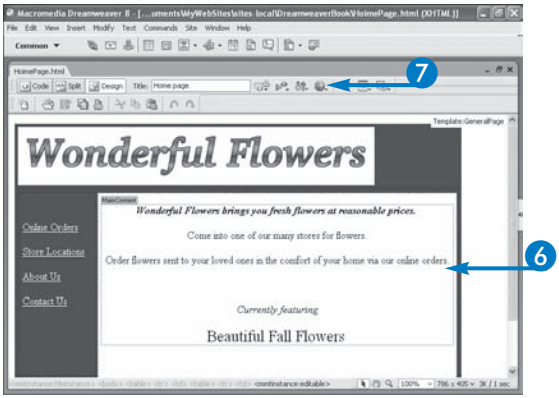
- The template name is displayed.
- changes to when over a locked region.



6 Add content to the editable region(s).

7 Click .

Note: *Chapter 1 explains Preview in Browser.*



The browser displays the Web page.

Can I create a normal Web page from a template?

Yes. The Web page contains the elements in the template, as is, without any special markings. The content of editable regions is included as normal text. The entire Web page can be edited and changed. The Web page cannot be updated when the template changes.

To create a normal Web page, in the New dialog box, uncheck the box labeled Update page when template changes.

How does Dreamweaver know where the editable regions are?

When you create a Web page based on a template, Dreamweaver encloses each editable region in comment lines that identify the editable region by name. The comments look similar to the following:

```
<!-- InstanceBegin
Editable name="" -->
<!--
InstanceEndEditable -->
```

The name of the editable region is included in the opening comment, as follows:

```
name="MainContent"
```

Can I create a Web page in one site based on a template in another site?

You can copy the template into the Dreamweaver site where you want to create the page. If you open the template file and click Save as Template in the File menu, the Save as Template dialog box allows you to select a different site for the template. If the template contains library items, you can copy the library items to the site as well, to avoid confusion.

Update a Template

You can change a template at any time. Some elements of the template might change, such as the company logo or address, or you might change your mind about its design based on customer feedback. You can change the template repeatedly as its design evolves with usage.

When you change a template, Dreamweaver can identify all the Web pages created from the template and update them to match the template changes. To update each Web page manually with the changes would mean much more work.

In some cases, you may not want to update all the existing Web pages. When you save changes to a template, Dreamweaver lists all the Web pages that are based on the template and gives you the option to update them or not.

When you create a Web page from a template, the New File page contains a box labeled Update Web page when template changes. Only Web pages created with this box checked can be updated. The box is checked by default when you create a Web page based on a template.

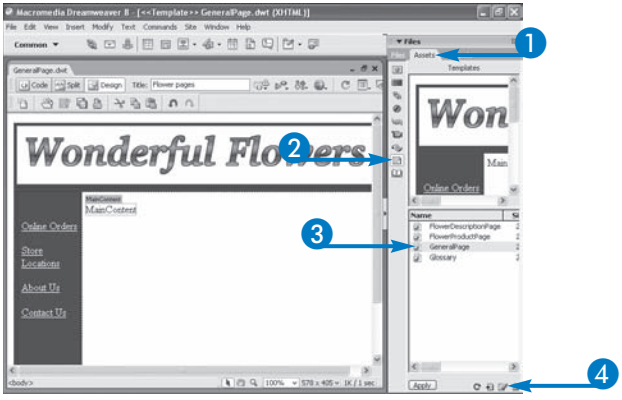
Update a Template

1. Open the Assets panel.

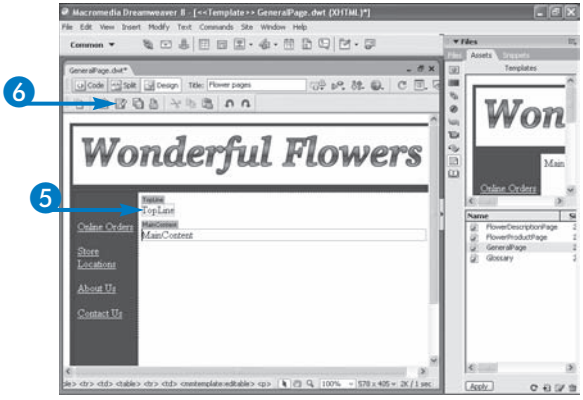
Note: *Chapter 2 discusses using panels.*

2. Click .
3. Click the template name.
4. Click .

   The template file opens.



5. Make changes to the template.
6. Click .



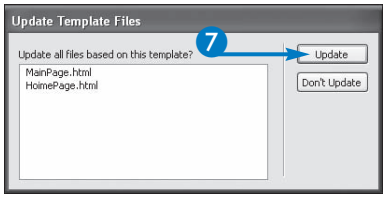
The Update Template Files dialog box opens.

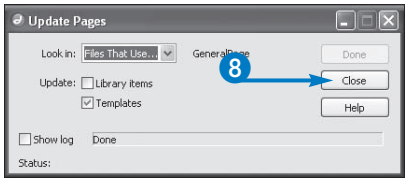
7. Click Update.

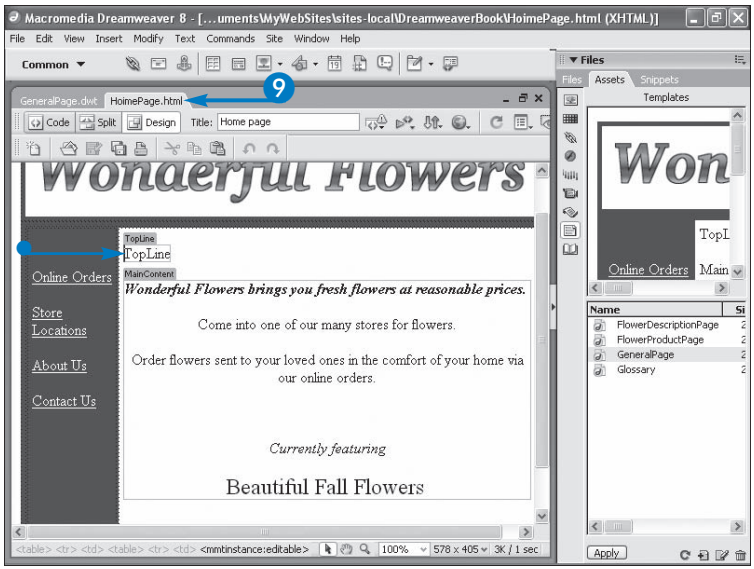
The Update Pages status box opens.

8. Click Close.

9. Open a Web page based on the changed template.
   - The changes in the template are also in the Web page.







How does Dreamweaver connect a Web page with a template?

When Dreamweaver creates a Web page from a template, it inserts a comment that includes the name of the template. Dreamweaver then displays the Web page with the name of the template. The comment looks similar to the following:

```
<!-- InstanceBegin template="path"-->
```

Path is the path/filename to the file that contains the template.

Dreamweaver can then update Web pages by looking for the name of the template in the Web page file.

Can I tell Dreamweaver to ignore a specific Web page when its template is updated?

You can break the connection between a Web page and its template. In Dreamweaver terminology, you *detach* the Web page from the template. In the Modify menu, select Templates and click Detach from Template.

After the Web page is detached, it is no longer connected to the template. It cannot be reattached. It becomes a normal Web page. All regions of the Web page can be edited. When the template is changed, it has no effect on the detached Web page.

Add a Repeating Region to a Template

Some Web pages contain elements that are similar, but variable in number. For example, a list of products might contain an identical row for each product, such as product name and price, but the number of rows depends on the number of products available. Another example might be a photo gallery where each photo is displayed in similar format, but the number of photos might vary.

A common Web page element is a table. For example, you might use a table to display products where each row is a product listing. You can designate a table row as a repeating region. You set up the format of the row, and the template user can insert as many of the rows as needed.

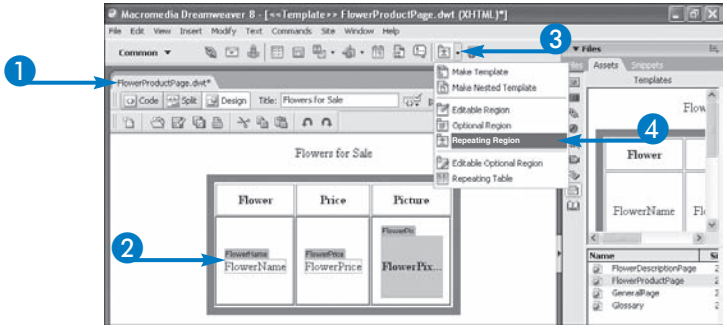
You can select an element in a Web page and designate it to be a repeating element. If you specifically want a table with repeating rows, you can add a repeating table to the template. Adding a repeating table is described later in this chapter.

A repeating region is not an editable region. If you want the user to be able to change parts of a repeating region, you need to insert editable regions in the element.

Add a Repeating Region to a Template

1. Open the template.
2. Select the repeating region.

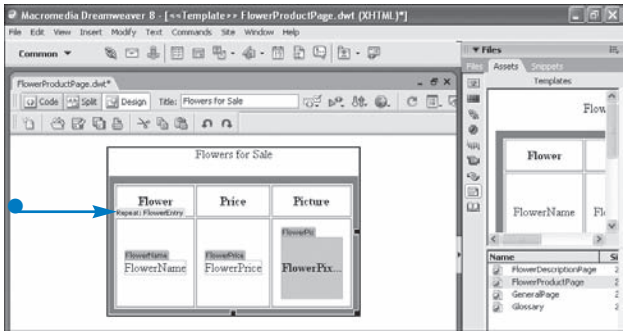
   Here, the table row is selected.
3. Click .
4. Click Repeating Region.



The New Repeating Region dialog box opens.

5. Type a name for the repeating region.
6. Click OK.

- Dreamweaver converts the selected element into a repeating region.



Using a Repeating Region in a Web Page

Repeating regions in a template allow the template user to add as many instances of the repeating region as needed. For example, if a template defines a table to display products and defines the table rows as repeating regions, you can add as many rows as you have products. If a Web page contains an element that is an image in a photo gallery, the image, with its format, can be designed to be a repeating region. You can then add as many images as needed.

In the Web page based on a template with a repeating region, the repeating region is outlined and identified by a tab. The outline and tab are lighter blue than the editable regions' outlines and tabs. The tab displays "Repeat: region name." Do not use a name for the repeating region that is the same as another name in the template.

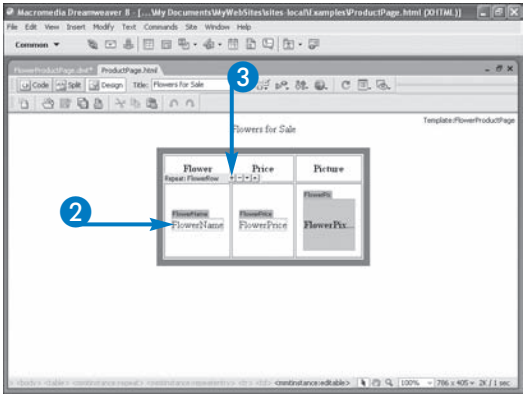
The repeating region has a set of four controls by the region tab: [+], [−], [▼], and [▲]. [+] and [−] add and remove a repeating region. [▼] and [▲] move to the next or previous repeating region.

Using a Repeating Region in a Web Page

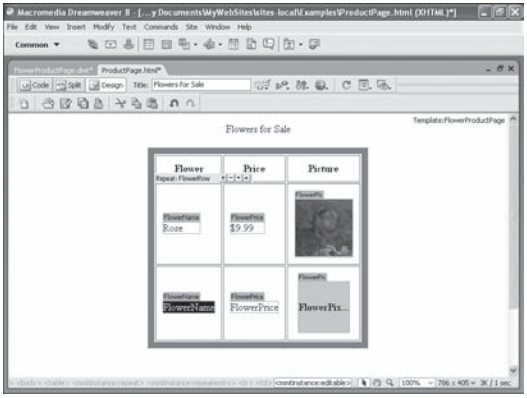
1. Create a Web page based on a template with a repeating region.

Note: *See the section "Create a Web Page Based on a Template" for more information.*

2. Fill in the editable regions.
3. Click [+].



Dreamweaver adds a repeating region.



Create a Repeating Table in a Template

Tables with repeating rows are used often in templates. For example, you might display your product information — product name, characteristics, price — in a single row of the table. Therefore, you would define the table row as a repeating region so you could add a row for each available product.

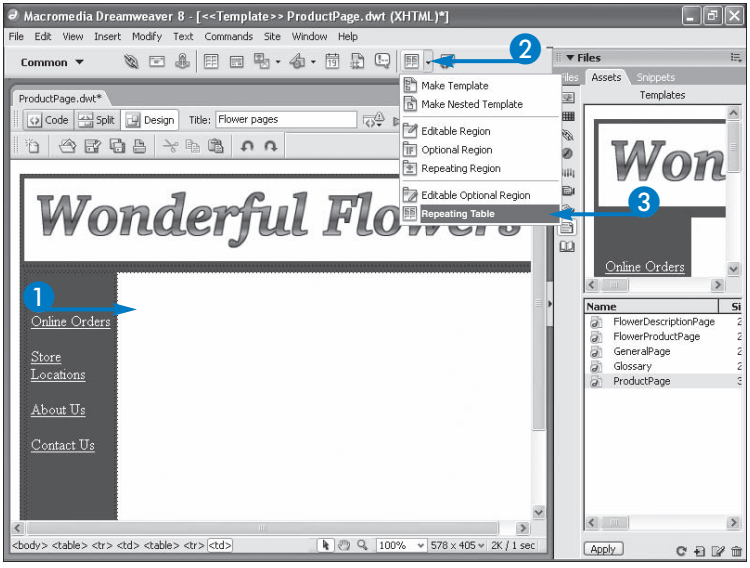
Because this kind of table is used so often in templates, Dreamweaver has provided a feature that adds the table in one step. If you need a simple table, with a simple format, this feature can save time and trouble.

When you insert a repeating table, Dreamweaver displays a dialog box in which you can set several options for the table, such as number of rows and columns, width, cell spacing, cell padding, and borders.

In addition, you need to specify the rows that comprise the repeating region by setting the starting and ending row. For example, if you set the starting row to 2 and the ending row to 4, the repeating region consists of three rows. When you add a repeating region, a duplicate of the three rows is added at the end of the table.

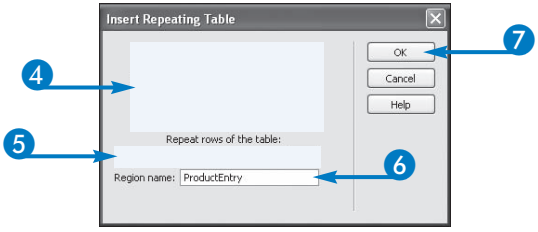
Create a Repeating Table in a Template

1. Click where you want to insert the table.
2. Click ▪.
3. Click Repeating Table.



The Insert Repeating Table dialog box opens.

4. Fill in the table format information.
5. Type the starting row and ending row.
6. Type a name for the repeating region.
7. Click OK.

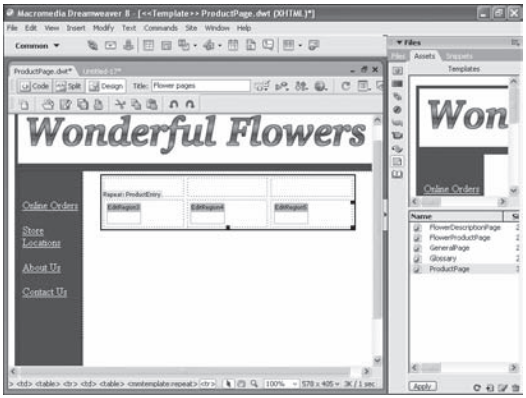


The table is inserted.

The editable regions have generic names.

8 Open the Property inspector.

Note: *See Chapter 2 to open the Property inspector.*



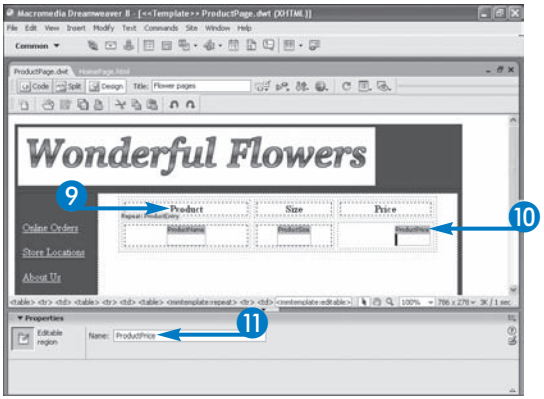
9 Add column names, if needed.

10 Click the tab for an editable region.

The Property inspector displays the properties for the region.

11 Type a name for the editable region.

12 Repeat steps 10 to 11 until all editable regions are named.



The dialog box offers only a few settings. Can I change other settings for the table?

After the repeating table has been inserted into your template, you can change any settings you want to change. You can change both the settings that were provided in the dialog box and any other settings. Use the Property inspector as you would for any other table. Chapter 7 discusses tables.

When adding a repeating table, how do I specify that the first row should remain the same so that I can use it for column names?

In the dialog box, setting the Starting Row to 2 means that the first row will not be part of the repeating region. The first row is then locked in the Web page based on this template. You can enter column names in the first row and the template user cannot change them.

Do I have to put an editable region in each table cell?

You should put an editable region in a cell only if you want the template user to be able to change the content of the cell. In some cases, you may want the content of a cell to be the same on all Web pages, like the column names in the example. If you do not want the template user to change the content of a cell, add the content in the template and do not add an editable region.

Create Nested Templates

Templates can be based on a template, resulting in *nested templates*. If you have more than one type of page on a Web site, requiring different templates, you can create a master template with Web page elements that you want on all pages, regardless of the type of page. Then, you can create separate nested templates for the different page types, based on the master template. You can make changes in the master template that will be updated on all pages, or changes in the nested templates that will be updated only on one page type.

The example in this section creates a master template that displays the company logo in a banner across the top of the page and two nested templates — one for a content page and one for a page that lists products. Web pages based on the nested templates will include the logo.

As with any other template, the master template must provide editable regions. If the master template includes no editable regions, you will be unable to change anything in the nested templates. In a nested template, you can add elements to the editable regions and/or insert new editable regions inside the editable regions provided by the master template.

Create Nested Templates

Create the master template

1 Create and save a template.

Note: *See the section "Create a Template" to create a new template.*

Create a nested template

2 Create a new page based on the master template.

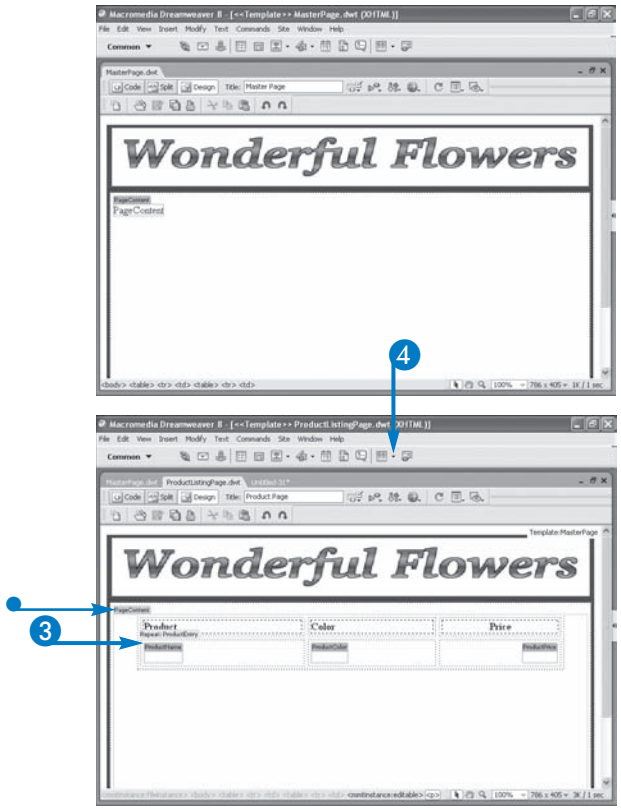
Note: *See the section "Create a Web Page Based on a Template" for more information.*

3 Add content to the editable regions of the master template.

- Here, a repeating table is inserted inside the PageContent region, changing its tab to orange.

4 Click ▪ and choose Make Template.

Note: *See the section "Create a Template" to save a template.*

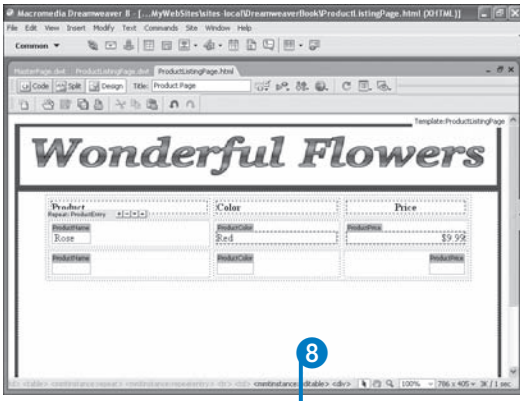


Create a Web page

5 Create a Web page based on the nested template.

Only the editable regions from the nested template are available.

Here, the nested template provides only a repeating table.



Create additional nested templates

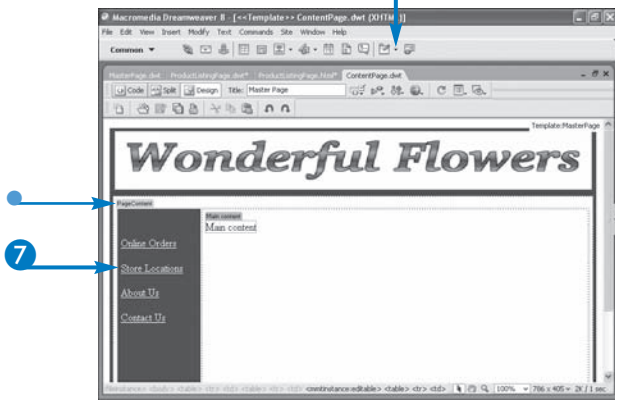
6 Create a page based on the master template.

7 Add content to the editable regions of the master template.

- Here, a two-column table is inserted into the PageContent region, causing the PageContent tab to change to orange.

8 Click and choose Make Template.

Note: *See the section "Create a Template" to save a template.*



When I am working on a nested template, how can I tell whether the editable region from the master template is going to appear in the Web pages that I create based on the nested template?

An editable region provided by the master template appears in the Web pages based on the nested template unless you insert a new editable region in the master editable region. When you insert an editable region while working in the nested region, the outline of the master editable region and its tab change to orange. Any orange regions do not appear in a Web page based on the nested template.

Can I prevent an editable region in the master template from being passed on to the Web page based on a nested template without inserting a new editable region?

Yes, but only by editing the source code of the nested template. The editable region is identifed by comment lines in the source code, similar to:

```
<!-- InstanceBeginEditable name=
"PageContent" -->
```

In Code view, add the following code immediately after the @@--> at the end of the `InstanceBeginEditable` line:

```
@@(" ")@@
```

@@ appears in the editable region and its outline and tab change to orange. When a Web page is created based on this nested template, only the content of the orange editable region appears in the Web page as a locked element. The editable region itself does not appear.

Introducing CSS and Layers

HTML was designed to present content on a Web page. The formatting capabilities of HTML are simple and limited. Developers have toiled to present attractive, creative Web design using HTML tags. In response, *Cascading Style Sheets* (*CSS*) was developed specifically for formatting. CSS allows much more control over the appearance of Web pages.

Using CSS, you can precisely place and size the elements of your Web page, to the exact pixel. All the formatting functionality of HTML tags is available with CSS, plus additional formatting functionality that HTML does not provide. For example, using CSS, you can set borders or increase or decrease the space around any Web page element.

Cascading Style Sheets are collections of rules that define the appearance of the content of your Web page. When you change a style in a style sheet, all Web page elements defined by the style change immediately to reflect the style sheet change.

Terminology

A CSS contains one or more *styles* that can be applied to a Web page element. A style consists of one or more *rules.* A rule contains one or more property specifications that define the way an element is displayed.

A rule is made up of two parts: the *selector* and the *properties.* The selector defines which elements are affected by the style. The properties specify the appearance of the style. The following is a rule as it appears in the source code of a Web page:

```
h1 {
     color: red;
     font-style: italic
}
```

In this example, `h1` is the selector. The properties are the text between the curly braces. Each property consists of a property name and a value for the property. A colon (:) follows the property name, separating it from the property values. Semicolons (;) separate the properties.

How Styles Work

You can create two types of styles: an HTML tag style or a class style. The selector of a tag style is an HTML tag. The style rules specify the appearance of all selector tags. A class is a style that can be applied to any individual tag. The selector is a class name, provided by you, which identifies the style and is used to apply the style to a Web page element.

Styles are stored in a style sheet. A style sheet can be internal (called *embedded*) or external. An embedded style sheet is stored in the head section of the Web page file and is available only to the Web page in which it resides. An external style sheet is stored in a separate CSS file, not in the Web page file. Any Web page can be connected to the external style sheet, making its styles available to that Web page.

CSS also provides inline styles that you can define for a single tag. If you are familiar with CSS code, you can code this type of style directly in Code view. In some situations, for certain types of properties, Dreamweaver writes inline styles for properties set with the Property inspector or other methods. However, this chapter discusses only internal and external style sheets.

Class styles are available via the style sheet, but you must apply the style before its rules take effect. You can apply the class style to any individual Web page element. The style affects only the HTML tag to which it is applied. For example, applying a style to one `<h1>` tag, does not affect any other `<h1>` tag.

Position Web Page Elements with Layers

You can position Web page elements precisely with CSS, using one of several measurement units. Pixels and percentages are the most common measurements used.

In Dreamweaver, you position Web elements using layers. A layer is a rectangular section on the screen that floats above the Web page. After you create a layer, you can resize it and move it anywhere on the Web page without affecting the Web page content underneath the layer. You can add any content to the layer, even another layer (called *nesting*). The background of the layer can be transparent, so the elements beneath the layer show through the layer, or it can be solid so it hides the content underneath the layer. You can create as many layers on a Web page as you need. Layers can overlap each other, or you can prevent them from overlapping.

Advantages of Using CSS

CSS allows you much greater control over the appearance of your Web page than HTML tags alone do. CSS provides all the formatting features of HTML tags, plus many formatting options not available with HTML tags. In addition, CSS allows you to position your Web page elements exactly where you want them.

Styles can save you a great deal of time and work. If your Web pages are formatted using styles, you can change a style and the change appears instantly in all the Web page elements that use the style. Even if your Web site consists of hundreds of Web pages, you can change an element on all the pages in a minute. One change to the style sheet changes all the Web pages instantly.

Style sheets ensure consistency throughout a Web site. If you use the same style sheet for all your Web pages, elements defined by the same style look exactly the same in all Web pages.

CSS and Browsers

Browsers control the appearance of Web pages. Browsers make the decisions when displaying a Web page. A browser could, theoretically, decide to display all text in `<h1>` tags upside down.

Browsers use standards, set by the World Wide Web Consortium (W3C), to display Web pages. You can see the standards details at www.w3.org. Different browsers interpret and comply with standards differently. In addition, some browsers have developed extra tags and/or attributes, not in the W3C standards, which other browsers do not recognize.

Currently, HTML tags are generally displayed similarly by most major browsers. CSS, however, is newer than HTML. Therefore, CSS standards are not yet as well supported. Although all browsers now support CSS to some degree, rendering the most common CSS code similarly, browsers still support the CSS standards incompletely and, in some cases, inconsistently. However, CSS standards support improves substantially with each browser release. The use of CSS is increasing rapidly. Many existing Web sites are being converted to CSS. CSS is the future of Web design.

If you plan to use CSS, you need to test your Web pages on a variety of browsers. The older a Web browser is, the more likely the CSS may not render as expected. Any browser older than Internet Explorer version 3 and Netscape Navigator version 4 does not support CSS at all.

Create a Class Style

A class style is a set of properties with their values. A class style is stored with a name, which you can use to apply the style to a Web element. For example, you might create a style named .red_ital, which defines red, italic text. You can then apply .red_ital to any text that you want to be red and italicized.

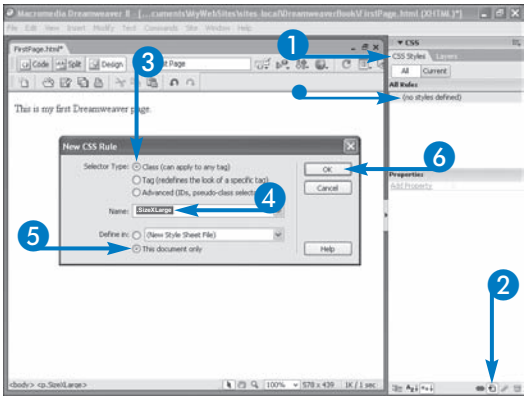
Class names must begin with a dot (.), such as .line_after or .big. A style sheet contains one or more classes. The style sheet can be embedded in the head section of a Web page or in an external file. When the style sheet is stored in the head section, the styles are available only to the Web page where they are stored. External style sheets are discussed later in this chapter.

Styles can be created, managed, and applied from the CSS Styles panel. The Styles panel lists all the class styles that are available to the Web page that is currently open in the Document window. Styles stored in the head section are shown under the category heading `<style>`. Styles stored in an external file are listed under the name of the external file.

Create a Class Style

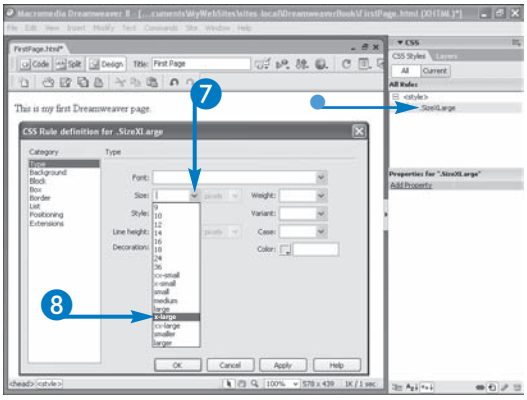
1. Open the CSS Styles panel.
   - No class styles are available for this Web page.
2. Click the New Item button ( ).

   The New CSS Rule dialog box opens.
3. Click Class for the selector type.
4. Type a class name.
5. Click This document only (changes to).
6. Click OK.

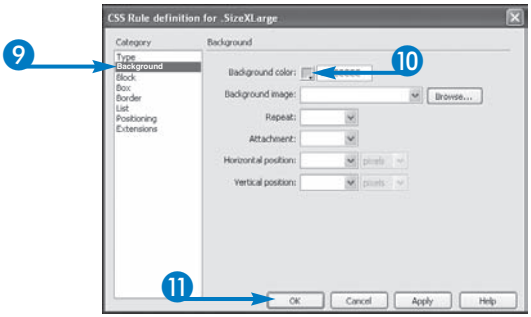


   - The class name is listed in the CSS Styles panel.

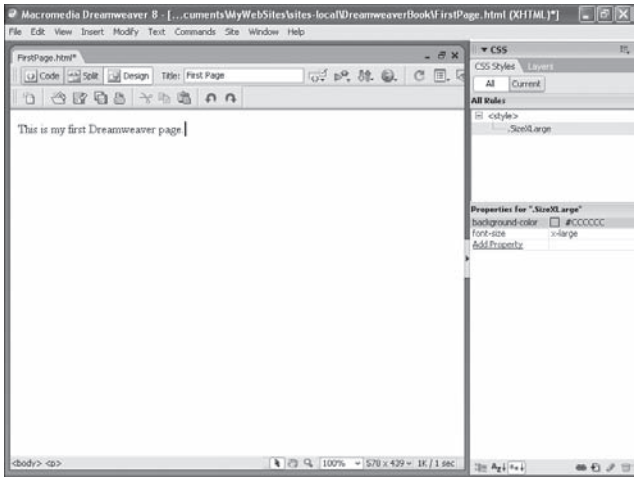
   The CSS Rule definition dialog box opens.
7. Click .
8. Click x-large.



9. Click Background.
10. Click the Background color box and click a color from the color grid.
11. Click OK.



The properties defined in the class style are listed.



The dialog box that opens when I create a class is titled CSS Rule. What is a rule?

Rule is the term for the style definition. The rule specifies the item affected by the rule and the properties and values of the style. The affected item is called the *selector* and can be either an HTML tag name or a class name. For example, a rule might define a selector (class name) `.red` with one property — `color` — set to the value `red`.

Can I look at a style sheet?

Yes. The style sheet contains CSS code which is just text. An embedded style sheet is code in the head section of a Web page file. A style sheet is enclosed in `<style>` tags, such as the following:

```
<style type="text/css">
</style>
```

A class within the style tags is coded as follows:

```
.ital {
    font-style: italic;
}
```

This example is a rule that defines the `.ital` class, which italicizes any Web elements to which it is applied. A style sheet contains one or more rules.

Apply a Class Style

A class style is a set of properties with their values. You use the class name to apply the class to any Web element that you want to format with the class style. For example, a class named `.red` might display red text. You can apply `.red` to any text that you want to be red.

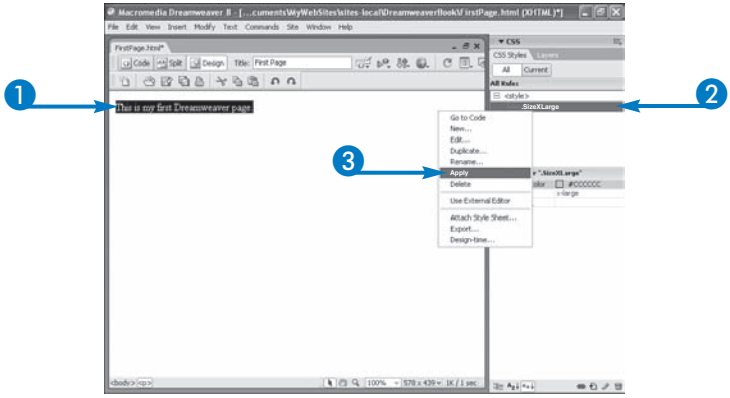
You can apply a class style to any element or set of elements. For example, if you select one word of text and apply a style, the style affects only the word that is highlighted. If you select the entire Web page and apply a style, the entire page changes to match the style. Whenever a class style is changed, all the elements to which the style was applied change instantly.

You can apply a style to a Web page element by selecting the element, right-clicking the class name in the CSS Styles panel, and selecting Apply. You can also apply a style by selecting and right-clicking a Web page element in the Document window. The menu that appears lists all the available styles. You can click the style you want to apply to the selected element.

To remove a style from a Web element, right-click the element, select CSS Styles, and then click None.

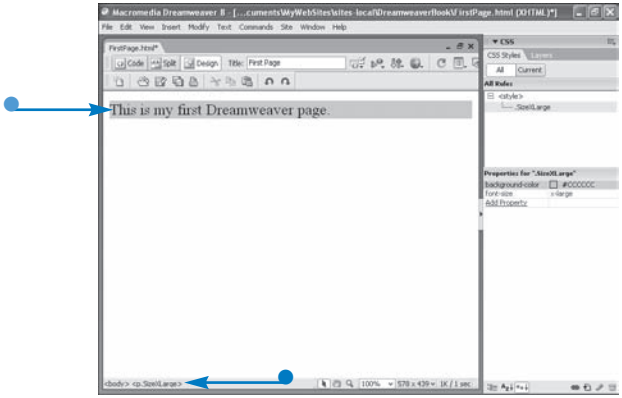
Apply a Class Style

1. Select the text to receive the style.
2. Right-click the class.
3. Click Apply.



Dreamweaver applies the style to the selected text.

- The style name is displayed in the status bar with the tag.
- The class makes the text larger and adds a gray background.



Edit a Class Style

You can change a class style at any time. When you change a style, all the Web elements to which the style is applied change instantly. This is very useful when designing your Web site. For example, you can test various colors for elements in your Web page, such as headings (<h1> and <h2> tags). Each time you change a color in the class style, all the headings in the Web page change color, so you can evaluate the appearance of your page in various colors.

When you open a class style to edit it, the same dialog box appears that you used to create the style. The dialog box provides many settings you can change, many of which cannot be set using HTML code; they can be set only in CSS code.

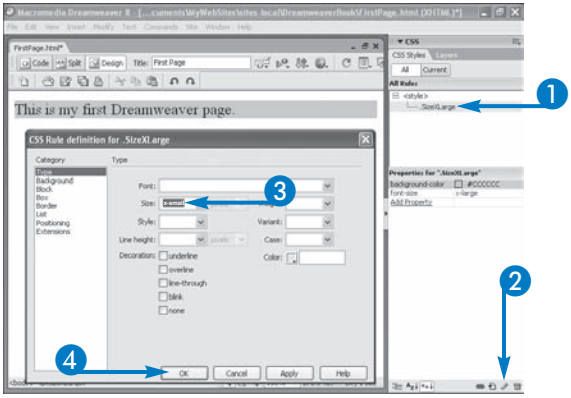
If you need to make only a simple change, you can change the style using the Properties section of the CSS Styles panel, which lists the properties currently defined in the class. Changing a style in the CSS Styles panel is described later in this chapter.

Edit a Class Style

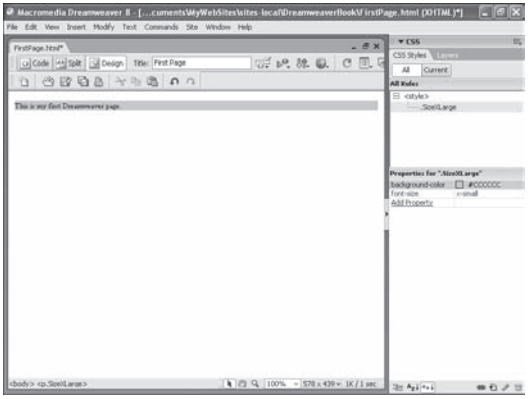
1. Click the class name.
2. Click the Edit Class button ( ).

   The CSS Rule definition dialog box opens.
3. Make changes to the class.

   Here, text size is changed to x-small.
4. Click OK.



The Web page text changes in response to the class style change.



Change a Style in the Styles Panel

You can change a class style at any time. When you change a style, all the Web elements to which the style is applied change instantly.

You can change a class style directly from the CSS Styles panel. The Properties section of the panel lists all the properties that are currently defined in the class. The two-column listing shows the name of the property and its current value. You can change the current value, remove a property setting, or add a property setting.

When you click a property value, an editable field opens. If the field has a limited set of possible values, a drop-down list appears, allowing you to select from all possible values for the field.

You can remove a property by clicking it and clicking the Delete button (🗑).

You can add a property by clicking Add Property. A new property line opens with a drop-down list for the property name. When you select a property, an editable field or a drop-down list appears for the property value.

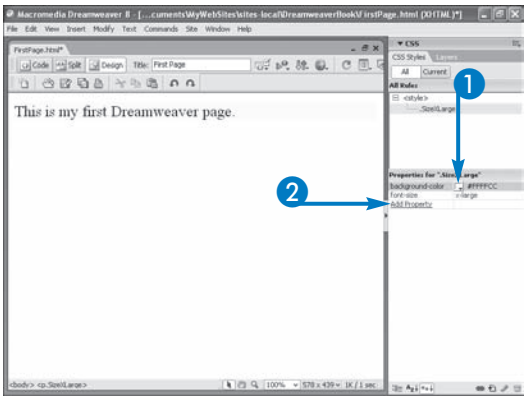
For a very complicated style with many properties to change, it is better to use the CSS Rules Definition dialog box, as described in the previous section of this chapter. This is the same dialog box you use to create a class.

Change a Style in the Styles Panel

1. Click the color box and select a different color.

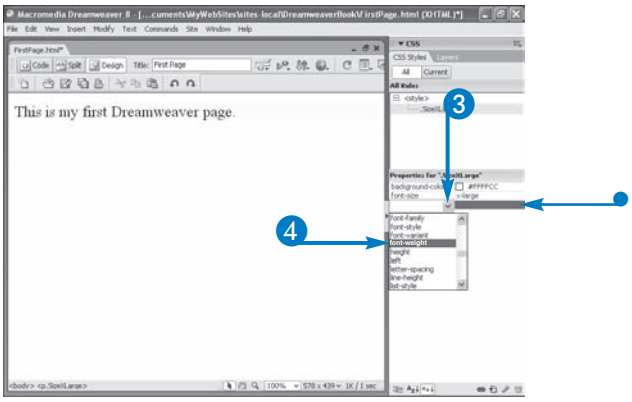
   The new background color appears immediately.

2. Click Add Property.



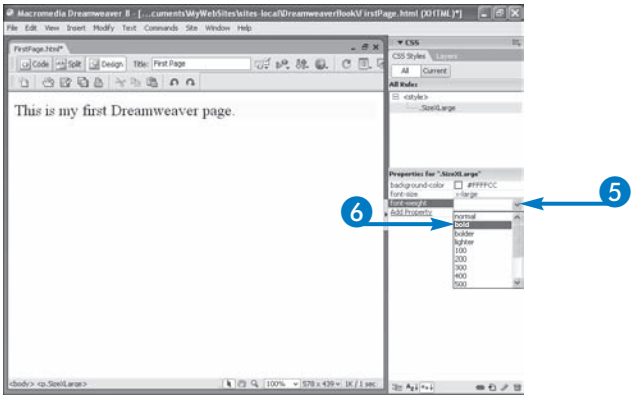
   - A new line is added to the Properties list.

3. Click ▼.
4. Click a property.



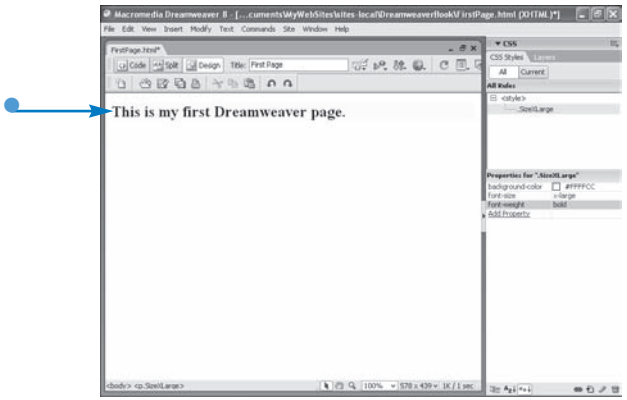
5 Click ▾.

6 Click a value for the property.



The new property is applied immediately.

- Here, the text is bolded.



MASTER IT

I want to change the style that defines some text. How do I know which class to change?

The status bar at the bottom of the Document window shows the class information. Click a Web page element. The tags that enclose the element appear at the left side of the status bar. Any class styles that are applied to the tag are shown, such as `<p.red>`.

Can I change a class by editing the source code?

Yes. CSS code is text that can be changed directly. If the style is in an embedded style sheet, the code is in the head section of the Web page file. You can change the source code in Code view. The code is in the following format:

```
<style type="text/css">
<!--
.red {
    color: #FF0000;
}
-->
</style>
```

You can change the value of the property. You can also remove the property or add a new property by adding or removing the property line. The semicolon is required to separate properties.

Create a Style for an HTML Tag

For some Web pages, you may want to change the definition of an HTML tag. For example, you may want all <h2> headers to appear in green text. Dreamweaver lets you customize the appearance of HTML tags.

You can create a style for an HTML tag. You create the style the same way you create a class style. However, when the New CSS Rule dialog box opens, you select Tag instead of Class. The dialog box then provides a field where you can type — or select from a drop-down list — the tag you want to create a style for.

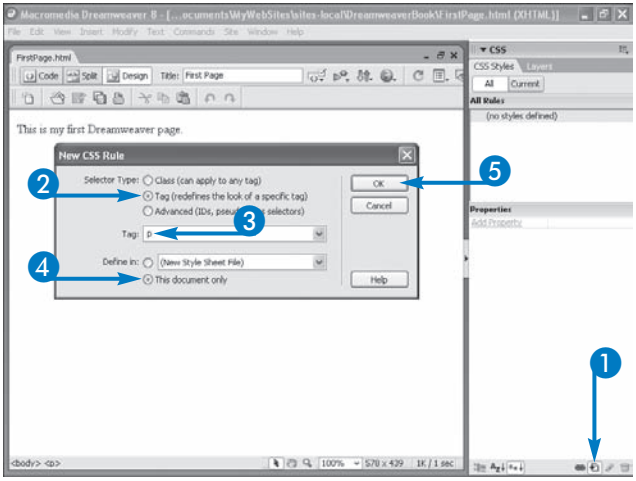
The CSS Rule Definition dialog box then opens, the same box used to create a class. You set the properties you want to associate with the selected tag. Dreamweaver creates a style for the tag, using the tag name as the selector. The style contains the properties you set for the tag. Wherever the tag is used in the Web page, the style defines it. The properties in the CSS style for the tag override the HTML properties for the tag. The properties not defined in the CSS style display with the normal HTML formatting.

Create a Style for an HTML Tag

1. Click .

   The New CSS Rule dialog box opens.

2. Click Tag for the selector type.
3. Type the tag for which you want to create a style.
4. Click This document only.
5. Click OK.

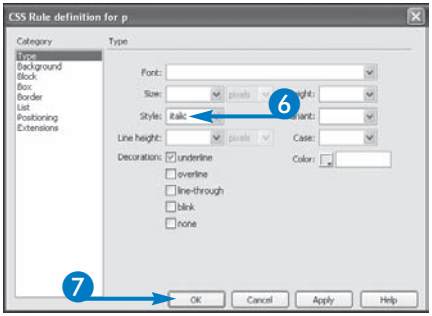


   The CSS Rule definition dialog box opens.

6. Set the style for the tag.

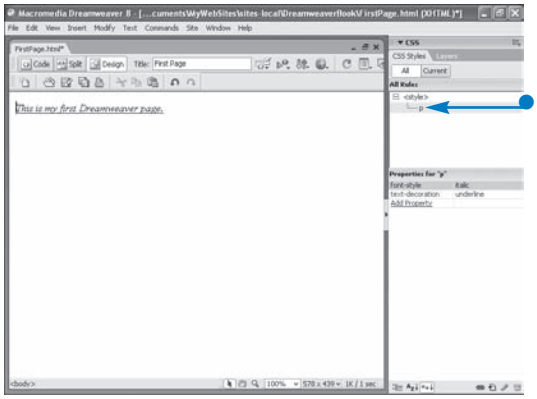
   Here, the text is set to italic and underline.

7. Click OK.

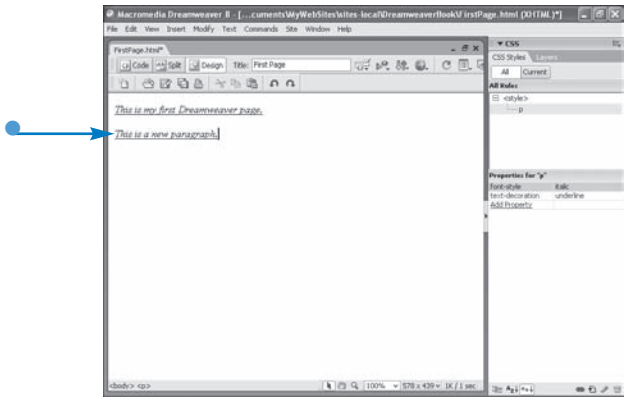


- The tag style is listed.

The style is applied to all existing tags.



- Dreamweaver applies the style to any new elements created with the tag.



Can I create a class and apply the class to all instances of an HTML tag?

Yes. However, when you want to change the appearance of all Web elements of a specific type, customizing the HTML tag is more efficient. You do not need to specifically apply a class whenever you add the element; the changes happen without any work required from you.

When you only want to change some instances of a particular tag rather than all instances, creating a class is more efficient. For example, if you want all `<h1>` to appear in green, customize the `<h1>` tag. However, if you want only every other `<h1>` to appear in green, create a class and apply it to every other `<h1>` tag.

How can I remove the customized style from an HTML tag?

The CSS Styles panel lists all the styles for a specific Web page. The customized style is shown in the panel in the category `<style>`. The tag name is listed for the customized style. Click the tag name and click 🗑.

Can I make one HTML tag behave exactly the same as another?

Yes. Create a customized style for the HTML tag and set the properties so that it mimics another tag. You can, for example, create a style for the `<b>` tag that italicizes the text instead, behaving just like the `<i>` tag.

Create an External Style Sheet

You can use a single style sheet for more than one Web page. Using the same style sheet for your entire Web site ensures consistency among your Web pages. A single style sheet can also facilitate maintenance: a change to the style sheet is reflected instantly among all the Web pages that use the style sheet.

To use a style sheet with more than one Web page, save the style sheet in a file that is separate from any Web page. This external style sheet can then be attached to any Web page and the styles applied to any element on the Web page.

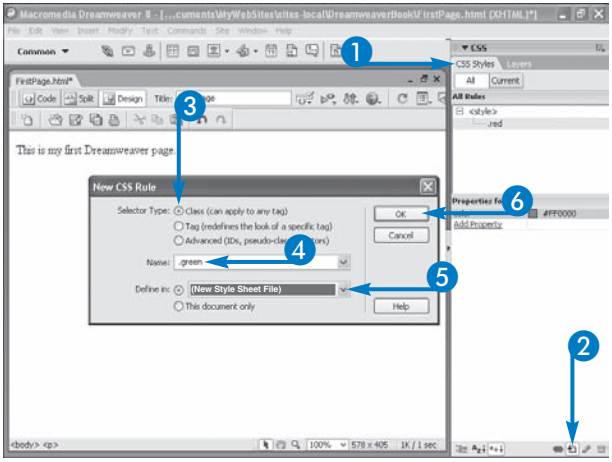
You can create a new style sheet in an external file or you can export the embedded style sheet from a Web page into an external file. When you create a new style in an external file, the external style sheet is automatically attached to the current Web page. To use the style sheet with other Web pages, you must attach it to the other Web pages.

The style sheet is saved in a file with a .css extension, such as ExampleSheet.css. The file is a text file containing CSS code.

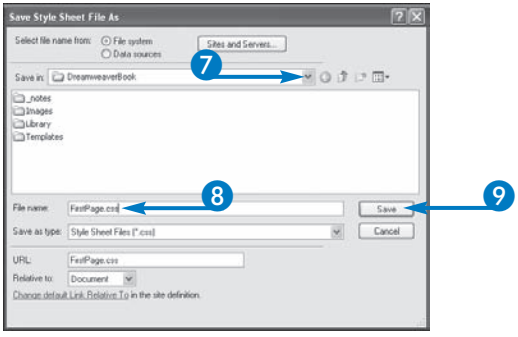
Create an External Style Sheet

1. Open the CSS Styles panel.
2. Click .

   The New CSS Rule dialog box opens.
3. Click Class for the selector type.
4. Type a class name.
5. Click and select (New Style Sheet File).
6. Click OK.



   The Save Style Sheet File As dialog box opens.
7. Click and select the Dreamweaver site folder where you want to save the file.
8. Type a filename.
9. Click Save.



The CSS Rule Definition dialog box opens.

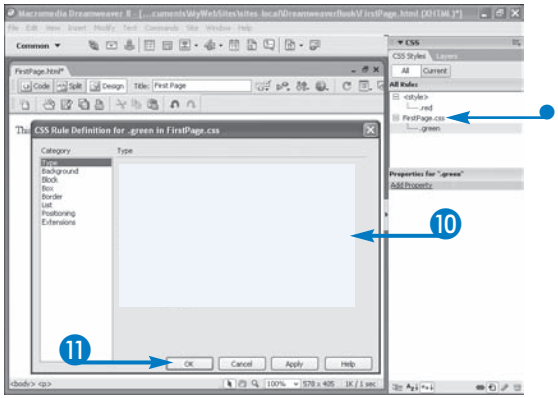
- The style sheet name is added as a category.

The class name is added to the list.

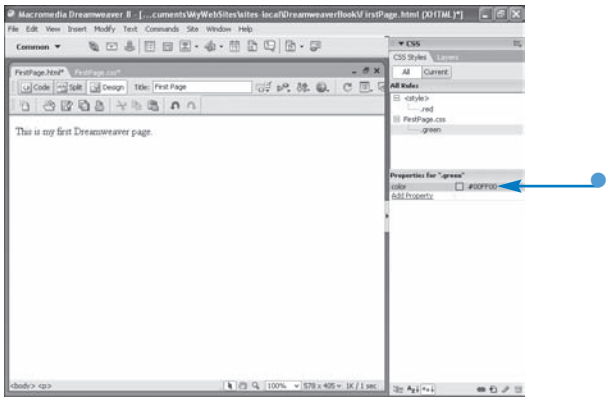
10 Set the property values.

Here, Color is set to green.

11 Click OK.



- Style properties are listed in the Properties section of the CSS Styles panel.



Can I use an external style sheet created in one Dreamweaver site in a different Dreamweaver site?

Yes. When you attach the style sheet to a Web page, you can browse to the CSS file that you want to attach. You can browse to any file in any folder. However, you might cause confusion with long links to files outside the site. To avoid any problem, copy the CSS file into the directory for the site where you are going to use it. Besides, in the future you may want to change a style for one site only.

How can I remove an external style sheet?

In the CSS Styles panel, click the style sheet name. Click 🗑 at the bottom of the Styles panel. The name of the external file that contains the style sheet disappears, as do the styles defined in the style sheet. You can no longer apply styles from the style sheet.

Although the external file is no longer attached to the Web page, it is not deleted. The external file still exists, with all of its class styles. You can reattach the style sheet to the Web page and apply any of the class styles.

Attach an External Style Sheet

A style sheet contains one or more classes. A style sheet can be embedded in the head section of a Web page or stored in a separate, external file. Before you can use a class from an external style sheet, you must attach the external style sheet to the Web page.

You can manage style sheets from the CSS Styles panel. You can attach a style sheet to a Web page by clicking the Attach Style Sheet button ( ) when the Web page is open in the Document window.

Dreamweaver attaches a style sheet to a Web page by inserting `<link>` tags into the head section of the Web page. The link connects the HTML Web page file to the CSS style sheet. The link tags are formatted as follows:

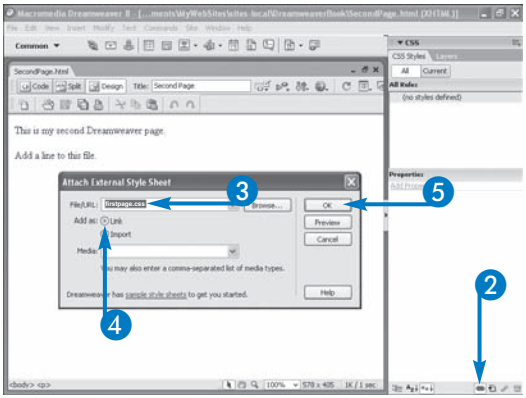
```
<link href="ExportedStyles.css"
rel="stylesheet" type="text/css" />
```

You can attach more than one style sheet to a Web page because more than one set of `<link>` tags can be added. You can then apply styles from either style sheet.

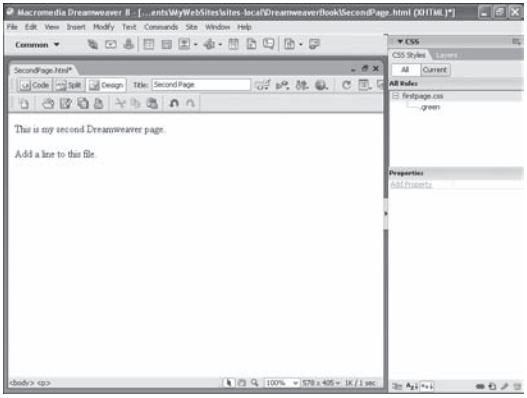
Attach an External Style Sheet

1. Open the Web page to which you want to attach the style sheet.
2. Click the Attach Style Sheet button ( ).

   The Attach External Style Sheet dialog box opens.
3. Click here and select the style sheet file to attach.
4. Click Link (changes to)
5. Click OK.



The style sheet name is added to the CSS Styles panel, with the class styles listed.



Export Embedded Styles

A style sheet contains one or more classes. A style sheet can be embedded in the head section of a Web page or stored in a separate, external file. You can export styles from an embedded style sheet into an external style sheet: you might want to extend styles that you have been using on a single Web page to use them on other Web pages, or you might want to share your embedded style sheet with another person.

Dreamweaver provides a feature that exports all the styles from your embedded style sheet in the head section of your Web page into a separate file. You can then attach this file to other Web pages and apply its styles to the Web page elements in the other Web pages.

You can look at your embedded style sheet in Code view. Look in the head section and you will see `<style>` tags surrounding one or more styles. The styles are similar to the following:

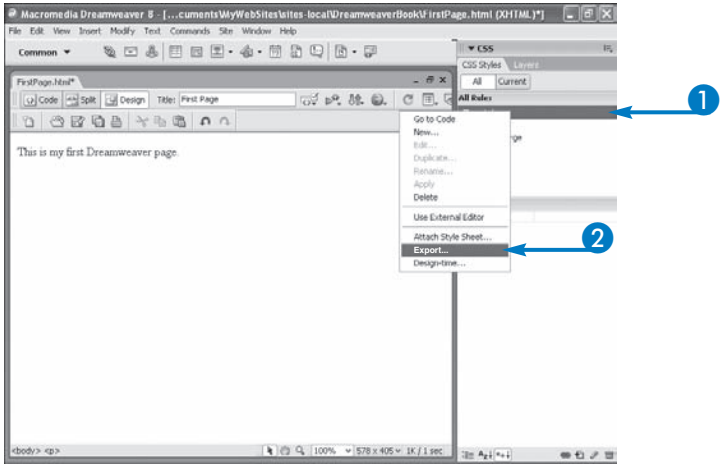
```
.red {
        color: #FF0000;
}
```

Dreamweaver exports all the styles into an external style sheet in a separate file.

Export Embedded Styles

1. Right-click in the CSS Styles panel.
2. Click Export.

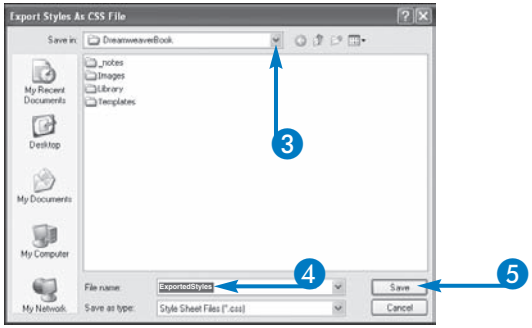
   The Export Styles As CSS File dialog box opens.



3. Click here and select a folder.
4. Type a filename for the CSS external file.
5. Click Save.

   Dreamweaver saves the embedded styles in an external file.

   The external file can be attached to any Web page.



Create a Layer

Using CSS, you can position your Web elements exactly where you want them. You can specify the exact location using width, height, margins, and other properties in your styles. If you know CSS code, you can write the styles directly in Code view.

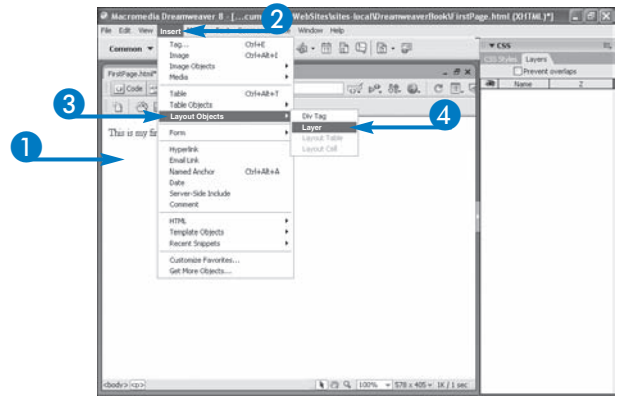
In Dreamweaver, you can use layers to position Web page elements. Layers are actually a style sheet phenomenon — they are built using the positioning capabilities provided by style sheets. When you create a layer in the Document window, Dreamweaver adds the CSS source code that specifies the positioning properties, as well as the dimensions, of the layer.

Layers are a useful feature for designing your Web page. You can create your Web page elements on layers and then move them around to try different designs. You can change layers from visible to invisible, so you can see the effect of the Web elements on the appearance of your Web page.

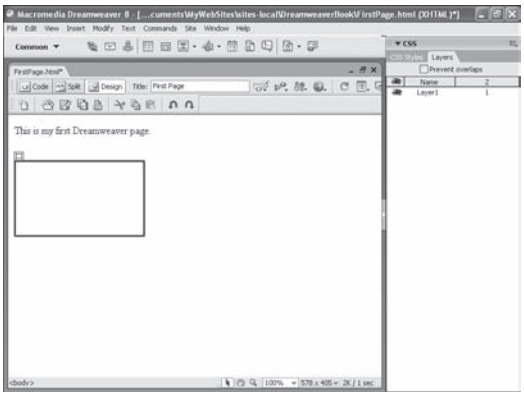
You can add any content to the layer — text, images, tables, and so on. You can even add a layer inside a layer. You can format the content in the layer in the same way you format the content of a Web page. For example, you can center text in the layer.

Create a Layer

1. Click the Web page where you want to insert a layer.
2. Click Insert.
3. Select Layout Objects.
4. Click Layer.



Dreamweaver inserts a layer.



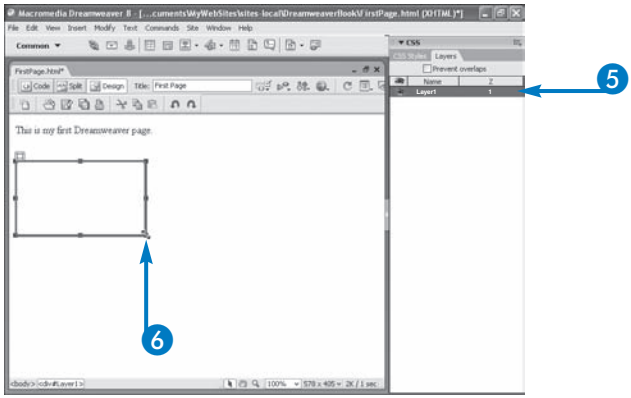
5 Click the layer.

The layer is selected and its handles are displayed.

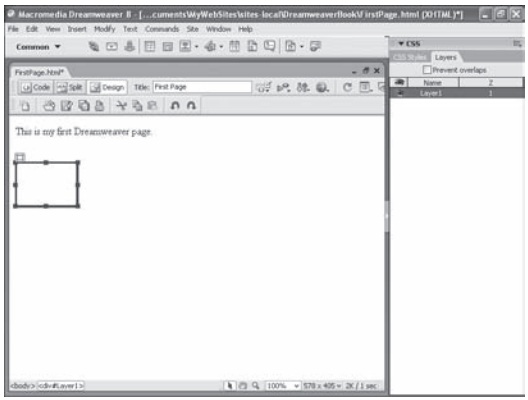
The layer is listed in the Layers panel.

6 Click and drag a layer handle.

changes to the ↕.



Dreamweaver resizes the layer.



MASTER IT

Can I create more than one layer on a Web page?

Yes. You can create as many layers as you need. Layers can overlap each other. The Z value determines which layer is on top when layers overlap. The lowest Z value is the bottom layer. You can change the stacking order (which layer is on top), described later in this chapter.

You can prevent layers from overlapping. Check the check box labeled Prevent Overlaps at the top of the Layers panel.

How can I select a layer?

You can select a layer itself or the content of the layer. If you click the layer in the Layer panel, you select the layer, not the content of the layer. The layer moves to the top of the stack. The layer is outlined in blue, has a blue box above the upper left corner, and has blue handles on the sides, top, bottom, and corners. You can move and resize the layer when it is selected.

How can I select the content of a layer?

If you click inside the layer, you select the content of the layer, not the layer itself. The layer moves to the top of the stack so you can see it and work on the content. The layer is outlined in blue and has a small box on the upper left corner. No handles appear on the layer outline.

Add Content to a Layer

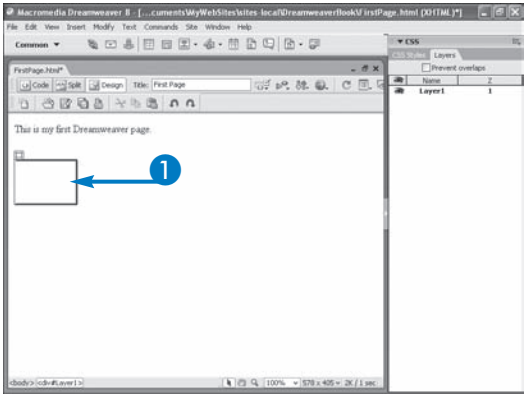
You can add any content to a layer — text, images, tables, and so on. You can even add a layer inside the layer. You can format the content in the layer in the same way you format the content of a Web page. For example, you can center text in the layer by right-clicking the layer text, selecting Align, and clicking Center; or you can center text in a layer from the Property inspector. Select the layer content and change the alignment by clicking the Center button (☰) in the Property inspector.

You can insert a layer inside a layer. If you move the outer (*parent*) layer, the nested layer moves with it. This can be handy while designing your Web page.

If your attempts to insert a layer inside another layer are unsuccessful, your Dreamweaver preferences may need to be changed. Click Edit and select Preferences. Click Layers in the list on the left side. The Layers dialog box appears. You will see a check box labeled Nesting toward the bottom of the dialog box. If this check box is not checked, you cannot create a nested layer.

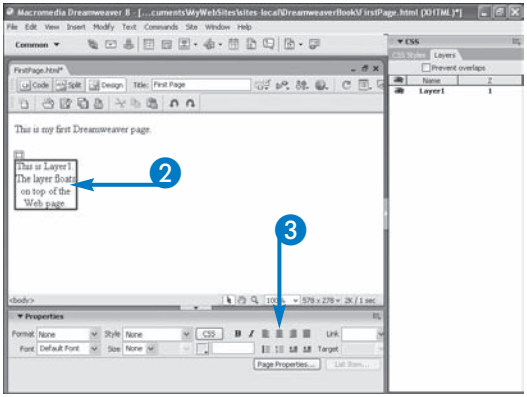
Add Content to a Layer

1. Click inside the layer.



2. Type text content for the layer.
3. Click ☰.

   Dreamweaver centers the content in the layer.



Add a Background Color to a Layer

A layer may have either a transparent or a solid background. The solid background can be any color. If no color is specified for the background, it is transparent. The content of the Web page or of the layer underneath shows through the transparent layer.

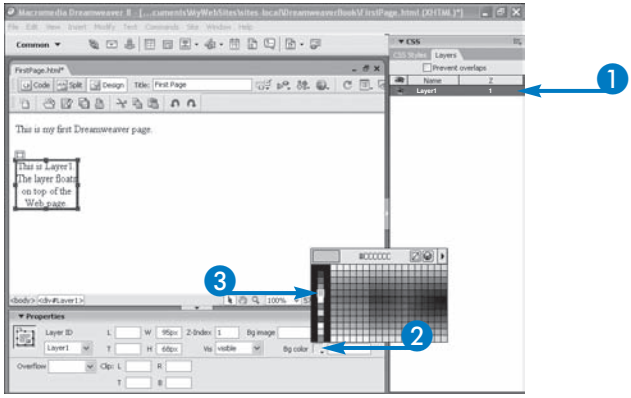
You can set the background in the Property inspector. When the background option is blank, the background is transparent.

The default background is transparent. You can change the default in the Dreamweaver preferences. Click Edit and select Preferences. The preferences dialog box opens. Click Layers in the list down the left side of the dialog box. Click the color box; a color grid opens. Click a color in the grid. Click OK. Now, all new layers that you create will have a solid background with the color you just selected. You can select white as a solid color. The only transparent background choice is a blank option — no color at all.

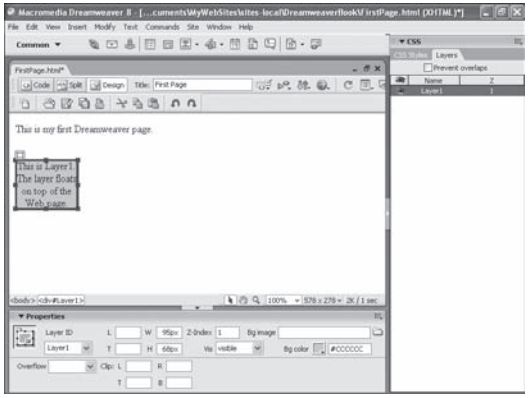
Add a Background Color to a Layer

1. Click the layer.
2. Click the color box.
3. Click a color.

   Here, light gray was clicked.



Dreamweaver adds a background color to the layer.



Move a Layer

You can move a layer to any location on the Web page. Moving a layer, with its content, is useful when designing your Web page. You can place your various Web elements easily in different locations to see the effect. Moving elements around is very useful for determining the most attractive appearance.

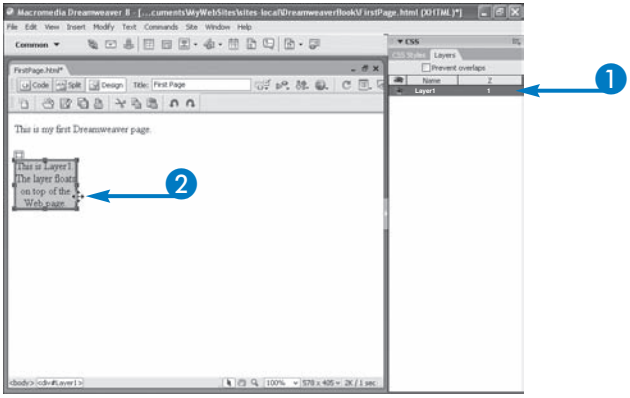
A nested layer maintains its position inside its parent layer when the parent layer is moved. Nesting several layers with their content inside a parent layer allows you to move the Web elements inside the parent layer as a unit, maintaining their relationship to each other while testing their appearance in different locations.

You can move a nested layer outside its parent layer. Even while it is outside the parent, the nested layer maintains its relationship to its parent. If the nested layer is 10 pixels to the left of the parent layer, it will still be 10 pixels to the left of the parent layer after you move the parent layer.

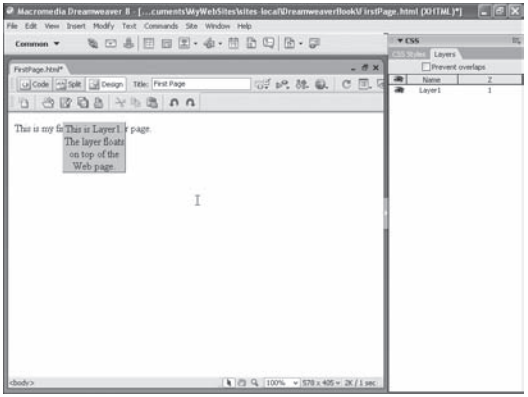
Move a Layer

1. Click the layer name.
2. Click and drag the layer.

   changes ✣ so you can drag the layer.



Dreamweaver moves the layer as you drag it.



Position and Size a Layer

You can drag a layer to change its size or to move it around the Web page. Dragging gives you an approximate position. However, if you want precise placement and/or size, you can position and size a layer using pixels or percentages.

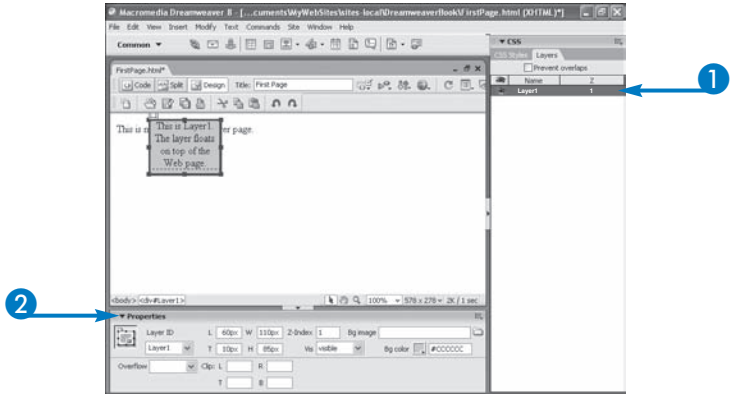
The size and position of a layer is determined by four measurements. The specifications are: 1) The distance from the top of the Web page to the top of the layer; 2) The distance from the left of the Web page to the left of the layer; 3) The width of the layer; and 4) The height of the layer. The first two specifications determine where the upper left corner of the layer is located. The remaining two specifications determine the size of the layer. You can set any or all of the four specifications in the Property inspector in pixels or percentages.

You can change the size of a layer one pixel at a time by selecting the layer and pressing Ctrl-arrow to change the size one pixel in the direction of the arrow. The up arrow makes the layer one pixel taller, the down arrow shortens it, the right arrow widens the layer, and the left arrow narrows the layer.

Position and Size a Layer

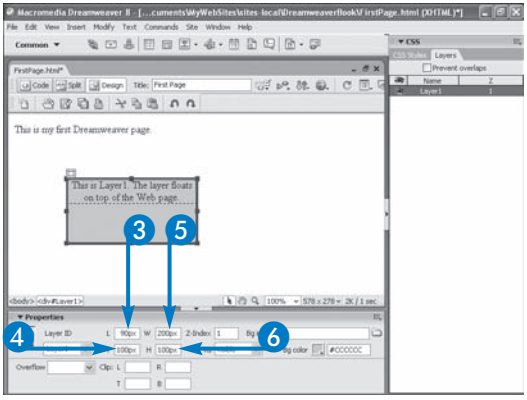
1. Click the layer name.
2. Open the Property inspector.

   The layer properties are displayed.



3. Type the distance from the left edge.
4. Type the distance from the top.
5. Type the width.
6. Type the height.

   Dreamweaver positions and sizes the layer.



Make a Layer Invisible

You can make a layer visible or invisible. Making a layer invisible can be useful when designing your Web page. It allows you to see the appearance of the page without the Web page element(s) on the layer, but without removing them. Removing a Web page element to see how it looks and then reinserting it when you decide the page looks better with the element is time consuming and open to error. Putting the elements in a layer and showing/hiding the layer greatly facilitates the design process.

You can make a layer visible or invisible with the Property inspector. By default, the layer is visible. You can change the default in Dreamweaver preferences. Click Edit and select Preferences. Click Layers. Click ▽ and select a visibility option. Click OK. The selected option is now the default.

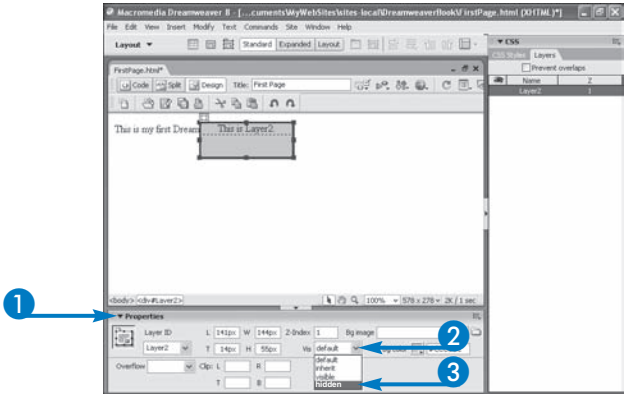
If a layer is a nested layer, you can set its visibility option to follow its parent. When the parent layer is hidden, the nested layer is also hidden. When the parent layer is visible, the nested layer is also visible.

Make a Layer Invisible

1. Open the Property inspector.

Note: *Chapter 2 explains the Property inspector.*

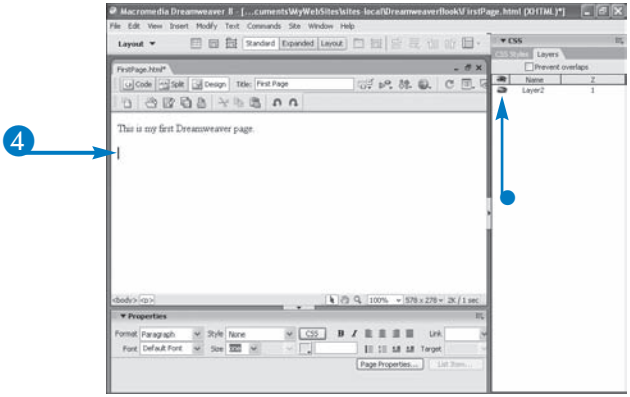
2. Click ▽.
3. Click hidden.



4. Click outside the layer.

   The layer is invisible, but still there.

   - A closed eye icon shows that the layer is hidden.



Align Layers

When you have more than one layer on a Web page, you may want to align the layers. Aligning layers manually is difficult, if not impossible. Dreamweaver aligns layers for you, allowing precise alignment.

You can align the layers by their top edges, bottom edges, left edges, or right edges. You can also change layers so they have matching widths or matching heights.

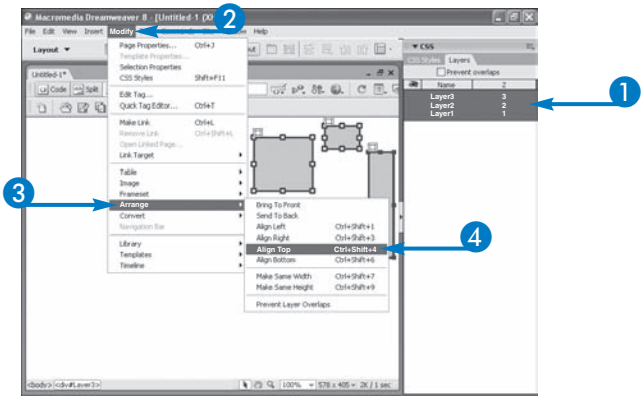
To align layers, you must select all the layers to be aligned. You can select multiple layers by Shift-clicking the layers in the Document window or Shift-clicking the layer names in the Layers panel. The last layer selected is the layer that Dreamweaver uses as the base. All the layers will be aligned to match the last layer selected.

If you select the choice that makes the layers the same width, Dreamweaver sets the width of the other layers to match the width of the base layer. The layers are not moved. The effect is the same as typing a different width into the Property inspector. The same is true if you select the choice that makes the layers the same height.

Align Layers

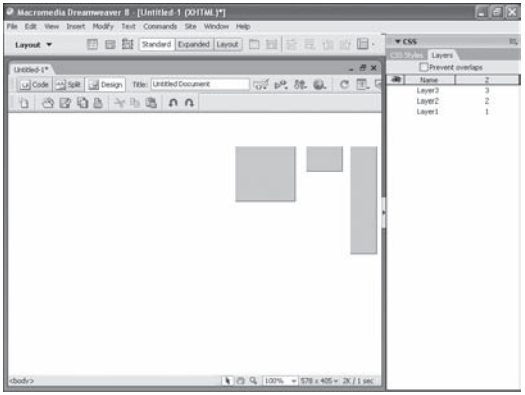
1. Shift-click all layers to be aligned.

   All layers are aligned to the layer clicked last.
2. Click Modify.
3. Choose Arrange.
4. Click Align Top.



Dreamweaver aligns all layers by their top border.

All layers are aligned to the top border of the layer on the right side, which was clicked last.



Change the Stacking Order of Layers

Multiple layers can overlap. When two layers overlap, one layer is on top and the other is on the bottom. Thus, multiple layers stack on top of each other. The order of this stack is called the *stacking order*.

Dreamweaver stacks the layers based on the order of creation. The first layer created is the bottom of the stack; the second layer created is second to the bottom, and so on. The last layer created is on the top of the stack.

Dreamweaver assigns a number to each layer when it creates the layer. The number is called the *z-index* and determines the position of the layer in the stacking order.

The z-index is a relative scale of numbers. The numbers determine the stacking position of a layer relative to other layers. Layers with higher z-index numbers are higher in the stack; layers with lower numbers are lower in the stack.

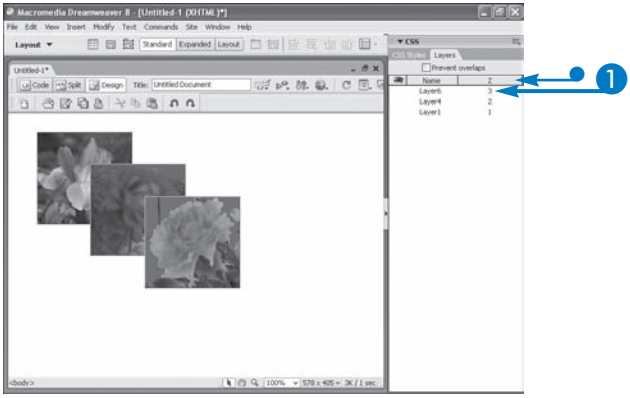
You can change the stacking order of the layers by changing the z-index number. The z-index number of each layer is displayed in the Layers panel. You can directly change the number of any layer to change its position in the stack.

Change the Stacking Order of Layers

- The z-index numbers of the layers are displayed.

Here, the carnation image, in Layer6 with z-index 3, is on the top.

1. Click a z-index number.



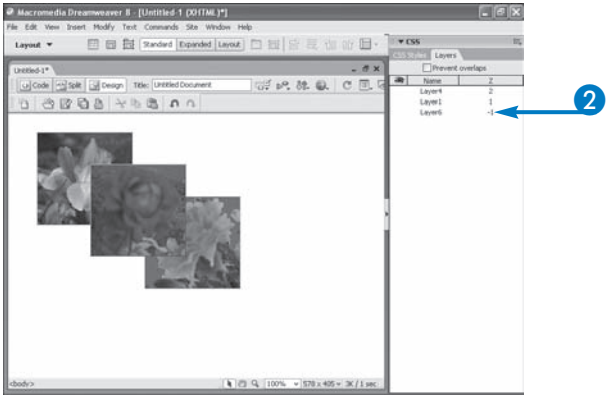
2. Type a different z-index number.

Here, 3 is changed to –1.

Dreamweaver moves the layer with the lowest number to the bottom.

Here, layer6, with the carnation, moves to the bottom.

Here, layer4, the rose with z-index 2, is now on top.



Convert Layers to Tables

Using layers to position Web page elements is preferable to using tables for layout in most situations. However, some older browsers do not render CSS as expected, particularly the positioning options of CSS. In addition, different browsers may render the CSS code differently. In particular, browsers prior to IE version 3 and Netscape Navigator version 4 do not support CSS at all.

If you expect visitors to your Web site are using old browsers, you may need to display your Web pages with tables rather than layers. You can use layers to build your Web site, taking advantage of the CSS features that assist with design. When your Web site is ready, you can convert the layers to a table layout, ensuring that older browsers display the Web page design correctly.

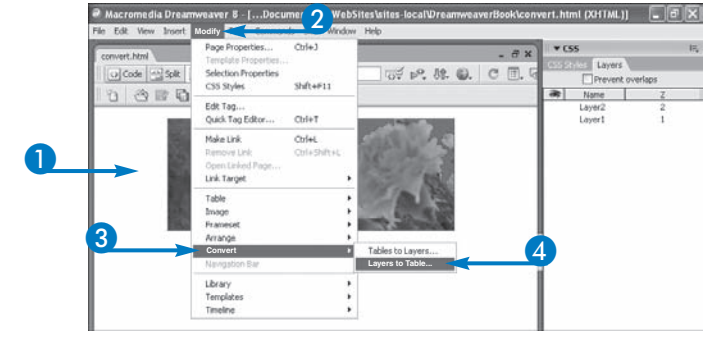
Dreamweaver provides a feature that converts layers to tables for you. You do not need to convert manually. However, the Dreamweaver conversion feature can not convert overlapping or nested layers. You must make sure that no layers overlap. You can use the "Prevent Overlaps" check box in the Layers panel to prevent overlapping layers.

Convert Layers to Tables

1. Create a Web page using layers.

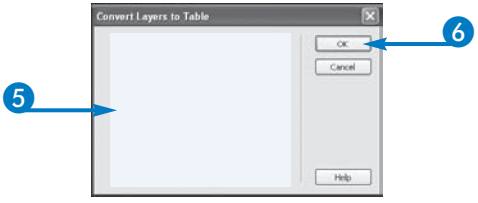
Note: *See the section "Create a Layer" to create layers in Web pages.*

2. Click Modify.
3. Select Convert.
4. Click Layers to Table.

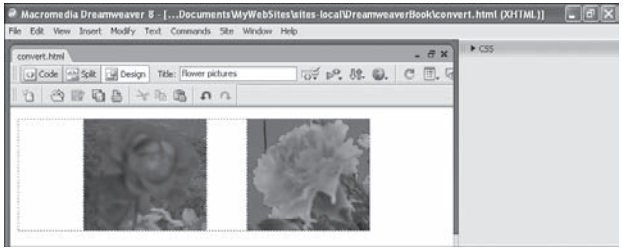


The Convert Layers to Table dialog box opens.

5. Select your desired options for the tables.
6. Click OK.



Dreamweaver converts the layers to tables.



Using Dreamweaver Behaviors

You can attach Dreamweaver *behaviors* to a Web page or a Web page element. A behavior consists of an *event* and an *action*.

An *event,* such as a click or moving the mouse over a Web page element, is performed by the Web page visitor. Events have names such as `onClick` or `onMouseOver`. An *action* is a specific task, such as open a window or display a new Web page. An action is defined by JavaScript code; if Web page visitors have JavaScript turned off in their browsers, behaviors will not function properly.

When you attach a behavior to a Web page element, the action is performed when the event occurs. For example, you can attach a behavior to an image that plays a sound file (the action) when the user clicks the image (the event). If you want to attach a behavior to an entire page, attach the behavior to the `<body>` tag.

Behaviors are managed via the Behaviors panel. Dreamweaver provides several built-in behaviors you can select. When Dreamweaver adds a behavior, it automatically selects a default event to trigger the action. You can change the event.

If you are proficient with JavaScript, you can write your own JavaScript action code and attach it to a Web page element.

Using Dreamweaver Behaviors

1. Click a Web page element.
2. Open the Behaviors panel.

Note: *See Chapter 2 to work with panels.*

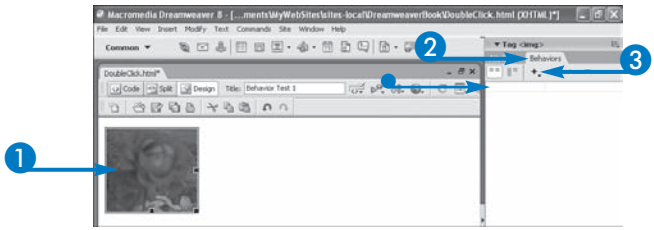
- The behavior panel lists no behaviors for the selected element.

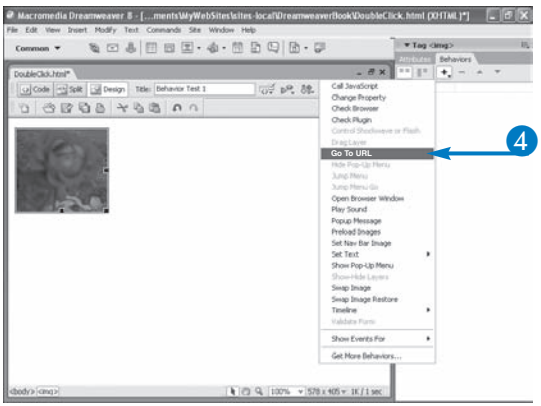
3. Click the Add Behavior button (+)

   A list of available behaviors displays.

4. Click a behavior.

   Here, Go To URL is the behavior selected.





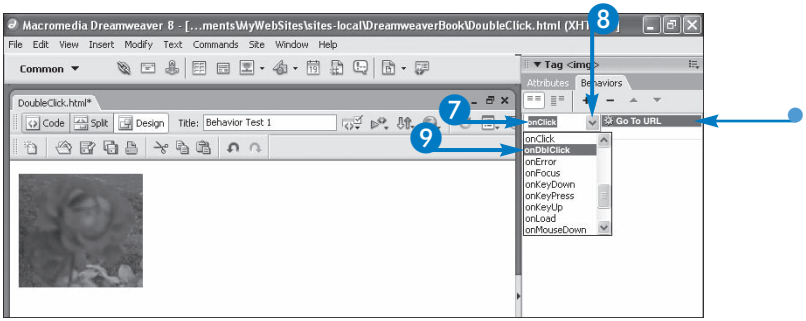
5. Fill in the information for the behavior.

   Here, the URL to go to is typed.

6. Click OK.

- A line for the new behavior is added to the Behaviors panel.

7. Click the event.
8. Click ▼.
9. Click an event.

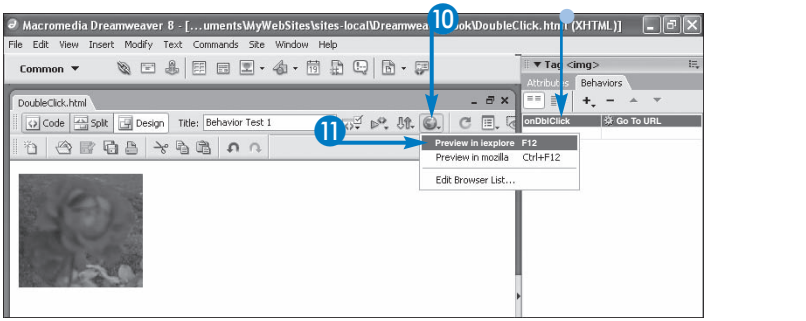


- The behavior line is changed in the Behavior panel.

10. Click ▶ to test the behavior in a browser.

    Behaviors do not work in Dreamweaver.

11. Click a browser.



Can I have more than one action triggered by an event?

Yes, you can. You can attach one behavior for each action to the Web element, giving each behavior the same event. The Behaviors panel lists the behaviors. When the event occurs, the behaviors are triggered in the order they appear in the Behaviors panel. You can change the order they execute by changing their order in the Behavior panel list. See "Change the Order of Actions" later in this chapter.

What do the two buttons on the left side of the top panel do?

The buttons determine what the Behaviors panel displays. The Show Set Events button (▤) lists all the behaviors that are currently set for the selected Web element. The Show All Events button (▤), displays all possible events, whether they are currently set or not.

Why are some of the actions in the Behaviors menu grayed out?

The behaviors that are grayed out cannot be applied to the selected Web page element. For example, unless the selected Web page element is a form, the Validate Form menu item is grayed out because it can only be attached to a form.

Change an Action

Each behavior consists of an event and an action that the event triggers. When you create a behavior, a dialog box specific to the selected action appears and you can set up the specific options and information for the action. You can change the options and information for an action at any time.

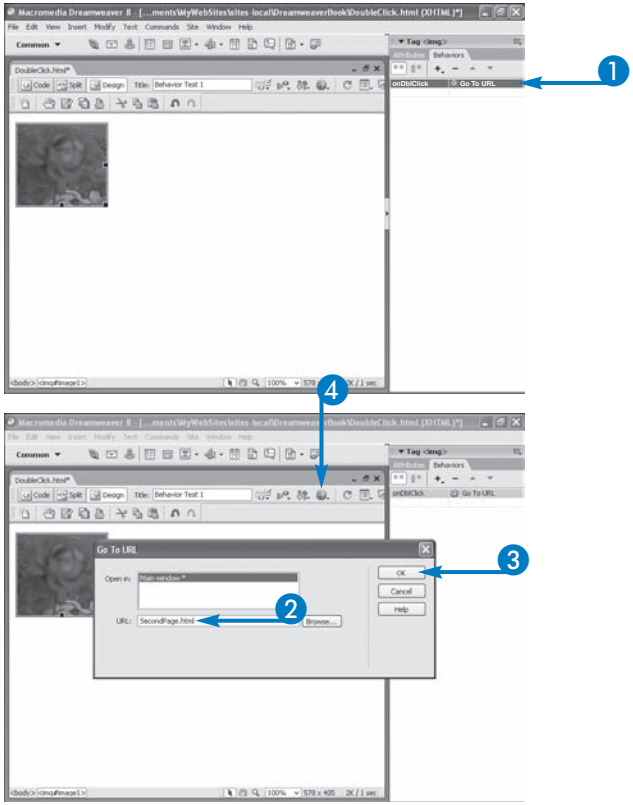
You can change a behavior from the Behaviors panel. When you click a Web page element, all the behaviors applied to that element appear in the Behaviors panel. Double-click any action. Its dialog box appears so that you can change the information for the action. Each dialog box is specific to the different type of action. It provides fields and buttons where you can type information or select options for a particular action. All dialog boxes include a Save button. Click it when you are finished entering information and/or selecting options.

When you double-click an action in the Behaviors panel, the same dialog box appears that appeared when you created the action. The dialog box contains the current settings for the action. You can change any of the information and then click Save to save the new settings.

Change an Action

1. Double-click the action.

   The dialog box for the action appears.



2. Change the information in the dialog box.
3. Click OK.

   The action is changed.

4. Click to test the new action.

   Behaviors do not work in Dreamweaver.

Change an Event

Each behavior consists of an event and an action. The event triggers the action. Events represent actions performed by the Web page visitor. Visitors might click a page element, double-click it, move the mouse pointer over the element, or move the mouse pointer off the element. Events have names, such as `onClick`, `onDblClick`, `onMouseOver`, and `onMouseOut`.

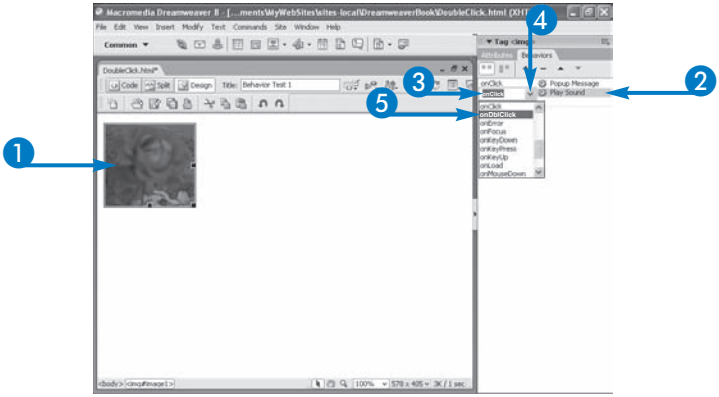
When you select an action from the menu in the Behaviors panel and attach it to a Web page element, a behavior is created. The behavior contains the action you selected and a default event, which is the event most often used to trigger the action. In some cases, you might want to define a different event to trigger the action. You can change the event in the Behaviors panel.

If you click in an event field, a drop-down list appears. If you click the drop-down list arrow to see the items in the drop-down list, you will see all the events that you can select to trigger the event. Select the event you want to trigger the action. The behavior now shows the new event with the same action.

Change an Event

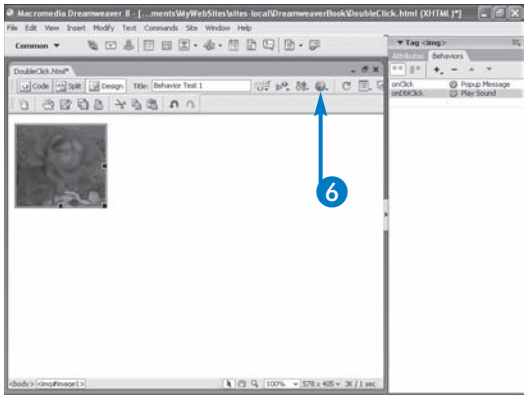
1. Click a Web page element.
2. Click a behavior.
3. Click the event field.

   A drop-down list appears.
4. Click ▼.
5. Click an event.



   Dreamweaver changes the event trigger for the behavior.
6. Click ▶ to test the new event.

   Behaviors do not work in Dreamweaver.



Remove an Action

If you no longer want a behavior attached to a Web page element, you can remove the behavior. When you remove the behavior, it is no longer listed in the Behaviors panel. The JavaScript code is removed from the Web page source code file. The event no longer triggers the action. However, the behavior is not affected. The behavior still can be reattached to the Web page element or attached to another Web page element. The behavior JavaScript code is not removed from Dreamweaver; it is just not applied to the Web page element any longer.

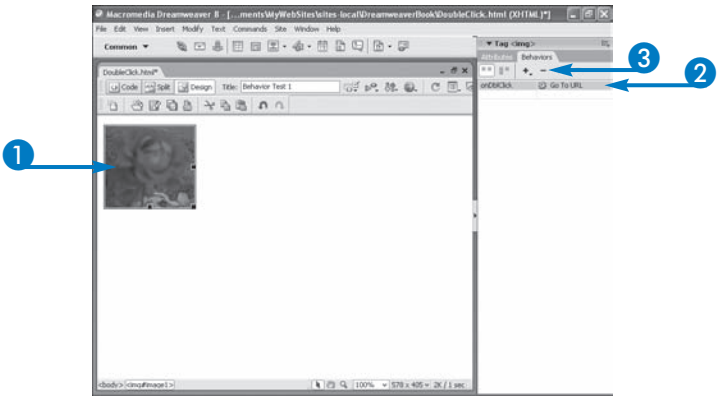
You can manage behaviors from the Behavior panel. The Behavior panel has a button that removes a behavior from an element. Click the element to select it and click the Remove Behavior button (−). The behavior is removed from the list in the Behaviors panel. However, it is not removed from the Add Behavior menu.

If you add a behavior and then change your mind, you can remove the behavior by clicking the Undo button ( ).

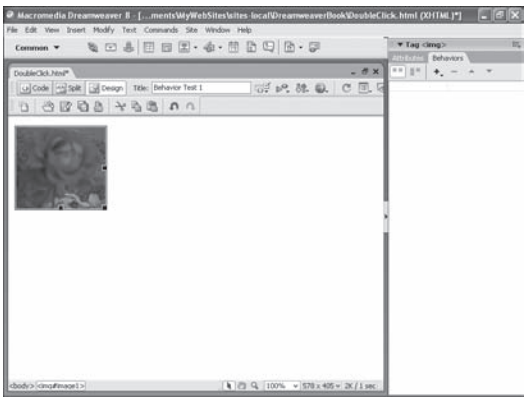
Remove an Action

1. Click a Web page element.

   Its behaviors appear in the Behaviors panel.
2. Click a behavior.
3. Click −.



Dreamweaver removes the behavior without removing the element.



Change the Order of Actions

More than one action can be triggered by the same event, such as `onClick` or `onMouseOver`. The actions are performed in the order in which they are listed in the Behaviors panel. You can change the order in which the actions execute.

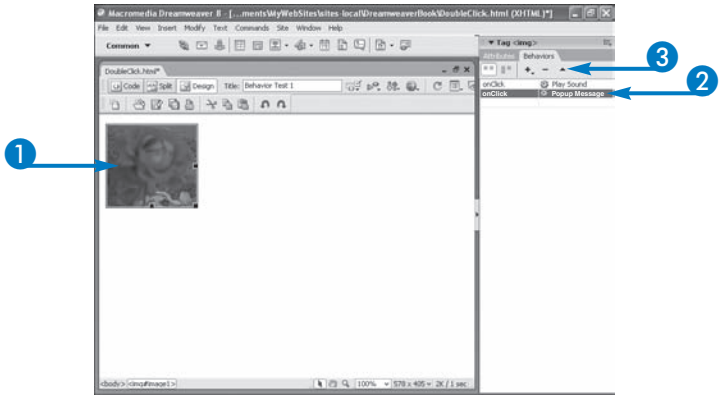
You can change the execution order in the Behaviors panel. At the top of the Behaviors panel, next to the + and the − buttons, are two directional buttons — move up (▲) and move down (▼). Highlight a behavior and click ▲ to move the behavior higher in the list or click ▼ to move the behavior lower in the list. The actions triggered by the same event execute in the order they appear in the list.

In the example in this section, two actions are triggered when the mouse is clicked. A sound is played and a pop-up message is displayed. The actions occur in the order they are listed in the Behaviors panel.

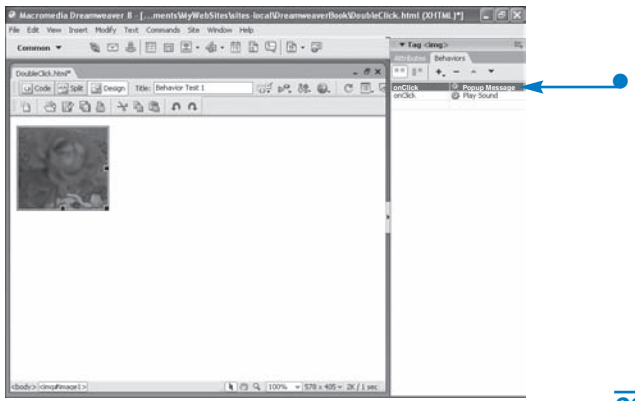
When a behavior is highlighted in the Behavior panel, the directional buttons that can be clicked are active. If the behavior is last in the list, the ▼ is grayed out because the behavior is already last and cannot move down any further.

Change the Order of Behaviors

1. Click a Web page element.
2. Click a behavior.
3. Click ▲.



- Dreamweaver moves the behavior up one place in the list.



Add a Rollover Image to an Image

You can add a second image to an image in your Web page, so that the second image displays when the mouse pointer is over the original image. When an image replaces an original image, it is called a *rollover image*. Rollover images can add interest to your Web pages. For example, a biology page might show a human outline with a rollover image that shows the internal organs.

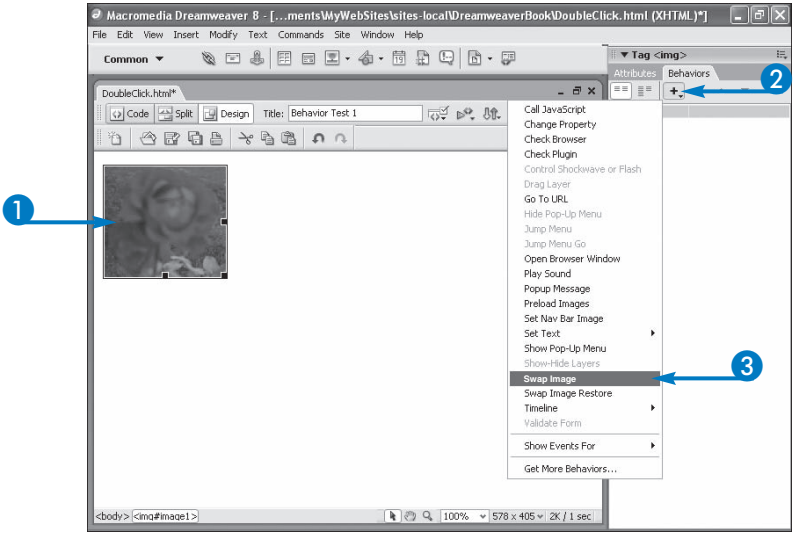
A rollover image actually consists of two behaviors: one that changes to the rollover image when the mouse pointer passes over the original image and another that changes back to the original image when the mouse pointer moves away from the image.

You can specify that the rollover images load into the browser when the page first appears. When the images are preloaded in advance, the rollover effect can appear instantly when the event occurs. Without preloading, a delay is possible following the event, while the replacement image downloads from the Web.

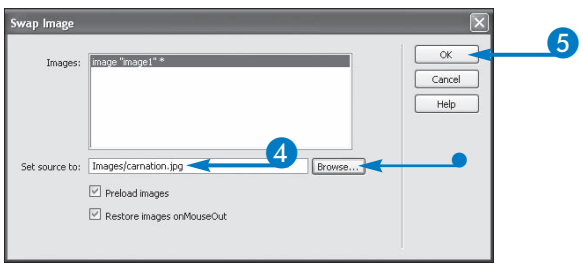
Add a Rollover Image to an Image

1. Click an image.
2. Click +.
3. Click Swap Image.

   The Swap Image dialog box appears.

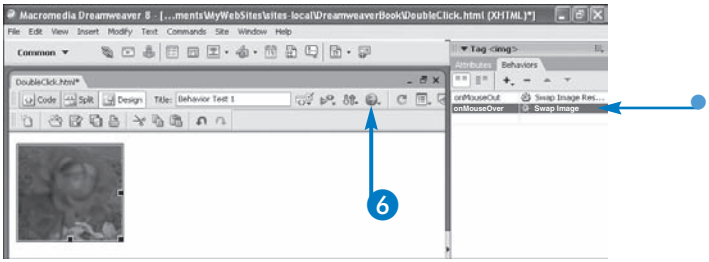


4. Type the path to the rollover image.
   - Click Browse to browse to the image.
5. Click OK.



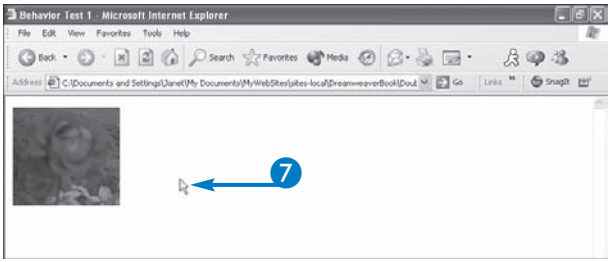
- Two behaviors are added to the Behaviors panel: one for `onMouseOver` and one for `onMouseOut`.

6 Click .



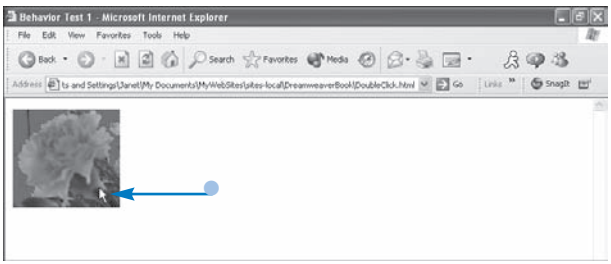
The page appears in the browser showing the original image.

7 Move the mouse pointer over the image.



- The mouse pointer is over the image.

The image changes to the rollover image.



What does the Images text area contain in the Swap Images dialog box?

The text area displays a list of all the images in the Web page. The name of the selected image is highlighted. The rollover image specified in the "Set source to" field is attached to the selected (highlighted) image.

If the image does not have a name, Dreamweaver lists the image as "Unnamed". However, the rollover effect requires a name for the image. When Dreamweaver creates the behavior, it gives the images names like Image1, Image2, etc. You can give the image a descriptive name using the Property inspector.

Why does nothing happen when I move the mouse pointer over the image in Dreamweaver?

The action is JavaScript code. The browser runs the JavaScript; Dreamweaver does not run the JavaScript. To test the action of the behavior, you must display the Web page in a browser. You can use the Dreamweaver Preview in Browser feature to test your behaviors. You can find the Preview in Browser feature on the File menu. Or, you can use to preview the Web page.

Insert a Rollover Image Link

You can insert a rollover image link into your Web page. A rollover image consists of two images — one that displays originally in the Web page and one that replaces the original when the mouse pointer passes over the original image.

A rollover image link is often used for navigation buttons, which are links. The button image appears to change shape or color when the mouse pointer is over it, helping the user to see which button the mouse pointer is over. Or, the button may appear to depress. Actually, the button image does not change its color or shape. Rather, a second button image with a different shape or color replaces the original button image.

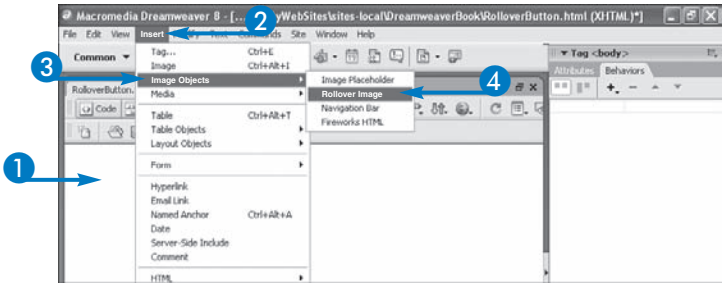
A rollover image can be used for display-only effects. The rollover image effect is not limited to links. The section "Add a Rollover Image to an Image" describes adding a rollover image to an existing Web page image. The rollover effect can add interest to your Web page. For example, a biology page might show a human outline with a rollover image that shows the internal organs.

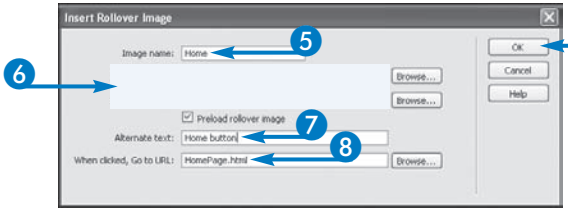
Insert a Rollover Image Link

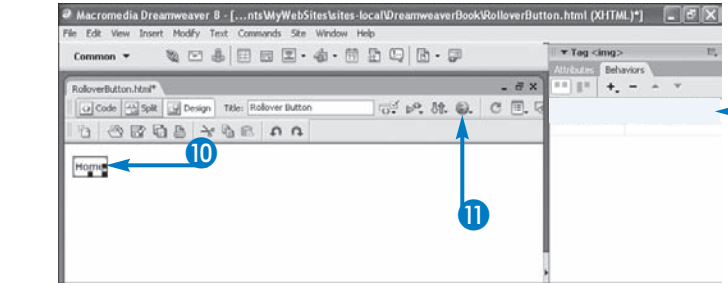
1. Click where the image should go.
2. Click Insert.
3. Select Image Objects.
4. Click Rollover Image.

   The Insert Rollover Image dialog box appears.

5. Type an image name.
6. Type a path to the two images.
7. Type alternate text.
8. Type a path to the link target.
9. Click OK.
10. Click the image.
    - Two behaviors are shown in the Behaviors panel.
11. Click and select a browser.



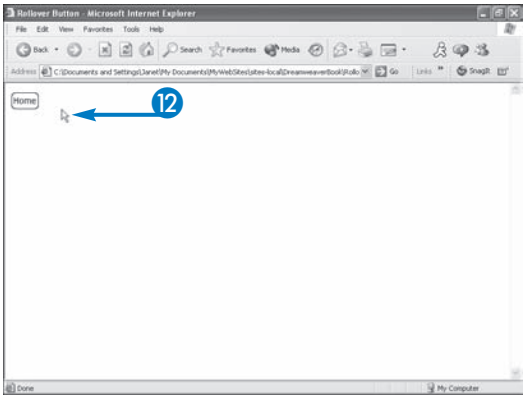




The browser shows the original image.

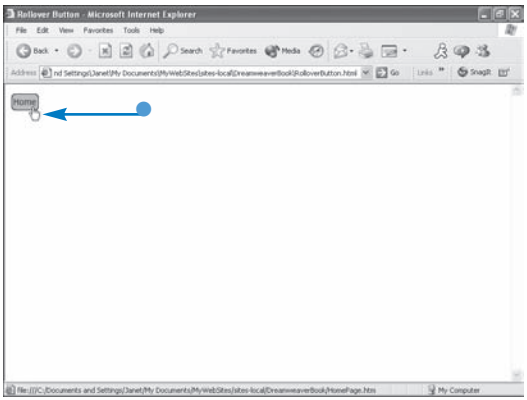
The mouse pointer is not over the image.

12 Move the mouse pointer over the image.



- The mouse pointer is over the image.

The rollover image replaces the original image.



How can I make my rollover image links look good?

A rollover image link looks best when the two images are the same size. The replacement image appears in the same space occupied by the original. If the images differ in size, the browser stretches or shrinks the replacement image.

When the mouse pointer passes over the original image, there is a slight delay before the rollover image appears. How can I prevent this delay?

Check the Preload rollover image box in the Insert Rollover dialog box. When this box is checked, the rollover image loads into the browser when the Web page first appears. Thus, the rollover effect can appear instantly when the mouse pointer moves over the original image. Without preloading, a delay, while the replacement image downloads from the Web, is possible.

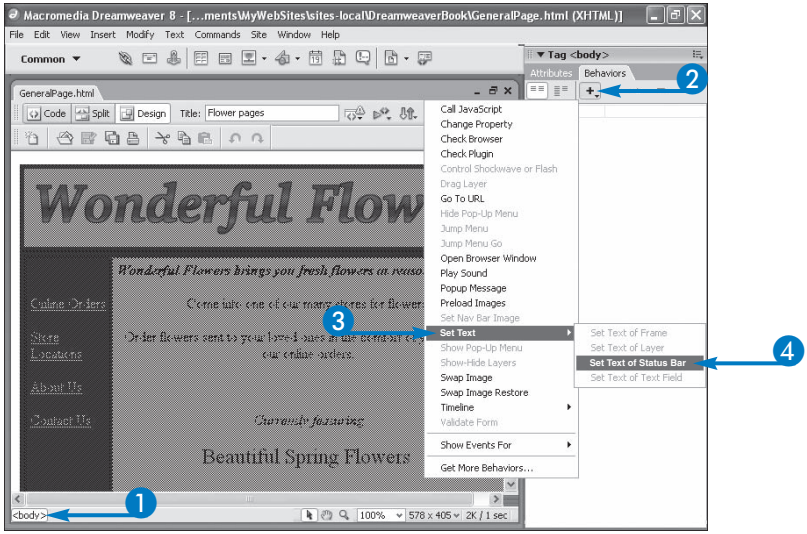
Create a Status Bar Message

A status bar appears at the bottom of a browser window. The status bar displays messages regarding the status of the Web page. For example, it displays Done when a Web page finishes loading. Or it displays the URL of the Web page that is loading. You can change the message in the status bar, displaying a message of your own creation instead of the normal message displayed by the browser. The new message is displayed by a behavior.

You can attach the message to a Web page element so that the message is displayed when the event is triggered on the Web page element. You can also attach the message to the entire page by attaching the message to the <body> tag. If you attach the behavior to the <body> tag, you can set the event to onLoad, so that the message appears when the Web page loads, without the user doing anything. You can also attach other events, such as onMouseOver, to the <body> tag, causing the new message to display on the status bar as soon as the visitor moves the mouse pointer over any part of the Web page.

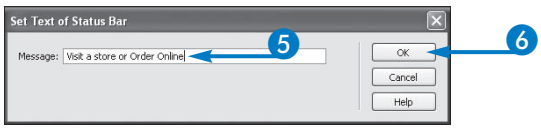
Create a Status Bar Message

1. Click the <body> tag.
2. Click [+].
3. Click Set Text.
4. Click Set Text of Status Bar.



The Set Text of Status Bar dialog box appears.

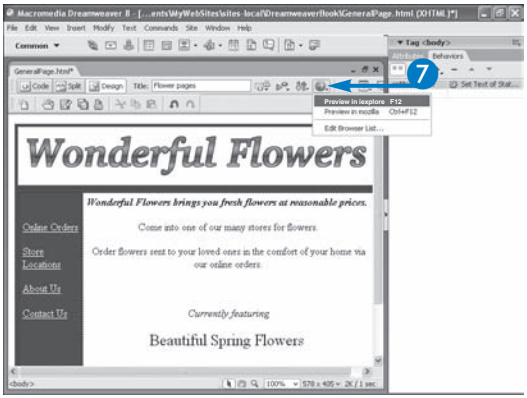
5. Type message.
6. Click OK.



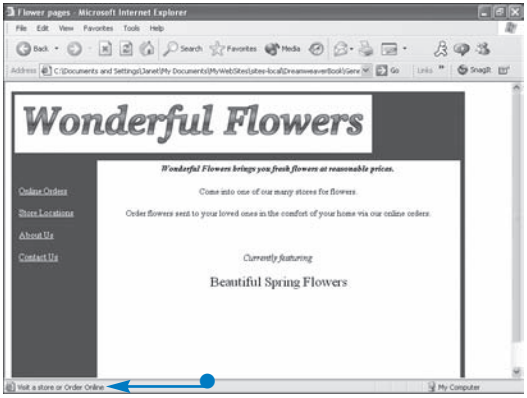
New behavior shows in the Behaviors panel.

7 Click and select a browser.

Behaviors do not work in Dreamweaver.



- Browser displays a Web page with a message in the Status bar.



PART III

When a visitor moves the mouse pointer over a link on my page, the URL of the link destination is displayed. Can I prevent Dreamweaver from displaying the URL?

Yes. You can set up a behavior with the `onMouseOver` event attached to the link and define the action to display a blank message. Then, when the visitor moves the mouse pointer over the link, the status bar is blank. In some cases, security is improved by hiding the file structure of your site and keeping users from seeing the file names and folders that make up your site.

What happens if my message is too long to fit in the browser's status bar?

The message will be displayed on the status bar. However, in most browsers, the message will be cut off when it reaches the end of the status bar. Only the leftmost section of the message, the part that fits in the status bar, is displayed.

Open a Customized Browser Window

You can open a window with a behavior and specify many of the characteristics of the new window, such as its width and height, which toolbars display, and whether the scrollbar and/or status bar displays. You can also specify whether resize handles are included on the new window. By not including the typical attributes that appear in a new browser window, such as a toolbar, you can display more content in the window.

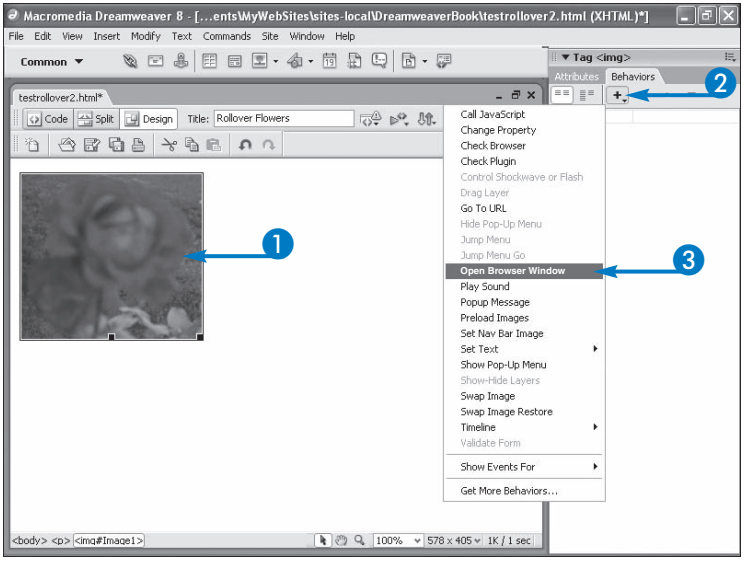
One useful way to use customized windows is to size them to the dimensions of the image, movie, or other content that appears in the window. This way, the window can open over the existing page and act as a miniature console for viewing the content. Users can click the Close button on the window when they want to return to the original page.

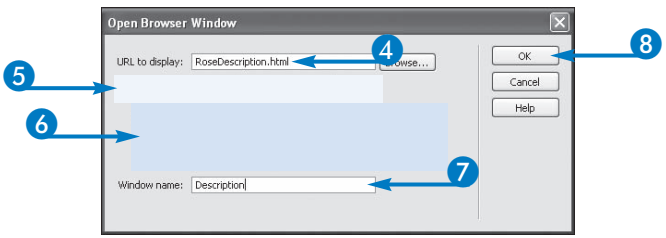
You specify the content that will appear in the new window when it appears. In the dialog box, you type the URL to the file that should display in the new window or you can click Browse and navigate to the file to open in the new window.

Open a Customized Browser Window

1. Click a Web page element.
2. Click +.
3. Click Open Browser Window.

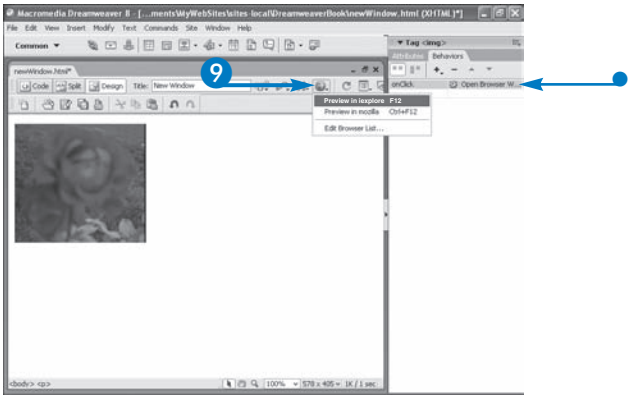
   The Open Browser Window dialog box appears.
4. Type the URL of the file to appear in the new window.
5. Type the width and height of the new window.
6. Select window options (☐ changes to ☑).
7. Type a name.
8. Click OK.





- New behavior is added.

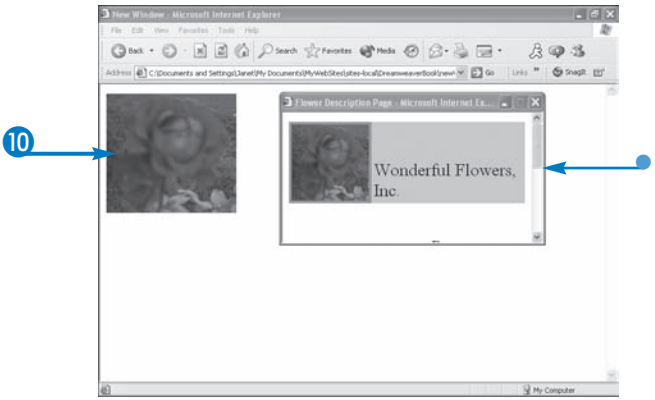
9 Click and select a browser.



The Web page appears in the browser.

10 Click the image.

- The new window appears.



What happens if I do not specify any attributes of the window?

If you do not specify *any* attributes, the new window appears at the size, and with the attributes, of the window that spawned it — the current window. If you specify *some* attributes, such as just the window dimensions, all the other attributes that are not explicitly turned on are disabled.

What happens if I leave resize handles off of my new window?

The user cannot resize the new window by clicking and dragging the bottom-right corner or by clicking the Maximize button on the title bar.

Why is naming the window useful?

Naming the window enables you to target the window with other hyperlinks in your site. Similar to having a set of hyperlinks in one frame open all their destination content in another frame, you can have a set of links in one window open all their content in another window.

Validate a Form

A form collects information from a Web site visitor. A malicious visitor can use a form on your Web page to send dangerous text to your Web site. Therefore, you should check all information from forms to make sure the format is reasonable and contains no dangerous characters.

A form collects information and passes it to a program for processing. This program should thoroughly check the information and filter out anything suspicious. However, you can do some simple preliminary information checking using JavaScript in the browser.

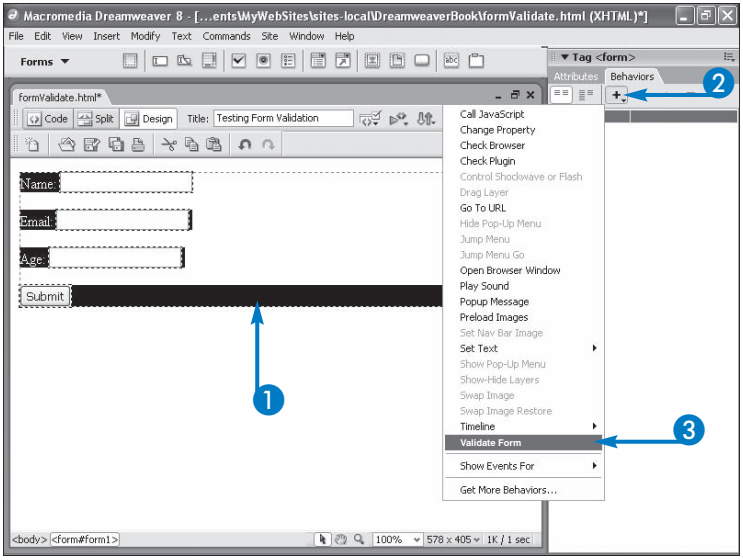
Dreamweaver provides a behavior that validates text fields. You can specify that each field meets certain criteria, such as it cannot be blank; the information must be numbers or numbers within a certain range; or it must contain an e-mail address.

When the browser displays the form, the visitor types information in the fields and clicks Submit. At that point, the fields are checked for the characteristics you specified. If any information does not meet the criteria, a message displays, listing the problem(s) encountered. Then, the form is redisplayed, allowing the visitor to correct her information. The form information is not passed to the processing program until the information is correct.

Validate a Form

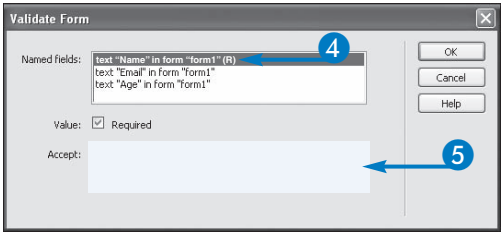
1. Select the form.
2. Click .
3. Click Validate Form.

   The Validate Form dialog box appears.



4. Click the first field.
5. Select the validation options for the field.

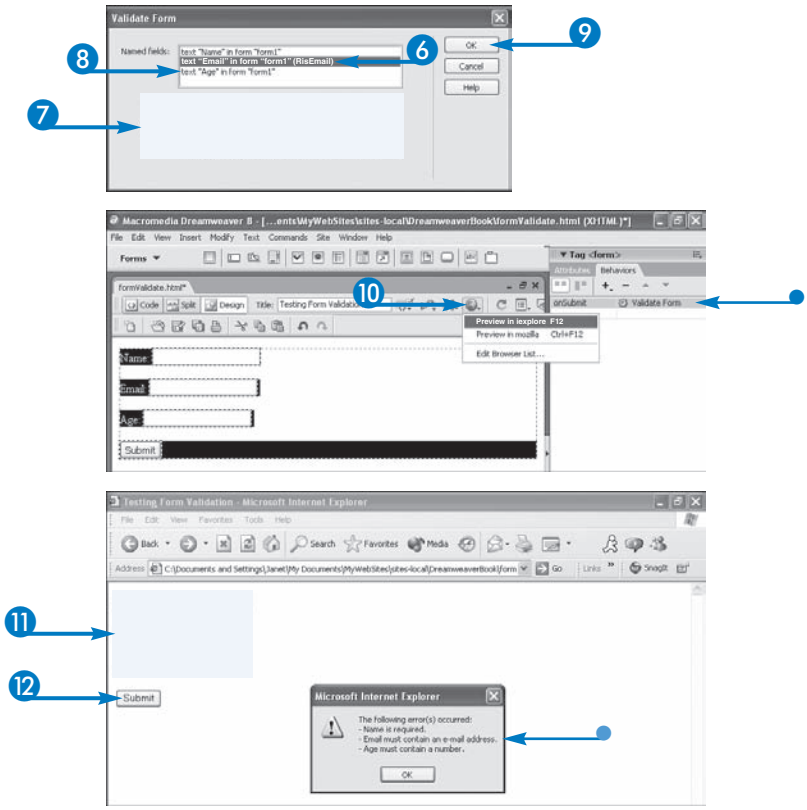
   Here, Required and Anything are selected.



6. Click the second field.
7. Check the validation options for the second field (◯ changes to ◉).

   Here, the Required and Email address options are selected.
8. Continue until all fields have been selected and validation options clicked for each.
9. Click OK.
   - Dreamweaver adds a behavior for form validation.
10. Click and select a browser to test the behavior.

    The browser displays the form in a Web page.
11. Type information into the form fields.
12. Click Submit.
    - A message window appears to display errors when incorrect information is entered in a field(s).



MASTER IT

What event should I use to trigger form validation?

If you need to validate a single field in a form, you can use the `onBlur` event. The `onBlur` event occurs when the visitor clicks away from the text field. Dreamweaver automatically applies the `onBlur` event if you select a single field and attach the validation behavior.

If you need to validate multiple fields, you need to use the `onSubmit` event, which occurs when the Submit button is clicked. Dreamweaver applies the `onSubmit` event by default if you select the entire form and apply the behavior.

Why is the Anything option made available in the Validate Form dialog box?

If you select Anything and check Required, Dreamweaver checks to make sure *something* is entered in the field — and alerts the user if that field is empty. Without Required selected, the Anything selection is meaningless.

How does Dreamweaver determine if a field contains a number or an e-mail address?

Dreamweaver's criteria for determining this are rudimentary. If Number is selected, Dreamweaver checks for nonnumeric characters — anything other than numbers and a single decimal point. E-mail addresses are validated with a simple check for an @ sign.

Display Web Pages Based on Browser Type

Designing a page that works equally well in all browsers is difficult, especially if you use advanced features, such as style sheets and layers. To get around this, you can use a behavior to check the browser brand and version of the user, and then forward a user to a page built specifically for that browser.

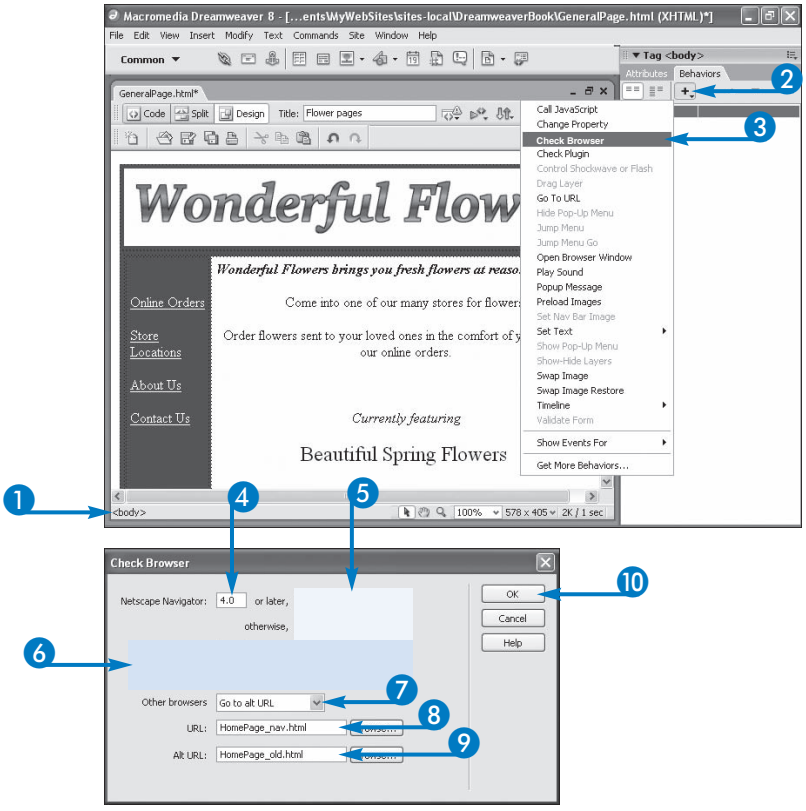
For example, you want to feature layers-based content on your home page, but you also want to accommodate version 3 browsers, which cannot display layers. A possible solution is to create your home page without layers and place the layers version on a secondary page. Then you can have a behavior check the browser on the home page and forward users with version 4 or better to the secondary page, while keeping users with other browsers where they are.

You can also use the check-browser feature to forward Netscape Navigator and Microsoft Internet Explorer users to different pages. This option can be useful if you want to integrate design features that are specific to one or the other browser.

Display Web Pages Based on Browser Type

1. Click the <body> tag.
2. Click +.
3. Click Check Browser.

   The Check Browser dialog box appears.



4. Type version cutoff for Navigator.
5. Click ▼ and select choices for earlier or later versions.
6. Repeat steps 4 to 5 for Internet Explorer.
7. Click ▼ and select a choice for other browsers.

   Browsers other than Netscape and IE will trigger the action specified for other browsers.
8. Type URL.
9. Type alternative URL.
10. Click OK.

Create a Popup Message

You can create a message that displays in a message window in the browser when the event occurs. Creating a message is a good way to provide the Web page visitor with information. The message window only provides one button — an OK button. Thus, you cannot provide the visitor with any choices. The window is useful only to provide information.

You can attach the message to any Web element or to the Web page (the <body> tag). The default event for the Popup Message behavior is onClick, but you can change it.

You cannot control how the message looks when it is displayed. The Web page visitor's browser determines how the message is displayed. If you want more control over the display, you can use the Open Browser Window behavior discussed earlier in this chapter.

For those of you who are familiar with JavaScript, you can include a JavaScript function call, a property, a global variable, or another expression in the message. Enclose the JavaScript expression in curly braces, as follows:

```
The date is {new Date()}.
```

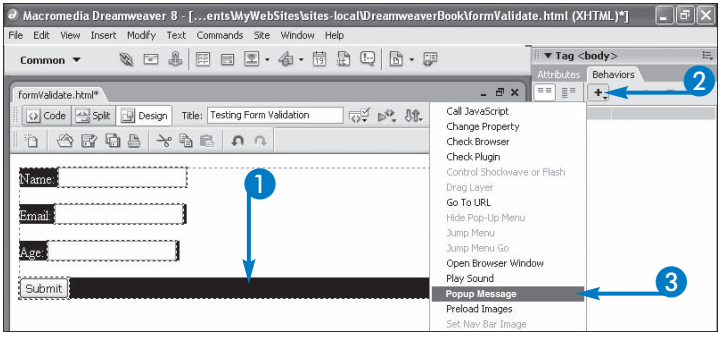
If you need to include a curly brace in the message text, precede it with a backslash, as follows:

```
You cannot type a \{ or a \} into the form.
```


Create a Popup Message

1. Select an element.
2. Click +.
3. Click Popup Message.

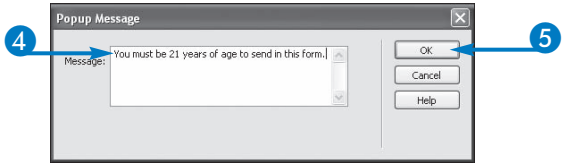
   The Popup Message dialog box appears.

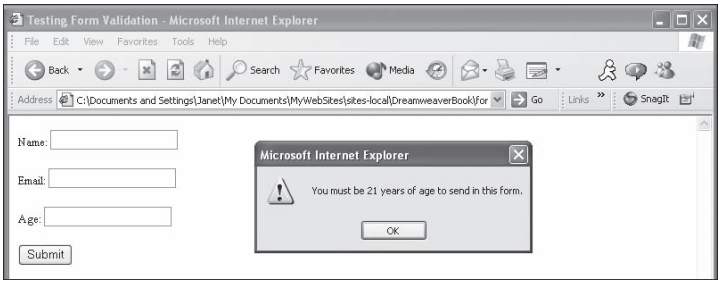


4. Type in the pop-up message content.
5. Click OK.
6. Test the behavior in a browser.

Note: *See the section "Using Dreamweaver Behaviors" to test behaviors in a browser.*

The popup message displays when the element is clicked.





Introducing Timelines

Dreamweaver provides an animation feature called Timelines. A *timeline* consists of one or more animation sequences that move Web page elements across your Web pages, fade elements in or out, show or hide elements, and expand or contract elements. You add and manage timelines with the Timelines inspector.

Animating Web Page Elements

To animate a Web page element, it must be placed in a layer. You then add a timeline that changes the properties of the layer in a time sequence. Layer properties consist of location, width, height, visibility, background color, and z-index. Any of the layer properties can be changed in an animation. For instance, one animation might reset a layer's location sequentially so that its contents move slowly or quickly across the page. Another animation might show/hide a layer in sequence, resulting in a flashing element. And yet another animation might reduce the size of a layer sequentially, producing a shrinking Web page element. Layers are discussed in Chapter 11.

Animation Frames

An animation sequence consists of a series of animation frames that execute one by one. Each frame sets the properties of the layer, which can change from the previous frame or remain the same.

To create an animation sequence, you set the layer properties for defined frames, called *keyframes*, and Dreamweaver fills in the properties of the frames between the keyframes.

The most common animation sequence moves a Web page element on the Web page. The element moves on a path defined by the location parameters in each frame. You define keyframes that locate points on the path. Dreamweaver fills in the location for the frames between the keyframes. For instance, to create a straight-line movement, you define the keyframes that locate the start and end of the line. Dreamweaver fills in the location of the frames between the two keyframes, which results in a straight-line path. You can set as many keyframes as you need to define the path, such as a curve, a wave, or a circle, you want.

You can set the speed at which the animation runs by setting the number of frames that execute in a second. You can also adjust the speed by changing the number of frames in the animation sequence.

Under the Hood

HTML cannot provide the features needed for timelines. Timelines are a combination of Cascading Style Sheets (CSS) and JavaScript. CSS layers allow for the precise placement of Web page content. JavaScript provides the ability to change the properties of CSS layers in a time sequence.

You create and manage timelines with the Timelines inspector. When you create or change a timeline, Dreamweaver writes the JavaScript code needed and inserts it into your source code files. Thus, you do not need to know JavaScript to add animation sequences to your Web pages.

Timelines and Browsers

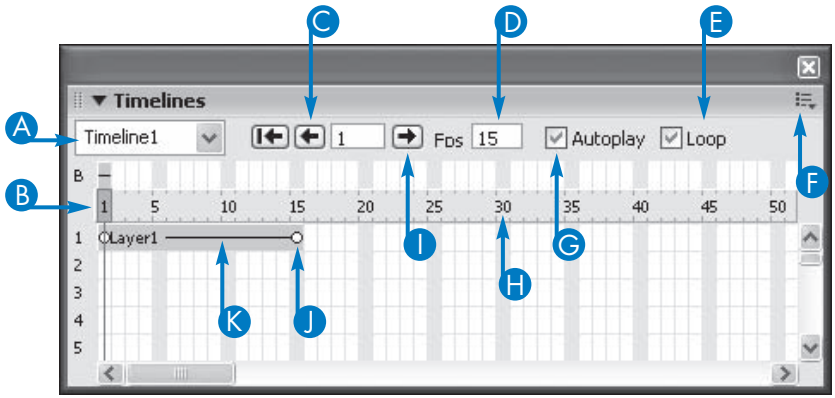
Not all browsers can support timelines. A browser must support the CSS location features that Dreamweaver uses to implement layers. Consequently, only browser versions 4 or later can handle timelines.

Browsers also need to execute JavaScript code in order to support timelines. While most browsers can execute JavaScript code, the browser user can turn off JavaScript. Browsers with JavaScript turned off cannot run timelines. Consequently, timelines should only be used when you are sure all the Web page visitors will have JavaScript turned on or if you accept that some percentage of users will not see the animation effect.

Introducing the Timelines Inspector

You can create and manage timelines with the Timelines inspector. In the inspector, you set the properties for the frames, the number of frames, and the speed at which the animation plays. You can play and rewind the animation. You can also set the timeline to automatically play when the page is loaded and/or to loop indefinitely.

To open the Timelines inspector, click Windows and click Timelines. The inspector appears in the window at the bottom of the Dreamweaver workspace.



A Timeline List
Shows current timelines.

B Playback Head
Plays a frame.

C Back Button
Moves playback head back 1 frame.

D Playback Rate
Sets the number of frames that play per second.

E Loop
Repeats timeline indefinitely.

F Timeline menu
Provides timeline commands.

G Autoplay
Timeline begins automatically when page loads.

H Frame Number
Number of the frame.

I Play Button
Plays a frame when clicked or all frames when held down.

J Keyframes
Frames where you specified properties, such as position.

K Animation Bar
Shows a timeline for a layer.

Create a Straight-line Animation

The most common timeline is a *straight-line animation*, in which the layer moves from one point to another in a straight line on the Web page.

You define two keyframes to set up a straight-line animation. The first keyframe defines the location of the beginning point of the straight-line movement. The second keyframe defines the location of the ending point of the straight-line animation. Dreamweaver fills in the position information for frames between the two keyframes, moving the layer in a smooth line from the beginning point to the ending point.

Because you can fill a layer with any Web page element, you can turn practically anything on your Web page into an animation. Chapter 11 explains how to create and add content to layers.

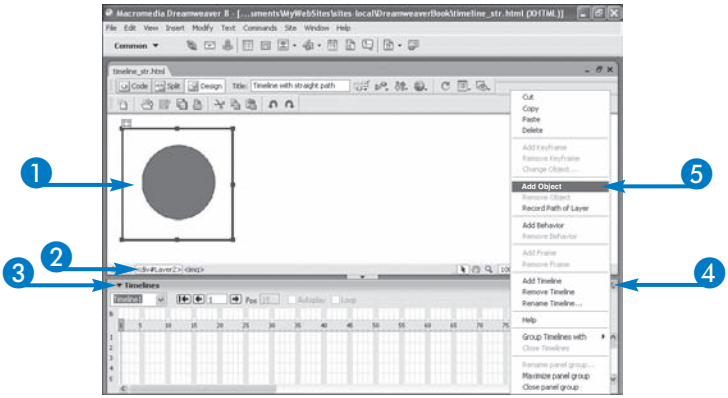
You can add more than one timeline to a Web page. You need to put each element that you want to animate into a separate layer. Then, you create separate timelines, with a separate animation bar, for each layer. You can put the animation bars on separate rows to play simultaneously, or one after another on the same row to play sequentially. You can click and drag the animation bars in the inspector to change their positions.

Create a Straight-line Animation

1. Position the layer where the timeline should start.

Note: *Chapter 11 explains layers.*

2. Select the layer.
3. Open the Timelines inspector.
4. Click the Panel Options button ( ).
5. Click Add Object.

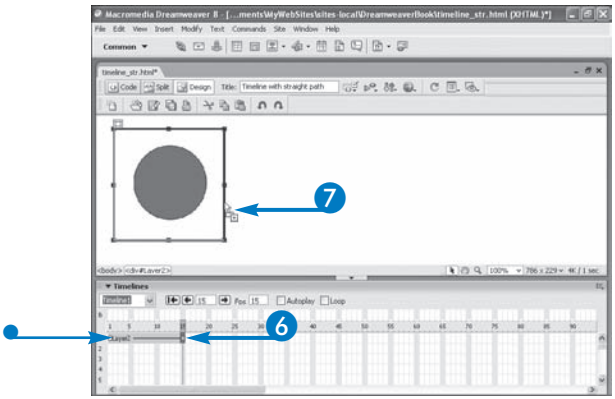


- The layer is added to the timeline.

The start and end keyframes have the same location: the current location of the layer.

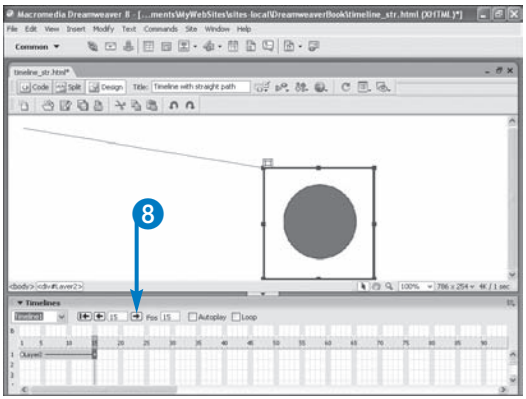
6. Click the ending keyframe.
7. Click and drag the layer to the position where the animation should end.

The mouse pointer changes shape.



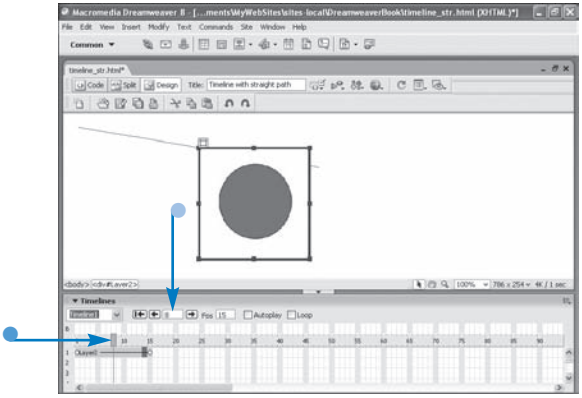
A line appears to show the timeline movement.

8 Click and hold down the Play button ( ).



The animation plays until you release the Play button.

- The Playback head moves along with the animation.
- The Timelines inspector shows the current frame number.



MASTER IT

Does the position of the animation on the page change with the size of the browser window?

No. When you set the keyframes for the position of your animation, you set the position using absolute coordinates. The positions are not relative to the browser window, and, therefore, do not change in response to changes in the size of the browser window. As a consequence, if you set a position for an animation on the far right of the browser window, part of the animation might not show if your visitor is using a small browser window or screen.

The animation is moving from beginning to end too quickly. Can I change its speed?

Yes. You can change the speed of the animation by adjusting the length of the animation bar or the timeline's frame rate. Changing the speed is explained in detail in the section "Change Animation Speed" later in this chapter.

Can I make the animation repeat?

Yes. If you check Loop in the Timelines inspector, the animation will repeat endlessly.

Create a Curved-line Animation

You can create a curved-line animation by defining the location of one or more keyframes between the beginning and ending keyframes of the animation path. Dreamweaver defines the location for the frames between the keyframes to create a curve through all the defined points.

The example in this section converts a straight-line animation path into a curved animation path by adding one keyframe in the middle of the line. The result is a balanced curve. You can add as many keyframes as you need to define the path you want the animation to follow.

Dreamweaver will create a curved-line through all the points you define. You can create wavy lines, loops, spirals, or any shapes you want.

You add a keyframe by Ctrl-clicking the mouse on the animation bar at the location where you want to add the keyframe. The keyframe is added and the layer is automatically moved to the location of the new keyframe in the current animation. You can then move the layer to a different location, creating a curve.

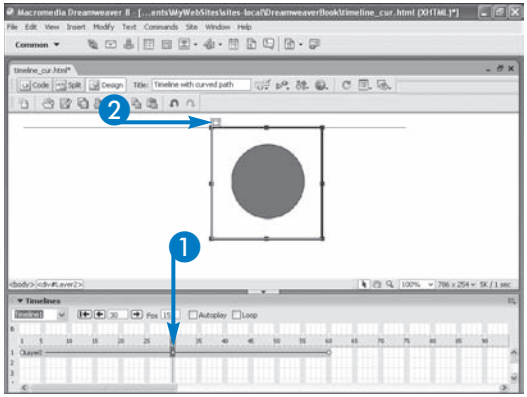
You can move a keyframe to a different frame. Click and drag the keyframe to wherever you want it.

Create a Curved-line Animation

1. Ctrl-click the animation bar where you want to add a keyframe.

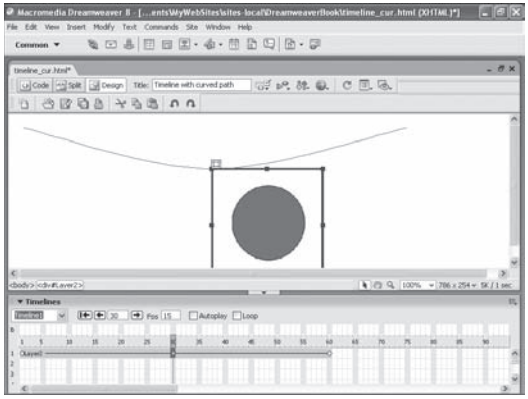
   The layer moves to the location of the new keyframe.

2. Click and drag the layer to the location for the new keyframe.



   The layer is located at its new location.

   Dreamweaver changes the animation into a curved line.



Remove a Frame, a Keyframe, or an Animation

You can remove a frame or a keyframe from a timeline. When you remove a frame from the middle of the animation bar, Dreamweaver takes the frame out of the animation, making the animation bar one frame shorter. When you remove a keyframe from the middle of the animation bar, Dreamweaver changes the keyframe into a regular frame. The animation bar stays the same length.

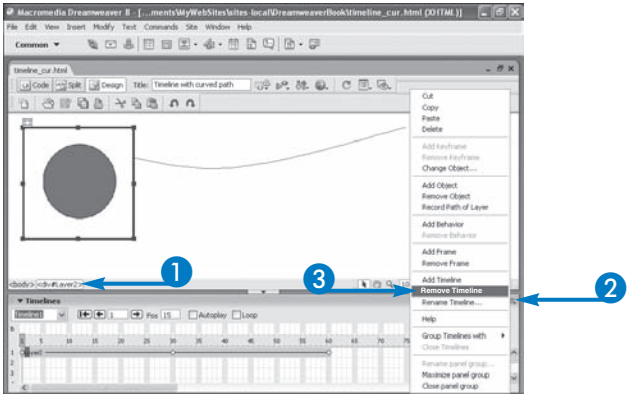
You can remove an entire animation from a timeline. The animation bar, with all its frames, is removed. Other animations in the timeline are not affected. You can add new animation bars to the timeline.

In the Timelines inspector, each animation is an object. If the timeline contains more than one animation bar, you can remove any one of the animation bars by selecting Remove Object from the context menu. If the timeline contains only one animation bar, Remove Object is grayed out. You can only select Remove Timeline. However, if there is only one timeline, Remove Timeline removes the animation bar and displays an empty timeline.

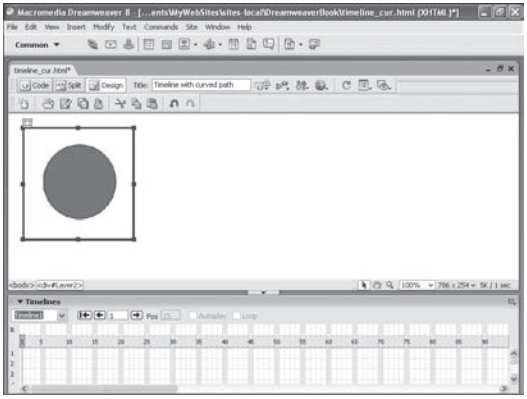
If you remove a frame or an animation bar accidentally or change your mind after removing one, you can return the object using the Undo function in Dreamweaver.

Remove a Frame, a Keyframe, or an Animation

1. Select a layer.
2. Click .
3. Click Remove Timeline.



The animation bar is removed.



Create an Animation by Dragging a Path

While some of the animations you may want to create involve movement in straight lines or simple curves, others may involve more complex paths. To create these animations, you can drag a layer along the intended path and have Dreamweaver record the path as you go.

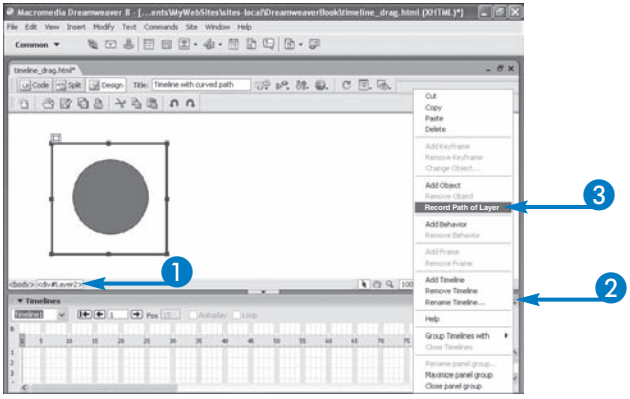
Dreamweaver creates the animation bar for you in the inspector, inserting the appropriate keyframes where the path changes direction. After you record your path, you can edit it by moving the playback head to a keyframe, and then repositioning the layer in the Document window.

Recording a path can be a great time-saver, because describing an animation that includes loops or curves can require you to insert many keyframes and carefully position your layer for each one.

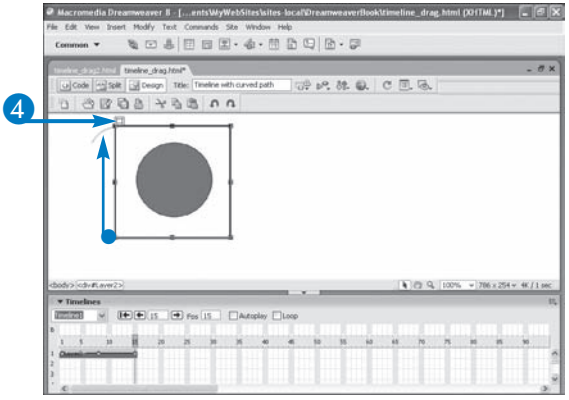
Creating an acceptable recording can also be a challenge, however, because Dreamweaver records not only the position of the layer as you drag it but also the speed at which you move it. If you speed up and slow down as you move your layer, you can end up with a jerky animation that looks unnatural.

Create an Animation by Dragging a Path

1. Select a layer.
2. Click .
3. Click Record Path of Layer.



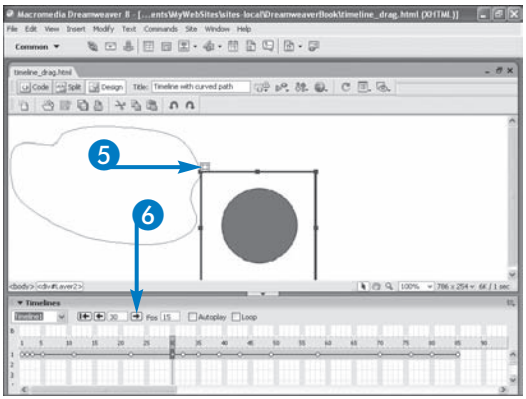
4. Click and drag the layer.
   - A line shows the path that is being recorded.



5 Drag the layer until the desired path is complete.

6 Click and hold ▶.

The layer travels around the recorded path.

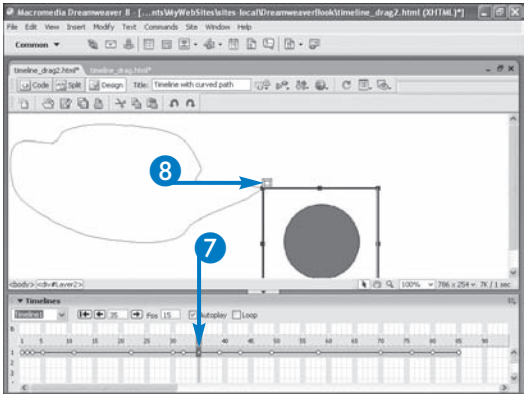


7 Click a keyframe.

The layer moves to the location of the keyframe.

8 Click and drag the layer to a new location.

The path changes to accommodate the new location of the keyframe.



Can I cause a layer to rotate using timelines?

No. While the path of a timeline animation can contain curves and loops, you cannot use timelines to actually rotate the content that is inside a layer. The content in the layer that is being animated must stay perpendicular to the browser window as it moves. One way to put rotating content on your page is to create it as an animated GIF file. You can create animated GIFs in Macromedia Fireworks.

How can I change the speed of a recorded animation?

If you want to slow down an animation, increase the length of the animation bar — click the last keyframe on the bar and drag right. If you want to speed it up, decrease the length of the animation bar — click the last keyframe on the bar and drag left. For more information, see the section "Change Animation Speed."

Change Layer Properties in Timelines

You can change the visibility, dimensions, and z-index of a layer over time to achieve interesting animated effects on your Web page. You do this by making adjustments in the Property inspector at different keyframes in your timeline.

Changing visibility enables you to make elements in your page appear or disappear at different times, or flash on and off repeatedly. You can combine changes in visibility with changes in position to create layered content that flashes as it moves across the page.

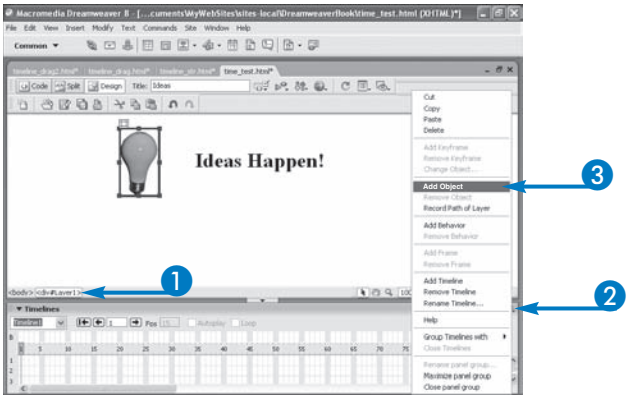
Changing the dimensions of a layer in a timeline can make the layer gradually expand, or shrink, in size. If the Overflow value of a layer is set to hidden, shrinking a layer over time can cause content to gradually disappear as the layer closes around it. You can set a layer's Overflow value in the Property inspector.

The *z-index* refers to the relative position a layer assumes when it is stacked with other layers. The greater the z-index, the higher the layer is in the stack. You can change the z-index in a timeline to shuffle stacked layers on your page.

Change Layer Properties in Timelines

1. Click a layer.
2. Click .
3. Click Add Object.

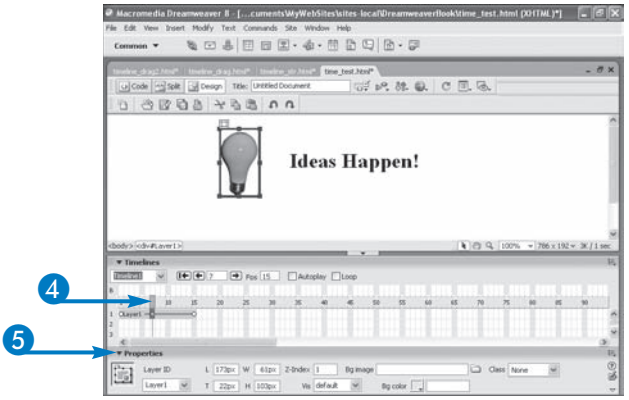
Note: *Both the starting and ending keyframes are given the current location of the layer. If you do not change the end location, the layer remains in the same position in the animation.*



4. Drag the playback head to where you want to change a layer property.
5. Open the Property inspector.

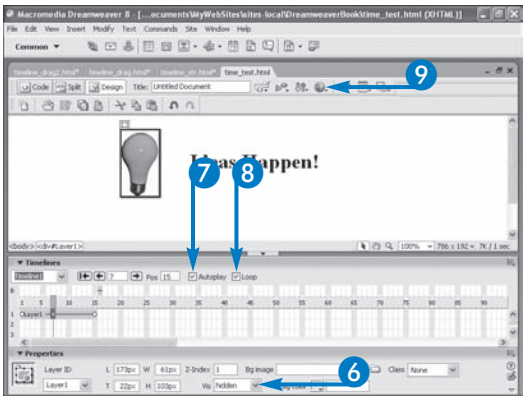
Note: *See Chapter 2 to work with the Property inspector.*

The Property inspector displays the current properties of the layer.



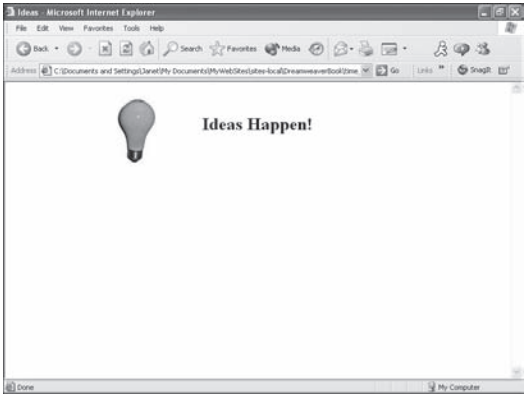
6. Click ☑ and select hidden.
7. Check Autoplay (☐ changes to ☑).
8. Check Loop (☐ changes to ☑).
9. Click ▶.

Layer properties do not work in Dreamweaver.



The browser displays the Web page.

In this example, the light bulb turns on and off indefinitely.



How can I create labels that pop up when the user rolls the cursor over images on my page?

You can create a pop-up label for an image by using a hidden layer, a timeline, and a behavior. First, create the label using a layer — for example, put text into a layer that has a background color — and set the visibility of the layer to hidden. Then create a timeline that makes the hidden layer visible. Finally, define a behavior that triggers the timeline when the cursor rolls over the image. For information about triggering timelines, see the section "Trigger an Animation with a Behavior."

What z-index values should I give my layers?

Z-indexes come into play only when layers overlap. When they do overlap, what matters is not the exact z-index value, but what the value is relative to the z-indexes of other layers. For example, if you want to use a timeline to move a layer with a z-index of 1 beneath a layer with a z-index of 5, you need to switch the z-index of the first layer to something greater than 5. Z-indexes of 6 and 60 have the same effect.

Change Animation Speed

Two methods slow down or speed up a timeline animation: changing the frame rate or changing the number of frames in the animation. Thus, you can fine-tune how your animations play when you test them in browsers.

The *frame rate* is the number of frames that play in a second. The more frames that play in a second, the faster the animation runs. The default animation speed is 15 frames per second (fps). You can change the frame rate in the Timelines inspector. The frame rate controls all the animation sequences in the timeline.

The number of frames in the animation also affects the animation's speed. An animation with more frames will take longer to run than an animation with fewer frames, given the same frame rate. That is, a 15-frame animation running at 15 fps finishes in one second; a 30-frame animation running at 15 fps finishes in two seconds.

If you want different animations on your Web page to run at different frame rates, you can add two different timelines for the two animations. Then, you can set different frame rates in the two timelines.

Change Animation Speed

Change the frame rate

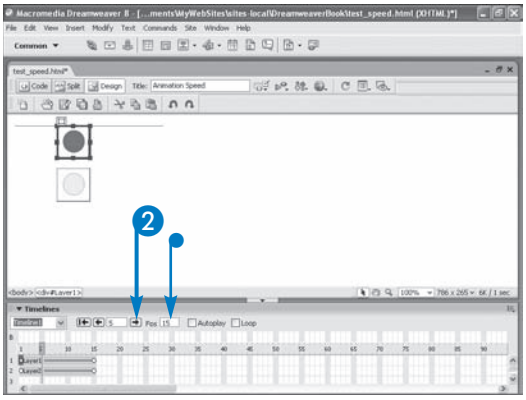
1. Create two parallel animations.

   The two animations have parallel paths in animations of equal lengths.

   - The frame rate is set to 15.

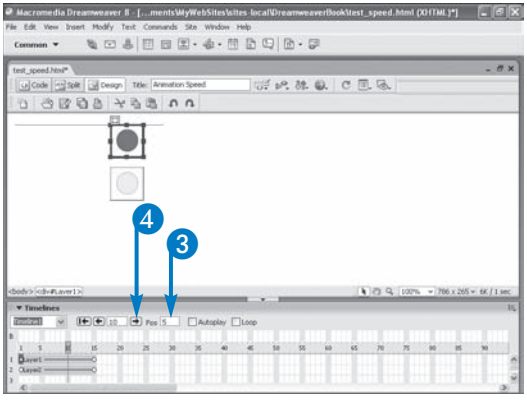
2. Click and hold ➔.

   The animations move at the same speed.



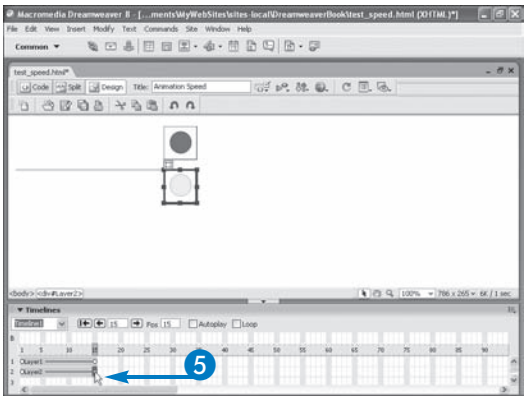
3. Type a new frame rate.
4. Click and hold ➔.

   Both animations move at the new speed.



Change the number of frames

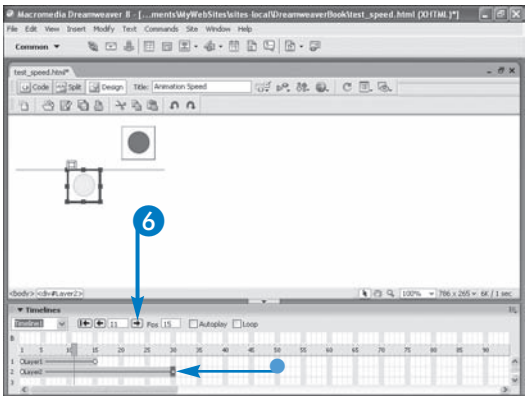
5 Click and drag the end keyframe of one animation bar.



- One animation bar is now longer, with more frames than the other.

6 Click and hold ▶.

The animation with more frames moves more slowly than the one with less frames.



How high can I set my frame rate for animations?

Most browsers running on average computer systems cannot display animations at rates faster than 15 fps. You probably do not want to set your rate higher than 15 fps. If you are running many animations on a page and want to make sure all users can play them without having performance issues, you may want to decrease the frame rate to less than 15 fps. As a comparison, 30 fps is the standard frame rate for video and 24 fps is standard for film.

What happens when a browser cannot display an animation at the specified frame rate?

The browser plays all the frames in the animation, but plays them at a slower speed. It does not skip frames or otherwise shorten the animation.

Trigger an Animation with a Behavior

You can set up your timeline so that it runs when the Web page is loaded, but you may not always want the timeline to run every time the page is loaded. You may want the timeline to execute when a user clicks an image or passes the mouse pointer over an image. You can set up your timeline to execute in response to user actions by setting up the timeline as an action in a behavior.

A behavior consists of an event and an action. An *event*, such as a click or moving the mouse over a Web page element, is performed by the Web page visitor. Events have names such as `onClick` or `onMouseOver`. An *action* is a specific task, which is defined by JavaScript code. In this case, the action that the event triggers is running the timeline.

You set up a behavior using the Behaviors panel. You attach a behavior to a specific Web page element, defining an event that triggers the timeline. See Chapter 12 for information about Dreamweaver behaviors.

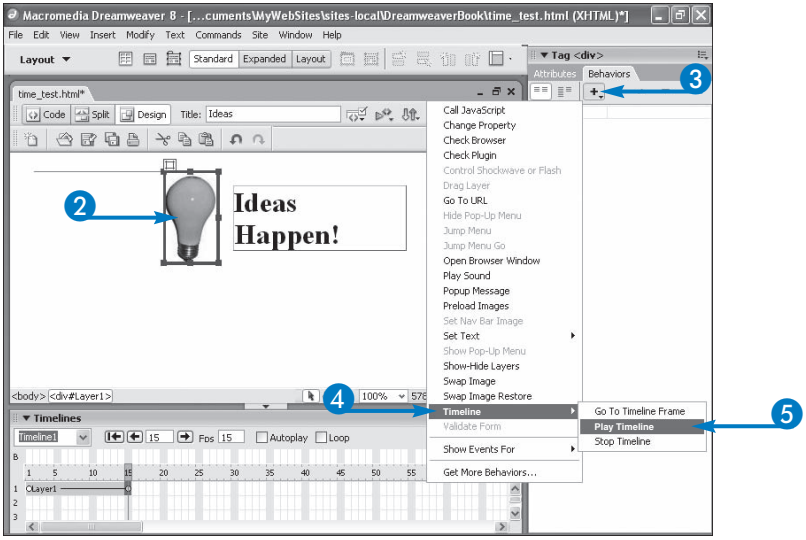
Behaviors do not work in Dreamweaver. You need to preview your Web page in a browser to test whether the timeline executes correctly when the event occurs.

Trigger an Animation with a Behavior

1. Create a timeline animation.

Note: *See the section "Create a Straight-line Animation" to create a timeline animation.*

2. Select an element to trigger the animation.
3. Click the Add Behavior button (+).
4. Click Timeline.
5. Click Play Timeline.



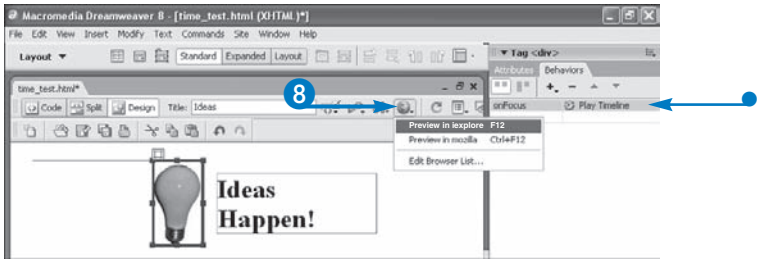
The Play Timeline dialog box appears.

6. Click and select a timeline.
7. Click OK.

- The Timeline behavior is listed.

8 Click .

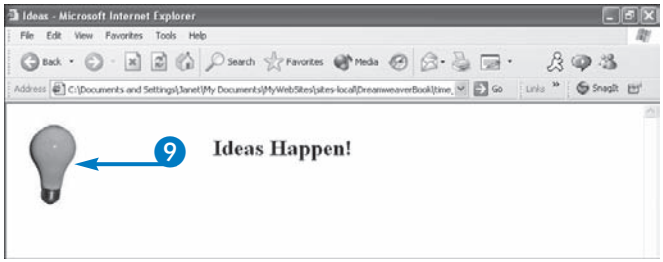
Behaviors do not work in Dreamweaver.



The browser displays the Web page.

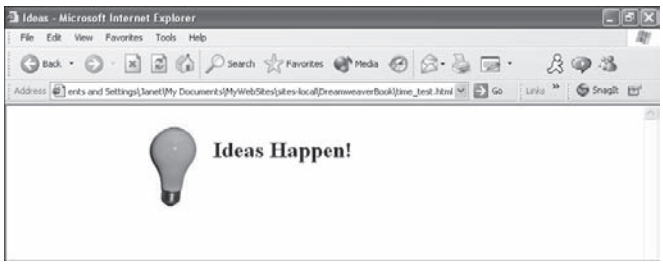
9 Click the element that is set up to trigger the animation.

Here, the behavior is attached to the light bulb.



The animation runs.

In this example, the light bulb moves.



PART III

How can I choose an event to trigger the timeline?

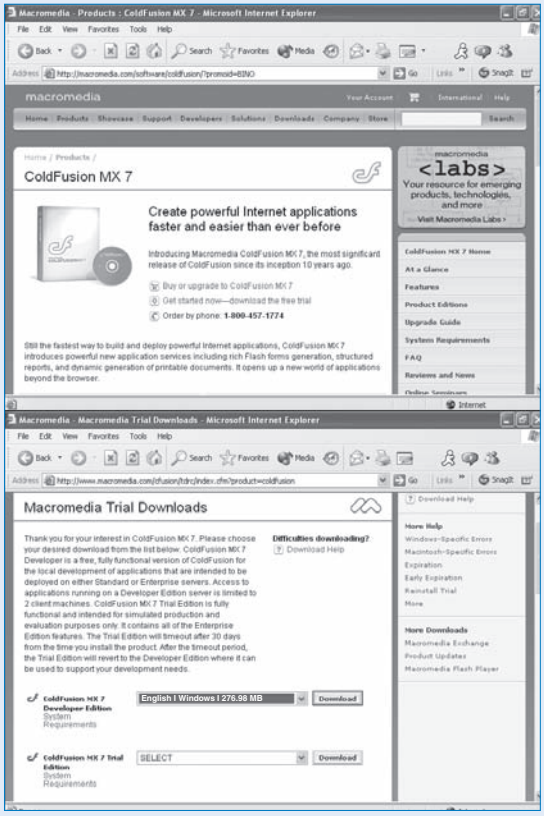
Dreamweaver uses a default event when it attaches a behavior to a Web page. If you click the event in the Behaviors panel, a drop-down list containing all available events displays. You can click any event to be the trigger for your timeline. For example, `onDblClick` makes double-clicking the trigger that starts the animation. And `onMouseOver` starts the animation when the cursor rolls over the element.

How do I remove a behavior that triggers the animation?

You can remove the behavior by selecting the element in the Document window that does the triggering. The behaviors attached to the element are listed in the Behaviors panel. Click the behavior that triggers the animation. Then, click the Remove button (−). You can then assign the triggering behavior to another element on the page or make the animation autoplay.

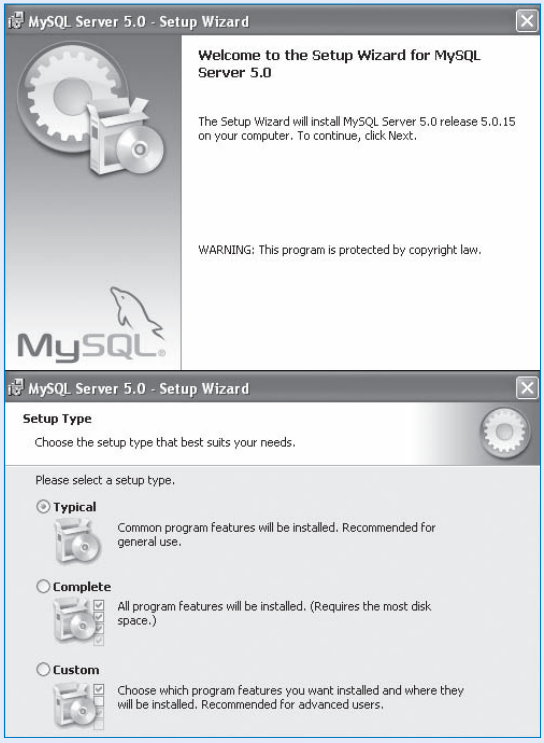
14 Setting Up a Dynamic Site

Introducing Dynamic Web Sites 254
Introducing Application Servers 256
Obtain the Apache Web Server 258
Install the Apache Web Server 260
Install the IIS Web Server 262
Obtain the PHP Application Server.....264
Install the PHP Application Server 266
Configure Apache to Process PHP Code....268
Obtain the ColdFusion Application Server....270
Install the ColdFusion Application Server....272
Set Up a Dynamic Dreamweaver Site 274
Create a Dynamic Web Page 276
Test a Dynamic Web Page 278



15 Using a Database with a Web Site

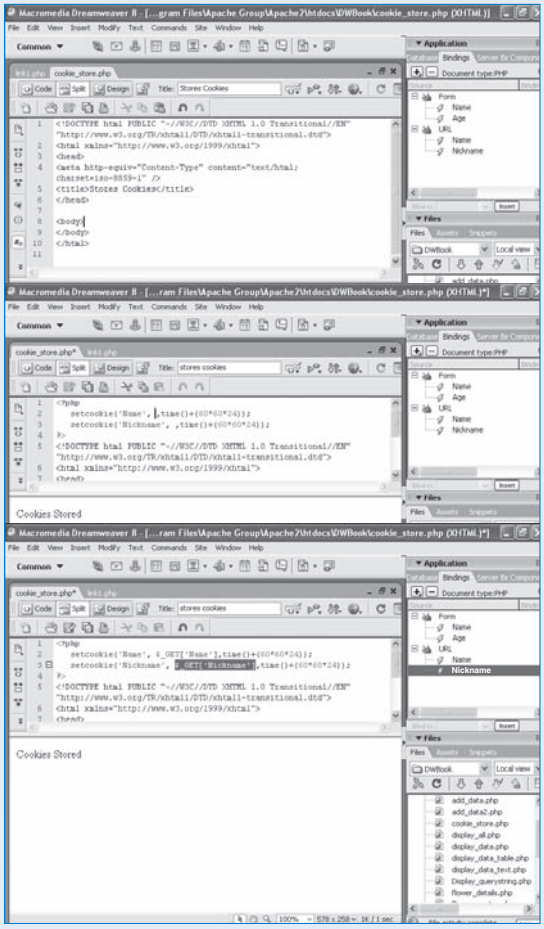
Introducing Databases 280
Obtain MySQL.....282
Install MySQL 284
Configure MySQL 286
Set Up PHP to Communicate with MySQL 288
Using MySQL Versions 4.1 or Newer with PHP.....290
Connect a Dreamweaver Site to a Database 292
Retrieve Data for Use in a Web Page.....294
Display a Data Item on a Web Page 296
Display Multiple Data Records on a Web Page.....298
Add Data to a Database 300

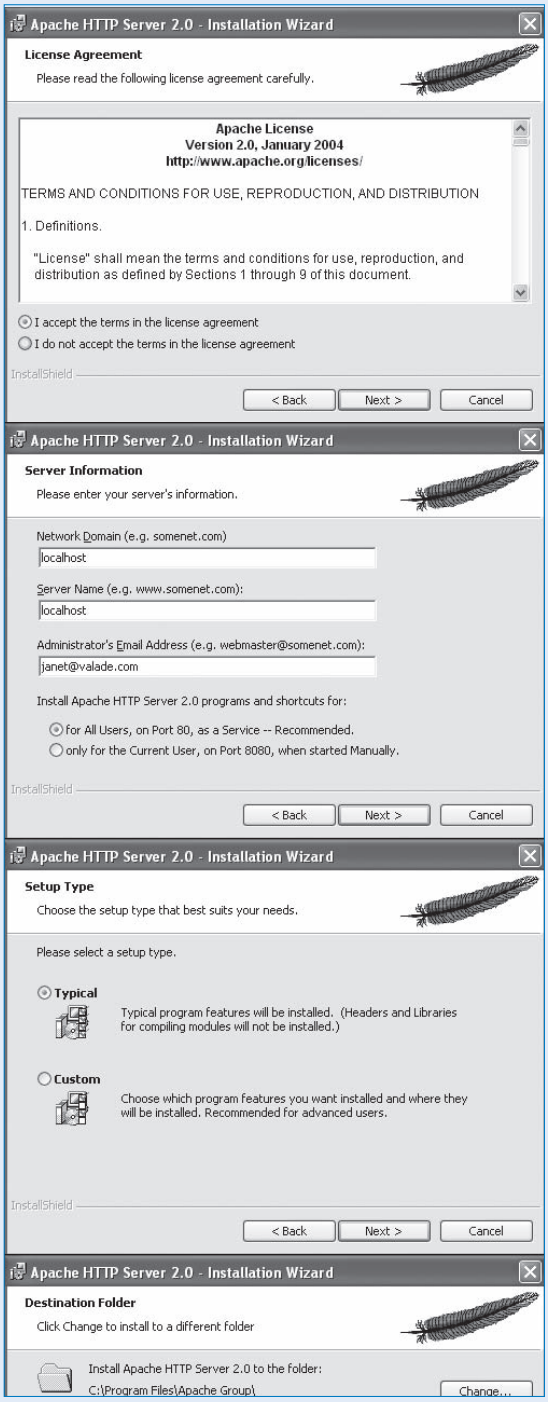


PART IV
CREATING A DYNAMIC SITE

16 Advanced Dynamic Topics

Using Information from a Form 302
Add Information to a URL 304
Display Information Passed in a URL 306
Store Information in a Cookie.....308
Using Information from a Cookie 310
Store Session Information 312
Using Session Information 314
Display Multiple Records with Paging.....316
Create a Search/Results Page Set 318
Create a Master/Detail Page Set 320





Introducing Dynamic Web Sites

Today's Worldwide Web (WWW) is a dynamic, interactive environment for transactions of many types — commerce, research, forums, and so on. Dynamic Web pages are an essential part of today's Web. Dynamic Web sites interact with a visitor. For instance, most online catalogs are databases of product information. Customers select the type of product that interests them via an HTML form and the Web page displays only the requested product information.

Previous chapters of this book described static Web pages. Static Web pages do not change. Every visitor sees the same Web page. Dynamic Web pages change. Different people might see different pages. One visitor to a flower store Web site might request and see information about roses, while another visitor might request and see information about carnations.

Dynamic Web Site Software

HTML alone does not provide the capabilities needed for dynamic Web sites. HTML forms can collect information from users, but another language is needed to process the information collected in the forms. Several languages, such as PHP, ColdFusion, and ASP, are available to provide this functionality. An application server — a required component of a dynamic Web site — provides these languages. Application servers are discussed in the next section of this chapter.

Most dynamic Web sites require access to a database. Dynamic Web sites may display information from a database or store information in a database, or both. Most application servers support all the major databases, such as MySQL, Access, Microsoft SQL Server, Oracle, and so on. Using databases with your Web site is discussed in Chapter 15.

Public access to any Web site requires a Web server. While you can test a static Web page locally without a Web server, the Web page is not available to the public unless a Web server is installed. Dynamic Web pages require a Web server, even for local testing. Therefore, even the local site of a dynamic Web site needs access to a Web server.

Web Servers

When someone wants to view a Web site, he or she types the URL (such as amazon.com) into a browser. The browser sends a request over the Internet, asking to view the Web page at the URL. Software at the Web site receives the request and responds by returning the requested page, which the browser displays. The Web server is the software that receives and responds to requests.

The browser displays HTML code. Most browsers also render Cascading Style Sheets (CSS) and JavaScript, and display the Web page correctly. However, browsers do not understand languages such as PHP and ASP. These languages are processed by an application server. The Web server's job is to send the language code to the application server for processing. After processing, the application server sends the output back to the Web server, which then sends it to the browser.

Because the Web server sends the application language code to the application server, you cannot test dynamic Web sites without a Web server. Clicking File and selecting Open accesses the file directly and opens it without going through the Web server. Consequently, the dynamic language code is not sent to the application server and is not processed.

When the Web server receives a request for a Web page, it looks in a specific location for the page to send in response to the request. If the file is not in the expected location, called a *Web space*, the Web server cannot find it and returns an error message. Consequently, your dynamic Web pages can only be tested from a location in your Web space.

Apache and Internet Information Services (IIS) are the two most popular Web servers. Between them, they provide Web service for more than 90 percent of Web sites, according to the Netcraft survey at www.netcraft.com.

Apache is open-source software. You can download and install it without paying a fee. Apache runs on almost every operating system that exists. Apache is used on approximately 70 percent of Web sites.

IIS is published by Microsoft and used on about 20 percent of Web sites. A version of IIS is included with Windows 2000 Professional and Windows XP Professional. This version is useful for development, but not for a production Web site with a high volume of traffic. A more powerful version of IIS is included with Windows 2000 Server and Windows 2003 Server. Although IIS is included with Windows, it is not always installed. Often you must install it from the Windows CDs, which is a simple process.

Mac OS X comes with Apache already installed.

Setting Up a Dynamic Site

For the previous chapters in this book, the Dreamweaver site included two sites — the *Local site* and the *Remote site*. The Local site is for development and not available to the public. The Remote site is the finished Web site that is available to the public. A dynamic Dreamweaver site requires three sites. In addition to having the Local site and the Remote site, you need to set up a testing site. However, in most cases, the testing site and the local site are the same site.

If you set up your local site and your testing site as the same site, the site needs to be located where the Web server expects to find Web pages — your Web space. If you are using a Web hosting company, you can set up your local/testing site on the hosting company computer, where a Web server is already installed. You can use a private subdirectory in your remote site for this purpose.

Many people prefer to develop on their local computer and transfer only the finished Web pages to the remote site. To develop dynamic Web sites on your local computer, you must have a Web server on your local computer. You must also install an application server, discussed in the section "Introducing Application Servers" of this chapter.

Dreamweaver and Dynamic Web Sites

Dreamweaver provides features that enable you to add the most common dynamic elements to your Web page without knowing an application language. You can write a page that processes a form, displays data from a database, or stores data in a database table by using Dreamweaver menu items and panels.

When you set up a dynamic site, you specify which application language to use for the site. Dreamweaver stores this setting. When you create a new page for the site, Dreamweaver automatically sets up the correct type of page.

When you use Dreamweaver menu items and panels to add dynamic content to a Web page, Dreamweaver adds the application language code to your source file. Dreamweaver adds the code using the language setting that you set up when you created the Dreamweaver site.

Dreamweaver supports several languages — PHP, ASP, ASP.NET, JSP, and ColdFusion. Application servers are discussed in the section "Introducing Application Servers."

Introducing Application Servers

The dynamic content of Web sites is created with an application language. The dynamic code is added to the Web page source file, along with HTML code. An application server processes the dynamic code.

The application server works together with the Web server. The Web server passes the dynamic language code to the application server for processing. When the application server is finished processing the code, it passes the output from the code back to the Web server, which sends the output to the browser, which displays the Web page.

The Code

The dynamic content is created using a specific language. The exact code used depends on the language used. Each language has its own code syntax. The languages are similar, but not the same. The languages provide many of the same features found in any scripting language. The languages can output text, execute conditional actions, perform repeated actions, and so on.

The code is added to the Web page source file, along with HTML and other code. The dynamic language code is surrounded by tags that identify its language. For instance, PHP code is surrounded by `<?php` and `?>`, as shown below:

```
<?php
    echo "Hello!";
?>
```

Under the Hood

The Web server's job is to send the dynamic code to the application server for processing. The Web server is configured to recognize specific filename extensions, such as .php, .asp, or .cfm. When the Web server receives a request for a file with a specified filename extension, it passes the file to the appropriate application server.

The application server finds the dynamic code, identified by tags, and processes the dynamic code sections. After processing, the Web page no longer contains any of the language code, because it is replaced by its output. The output is sent back to the Web server. The Web server sends the Web page to the requesting browser, which displays the Web page as any other Web page.

For example, suppose your Web page source file has a PHP section that displays different pages based on the visitor's form input. The PHP code might look something like the following:

```
<?php
    if($age < 18)
        print "<p>Hi, kids!";
    else
        print "<p>Hello, Adults!";
?>
```

This code displays a different message on the Web page depending on the visitor's age. When the application server processes this block of code, it checks the age and then outputs either `Hi, Kids!` or `Hello, Adults!` to the Web server. The PHP code is no longer in the file. Only the output from the PHP code is sent to the Web server, which sends it to the browser.

Dreamweaver and Application Servers

Dreamweaver currently supports PHP, ColdFusion, ASP, ASP.NET, and JSP. You select one language when you set up a dynamic Dreamweaver site. You can use more than one application server with Dreamweaver. You can set up different Dreamweaver sites with different languages, but can use only one language per site.

You can add dynamic content to your Web page in Design view. Dreamweaver provides features that enable you to process form information, store data in a database table, or display data from a database, without knowing the language syntax. You select dynamic content from menu items and panels. Dreamweaver adds the language code to your source code file based on the language you selected when you set up the Dreamweaver dynamic site.

If you are proficient in the application language, you can add dynamic code directly to your Web page source code files in Code view.

Each language has its own advantages and disadvantages. If you already know a language, you save a lot of time if you use that language. ASP and PHP are free, which is an advantage. ASP is only available if you use the IIS Web server, which is less popular and powerful than Apache.

PHP Application Server

Currently, the most popular dynamic Web site technology is the PHP scripting language. PHP is currently installed in more than 20 million domains (`www.php.net/usage.php`).

PHP is open-source software that you can download and install without paying a fee. It runs on every major operating system, and runs with either Apache or IIS.

PHP can communicate with many databases. However, MySQL is commonly used with PHP for Web sites. MySQL is a small, fast database that is well suited for Web sites. MySQL is also open-source software. Dreamweaver supports PHP with MySQL, but not with any other database. You can add code manually for PHP with another database, but to use Dreamweaver features for dynamic content, you must use MySQL.

ColdFusion Application Server

ColdFusion is a tagged language, developed by Macromedia, who is also the developer of Dreamweaver. ColdFusion can be downloaded and/or purchased on the Macromedia Web site. A Developer Version, which works for development, is available for free, but if you use ColdFusion on a production server, you will need to purchase it.

ColdFusion runs with both Apache and IIS. A stand-alone Web server is also included as part of ColdFusion. The stand-alone server is fine for development, but you should use a more powerful server for a production Web site.

ASP Application Server

Application Server Pages (ASP) is Microsoft technology. It is built into IIS and PWS. You do not have to pay anything extra for ASP, nor do you need to obtain or install it separately. When you install IIS, you have access to ASP.

When you use ASP technology, you have your choice of languages — VBScript or JScript. When you set up your Dreamweaver site, you specify which language you want to use.

ASP.NET Application Server

ASP.NET is the application server included with .NET from Microsoft. It is available with any IIS server that has the free .NET extensions installed. You can use several languages with ASP.NET, but the main languages are VB and C#.

JSP

JSP (JavaServer Pages) is a Java-based language for dynamic Web development. JSP requires a Java server, such as a J2EE server. If you are proficient in Java, you might want to consider JSP.

Obtain the Apache Web Server

Apache is open-source software. You can download it and use it for free from `http://httpd.apache.org`. For Windows, you should download the Microsoft Installer file, which installs Apache on your system. The Microsoft Installer file has an .msi extension. Most Mac computers come with Apache already installed. Unless your Mac is quite old, you do not need to download Apache. However, you do need to turn it on (described in the section "Install the Apache Web Server").

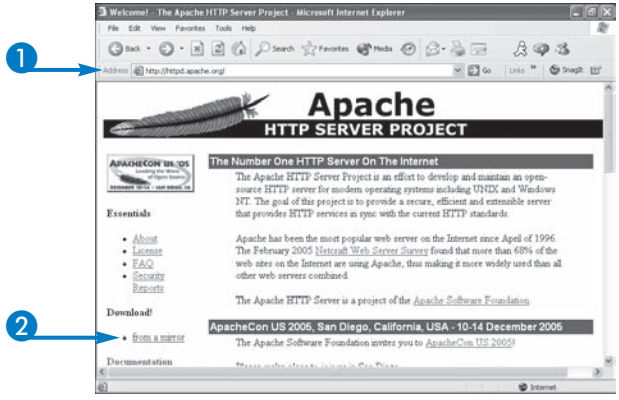
Apache is available in three versions: Apache 1.3, Apache 2.0, and Apache 2.2. All three versions are supported and upgraded. Apache 2 changed considerably from Apache 1.3; Apache 2.2 changed from Apache 2.0. Third-party modules that run on 1.3 will not work correctly with Apache 2 and modules that work on Apache 2.0 may not work correctly with Apache 2.2. Therefore, only modules that have been modified for Apache 2 or 2.2 can run on Apache 2 or 2.2.

The PHP application server runs with Apache 2 or 2.2. However, some PHP third-party modules may experience problems. If you plan a simple Web site without third-party PHP software, use the most recent version of Apache 2. Apache 2 runs better on Windows than Apache 1.3. However, if you plan a large, complicated Web site, on which you might use a variety of third-party PHP software, it might be best to stick with Apache 1.3.

Obtain the Apache Web Server

1. Type **httpd.apache.org**.
2. Click "from a mirror."

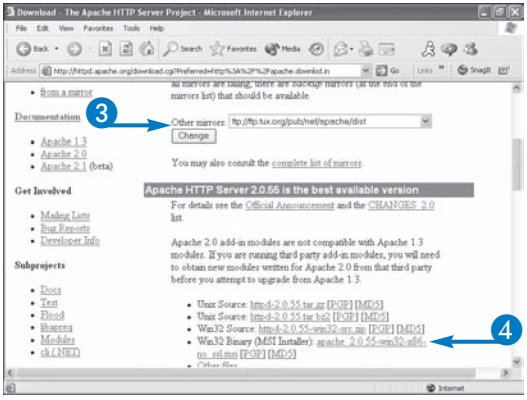
   The Apache download page opens.



3. Scroll down to the mirror field.

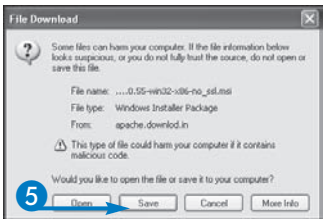
   A default mirror is selected for you, which you can change.
4. Click the Windows binary installer for the Apache version you want to install.

   The File Download dialog box opens.



5 Click Save.

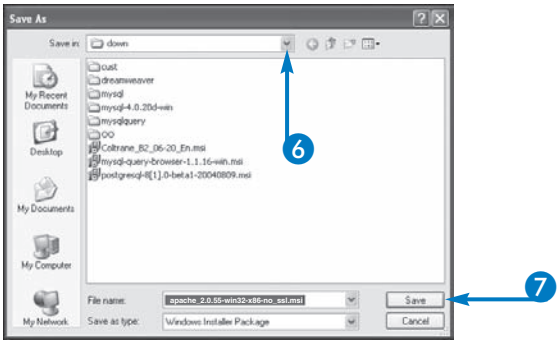
The Save As dialog box opens.



6 Click ▼ and navigate to the folder where you want to save Apache.

7 Click Save.

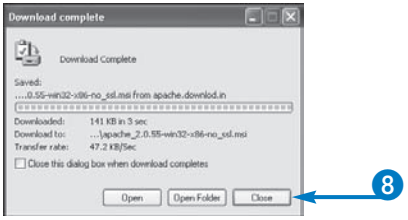
The Download dialog box opens.



The Download complete message appears when Apache finishes downloading.

8 When the message "Download Complete" appears, click Close.

Note: *After downloading Apache, scroll down the Download page to the Verify the Integrity of the Files section and follow the instructions.*



Do I need to download any other software before I can install Apache?

The Apache installer file requires version 1.10 or later of the Microsoft Installer (MSI). The Microsoft Installer is built into Windows XP/2000/NT, but you might need to upgrade it. To check for MSI, click Start and then click Run. Type **msiexec**. If MSI is installed, it will display information, starting with its version. If necessary, you can download and install MSI from the Microsoft Web site.

Can I run Apache on older versions of Windows?

Apache runs on Windows 95/98/ME/NT 4/2000/XP. However, running a production server on Windows 95/98/ME is not recommended.

For Windows 95, you need to download and install the Windows Socket 2 Update from Microsoft before installing Apache.

For Windows XP, you need to download and install Service Pack 1 before you install Apache.

What does Verify mean on the Apache Web site?

The Apache Web site provides a method to verify the Apache software after you download it. Since Apache is provided on many mirror Web sites, it is possible for the bad guys to replace the legitimate Apache file with one that has been altered. Verifying the downloaded file is a security precaution to make sure the file is the correct file. The verify procedure is not required. If it is the correct Apache file, Apache runs fine. However, it is best to take the time to verify the file after downloading.

Install the Apache Web Server

You can install the Apache Web server by running an installer file that you download from the Apache Web site (`http://httpd.apache.org`). Downloading Apache is discussed in the section, "Obtain the Apache Web Server."

When you double-click the downloaded installer file, an installation procedure starts. You see several screens, one after another, that request required information, including your domain name, your server name, the e-mail address of the Apache administrator, and the folder where you want to install Apache. Then, when you have provided the information, Apache is installed.

The Apache Web server must be both installed and started. Apache can be set up so that it starts automatically whenever the computer starts or so that you must start it manually. During installation, select "For all users, on Port 80, as a service," to set up Apache to start automatically.

Apache comes already installed on Mac computers. However, you need to turn it on. Open System Preferences and Click the Sharing folder. In the Services tab, check Personal Web Sharing.

At times, you will need to stop or restart the Apache Web server. For instance, when you change Apache or PHP settings, you need to restart Apache before the new settings go into effect. You can start and stop Apache from a menu item in the Start menu.

Install the Apache Web Server

1. Navigate to the folder where you downloaded Apache and double-click the Apache installer.

   A Welcome screen appears.

2. Click Next.

   The License Agreement screen appears.

3. Click "I accept ..." (◯ changes to ◉).

4. Click Next.

   The Server Information dialog box appears.

5. Type in your network domain name.

6. Type in your server name.

7. Type in your e-mail address.

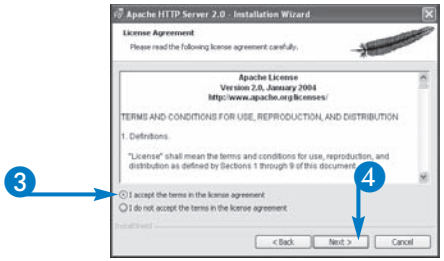
8. Click Next.

   The Setup Type dialog box appears.

9. Click Typical (◯ changes to ◉).

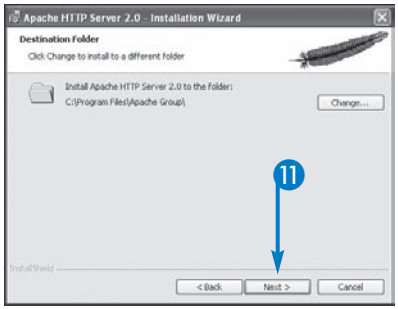
10. Click Next.

    The Destination Folder dialog box opens.



A default destination folder is selected.

11 Click Next.

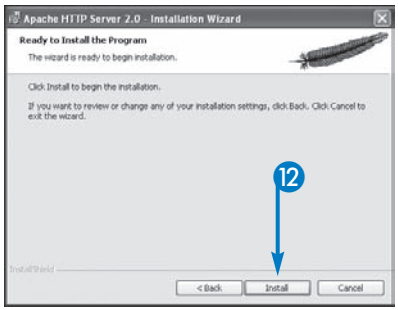


The "Ready to Install the Program" message appears.

12 Click Install.

A window shows the progress of the installation.

A message appears when Apache is finished installing.



How do I know if Apache is running as a service?

You can look at the list of services on your computer. Click Start; click Control Panel; click Administrative Tools; click Services. An alphabetical list of services is displayed. If Apache is not listed, then it is not a service.

In the list, the status of Apache appears as "started" if Apache is currently running. You can click links to start, stop, or restart Apache. If the Type is automatic, Apache will start whenever the computer starts.

Apache is currently set up so that I start it manually. How can I set Apache up to start automatically?

You can install Apache as a service. Open a Command Prompt window by clicking Start, Accessories, and then Command Prompt. Change directories to the bin folder in the folder where Apache is installed, such as cd c:\Program Files\Apache Group\Apache2\bin. Type

```
apache -k install
```

For more information, see http://httpd.apache.org/docs/2.0/platform/windows.html#winsvc.

What do I do if I have problems installing Apache?

Search the Apache Web site for information. At httpd.apache.ord/docs, select the link for the Apache version you are using. You can then search the complete documentation for the selected version.

You can join an Apache discussion list where you can ask questions (http://httpd.apache.org/lists.html). With hundreds of members who know everything about Apache, you often get an answer seconds after you ask a question.

Install the IIS Web Server

Internet Information Services (IIS) is the second most popular Web server. According to the Netcraft Web survey (`http://news.netcraft.com/archives/web_server_survey.html`), about 20 percent of Web sites use IIS. Together, Apache and IIS power more than 90 percent of Web sites.

Published by Microsoft, IIS is included as part of the operating system for Windows 2000 Professional, Windows XP Professional, and Windows Server 2003.

The version of IIS included with Windows 2000/XP is not as powerful as the version on Windows Server. It allows only a limited number of people to connect to your Web site at one time. Consequently, it is not useful as a production server for a large, public site, though it can be useful as a development server or for internal organizational use.

IIS is included with the operating system, but is not automatically installed. You need to install it from the Windows XP Professional or Windows Server 2003 CDs before you can use it.

Active Server Pages (ASP) is included with IIS. You do not need to install ASP separately from IIS.

When you install IIS, you can install optional features, such as documentation, an FTP (File Transfer Protocol) server, or the IIS snap-in that enables you to manage IIS.

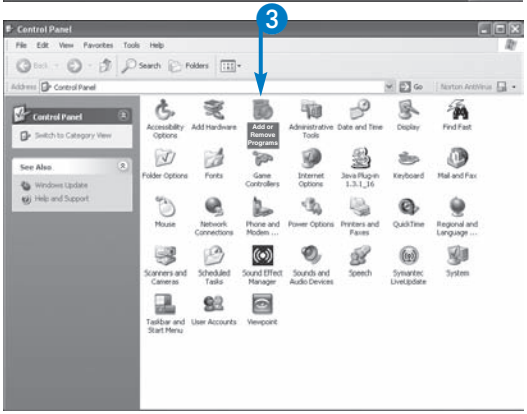
Install the IIS Web Server

1. Click Start.
2. Click Control Panel.

   The Control Panel window opens.

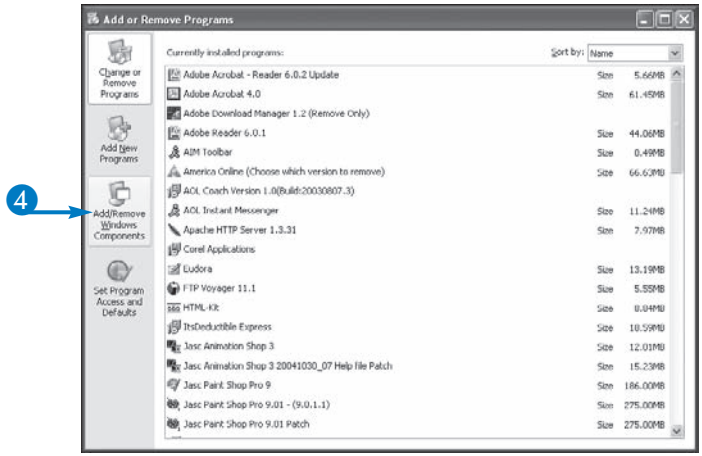
3. Double-click Add or Remove Programs.

   The Add or Remove Programs window opens.



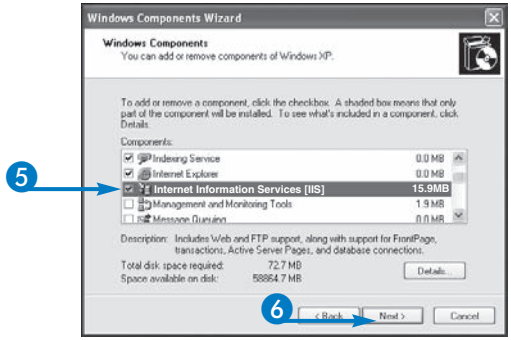
4. Click Add/Remove Windows Components.

   The Windows Components Wizard window opens.



5. Click Internet Information Services (IIS) (☐ changes to ☑).
6. Click Next.
7. Complete the information requested by the installation wizard.

   IIS is installed from an XP Professional CD.



Where does IIS expect to find Web page files?

When you install IIS, it creates a folder named `InetPub/wwwroot`. This is the top directory of your Web space. IIS looks for Web pages in this directory and its subdirectories. This is the directory, or one of its subdirectories, that you specify for your test site when you set up a dynamic Web site in Dreamweaver. Setting up the Dreamweaver site is discussed later in this chapter.

Can I use IIS on Windows 98, Windows ME, or Window XP Home Edition?

On Windows 98/ME you can use an earlier Microsoft Web server called PWS (Personal Web Server). However, this Web server is now retired. It is much less reliable and powerful than IIS. If you are planning to publish a public Web site on your computer, and are expecting many visitors, it is best to upgrade to Windows XP Professional and use IIS.

According to Microsoft, IIS is not available for XP Home. If you want to run a Web server, you need Windows XP Professional.

Obtain the PHP Application Server

PHP, a scripting language designed specifically for use on the Web, is a popular language for creating dynamic Web pages. PHP includes features for processing HTML forms and for storing and retrieving database data.

PHP is open-source software, which means you can download and use it without paying a fee. PHP runs on a wide variety of operating systems, including Windows, Mac, Linux, and most varieties of Unix. PHP works with either Apache or IIS.

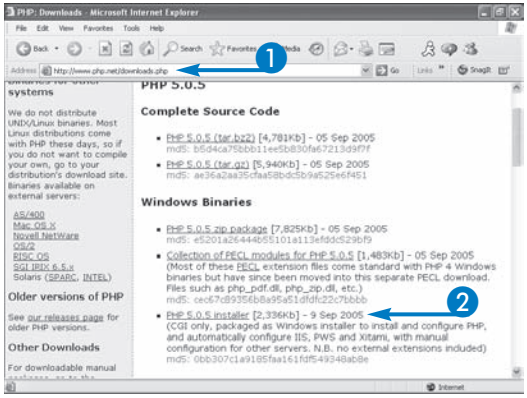
Two versions of PHP are available: PHP 4 and PHP 5. If you are installing PHP for the first time and creating your first Web site, you should download PHP 5. It is better and faster than PHP 4. If you have an existing Web site created with PHP 4, you may want to get started with PHP 4 and upgrade to PHP 5 in a planned, systematic manner.

You can download a PHP version with an installer. However, if you are planning to use MySQL with PHP, you must also download the zip file. The files that enable PHP to communicate with MySQL are in the zip file and must be copied onto your computer after the PHP installer is finished.

Obtain the PHP Application Server

1. Type **www.php.net/downloads.php**.
2. Click the Windows Installer.

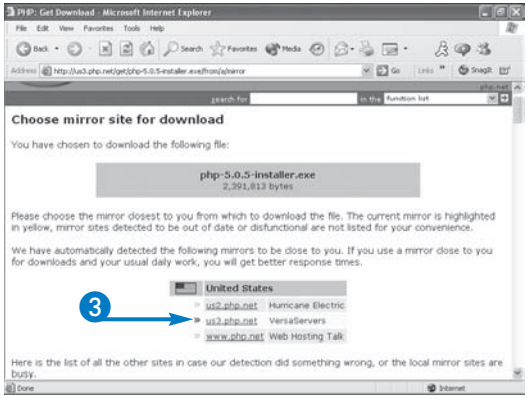
Note: *Choose the file in the Windows section that is called the installer and that is described as the installer in the description.*



The "Choose mirror site for download" page displays.

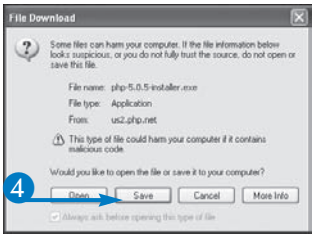
3. Click the mirror site you want to download from.

The File Download dialog box opens.

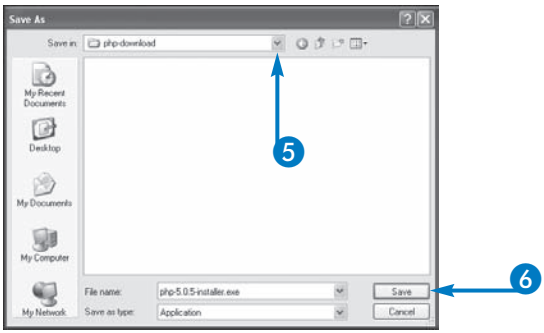


4. Click Save.

   The Save As dialog box opens.

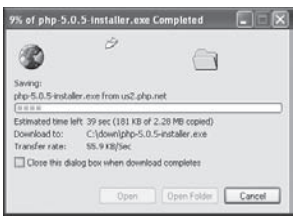


5. Click ▼ and navigate to the folder where the download should be stored.
6. Click Save.



   A window shows the progress of the download.

   A message appears when PHP is finished downloading.



What databases can I use with PHP on my Web site?

PHP can communicate with a wide variety of databases — almost every database you have ever heard of. However, Dreamweaver supports only PHP and MySQL as a pair. When you use Dreamweaver database features, Dreamweaver adds the approproate code to your source files. Dreamweaver can only add code for PHP with MySQL. If you want to communicate with a different database, such as SQL Server or Oracle, you will need to add the PHP code to your source files manually.

Where do I find a binary installer for the Mac?

The PHP Web site does not provide a binary for the Mac. You need to download the source code, compile it, and install it. The instructions for installing on a Mac are available in the PHP online manual at `www.php.net/manual/en/install.macosx.php`. Also, a Web site for PHP on Macs (`www.phpmac.com`) is a good resource.

Install the PHP Application Server

You can install a basic PHP set up using the PHP installer. The PHP 5 installer does not install any outside extensions. To add outside extensions, you must download the zip file, as well as the installer, and add the extension files from the zip file after installation.

PHP works together with your Web server. Therefore, your Web server needs to be configured to expect PHP code. When you install PHP with the installer, it automatically configures IIS or PWS, whichever you are using. It does not configure Apache. If you are using Apache, you must configure Apache manually after you install PHP.

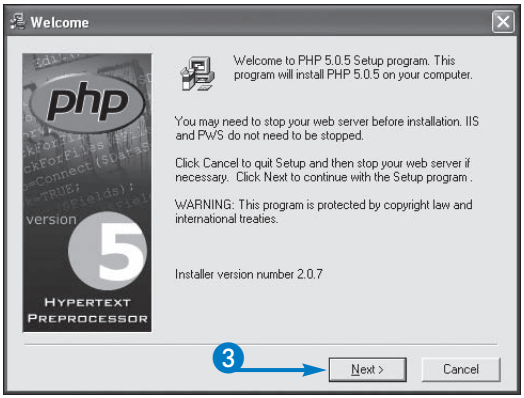
PHP has many settings, stored in a file named php.ini, which you can edit. The PHP installer should create the PHP file in your system directory (such as, `C:\windows`). If the file does not exist in your system directory, you can copy the file php.ini-dist from the main PHP folder into your system folder (such as, `C:\windows`), renaming it php.ini. If no php.ini file exists, PHP starts with default values.

Install the PHP Application Server

1. Navigate to the folder where the installer is stored.
2. Double-click the installer.

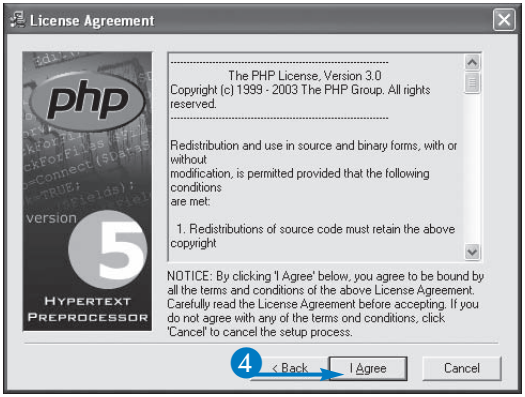
   The installer Welcome window opens.

   A message tells you to shut down your Web server unless you are using IIS or PWS.
3. Click Next.



   The license is displayed.
4. Click I Agree.

   The Installation Type dialog box opens.



5. Click Standard if it is not already selected (○ changes to ◉).
6. Click Next.

   The Choose Destination Location dialog box opens.

   A default folder is selected by the installer.

Note: *Unless you have an important reason not to, it is best to accept the default.*

7. Click Next.

   A Mail Configuration box opens.

8. Fill in the information if you know it; otherwise, just click Next.

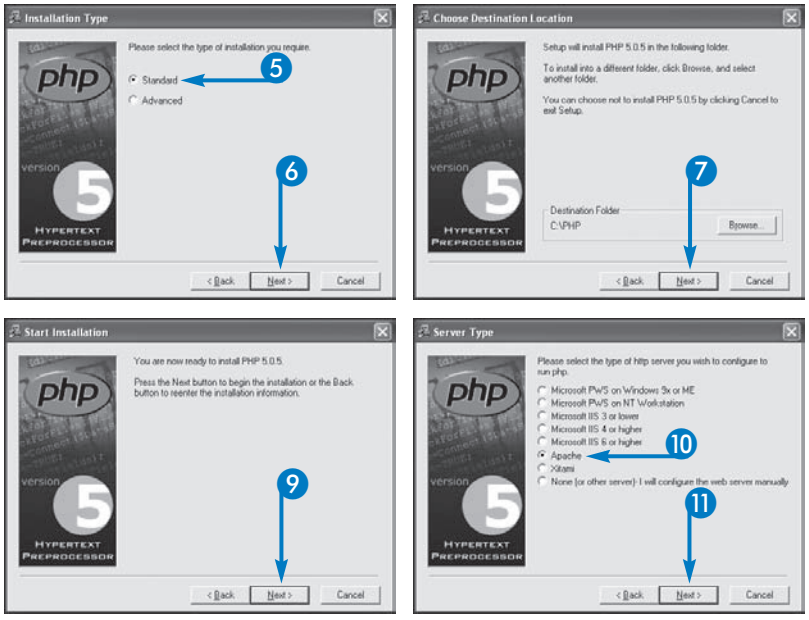
   A ready to install message is displayed.

9. Click Next.

   The Server Type dialog box opens.

10. Click the Web server that is installed on your system (○ changes to ◉).
11. Click Next.

    A window shows you the progress of the installation.



What do I do if I have problems installing PHP?

- Search the PHP Web site for information. You can search the entire documentation at `www.php.net/manual/en/`. PHP provides complete installation instructions.

  You can also join a PHP discussion list where you can ask questions. With hundreds of members who know everything about PHP, you often get an answer seconds after you ask a question. Several PHP mailing lists are available, focussing on specific topics (`www.php.net/mailing-lists.php`). For example, one mailing list is specifically for installation problems and another is specifically for PHP on Windows.

What databases can PHP communicate with?

- PHP can communicate with many databases. It supports almost every database you have heard of, and perhaps some you have not heard of. Databases are discussed in Chapter 15.

  Dreamweaver provides features for using PHP with MySQL. This is a popular combination for Web sites. When you use database features in Dreamweaver, it adds code to your source file for communicating with MySQL from PHP. If you want to use another database in your PHP dynamic Web site, you can add the code to your source code manually yourself.

Configure Apache to Process PHP Code

If you install PHP using the installer, IIS and PWS are automatically configured for PHP during the installation process, but Apache is not. If you are using Apache as your Web server, you need to configure Apache manually after the PHP installation.

Apache reads a configuration file when it starts. It will not start if it cannot find the file. The installation procedure for Apache creates the configuration file, named httpd.conf, in the `/conf` folder inside the folder where Apache was installed. You can open the file in your favorite text editor, or you can open it from a menu item installed when Apache was installed.

The Apache configuration file needs three lines to process PHP code correctly, as follows:

```
ScriptAlias /php/ "c:/php/"
AddType application/x-httpd-php .php
Action application/x-httpd-php /php/php-cgi.exe
```

If any of the three lines are in the file with a hash mark (#) at the beginning of the line, remove the hash mark. If the lines do not exist, add them. The three lines should be inserted at different locations in the httpd.conf file, where other directives of the same type are located.

You must restart Apache after editing httpd.conf. Apache can be restarted from a menu item in the Start menu.

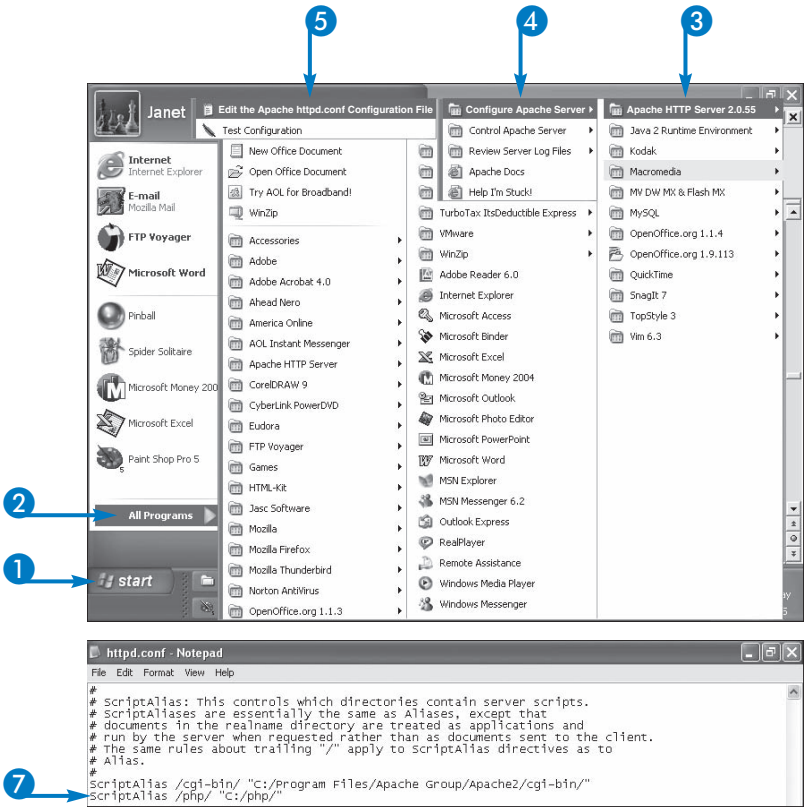
Configure Apache to Process PHP Code

1. Click Start.
2. Click All Programs.
3. Select Apache HTTP Server.
4. Select Configure Apache Server.
5. Click Edit the Apache httpd.conf Configuration File.

   httpd.conf opens in the Notepad text editor.

6. Scroll down to find the ScriptAlias directive section.
7. Add the ScriptAlias directive for PHP **`ScriptAlias /php/ "C:/php/"`**.

   If the line is already in the file with a `#` at the beginning, remove the `#`.



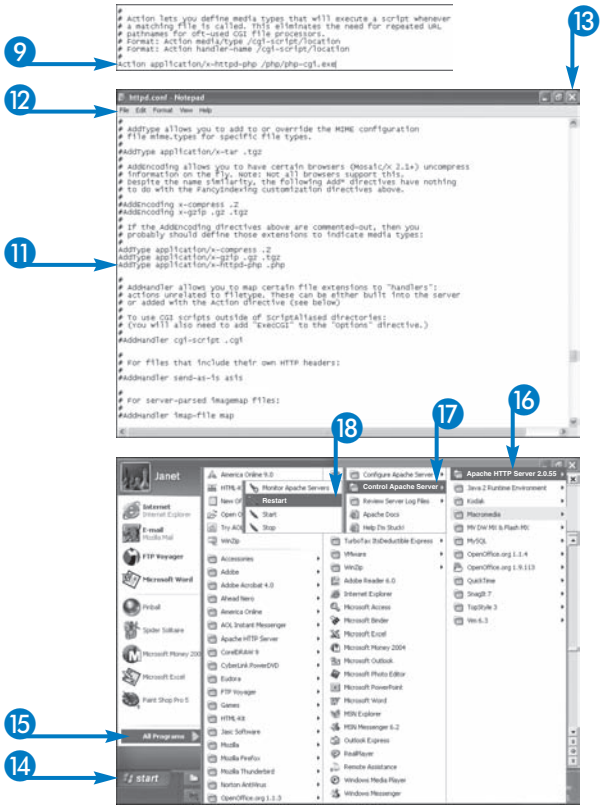
8. Scroll to find the Action directive section.
9. Add the Action directive for PHP.

   If the line is already in the file with a # at the beginning, remove the #.
10. Scroll to find the AddType directive section.
11. Add the AddType directive for PHP.

    If the line is already in the file with a # at the beginning, remove the #.
12. Save the file.
13. Close the file.

14. Click Start.
15. Click All Programs.
16. Select Apache HTTP Server.
17. Select Control Apache Server.
18. Click Restart.

    A small window opens for a short time, displaying a message that Apache is restarting, and then closes.



What do the lines that I added to httpd.conf do?

The three lines are Apache directives (instructions). The ScriptAlias directive sets up `/php/` to be a directory name that refers to `c:/php/`. If you installed PHP in a different directory, use that directory path instead. Be sure to include the last /.

The AddType directive tells Apache that files with .php extensions are files of type x-httpd-php. The Action directive tells Apache that files of type x-httpd-php should be run using the application program located at `/php/ php-cgi.exe`. On this line, `/php/` is the shortcut (for `c:/php/`) set up with the ScriptAlias directive. If you are installing PHP 4, the application should be php.exe, instead of php-cgi.exe.

Why must I restart Apache after adding the three lines?

Apache reads its configuration file (httpd.conf) when it starts. When you make changes to the configuration file, you must restart Apache so that it reads the configuration file with the new directives. The changes do not go into effect until Apache reads the new information from the configuration file and know about the new directives.

Obtain the ColdFusion Application Server

You can download ColdFusion from the Macromedia Web site and install the downloaded file. You can also purchase ColdFusion in a boxed set and install it from the CDs.

Macromedia offers a free, fully functional Developer Edition of ColdFusion for local development. In the Developer Edition, limited access is available to applications running on a development server — access from localhost and two other client machines only.

You can purchase one of two versions of ColdFusion — the Standard Edition and the Enterprise Edition. The Standard Edition is meant for developing a single Web site or application on a single server; the Enterprise Edition is meant for developing multiple Web sites on multiple servers. A Trial Edition of the Enterprise Edition is available for download. After 30 days, the Trial Edition changes into a Developer Edition.

ColdFusion is available for both Windows and Mac OS X. ColdFusion requires 500 MB of hard disk space and 512 MB of memory. The processor must be a Pentium II or higher. ColdFusion runs on Windows XP Professional, Windows 2003 Server, Windows 2000 Professional (SP3 or higher), and Windows 2000 Advanced Server. ColdFusion runs on Windows XP Home Edition for development purposes only.

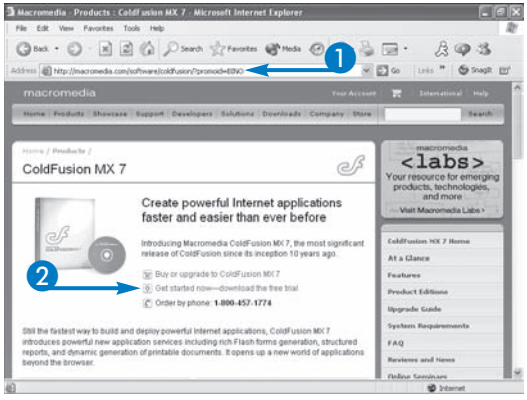
Obtain the ColdFusion Application Server

1. Type **http://macromedia.com/software/coldfusion/?promoid=BINO**.
2. Click the "Get started now" link.

   If a login page is displayed, log in.

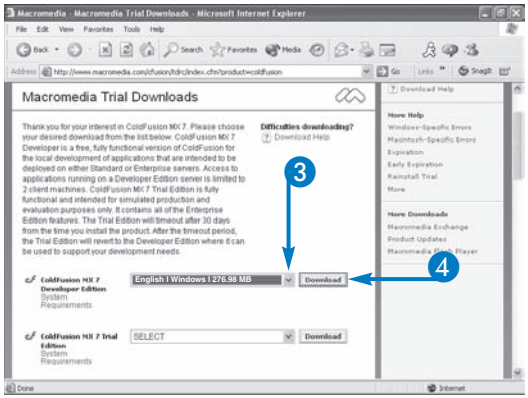
Note: *If you have not registered for a macromedia membership, type your e-mail address and a password to register now.*

   The Download page is displayed.



3. Click ▼ and select the correct version.
4. Click Download.

   The File Download dialog box opens.

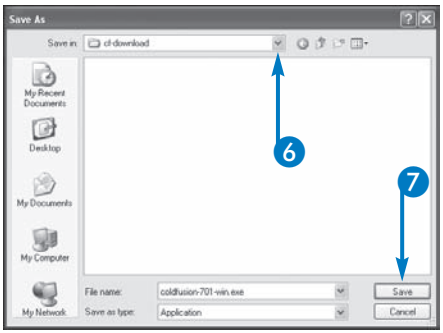


5 Click Save.

The Save As dialog box opens.

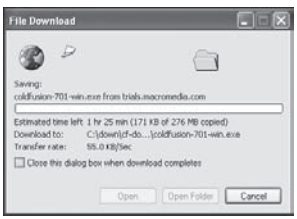
6 Click ▼ and navigate to the folder where you want to save the installer file.

7 Click Save.



A window shows the progress of the download.

A message is displayed when the download completes.



If I download and like the trial version of ColdFusion, how can I purchase it?

The trial version that you download and install is a full-featured version that will time-out in 30 days. You can buy a license at any time and apply it to the trial version you are using, changing it into a purchased version.

Whenever you decide to purchase ColdFusion, you can return to the Macromedia online store and purchase the product you want. When you pay for your purchase, you receive a serial number. You can enter this serial number into your existing ColdFusion software to change if from a trial to a licensed product.

How can I learn more about installing and using ColdFusion?

Dreamweaver includes help for using Coldfusion. Click Help and then click Using ColdFusion.

When you purchase ColdFusion, you receive a specific amount of telephone support.

Macromedia supports product-specific forums on their Web site at `www.macromedia.com/support/forums/`.

Macromedia provides a knowledge base that you can search for information related to your question. Move your mouse pointer over Support on the Macromedia menu and click Knowledge Base.

Install the ColdFusion Application Server

ColdFusion can be installed from a CD that you receive when you purchase it or from a file that you download from the Macromedia Web site. Information about downloading ColdFusion is provided in the section, "Obtain the ColdFusion Application Server."

To start the installation wizard, put the CD into the CD drive on your computer or double-click the file you downloaded. The example in this section installs the Developer Edition from the file downloaded from the Macromedia Web site.

ColdFusion can run with Apache or IIS or with its own independent stand-alone Web server. The ColdFusion stand-alone Web server is fine for local development, but if you are using ColdFusion in a production environment, you should use Apache or IIS for the Web server. You select the Web server you want to use during the installation procedure and the ColdFusion installer sets up for that Web server.

ColdFusion can run on top of a J2EE server. If you are already using this environment and are familiar with it, you can choose this environment in the Installer Configuration window during the installation process.

Install the ColdFusion Application Server

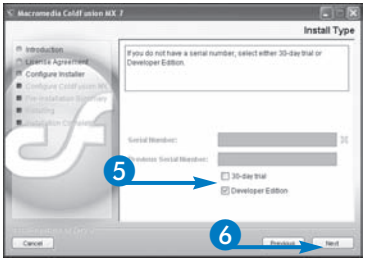
1. Navigate to the folder that contains the ColdFusion installer.
2. Double-click the file.
3. Complete the initial screens, clicking Next to move to each screen.
4. Accept the registration agreement.

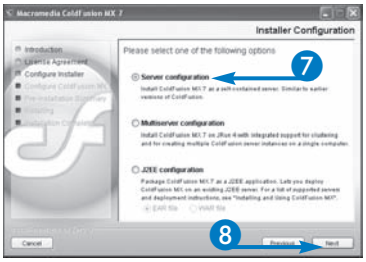
   The Install Type dialog box opens.
5. Click an Installation Type.

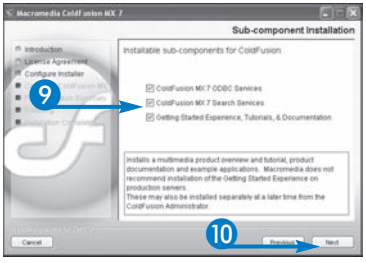
   If you already purchased ColdFusion, type your serial number.
6. Click Next.
7. Click a server configuration (◯ changes to ◉).
8. Click Next.

   The Sub-component Installation dialog box opens.
9. Click desired sub-components (☐ changes to ☑).
10. Click Next.

    The Select Installation Directory dialog box opens.







A default installation directory is displayed.

You can browse to change the directory.

11 Click Next.

12 Select the Web server to work with ColdFusion.

Here, the built-in Web server is selected.

13 Click Next.

The Password dialog box opens.

14 Type a password twice.

15 Click Next.

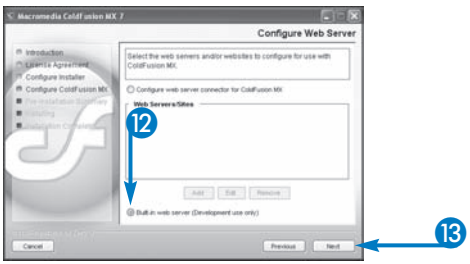
A second password dialog box opens.

16 Type another password twice.

17 Continue through the screens until a summary window displays.

18 Click Install.

ColdFusion will display a message when installation is complete.



How do I access Web pages using the ColdFusion stand-alone Web server?

When a Web server is running, it waits and listens for requests from browsers. A Web server listens at a specific location, called a port. By default, Web browsers send their requests to port 80. Most Web servers listen on port 80.

The ColdFusion stand-alone Web server listens on port 8500, rather than on port 80. Therefore, to access Web pages through the stand-alone Web server, you need to address your requests to port 8500. You do this by specifying the port number following the domain name, as follows:

```
localhost:8500/test.php
www.myplace.com:8500
```

How do I stop and start the ColdFusion stand-alone Web server?

The stand-alone Web server runs as a service on your Windows computer. You can stop and start the service.

Click Start and click Control Panel. Click Administrative Tools. Click Services. A window opens that displays a list of all the services on your computer. Click the entry for the ColdFusion MX 7 Web Server. If the status shows "Started," the server is running. If the Startup Type shows "Automatic," the server automatically starts when the computer starts. You can stop and start the server manually using the links to Stop and Restart the server that you see to the left of the services list.

Set Up a Dynamic Dreamweaver Site

The Dreamweaver sites discussed in previous chapters are set up with two sites — the local site, where the Web pages are developed, and the remote site, where the finished Web pages are made available for public access. A dynamic Dreamweaver site requires a third site — the testing site, where the dynamic code is tested.

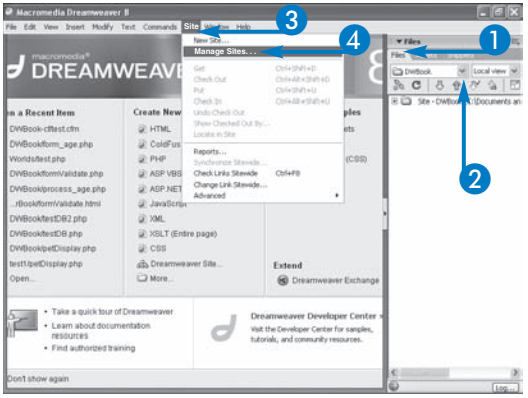
The most efficient dynamic Dreamweaver site uses the same location for the local site and the testing site. This local/testing site must be in your Web space so the Web server can find it and send it to the browser. The local/testing site must also be located on a computer where an application server is installed.

You can set up your local/testing site in a private subfolder on your remote site, which must have all the required servers installed. Many people prefer to develop their Web pages on a local computer, copying only the finished pages to the remote site. To develop on a local computer, you can set up your local/testing site on your local computer, which often means installing a Web server and an application server.

Set Up a Dynamic Dreamweaver Site

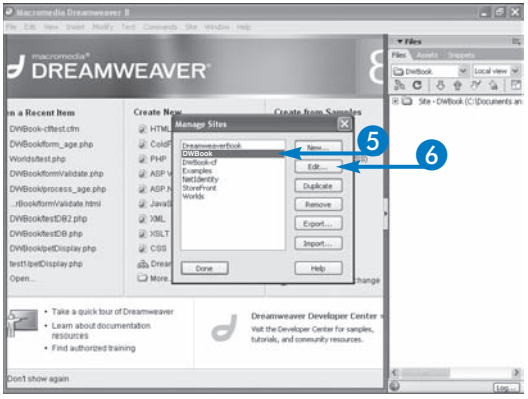
1. Open the Files panel.
2. Click and select a Dreamweaver site.
3. Click Site.
4. Click Manage Sites.

   The Manage Sites dialog box opens.



5. Click a site.
6. Click Edit.

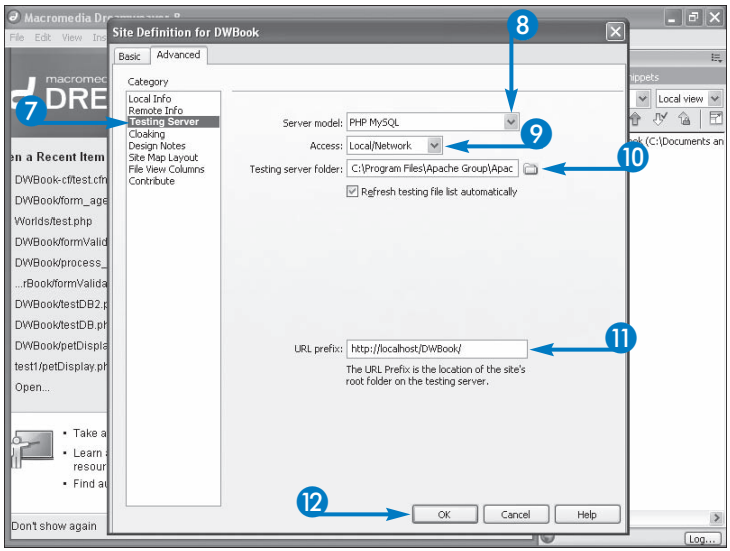
   The Site Definition dialog box opens.



7. Click Testing Server.
8. Click ▼ and select an application server.
9. Click ▼ and select the type of access.

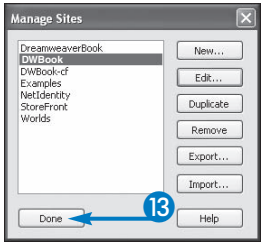
   Fields appear.
10. Type the path to the folder where the application files are located.

    The folder is in your Web space.
11. Type the URL to the testing server directory.
12. Click OK.



The Site Definition window closes.

13. Click Done.



Where should I locate my testing site on my local computer?

Your testing site needs to be located in your Web space. The location of your Web space [[folder]] depends on which Web server you are using. The same folder can also be your local site.

Apache expects your Web space to be located in the folder `\htdocs`, which is located in the main Apache directory, such as `C:\Program Files\Apache Group\Apache2\htdocs`. This folder and all its subfolders constitute your Web space, unless you change the location during Apache installation or in the Apache configuration file. For IIS, the default location is `InetPub\wwwroot`. The default for the ColdFusion stand-alone Web server is `C:\CFusionMX7\wwwroot`.

What if I want to add dynamic pages to an existing Dreamweaver site and the current local site is not in my Web space?

You can set up a testing site that is different from your local site. You can then continue to develop in your local site. When you preview the site in a browser, the files are automatically copied from your local site to your testing site before the browser displays them.

Alternatively, you can set up a new folder in your Web space and copy the content of the current local site into the new folder. Then, you can edit the current Dreamweaver site so that the local site points to the new folder and add a testing site that points to the same folder.

Create a Dynamic Web Page

A *dynamic Web page* is simply a Web page that contains dynamic code. The dynamic code is in a language that has more capabilities than HTML alone, such as PHP, ColdFusion, or ASP. Dreamweaver provides features for creating dynamic pages. You can create pages that process forms or interact with a database using Dreamweaver features. Dreamweaver adds the code to your source code file.

When you create a dynamic page, you specify the language you want to use. Dreamweaver then adds code to your Web page using the specified language.

For the code to be processed, the Web server must pass the dynamic page to the application server. The filename extension triggers the Web server to send the code to the appropriate application server for processing. Dreamweaver adds the correct extension to file names when you save the dynamic file.

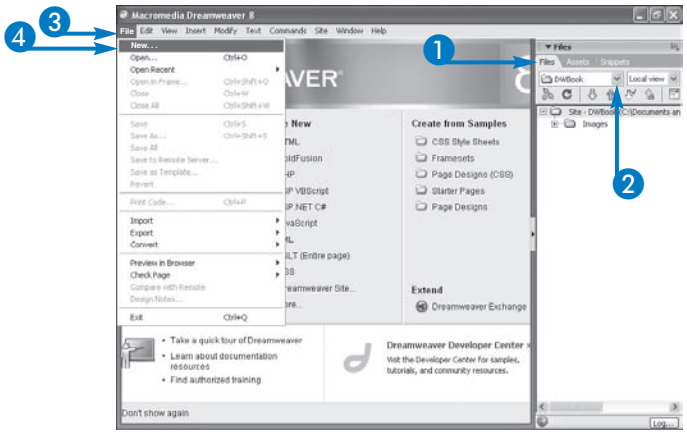
You can use Dreamweaver features to process forms and to store or retrieve database data, letting Dreamweaver add the script language to your Web page file, or you can add the code directly yourself into the source file.

In the example in this section, you create a blank Web page for PHP in the DWBook dynamic Dreamweaver site. In the section "Test a Dynamic Web Page," you add PHP code to test the dynamic site and the Web page displays in a browser.

Create a Dynamic Web Page

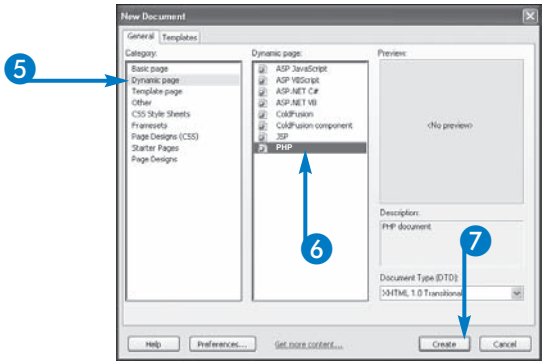
1. Open the Files panel.
2. Click ▼ and select a dynamic site.
3. Click File.
4. Click New.

   The New Document window opens.



5. Click Dynamic page.
6. Click the dynamic page type

   Here, PHP is selected.
7. Click Create.



Blank page opens in the document window.

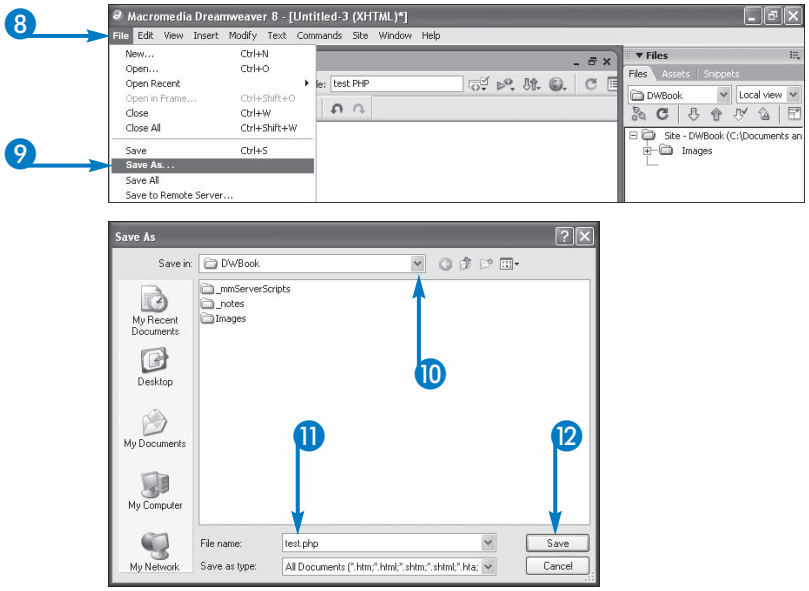
8. Click File.
9. Click Save As.

   The Save As window opens.

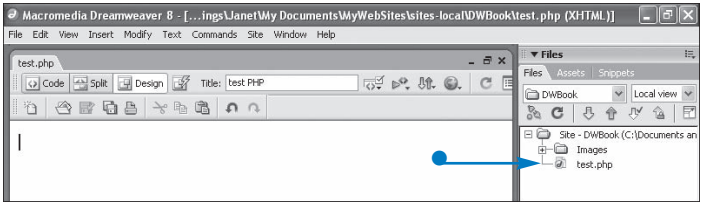
10. Click ▼ and navigate to the local folder.
11. Type a filename.

    Dreamweaver adds the file name extension for the application server you assigned to this site.

12. Click Save.



- The file name is listed in the Files panel.



What filename extensions should I give my files?

The extension designates which application server should receive the file content for processing. You should use the extension for the application server you have selected: .php for files containing PHP code; .cfm for files containing ColdFusion code; .asp for files containing ASP code; and .jsp for JSP code.

Does the source file for the blank dynamic page contain any special code?

No. If you look at the Code view of the file, you see the same code that you see when any new blank file is created. The `<!DOCTYPE>` and `<html>` tags define the file type, followed by the `<head>` tags, a `<meta>` tag, `<title>` tags, and `<body>` tags, with nothing between the `<body>` tags because the file is blank.

Can I store files with .html and .js extensions in my testing site?

Yes. In most cases, storing all the files for your Web page in one directory is the most efficient way to proceed. The Web server finds the files with .html and .js extensions and sends them to the browser. Only files with extensions signifying dynamic code are sent to an application server.

Test a Dynamic Web Page

A dynamic Web page contains code in a language that has more capabilities than HTML alone, such as PHP, ColdFusion, or ASP. If you know a language, you can manually add the code to your source file. If you do not know a language, you can still create some types of dynamic pages with Dreamweaver features that add the code to the source file for you. For instance, you can use Dreamweaver features to retrieve and store database data, without knowing the code that interacts with the database.

The code processed by the application server you choose to use is added to an HTML file. Tags surround the code to mark the code sections for the server. The tags specify which type of code is included, such as `<?php` and `?>` tags for PHP code and `<%` and `%>` tags for ASP. ColdFusion uses several different tags, depending on the action to be performed, such as `<cfoutput>` to send output and `<cfmail>` to create an e-mail message.

The example Web page in this section tests whether the dynamic Dreamweaver site is set up correctly. This example is written in PHP and the PHP function `phpinfo()`, which outputs a table of PHP settings, is added to the Web page source file.

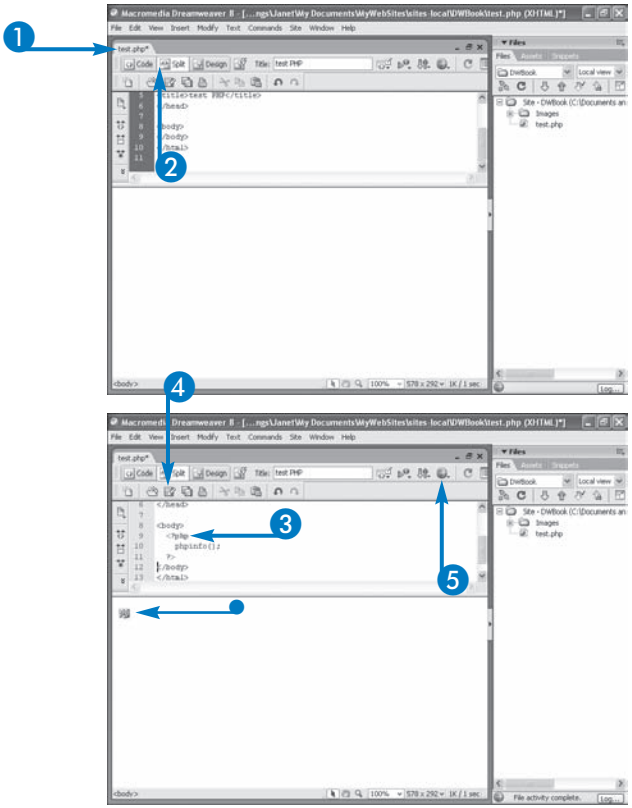
Test a Dynamic Web Page

1. Create or open an empty dynamic Web page.

Note: *See the section "Create a Dynamic Web Page" to open an empty dynamic Web page.*

2. Click Split to split the Document window.

   The Web page is blank, with no code between the `<body>` tags.



3. Type some application code in the `<body>`.

   Here, some PHP code is added.

   - Dreamweaver puts a marker in Design view where the PHP code is.

4. Click .

5. Click .

   Application code does not work in Dreamweaver.

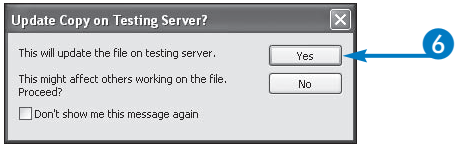
Dreamweaver asks whether you want to update the code in the test site.

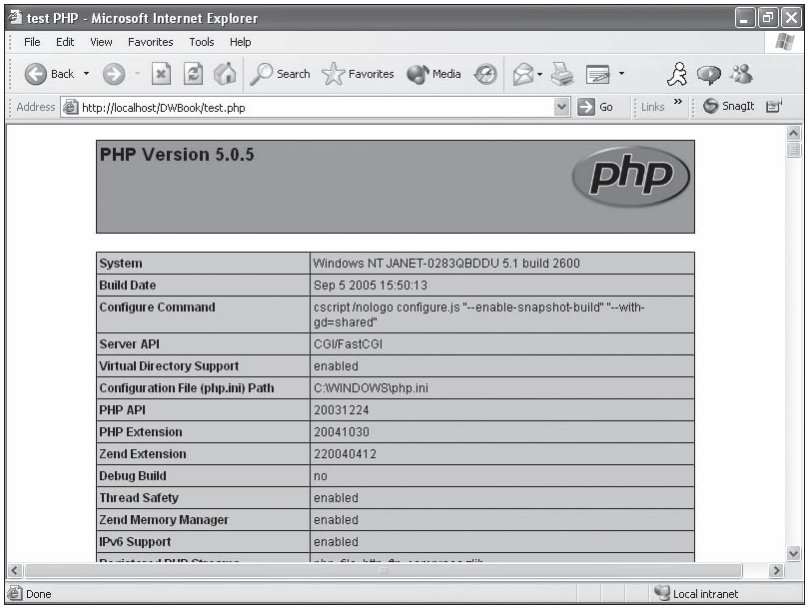
If the testing site and the local site are the same, the Update Copy on Testing Server query box is not displayed.

6 Click Yes.

The file is copied to the test site.

The browser displays the output from the application code.





How can I access my dynamic Web site directly from my browser?

You must type the URL of the Web site into the browser address field. For instance, type **www.mycompany.com/test.php**. If the Web site is on the same computer as the browser, you can use localhost, as in localhost/test.php.

You cannot access the Web site by clicking File and then selecting Open. Files opened using this method are opened directly, rather than served by the Web server. Therefore, the file would not be sent to the application server and would not display the dynamic output.

What code should I use in a file to test ColdFusion or ASP?

You can use any short statement that produces output to test your setup. A statement that outputs the date is a good statement for testing purposes. For example, the following lines of code can test your ColdFusion site:

```
<cfoutput> #DateFormat(Now())#
</cfoutput>
```

Put this code inside the `<body>` tags. When you display this page in a browser, the current date should display if your setup is working correctly.

Introducing Databases

A database is essential to many dynamic Web sites. A database is an electronic file cabinet that stores information in an organized manner so that you can find it when you need it. A database can be small with a simple structure, such as a database containing the titles and artists of all the CDs you own, or huge with a complex structure, such as the Amazon database of books, customers, orders, and other things.

Your Web site may display data that it retrieves from a database or store information in the database that you collect in HTML forms or both. For instance, a commercial Web site might display product information from a catalog database and store order information in a customer/order database.

Database Software

The term database refers to a file or group of files that contains the information. The information is accessed by a set of programs called a DBMS (Database Management System) or, more often, an RDBMS (Relational Database Management System).

Several database software packages are available. MySQL is an RDBMS that is popular on the Web. It is small and fast, making it particularly well-suited for the Web. In addition, it is open source software so you can download and use it for free. MySQL runs on all major operating systems, including Windows and Mac.

Another open source database software package is PostgreSQL. It is more powerful than MySQL, although MySQL is adding features at a rapid rate, and less popular, but sometimes better suited for complex database applications.

Oracle is a popular commercial database system. Oracle is a powerful system that does almost everything, but the cost is high. Some Web sites are using PostgreSQL when a powerful RDBMS is needed because PostgreSQL is free.

Microsoft SQL Server, a fully-featured RDBMS, is used frequently on Windows systems. Access is a less powerful Windows database that can be used for a small Web site, but is not suitable for a production site that expects a lot of traffic.

Database Organization

A DBMS organizes data into tables that are related to each other. Database tables are organized like other tables that you are familiar with — in rows and columns. Columns are called *fields* and rows are called *records.* For instance, in a table named Customer, each record may be a customer and each field is a piece of information about the customer, such as last name, first name, address, age, and so forth. In a table named Order, each record is an order and each field is information such as date of the order, customer who ordered it, cost of the order, etc.

Tables can be related. Most often, a row in one table is related to several rows in another table. For instance, a customer can make more than one order. To connect the tables, the order table might contain a field for a customer number, which relates the records in the order table to the customers in the customer table.

Communicating with a Database

A specialized language called SQL (Sequential Query Language) is used to communicate with most databases. You can manage your database, retrieve data from it, or add data to it using SQL queries. You build and send an SQL query to the database. The database responds by performing the action defined by the query or, if the database is unable to perform the requested operation, it returns an error message with information about the problem.

SQL is a simple, English-like language that you can learn quickly. For instance, an SQL query that retrieves all the data from a database table is:

```
SELECT * FROM Customer
```

The MySQL manual has a section on SQL (`dev.mysql.com/doc/refman/5.0/en/sql-syntax.html`) or Google for "SQL tutorial".

Application Servers and Databases

The dynamic code in a Web page interacts with the database. The dynamic code must send an SQL query to the database and accept the return response from the DBMS. Each application language uses its own syntax for interacting with a database.

As described in Chapter 14, when you set up a Dreamweaver site, you set up a testing site for a dynamic Web site, specifying which application server you are using for the site. To use Dreamweaver's database features, you must set up a connection from the Web site to the database. The connection is specific to the application server designated for the site.

When you use Dreamweaver's connection creation feature, the Dreamweaver dialog box asks for the information needed, based on the language you are using. In Dreamweaver and ColdFusion, you need to supply the database name, the host, the account, and the password. ASP connects to a database using an ODBC connection, requiring a DSN (data source name), which you can create in Dreamweaver.

PHP can connect to many databases, but Dreamweaver only creates MySQL connections for PHP Web sites. ColdFusion can connect to many databases. Since ASP only runs on Windows, ASP connects to databases that run on Windows, such as MS SQL Server and Access.

Dreamweaver offers several features to perform database operations. However, you may want to perform a task that Dreamweaver does not offer in its menu or panel choices. You can add any database interaction code manually into your source code.

Dreamweaver and Databases

Dreamweaver offers menu items and panel buttons for the most common database operations, allowing you to retrieve data from a database and store data in a database without programming in a dynamic language. When you use Dreamweaver database features, Dreamweaver adds the necessary dynamic code to your Web page source file.

To use Dreamweaver database features for a dynamic PHP Web site, you must use MySQL. If you use a different database, you must write the PHP code yourself in Code view. In ASP, you can use any database by defining a DSN. Dreamweaver allows ColdFusion Web sites to use MS SQL Server, Access, MySQL, DB2, Sybase, or Oracle databases.

If you are expert in writing dynamic code in the language your Web site is using, you can add any valid language code to your source file in Code view.

Obtain MySQL

MySQL is a small, fast database, particularly well suited for use with a Web site. MySQL is popular. PHP, ASP, and ColdFusion all provide support for MySQL. MySQL provides open source software, which you can download and use without paying a fee. MySQL also provides an Enterprise version that you can purchase.

MySQL currently offers version 4.0, 4.1, 5.0, and 5.1. Version 5.1 is not stable and should be used only for trying things out, not for production. The current stable version is 5.0, which is the version most people should download. Version 4.0 is pretty old and has many fewer features.

The MySQL free download is available in binaries — machine files that are already compiled. Two of the MySQL binaries for Windows are available with an installer — Windows Essentials, which is smaller and sufficient for most needs, and Windows Complete, which includes more optional software, such as the embedded server and benchmark suite.

The MySQL Web site provides md5 checksums and GPG signatures for security purposes. After you download the MySQL package, you can check to make sure the package has not been tampered with. Instructions are available at `dev.mysql.com/doc/refman/5.0/en/verifying-package-integrity.html`.

Obtain MySQL

1. Type **dev.mysql.com/downloads** and click the link for the MySQL version you want to download.

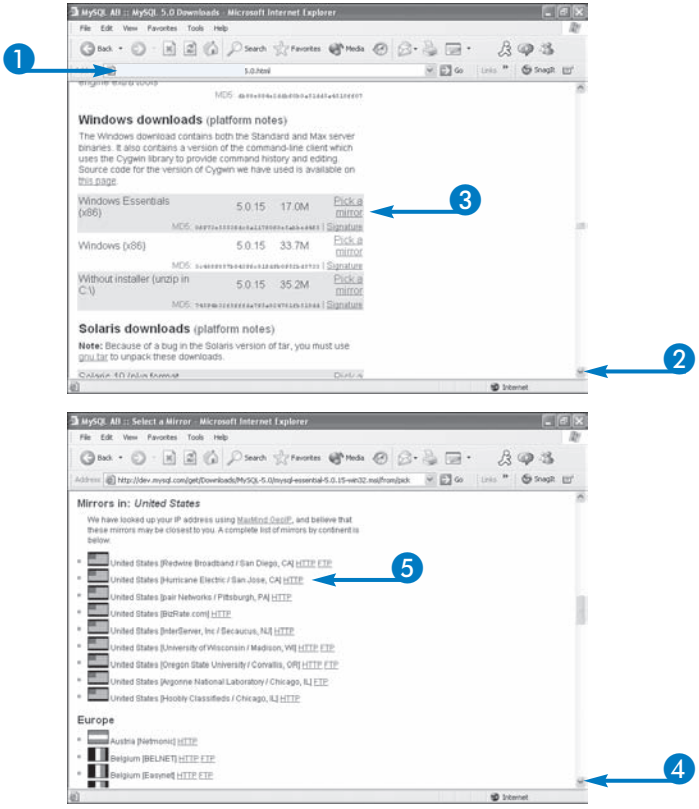
   The download page for the specified version opens.

   Here, the link for version 5.0 was clicked.
2. Scroll down to the Windows section.
3. Click the "Pick a Mirror" link by the version to download.

   Essentials is the best package for most purposes.

   The Mirrors page opens.
4. Scroll down to the list of mirrors.
5. Click HTTP by the mirror you want to use.

   The File Download dialog box opens.

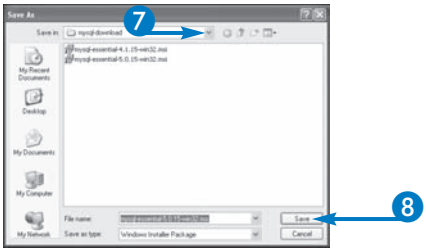


6 Click Save.

The Save As dialog box opens.

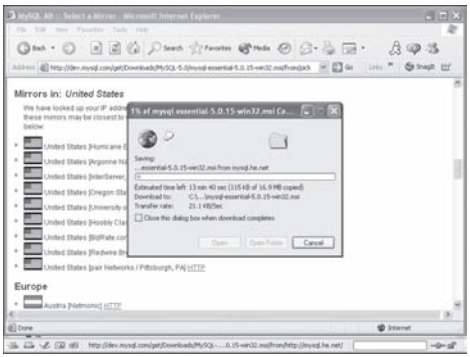
7 Click ▼ and navigate to the folder where you want to save the file.

8 Click Save.



A window shows the progress of the download.

A message is displayed when the download completes.



Do I need to install any other software to run MySQL?

You do not need to, but you may want to. After MySQL is installed, you need to administer and use it. You need to manage user accounts, set up databases and tables, add data, and so forth. Several software packages are available to assist you.

The MySQL Web site offers two useful software packages. MySQL Administrator provides a visual console for managing your databases and tables. MySQL Query Browser provides an interface for adding and examining data. phpMyAdmin is another popular program for administering MySQL.

Can I download the MySQL manual?

The MySQL manual is available in several formats for MySQL 4.1, MySQL 5.0, and MySQL 5.1. You can download a manual from `dev.mysql.com/doc/`.

The Web site provides a zip file that contains an HTML version of the manual and a PDF version of the manual in US or A4 size pages.

A Windows HTML help file can be downloaded. The file has a .chm filename extension. After you download the file, double-click the filename and the familiar help window opens.

If download the manual and use it from your hard disk, be sure to download it at regular intervals. The manual is continually updated to correct errors and remedy omissions.

Install MySQL

The MySQL download package includes an installer. The installer collects all the information it needs and then installs MySQL. You can start the installation process by navigating to the file you downloaded and double-clicking it. The installation wizard begins.

In general, the MySQL defaults are the best choice for beginners. The default folder where MySQL is installed is similar to `C:\Program Files\MySQL\MySQL Server 5.0`. You can change the default, but do not change it without a compelling reason.

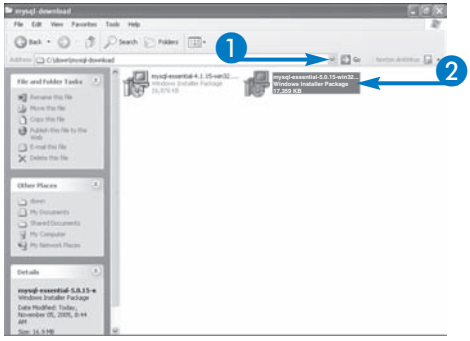
After being installed, MySQL needs to be configured. You need to create a password for your root account. Also, you need to designate whether you want MySQL installed as a Windows service. If you do not install MySQL as a service, you must start it manually whenever you want to use it.

You can start the configuration wizard for MySQL directly from the installation wizard. The last window has a checkbox for Configure the MySQL Server Now. If you check this checkbox and click Finish, the configuration wizard starts immediately. Or, you can start the configuration from the MySQL menu item at a later time.

Install MySQL

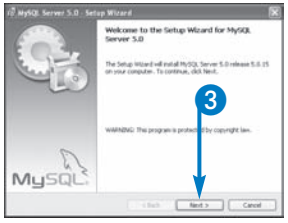
1. Click ▼ and navigate to the folder where you saved the MySQL installer.
2. Double-click the MySQL installer.

   The welcome screen for the installer opens.



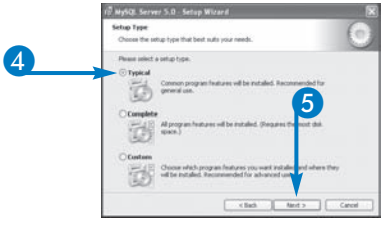
3. Click Next.

   The Setup Type window opens.



4. Click the type of installation you want (○ changes to ◉).
5. Click Next.

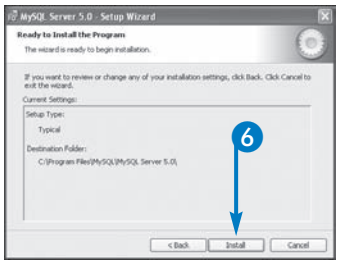
   A summary of the settings is displayed in a window.



6. Click Install.

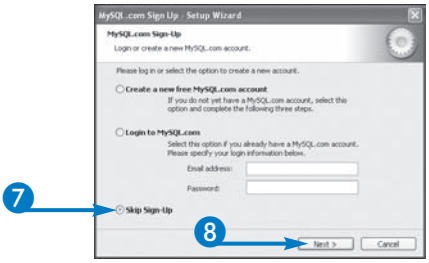
   A window shows the progress of the installation.

   When the installation is complete, a Sign-Up dialog box opens.



7. Click Skip Sign-Up (○ changes to ◉).
8. Click Next.

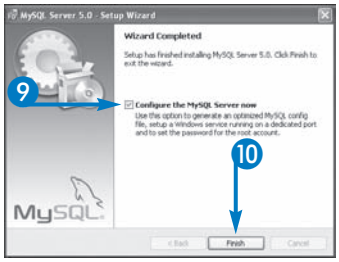
   A message states that the Wizard is complete.



9. Check Configure the MySQL Server now (☐ changes to ☑).
10. Click Finish.

    The configuration wizard starts.

    Configuration is discussed in the next section.



MASTER IT

Where can I get help if I have problems installing MySQL?

The online SQL manual is excellent. You can search it for the error message you received or for key words that identify your problem.

You can subscribe to one or more MySQL discussion lists where many users are available to answer questions. You can subscribe to the general list and/or to specialized discussion lists, such as MySQL on Win32 and MySQL and Java (`lists.mysql.com`).

The MySQL Web site also hosts forums where users assist one another (`forums.mysql.com`).

Can I install MySQL on my Mac?

Yes, MySQL runs on the Mac. The MySQL download page offers a binary file, with an installer, for Mac OS X. The installer file should download to your desktop and auto-extract. Double-click the icon and then double-click the pkg file. The install wizard begins.

After the installation, you probably need to start MySQL. Open a terminal window and change to the MySQL bin directory, for example:

```
cd /usr/local/mysql/bin
```

Type:

```
mysqld_safe &
```

A message displays that the mysqld daemon is starting.

Configure MySQL

MySQL includes a Configuration Wizard that you can use to configure your MySQL server. You can configure many details of your server operation, such as number of simultaneous users, or you can accept a MySQL typical installation setup. If you accept typical options, your configuration only involves some account settings and startup settings.

MySQL includes a security system that protects your data. No one can access the data without a valid user name and password. An account is created when you install MySQL called root. You should use this for your major administrative account, because this account is installed with all privileges. You need to set a password for this account.

Also, installing MySQL sets up the software on your system, but does not start the MySQL server. You can start it manually whenever you want to use it or you can set it up to start when the computer starts.

MySQL provides a Configuration Wizard. The Configuration Wizard starts immediately after installation if you check "Configure MySQL now" in the final installation screen. You can start the Configuration Wizard at any time using a menu item in the MySQL Start Menu item.

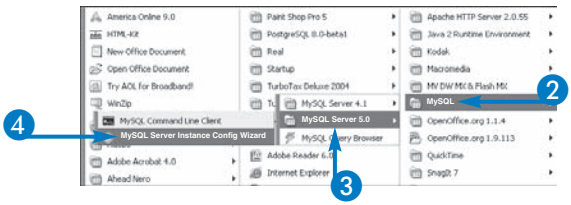
Configure MySQL

Note: *If the Configuration welcome window is already open because you started it at the end of the installation procedure, go to step 5.*

1. Click Start and click All Programs.
2. Select MySQL.
3. Select a Server version.
4. Click MySQL Server Instance Config Wizard.

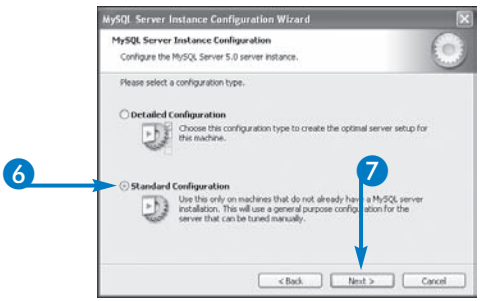
   The Configuration Wizard starts.
5. Click Next.

   The Configuration Type dialog box opens.



6. Click Standard Configuration (◯ changes to ◉).
7. Click Next.

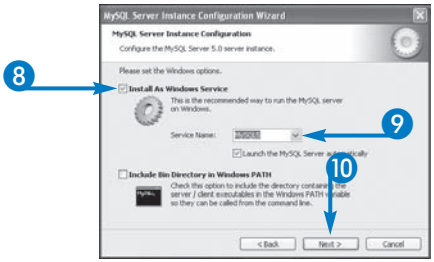
   The Windows options sheet opens.



8. Check Install as a Windows Service (☐ changes to ☑).
9. Click ▼ and select a service name.

   You can type a name.
10. Click Next.

    The Security Options dialog box opens.



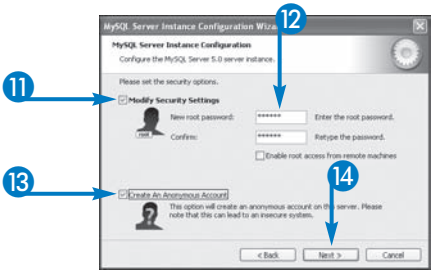
11. Click Modify Security Settings (☐ changes to ☑).
12. Type a password for your root account in both fields.
13. Click Create an Anonymous Account (☐ changes to ☑).

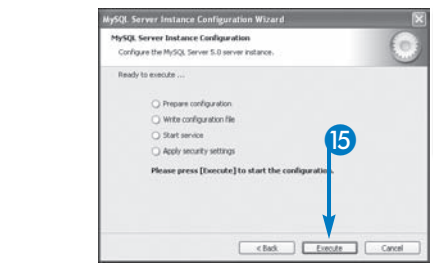
    If this MySQL server is going to be used in a production environment, rather than just for local development, do not create an anonymous account.
14. Click Next.

    A "Ready to execute" sheet opens.
15. Click Execute.

    The window reports the configuration progress.

    A message is displayed when the configuration completes.





Which MySQL accounts should I have?

MySQL is installed with an administrative account named root. In earlier version of MySQL, root was installed with no password, which is a security risk. More recently, the installer asks you to set a password for root during configuration. Thus, at the least, your database has a root account.

During configuration, you also have the opportunity to install an anonymous account — an account with a blank account name and password. Accessing your database is easy with this account, but it is a security risk if any additional persons, other than yourself, can access the computer.

Do I need to use a MySQL account to access the database that I use with my Web site?

Yes. The dynamic code that accesses your database for data storage or retrieval must include a valid account and password. Since the root account can do anything to your database, including shut down the MySQL server, you should not use it in your Web page files. You should create an account specifically for providing access from your dynamic pages.

You can use the root account to create the new account. Set up the account with only the privileges it needs. For instance, if your Web pages only retrieve data from the database and display it on the Web page, the MySQL account used in the Web pages only need SELECT permisison.

Set Up PHP to Communicate with MySQL

PHP communicates with MySQL via built-in PHP functions. Each function has an action, such as connect to the server, select a database, send an SQL query to the server, retrieve data from a result, and so on. When you use Dreamweaver features to communicate with your database, Dreamweaver adds the PHP function to your source code file.

PHP provides two sets of functions — the mysql functions, which communicate with MySQL 4.0 or earlier, and the mysqli functions (new in PHP 5), developed to communicate with MySQL 4.1 or later. You can use the mysql functions to communicate with later versions of MySQL, but you will not be able to use some of the advanced features. Also, the MySQL password storage changed with version 4.1 so you may have an authentication problem (discussed in the next section).

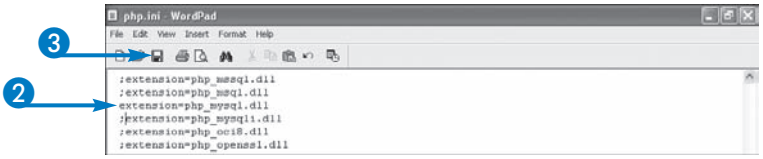
To interact with MySQL, you must activate MySQL support in PHP. You can activate either the mysql extension or the mysqli extension in the PHP configuration file php.ini. When you use the Dreamweaver database features, Dreamweaver adds mysql functions to your source code, so you must activate the mysql functions to use these features. You can use the mysqli functions only by adding them directly to the source code yourself.

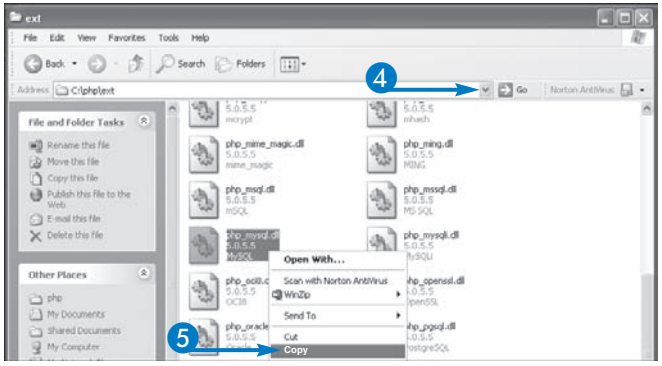
Set Up PHP to Communicate with MySQL

1. Open php.ini in your preferred text editor.

Note: *See Chapter 14 for a discussion of the php.ini file.*

2. Remove the semicolon (;) from the beginning of a line.
3. Save the file.
4. Navigate to the ext folder in the main PHP folder.
5. Copy the DLL file for the extension you want to use.

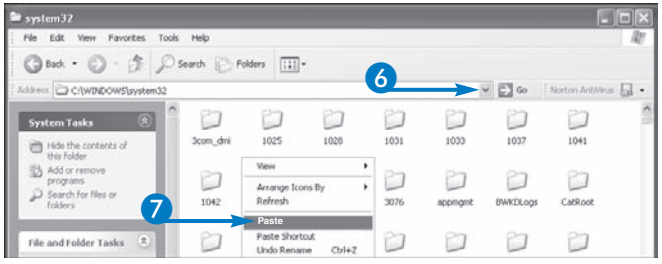




6. Navigate to your system folder.

   Here, for Windows XP, the system folder is `C:\windows\system32`.

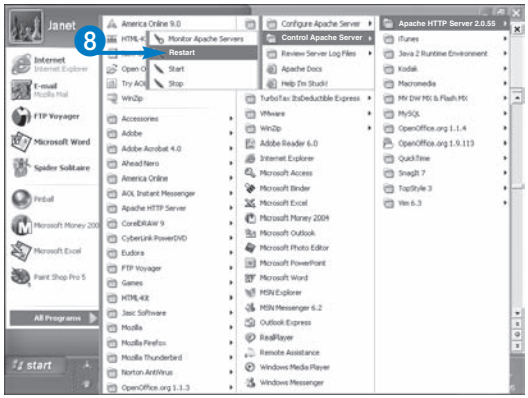
7. Paste the extension file in the system folder.



8 Restart your Web server.

Here, Apache is restarted.

Note: *You can restart the Windows service to restart the Web server.*

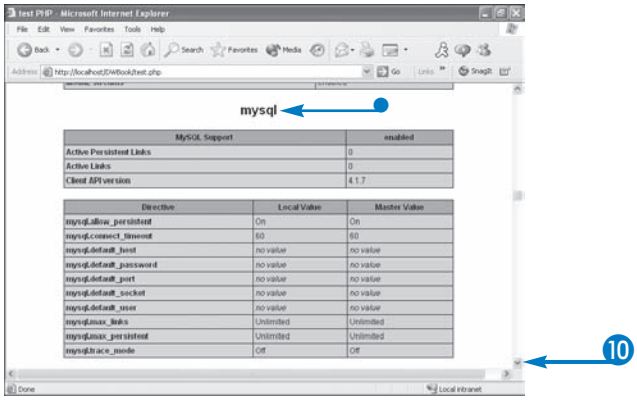


9 Run a PHP test program.

Note: *See the end of Chapter 14 to create and run a PHP test program.*

10 Scroll down the test program output to see the listing for MySQL.

- If MySQL is activated correctly, as described in this section, a block of MySQL settings appears in the output.



When I try to open a Web page in the browser, I see the following error message: "PHP Startup: Unable to load dynamic library './php_mysql.dll' - The specified module could not be found." What is the problem?

PHP is unable to find the file php_mysql.dll. This file must be located somewhere where PHP can find it.

The php_mysql.dll and php_mysqli.dll files are only available in the ZIP file. If you installed PHP from the installer, you must also download the zip file and copy php_mysql.dll or php_mysqli.dll into your system directory. They are available in the subdirectory `\ext` in the ZIP file.

I did not edit php.ini, but the test program output shows that MySQL is activated. How can this be?

You are probably looking at the output from PHP 4. PHP 4 automatically activates PHP support. However, in PHP 5, MySQL support is not activated by default. You must activate it yourself.

Using MySQL Versions 4.1 or Newer with PHP

MySQL version 4.1 adds many new features, including a new, more secure authentication protocol. Programs trying to communicate with MySQL using the older authentication protocol cannot connect.

PHP has two sets of functions to communicate with MySQL. The mysql functions use the older authentication protocol; the mysqli functions, developed for use with MySQL 4.1, use the newer authentication methods.

When you use Dreamweaver database features, Dreamweaver adds PHP functions to your source code file to communicate with MySQL. Dreamweaver adds mysql functions, so you must activate the mysql functions in order to use Dreamweaver database features.

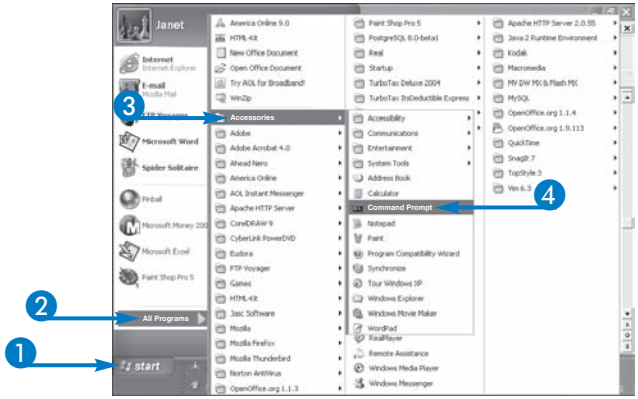
You can use mysql functions with PHP 4.1, but you must tell MySQL to use the old authentication methods. You can do this by setting the MySQL password using the OLD_PASSWORD function. If you access MySQL from other software that does not require the old password methods, you can set up a MySQL account specifically for use with PHP mysql functions.

When you installed MySQL, an account named root was created. You can use the root account to set up other accounts. During MySQL installation, you may have set a password for the root account. If not, you may have a root account with no password.

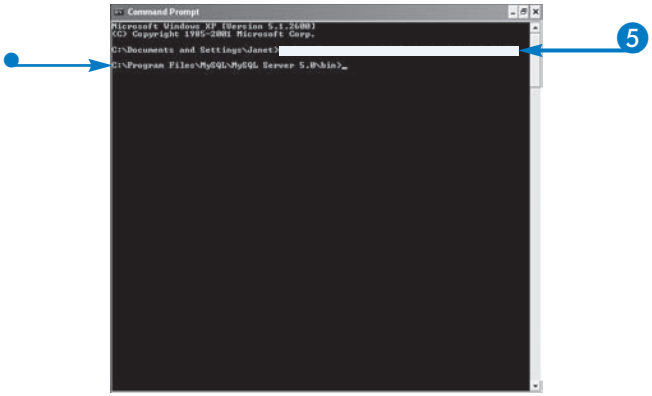
Using MySQL Versions 4.1 or Newer with PHP

1. Click Start.
2. Click All Programs.
3. Select Accessories.
4. Click Command Prompt.

   A Command Prompt window opens.



5. Type a `cd` command to change to the MySQL bin directory.
   - You are located in the bin directory.



6. Type **mysql -u root -p*secret*** to start the mysql text client.

   secret is your password.

   The mysql text client opens.

   - The mysql text client displays a text prompt: mysql>.

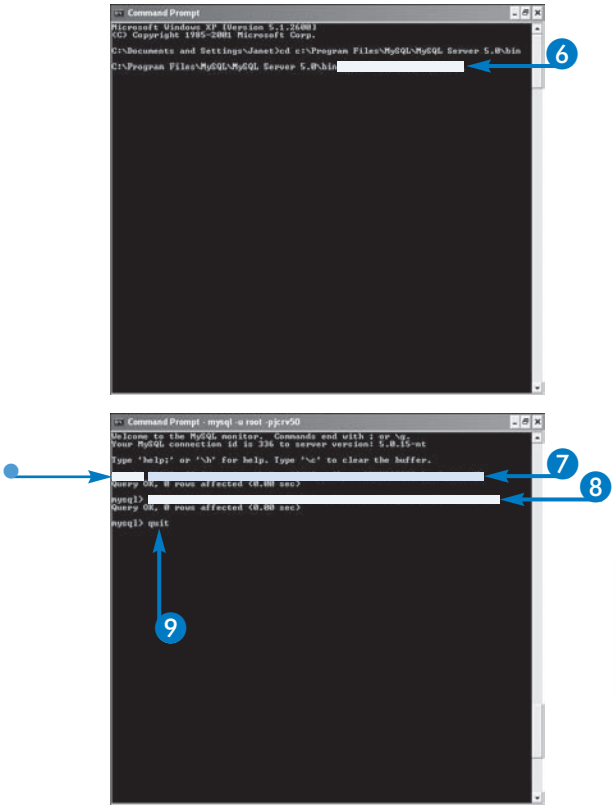
7. Type the SQL query to create a new account.

   This example creates a new account named phpUserOld with all privileges on all databases and sets the password to secret using the SQL query `GRANT all On *.* to phpUserOld@localhost IDENTIFIED by "secret".`

8. Type the SQL query to reset the password to the old format password.

   This example resets the password for the account created in step 7 to the old password format using the SQL query `SET PASSWORD FOR 'phpUserOld'@'localhost' = OLD_PASSWORD("secret").`

9. Type **quit**.



What changed in MySQL 4.1 to cause the authentication problem?

Each MySQL account requires a password. The account and password information is stored in a database named mysql, which is created when MySQL is installed.

Each password is stored in the user table of the mysql database. MySQL encrypts the password when you set it using GRANT or SET PASSWORD for security reasons.

In MySQL 4.1, the developers changed to a better password hashing mechanism, which is more secure than the previous method. The software, such as the PHP functions, that connects to MySQL needs to send old style password hash values to the older versions.

What happens if I send an old style password to MySQL?

You receive an error message and you cannot connect to the MySQL server. The error message is:

Client does not support authentication protocol requested by server; consider upgrading MySQL client

The MySQL developers added the OLD_PASSWORD function to assist users who encounter this problem. The function sets the password in the mysql database using the old style hashing method. Then, software that sends the old style passwords can connect.

You can tell which type of password is installed by looking in the user table. The old style password is shorter than the newer ones.

Connect a Dreamweaver Site to a Database

Before you can use any of the Dreamweaver database features, you must connect the Dreamweaver site to a database. The database connection contains the information needed, such as the domain name of the computer where the database is located, the database account name and password, and the name of the database you want to access.

You can create a database connection from the Databases panel. The Databases panel must be open and a file, of the correct type, in the dynamic Web site must be open. The document type is displayed at the top of the Databases panel.

When you create a database connection from a dynamic site, Dreamweaver prompts you for the information needed for the type of site that is connecting to the database and creates the correct type of connection.

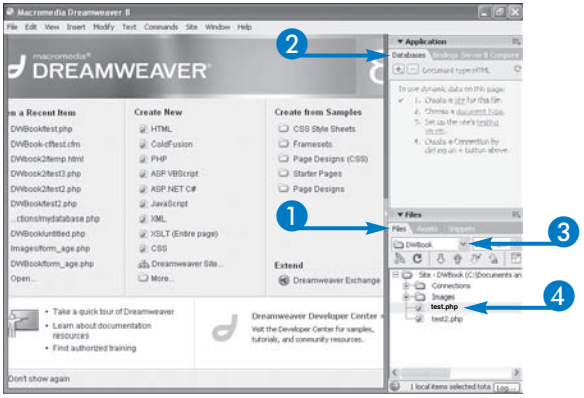
The database connection you create is stored and is available for use on any Web page in the Web site. When you retrieve or store data, you specify a stored connection. You can save more than one connection for a single Web site, such as two connections to two different databases.

Connect a Dreamweaver Site to a Database

1. Open the Files panel.
2. Open the Databases panel.

Note: *See Chapter 2 to open and close panels.*

3. Click ▼ and select a site.
4. Double-click a file.



The file opens in the Document window.

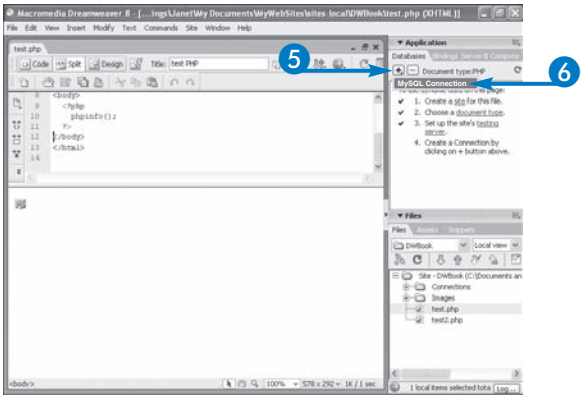
The Database panel shows the database connections for the site.

Here, the site has no existing connections.

5. Click the Create Connection button (+).

Only a MySQL connection can be created.

6. Click MySQL Connection.

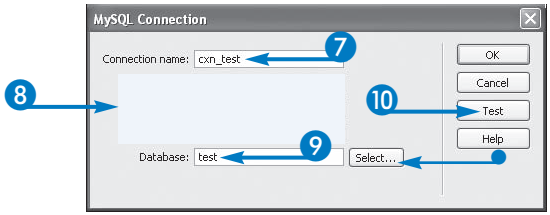


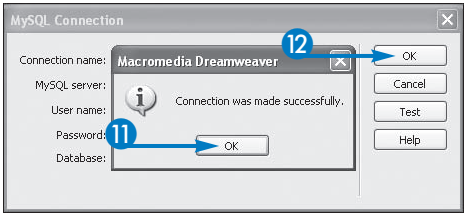
The MySQL Connection dialog box opens.

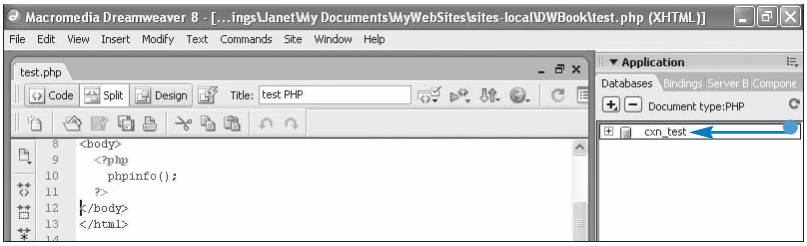
7. Type a name.
8. Type the information needed.
9. Type a database name.
   - You can click Select to choose from a list of databases.
10. Click Test.

    A test result message is displayed.
11. Click OK.

    The result closes.
12. Click OK.
    - The connection is added to the Databases panel.







Can I create more than one connection for the same Web site?

Yes. Any number of connections can be stored. In most cases, your application retrieves and stores data using one table or different tables in the same database. However, occasionally, you need to retrieve data from one database and store data in another database. If so, you need to create a connection for each database used. The connections are listed in the Databases panel. Be sure to give descriptive names to the connection, so that you know which connection is which.

How does Dreamweaver store the connection?

The connection storage method depends on the application language used. For PHP and ASP, the connection information is stored in a file. The name you give the connection is the filename. The file is stored in a folder named connections in the testing site. The connection information is stored in the file in the application language syntax. Thus, the connection information statements in the file can be added to the Web page source code.

ColdFusion stores the connection information in system files in its own directory.

Retrieve Data for Use in a Web Page

You can retrieve data from a database. The data is retrieved in a recordset. The recordset is specific to the Web page and its data can be used anywhere on the Web page.

Recordsets are created in the Bindings panel. To create a recordset, you designate the connection to use, the table name, and which columns and rows are to be included in the recordset. You can select all columns or specify which columns to include. You can set up a condition, called a *filter*, which is used to select rows, such as age greater than 21 or name is Smith. You can create more than one recordset per Web page.

Data is retrieved with an SQL statement. Dreamweaver creates the SQL statement, based on your selections, and adds the dynamic code, including the SQL statement, to your Web page source code.

If you are familiar with SQL, you can write your own SQL statement. You can write statements that are more complex if you write them yourself. To write your own SQL statement, click Advanced in the Recordset dialog box.

You can display the data in the recordset on your Web page. Displaying data is described later in this chapter.

Retrieve Data for Use in a Web Page

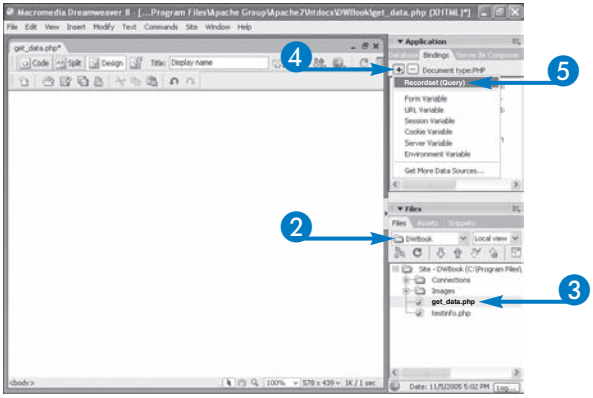
1. Open both the Files panel and the Bindings panel.

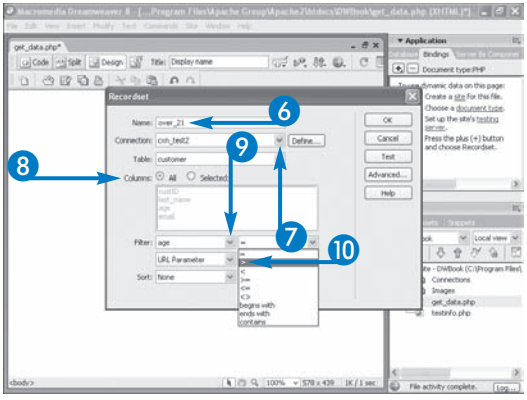
Note: *See Chapter 2 to work with panels in Dreamweaver.*

2. Click ▽ and select a site.
3. Double-click a filename.

   The file opens in the Document window.
4. Click ⊞.
5. Click Recordset.

   The Recordset dialog box appears.
6. Type a name.
7. Click ▽ and select a table.
8. Click columns (○ changes to ◉).
9. Click ▽ and select a column.
10. Click ▽ and select an operator.



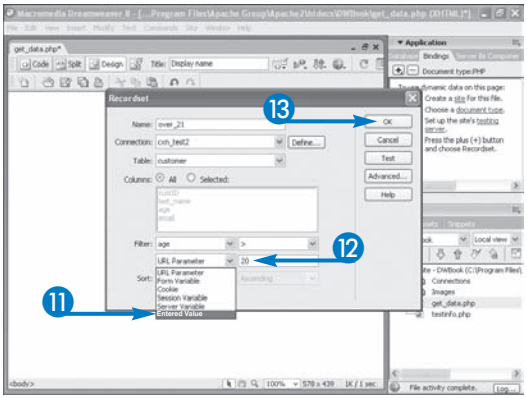


11 Click ▼ and select a source for the value.

Here, Entered Value is chosen.

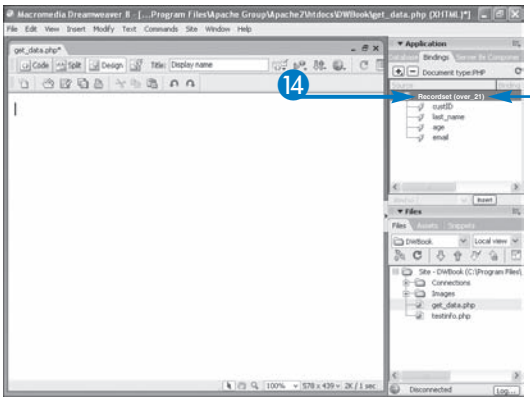
12 Type a value to filter on.

13 Click OK.



- The new recordset is listed on the Bindings panel.

14 Click + to open the recordset and see what columns are included.



Can I use a recordset from one Web page on another Web page?

No, you cannot use a recordset that you create on one page in another page, but you can copy the recordset from the original Web page to another Web page where you can use it.

To copy a recordset from one page to another, right-click the recordset in the Bindings panel. Click Copy from the menu that appears. Then, open the page you want to copy the recordset to, right-click the Bindings panel, and click Paste from the menu that appears.

How can I change a recordset?

Double-click the recordset in the Bindings panel. The Recordset dialog box opens and you can change the settings. To delete a recordset, click the recordset in the Bindings panel and click -.

How does Dreamweaver code a recordset in a Web page?

When you create a recordset for a page, Dreamweaver inserts the recordset code at the top of the page code. For instance, a ColdFusion page adds a recordset with a cfquery tag and an SQL query. A PHP page adds a recordset with an SQL query and some mysql functions.

Display a Data Item on a Web Page

You get data from the database by creating a recordset. You can display either one piece of data or a dynamic table of data from the recordset on your Web page. This section describes how to display a single data item. The next section describes how to display multiple records on a Web page.

To display one piece of data, you create a recordset that contains one record. You can then select one field from the record to display on the Web page. You can display all the fields from the record, but you must display them one at a time.

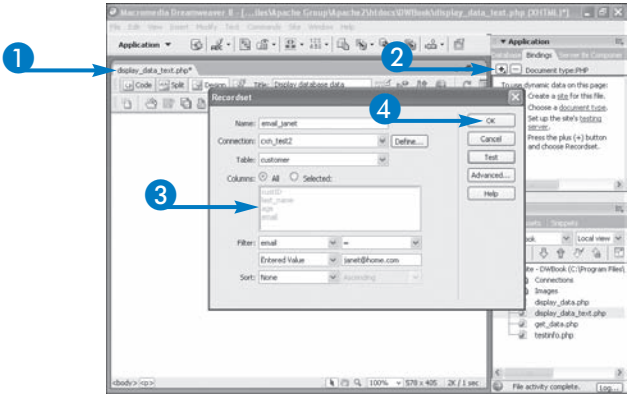
You add the data item to the Web page from the Bindings panel. You click a field name and then click Insert. The data item name, in the format *recordsetname.fieldname*, is added in the document window in Design view, but the actual data does not display in the Document window. The data item name is highlighted in blue, to show that it is a field, not actual data. You must view the page in a browser to see the actual data retrieved from the database.

Display a Data Item on a Web Page

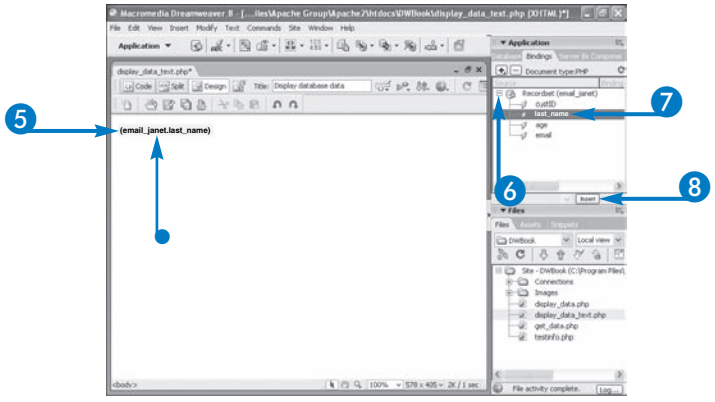
1. Open a file.
2. Click +.
3. Type and select values to create a recordset that selects one record.

Note: *See the section "Retrieve Data for Use in a Web Page" to create a recordset.*

4. Click OK.

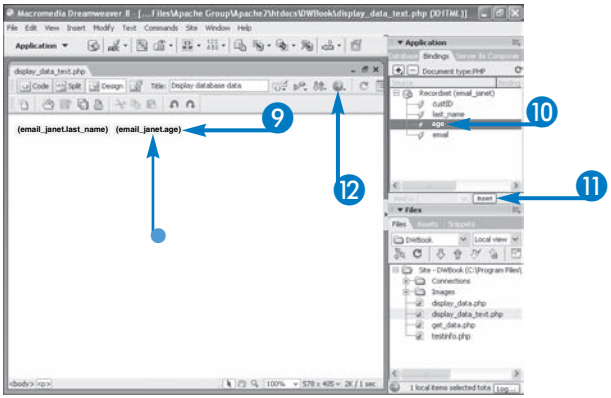


5. Click in the Web page.
6. Click +. (The + changes to –.)
7. Click a data item.
8. Click Insert.
   - Dreamweaver places the data item name on the Web page.

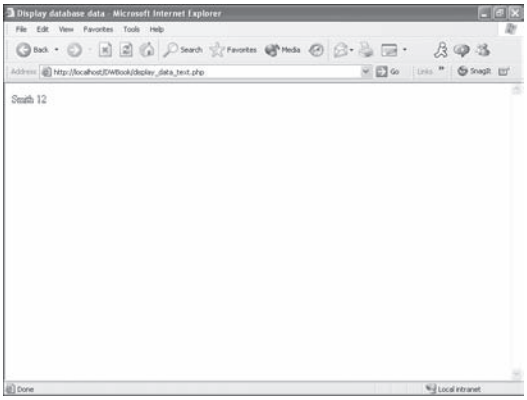


9. Click in the Web page where the text should go.
10. Click a data item.
11. Click Insert.
    - Dreamweaver inserts the data item name at the cursor.
12. Click .

    Actual data does not display in the Document window.



The browser displays the selected data.



What happens if I create a recordset that contains more than one record?

When you insert a data item from the recordset into the Document window, the data name is added, with nothing to indicate which record to display. Only one record can be accessed in the recordset. In general, when you display the page in a browser, the data field from the first record is displayed in the page. If you insert the same field in the Web page twice, the same data displays twice, not the field data from two different records.

Can I view the data without displaying the page in a browser?

Yes, you can see the data, but it does not appear exactly as it will in the browser. Dreamweaver provides a Live Data window in which you can view dynamic content. To open the Live Data window, Click View and click Live Data. The Live Data window replaces the Document window. To return to the Document window, click View and click Live Data again.

Display Multiple Data Records on a Web Page

You get data from the database by creating a recordset. You can display either one piece of data or a dynamic table of data from the recordset on your Web page. This section describes how to display multiple records on a Web page. The previous section describes how to display a single data item.

If your recordset contains several records and you want to display all the records on your Web page, you can insert a dynamic table to display the data. You specify the recordset name that you want to display in the table, the number of records to display, and the border, cell padding, and cell spacing to use in formatting the table.

The table is a repeating table, as described in Chapter 10. The table adds as many rows as needed to display the data. You can format the table and the text within the table cells using the Property inspector.

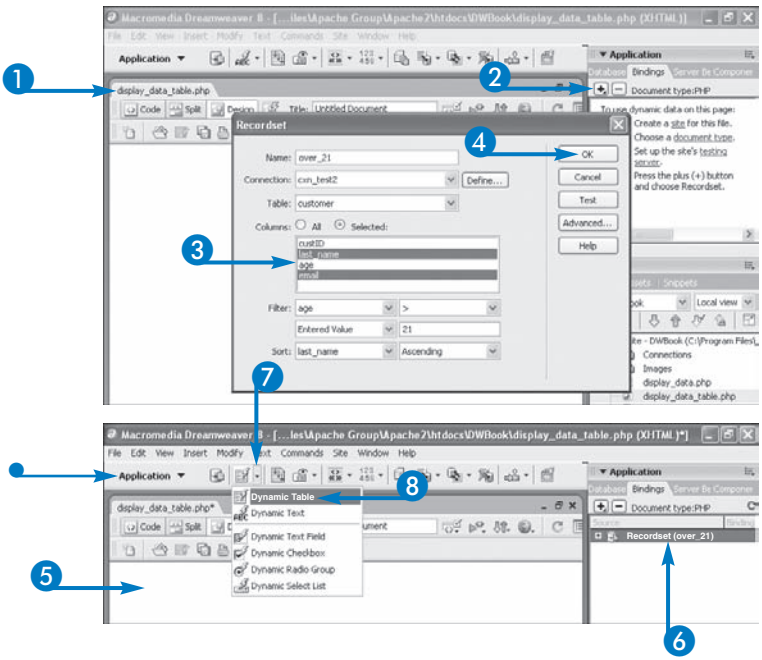
The table inserted into the Document window contains the name of the fields in the table cells. It does not contain the actual data. View the table in a browser to see the actual data.

Display Multiple Records on a Web Page

1. Open a file.
2. Click .
3. Type and select values to create a recordset that selects more than one record.

Note: *See the section "Retrieve Data for Use in a Web Page" to create a recordset.*

4. Click OK.
5. Click the Web page.
6. Click a recordset.
7. Click .
   - The Application category must be open.
8. Click Dynamic Table.



The Dynamic Table dialog box appears.

9 Type and select the table information for any fields in which you do not wish to accept the default.

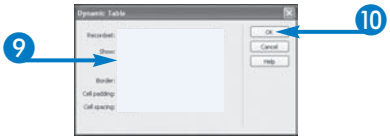
10 Click OK.

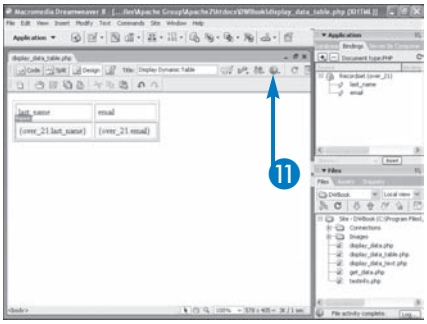
Dreamweaver inserts a repeating table in the recordset.

Chapter 10 explains repeating tables.

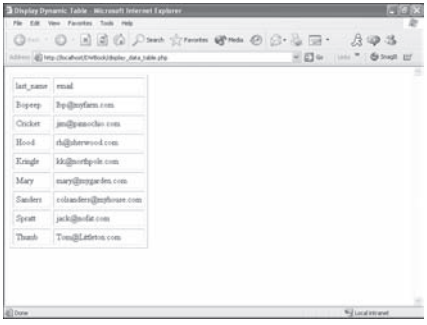
11 Click .

Actual data is not displayed in the Document window.





The browser displays a table containing all data in the recordset.



How can I sort the data when it is displayed?

The data will be displayed in the table in the order that it is encountered in the recordset. You cannot change the order when you display the data.

To sort the data into the order you prefer, you need to specify a sort order when you create the recordset. The Recordset dialog box allows you to specify a column to sort on and whether to sort in ascending or descending order.

I am displaying names in a dynamic table. Can I specify that the first letter of the cell content is capitalized?

Yes. Dreamweaver provides some special formats to format the text in dynamic tables. Open the Server Behaviors panel. You will see a Dynamic Text entry for each cell of your table. Double-click one of the Dynamic Text entries. A Dynamic Text dialog box opens, listing all the cell text available. Click the drop-down box and select a format option. Selecting AlphaCase - First Letter Upper capitalizes the first letter of the cell content.

Add Data to a Database

Dreamweaver provides a data entry form for adding data to the database. You enter the data into the database table by filling in a form and submitting it. When the form is submitted, a new record containing the data from the form is inserted into the table.

You can use the data entry form feature to enter data yourself. You can also use the data entry form feature to provide forms on your Web page for visitors to enter data, but you may want to consider security issues. Data type verification is applied to the form fields and the dynamic code cleans the data for obvious malicious code, but you may want to add additional verification to the dynamic code.

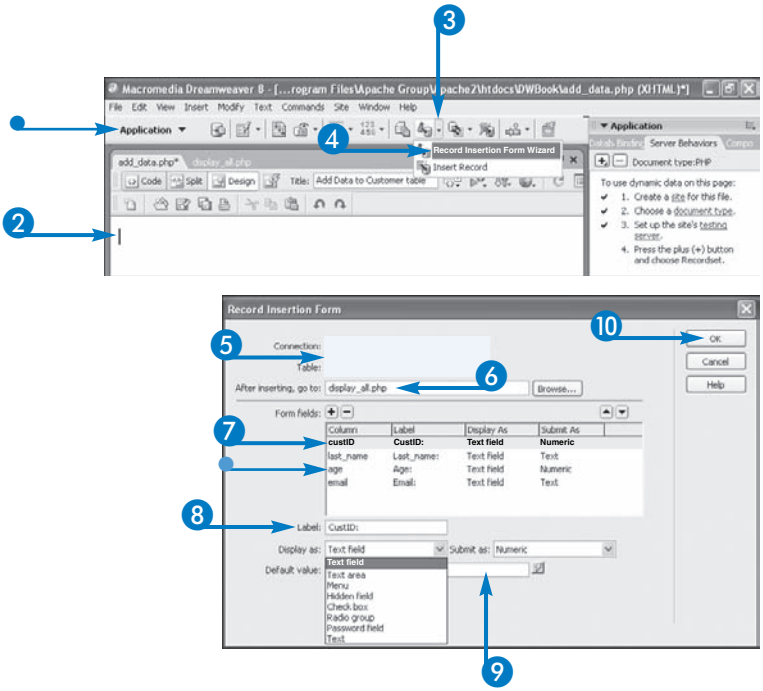
Dreamweaver can create a form based on the columns in the database table. By default, the form contains a text field for each column in the database, labeled with the column name. Each column limits the type of data accepted to the type defined for the database table field.

You can change the type of field and the label. You can change the type of data accepted. You can also specify a default value to enter into the database table if the form field is blank.

Add Data to a Database

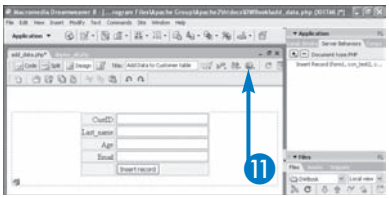
1. Create a new blank Web page.
2. Click in the Web page.
3. Click .
   - The Application category of the Insert toolbar must be open.
4. Click Record Insertion From Wizard.

   The Record Insertion Wizard opens.
5. Select a connection and a table.
6. Type a filename.
   - The list box shows how each column will be displayed in the form.
7. Click any field you want to change.
8. Change its label, field type, or data type.
9. Type a default value if needed.
10. Click OK.



Dreamweaver creates the form.

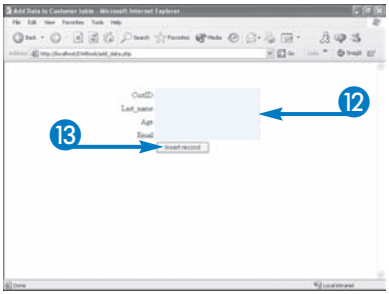
11 Click .



The browser displays the form.

12 Type the values into the fields.

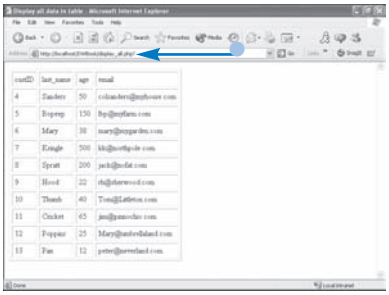
13 Click Insert record.



- The form is submitted and the specified program runs.

Here, the program displays all the data in the database table.

The data from the form was inserted into the database table and is now displayed.



Can I create my own data entry form?

Yes. You can create any form that you please, using the methods described in Chapter 8. Be sure to give each form field the same name as the database table field it belongs in. Add a Submit button, setting the text on the button to your preferred label.

After you have created the form, in the Server Behaviors panel, click . A dialog box opens. You specify the form, the connection, the table, and other information for the data entry form. Dreamweaver adds the necessary code so that the form data is inserted into the database table when theSubmit button is clicked.

Can I add a data field to the database that the person using the form cannot change?

Yes. You can send a hidden field to be added to the database. Hidden fields are not displayed in the form. Instead, you set the value of the hidden field and it is sent with the other form information. In a data entry form, the hidden field is entered into the database.

To send a hidden variable, in the Record Insertion Form dialog box, in the Display As dropdown list, select Hidden Field.

Using Information from a Form

Web site visitors type information or make choices in an HTML form. When the visitor clicks the Submit button, the information from the form is passed to the program specified in the action attribute of the `<form>` tag. The program that receives the form information can access the information using the name that is given to the field in the HTML form.

In Dreamweaver, you can insert data from a form into your Web pages. First, you *bind* the needed information to the page. Then, you insert the field from the Bindings panel into the page.

HTML forms can be submitted using the POST method (the usual method) or the GET method. The POST method includes the form data in the body of the message sent to the Web server and the GET method appends the form data to the URL when the form is submitted. To bind data from POST method form, bind form variables; to bind GET method data, bind URL variables.

When you insert the field into a Web page, Dreamweaver adds the field name in Design view and adds dynamic code to the source file. The form data displays when the processing Web page is displayed in a browser.

Using Information from a Form

1. Create a form.

Note: *See Chapter 8 to create a form.*

2. Create a new dynamic file.

   The filename is the same as the filename in the action attribute of the form.

3. Open the Bindings panel.
4. Click the Add button (+).
5. Click Form Variable.

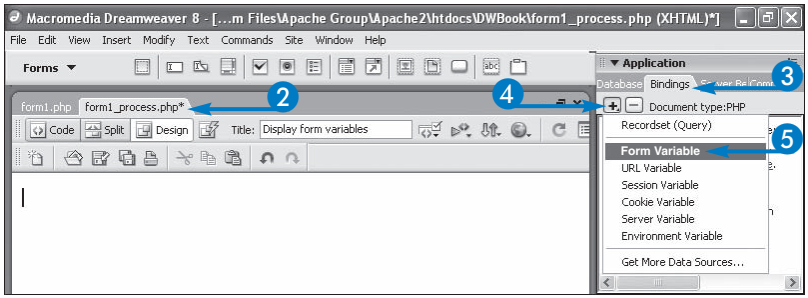
   The Form Variable dialog box opens.

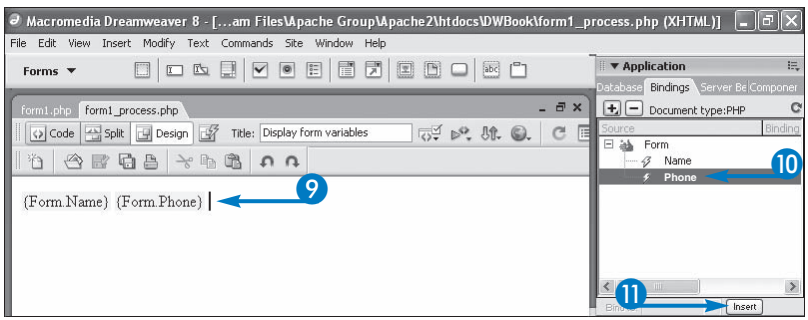
6. Type a field name.
7. Click OK.

   An entry for the field is displayed in the Bindings panel.

8. Repeat steps 4 to 7 for all form fields needed.
9. Click the Web page.
10. Click a field name.
11. Click Insert.
12. Repeat steps 9 to 11 for each field to be displayed.

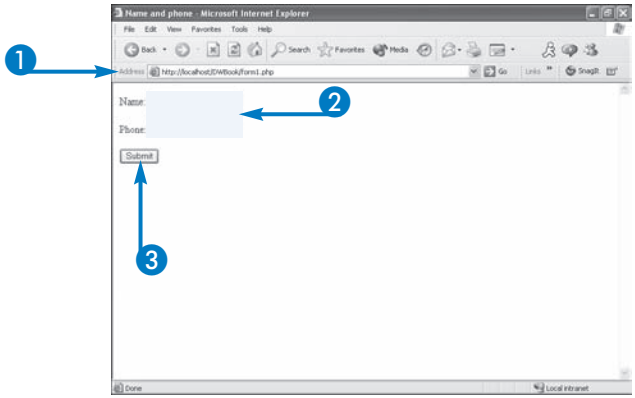
    Field names are inserted into the Document window, but not the actual data.





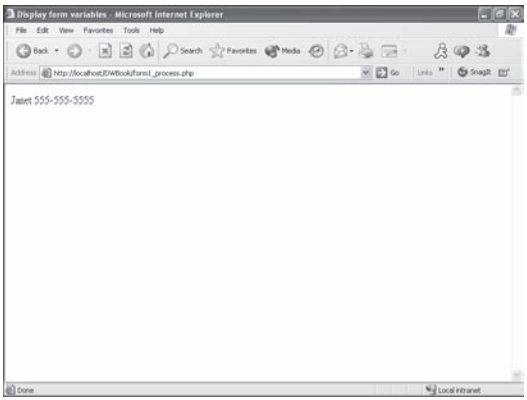
Test in a browser

1. Open the form in a browser.
2. Fill in the form fields.
3. Click Submit.



The browser opens the form processing file.

The form field contents are displayed.



Can I use form information in my Web pages if I am using ColdFusion or ASP, instead of PHP?

Yes. You can bind information from the form using any dynamic language. When you click + to bind data to the Web page, the menu of choices will look somewhat different for different languages. In ColdFusion, you will find form and URL variables on the menu. In ASP, you select Request Variable and then select `Request.Form` or `Request.URL` in the dialog box.

After binding, click a form field and click Insert, as shown in the example. Dreamweaver will add the correct code to your source file.

What can I do with form information in addition to displaying it?

You can use the content of a form field anywhere in your dynamic code that you need it. For instance, you might want to display one message to visitors who are under 21 and a different message to visitors who are over 21. To do so, you use an if statement in your dynamic code. For instance, in PHP, the code is:

```
if ( formfield1 > 20 )
   echo "Welcome, adults.";
else
   echo "Welcome, Kiddies.";
```

In this example, you would replace formfield1 by inserting a form field from the Bindings panel.

Add Information to a URL

HTML pages are independent from one another. When a browser requests a page, the Web server responds to the request without any history. The Web server has no idea whether this is the first page sent to this browser or the hundredth. HTML pages are *stateless*.

Dynamic Web sites generally need to pass information from one Web page to the next. For instance, a form might collect the visitor's name and you might want to personalize the next page, saying Hello, George. Thus, you need to use the name George entered in the previous page.

One way to pass information is to append it to the URL. When the request for the Web page is sent to the Web server, the appended information is also sent. The application server can access the URL information for use in the dynamic code.

Information is appended in a string of name/value pairs, such as name=George and age=21. The dynamic code can access the information using the name. The added information, called a *query string*, looks as follows:

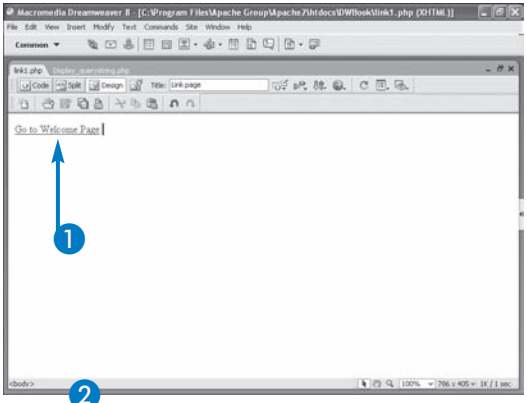
```
www.myplace.com?name=Mary&age=21
```

The string can be added to a hyperlink. When the visitor clicks the link, the entire URL, including the appended information, is sent to the Web server.

Add Information to a URL

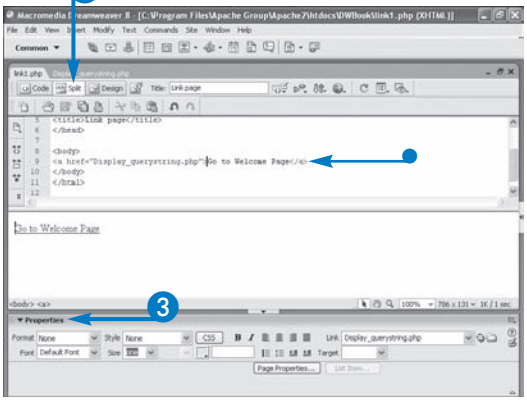
1. Create a hyperlink.

Note: *See Chapter 6 to create a hyperlink.*



2. Split the Document window.
   - The link shows in code view.
3. Open the Property inspector.

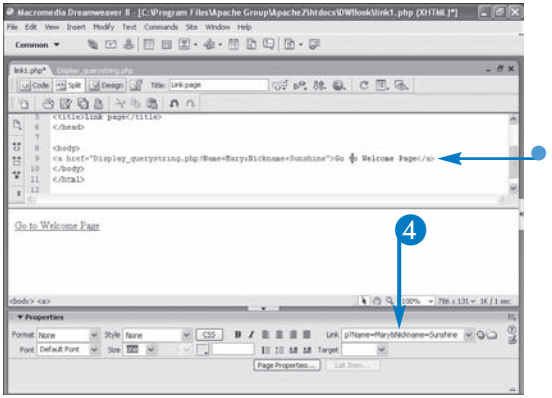
   The link destination is displayed.



4 Add name/value pairs to the end of the link destination.

Here, the pairs are Name=Mary and Nickname=Sunshine.

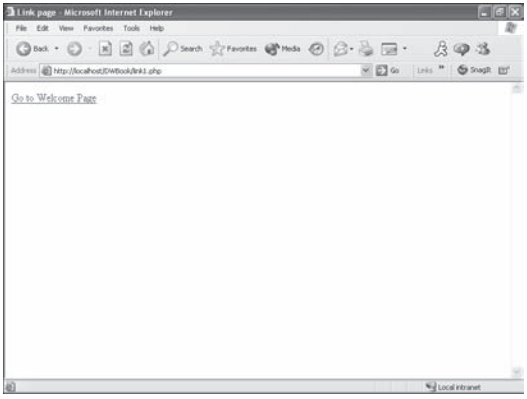
- Information is added in code view.



Browser displays the link.

When the link is clicked, the two pieces of information are passed in the URL.

The dynamic code in the link destination page can display, store, or otherwise use the information passed in the URL.



Are there disadvantages to adding a query string to the URL?

The obvious disadvantage is that the information is in plain view to the visitor. If the information is important and needs to be kept secret, the URL method is not appropriate.

In addition, a length limit on the query string prevents you from adding a really large number of name/value pairs. The limit varies, depending on the browser, version, and other factors, but a limit always exists.

A query string can sometimes pose a security risk. Users can add their own query string when they access your Web site. You need to be careful that they cannot do any damage.

When should I pass information in the URL?

One common application of query strings is to pass information about a visitor, such as a name, to personalize the visitor's Web experience. The Web page that receives the query string might greet the visitor by name.

Using a query string to pass some types of information, such as authentication information, can be a security risk. When designing your Web site, remember that the person who accesses your Web site can add their own query string. Be sure your site is not vulnerable to user generated query strings.

Display Information Passed in a URL

HTML pages are *stateless*, meaning they are independent from one another. Web servers do not keep track of browser requests or pages sent. In order to provide dynamic Web pages with personalized content, user information needs to be passed from one Web page to the next. One way of passing information is to append it to the URL. The information is appended as a string of name/value pairs, called *query string*, that looks as follows:

```
www.domainname.com?name=Mary&age=24
```

When a Web page is requested using a URL with a query string added to the end, the Web page can use the information in the query string.

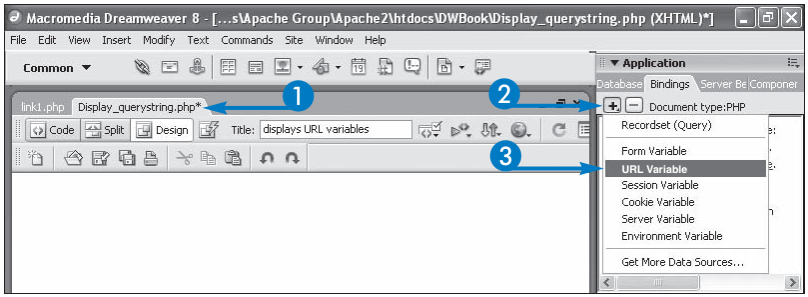
You can access the query string information using the name passed in the name/value pair. In Dreamweaver, you can insert data from a query string into your Web pages from the Bindings panel. First, you *bind* the needed information to the page. Then, you insert the URL variable from the Bindings panel into the page.

When you insert the URL variable, Dreamweaver adds its name in Design view. Dreamweaver also adds the correct dynamic code to your source file, depending on the application language you are using. When the Web page is requested from a browser, the dynamic code is processed and the information from the query string inserted into the page.

Display Information Passed in a URL

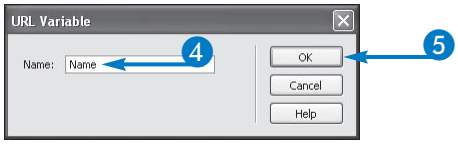
1. Open a dynamic page.
2. Click ⊞.
3. Click URL Variable.

   The URL Variable dialog box opens.

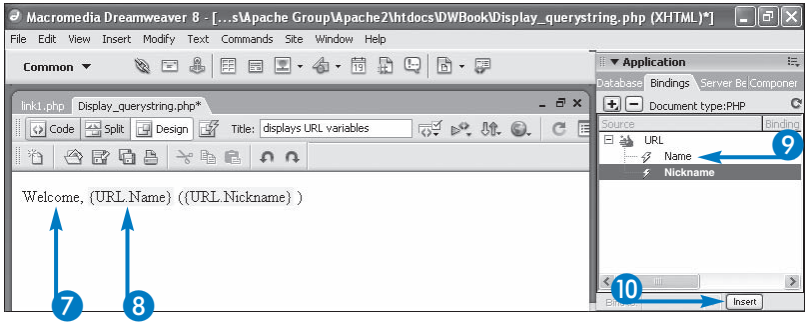


4. Type a name.
5. Click OK.

   The URL variable is added to the bindings list.



6. Repeat steps 2 to 5 for each variable needed.
7. Add text to page.
8. Click where URL variable is to go.
9. Click name.
10. Click Insert.
11. Repeat steps 8 to 10 for each variable needed.

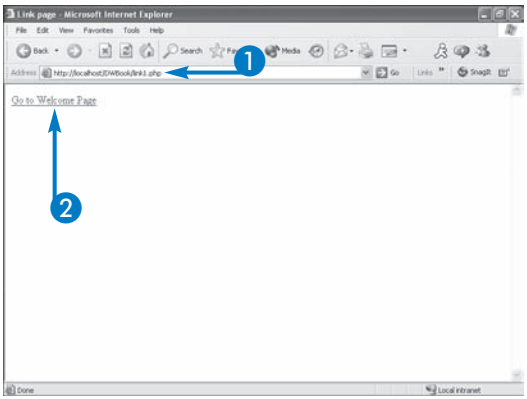


Test URL info display

1. Open the Web page with the link in a browser.

   No URL information shows.

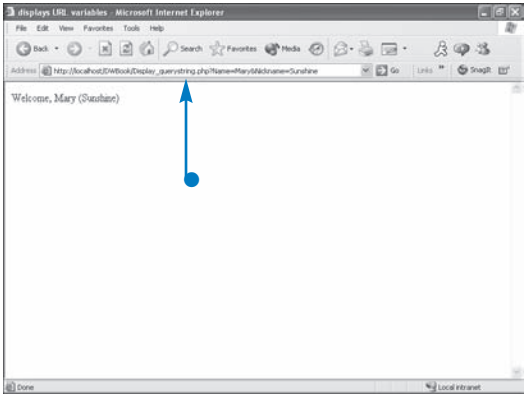
2. Click the link.



The link destination file opens in the browser.

- The information is included in the URL.

The Web page displays the information from the URL.



Can I use information added to a URL in my Web pages if I am using ColdFusion or ASP, instead of PHP?

Yes. You can bind information from the URL using any dynamic language. When you click + to bind data to the Web page, the menu of choices will look somewhat different for different languages. In ColdFusion, you will find URL variables on the menu. In ASP, you select Request Variable and then select `Request.QueryString`.

After binding, click a URL field and click Insert, as shown in the example. Dreamweaver will add the correct code to your source file.

Store Information in a Cookie

HTML pages are *stateless*, meaning they are independent from one another. Information from one Web page is not available to other Web pages. Dynamic Web sites generally need information from one Web page to be available to another Web page.

You can pass information from one page to the next using HTML forms or by attaching a query string to the URL, as described earlier in this chapter. However, in some applications, the user may view several pages and you want information available to all the pages. For instance, a shopping cart application needs to keep track of the customer's order while the customer continues to shop and check out.

One way to make information available to multiple Web pages is to store the information in a cookie, which can be accessed from any Web page. A cookie consists of name/value pairs, such as name=Mary, stored on the visitor's computer, not on the computer where the Web site is stored.

For this method to work, the visitors' browsers must be set to accept cookies. Your Web site will not function correctly for visitors whose browser is set to refuse cookies.

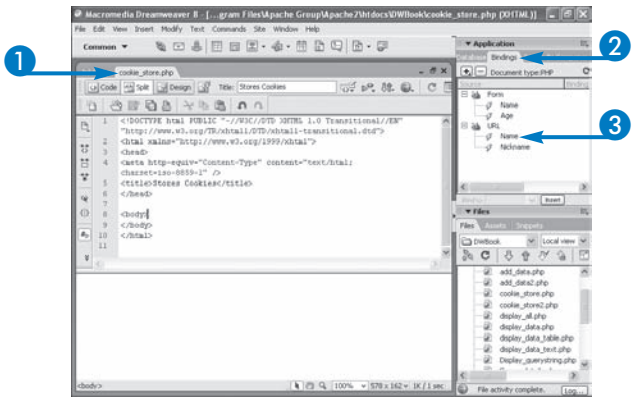
Store Information in a Cookie

1. Open a new dynamic page.
2. Open the Bindings panel.

Note: *See Chapter 2 to work with panels in Dreamweaver.*

3. If the data you want to store in a cookie is not already listed in the Bindings panel, bind it to the page.

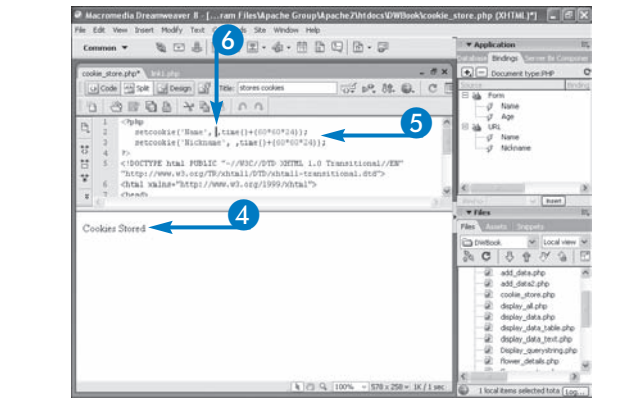
   Here, URL variables are to be stored in the cookie.



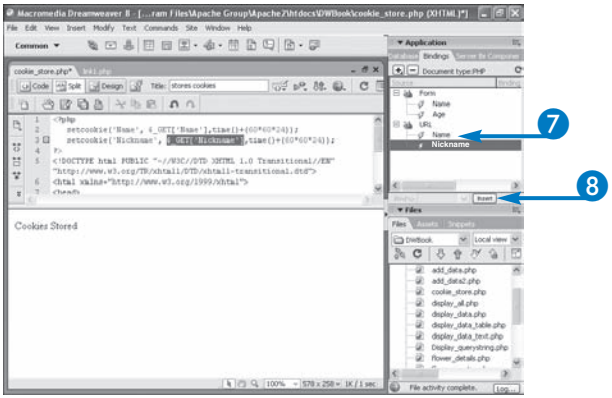
4. Add content to page.
5. Add the dynamic code for storing cookies in Code view.

   Here, PHP code is added, without specifying the data source.

6. Click in Code view where the data source should go.



7. Click a data source.
8. Click Insert.
9. Repeat steps 6 to 8 for all information to store.

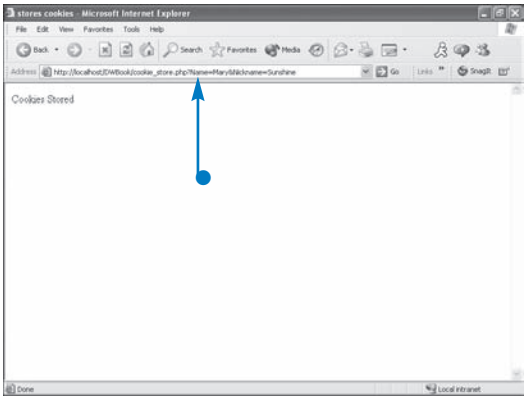


Test the cookie storage page

1. Open a page in the browser that links to the cookie storage page and passes the URL variables.
2. Click the link to the cookie storage page.

   The cookie storage page opens.

   - The information is passed in the URL.



How do I save information in a cookie if I am using ColdFusion?

The procedure is basically the same as the example in this section. You need to add the dynamic code in Code view to save the cookie information. You only need to substitute ColdFusion code for the PHP code shown in the example. ColdFusion code looks something like this:

```
<cfcookie name="Name"
expires="never" value=" ">
```

After adding the code, insert the datasouce name from the Bindings panel, with the insert button, as shown in the example. Place the cursor between the value quotes.

How do I save information in a cookie if I am using ASP?

The procedure is basically the same as the example in this section. You need to add the dynamic code in Code view to save the cookie information. You only need to substitute ASP code for the PHP code shown in the example. ASP code looks something like this:

```
<%
Response.Cookies("Name") =
Response.Cookies(Expires = Date+30
%>
```

After adding the code, insert the datasouce name from the Bindings panel, with the insert button, as shown in the example. Place the cursor after the first equals sign.

Using Information from a Cookie

You can use information from a cookie on any Web page. The contents of a cookie file are name/value pairs, such as name=Mary and weather=good.

Cookies are stored on the visitor's computer, not on the Web server. Some people set their browsers to reject cookies. If your page uses cookies, the page will not work correctly for people with cookies turned off. Therefore, the cookie method only works in environments where you know that the user will have cookies turned on. Some developers post a notice on their Web site that users must turn on cookies to use this page.

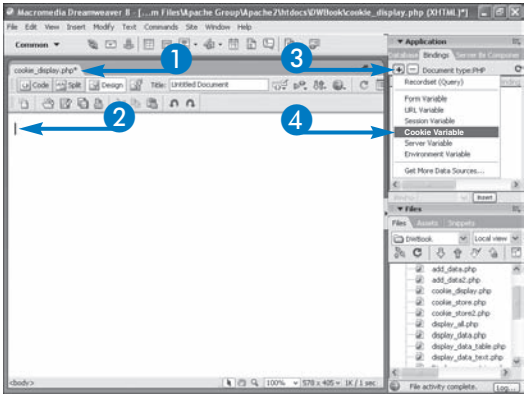
You can access the cookie information using the name stored in the name/value pair. In Dreamweaver, you can insert data from a cookie into your Web pages from the Bindings panel. First, you *bind* the needed information to the page. Then, you insert the cookie variable from the Bindings panel into the page.

You can use cookie information anywhere that the dynamic code allows it. You can display cookie information or use it to display alternate Web content. For instance, you can retrieve a variable named age. Then, you can display different Web content based on the age of the visitor.

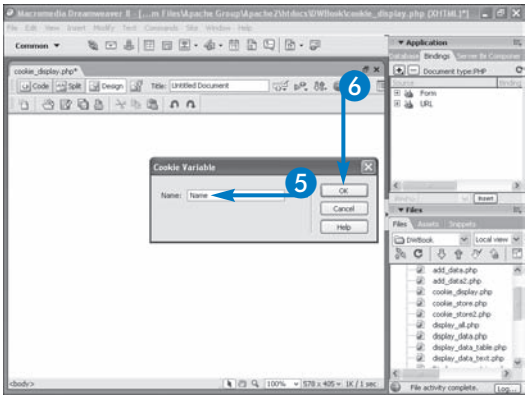
Using Information from a Cookie

1. Create a new page.
2. Click in the Web page where Cookie information is to go.
3. Click .
4. Click Cookie Variables.

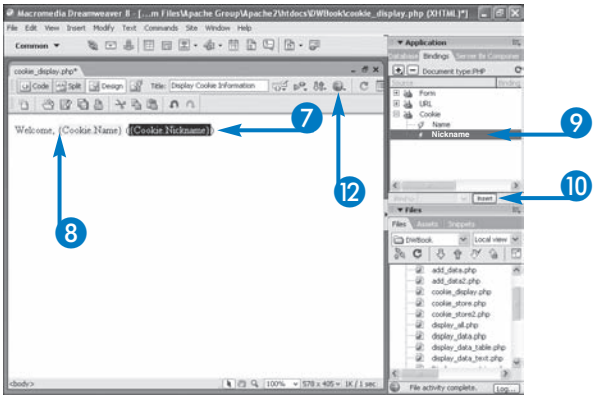
   The Cookie Variable dialog box opens.



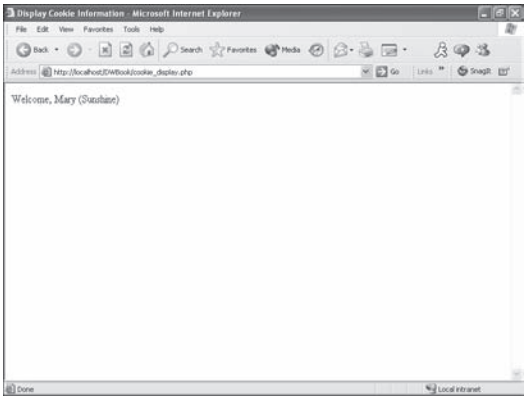
5. Type a variable name.
6. Click OK.



7. Add text, if needed.
8. Click in page where cookie information should go.
9. Click a cookie variable.
10. Click Insert.
11. Repeat steps 7 to 10 for all cookie information.
12. Click .



The browser displays the cookie information in the Web page.



Can I use cookie information in my Web pages if I am using ColdFusion or ASP, instead of PHP?

Yes. Cookies are a feature of Web sites, supported by all major Web servers and browsers, not a special feature of dynamic languages.

You can bind information from cookies using any dynamic language. When you click to bind data to the Web page, the menu of choices will look somewhat different for different languages. In ColdFusion, you will find cookie variables on the menu. In ASP, you select Request Variable and then select `Request.Cookie`.

After binding, click a cookie variable and click Insert, as shown in the example. Dreamweaver will add the correct code to your source file.

What are the disadvantages of using information from cookies?

Cookies are not under your control; they are under the Web site visitor's control. Visitors can set their browsers to refuse cookies. Visitors can delete cookies or change the information in the cookie file. Some visitors, who are not comfortable allowing a Web site to store information on their computer, refuse or routinely delete cookes.

If you write your dynamic Web site so that its functionality depends on cookies, Web pages will not work correctly for a certain percentage of your visitors. Unless you are in an environment where you can insist that your visitors turn on cookies, you might prefer to store information in a session or a database.

Store Session Information

Most Web sites consist of more than one Web page, perhaps dozens or hundreds. The time that a visitor spends at your Web site is called a *session*. A visitor may view many Web pages between the time they enter your Web site and then leave it. You may want information to be available on every site a visitor views during a session. Dynamic languages provide methods for making information available to all the Web pages viewed in a session.

Different dynamic languages use different mechanisms for storing session information. For instance, PHP stores session information in a file on the computer where the Web server is installed.

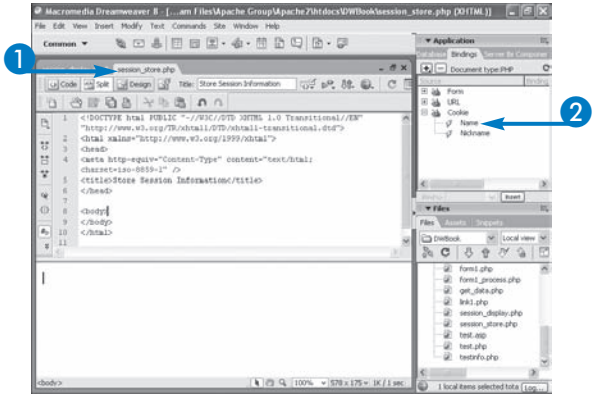
Session information is stored in session variables. Variables are containers that hold information. A variable has a name and information is stored in the variable. For instance, you might name a variable first_name and store the word Mary in the variable.

Different dynamic languages use different code to store session variables. You can store session data by adding the code to your source file in Code view. The value stored in the variable can be typed in the source code or can be obtained from another data source, such as a cookie or a query string.

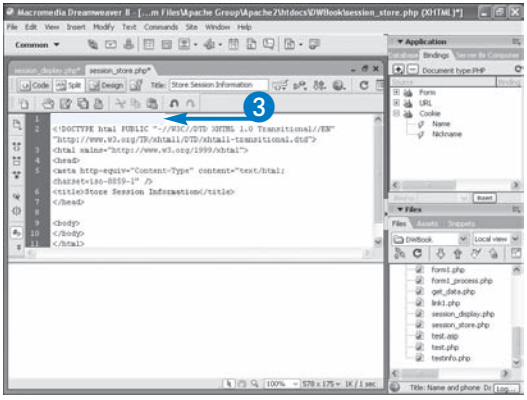
Store Session Information

1. Create a new dynamic page.
2. If the data you want to store in a session variable is not already listed in the Bindings panel, bind it to the page.

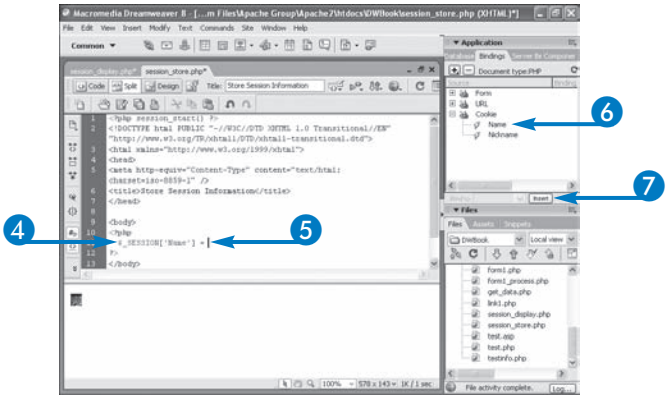
   Here, a cookie variable is to be stored in the session.



3. Add a session_start function at the top.



4. Add dynamic code in <body>.
5. Place the cursor where the data source code should go.
6. Click the data source.
7. Click Insert.

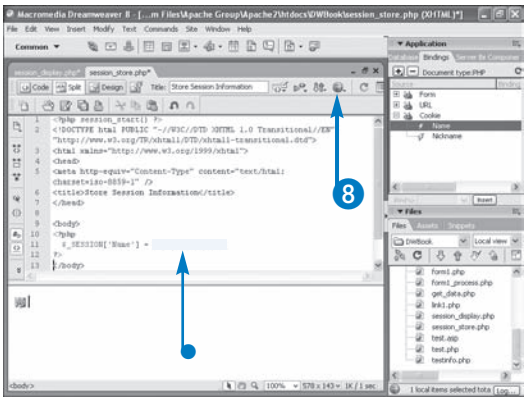


- The data source code is added.

8. Click .

The data is stored when the browser processes the page.

A blank Web page is displayed.



How do I store session variables if I am using ColdFusion?

The procedure is basically the same as the example in this section. You need to add the dynamic code in Code view to save the session variables. You only need to substitute ColdFusion code for the PHP code shown in the example. ColdFusion code looks something like this:

```
<cfset session.varname= >
```

After adding the code, insert the datasouce name from the Bindings panel, with the insert button, as shown in the example. Place the cursor after the equal sign. In this example, the code is:

```
<cfset session.Name = cookie.Name>
```

How do I save a session variable if I am using ASP?

The procedure is basically the same as the example in this section. You need to add the dynamic code in Code view to save the cookie information. You only need to substitute ASP code for the PHP code shown in the example. ASP code looks something like this:

```
<% session("varname") =  %>
```

After adding the code, insert the datasouce name from the Bindings panel, with the insert button, as shown in the example. Place the cursor after the equals sign.

Using Session Information

The time a visitor spends at your Web site, from the first page viewed to the last page viewed, is called a *session*. A dynamic site often needs information to be available to all the Web pages during a visitor's session. Dynamic languages provides methods for making information available to all the Web pages in a session.

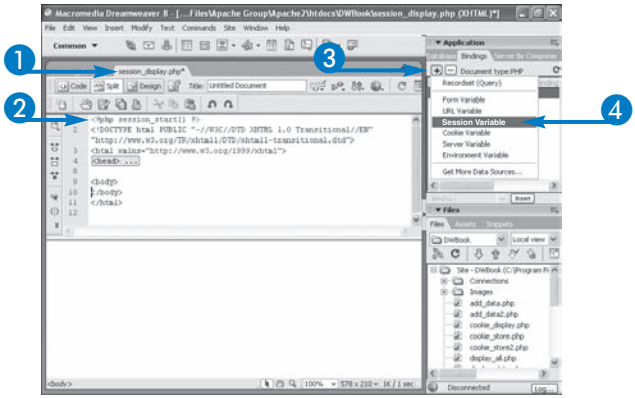
Session information is stored in session variables. You can access the session variables using the variable name. In Dreamweaver, you can insert data from a session variable into your Web pages from the Bindings panel. First, you *bind* the session variable to the page. Then, you insert the session variable from the Bindings panel into the page.

Session are identified by a unique session ID. Session variables are retrieved based on the session ID. The session ID must be passed from Web page to Web page. Many server technologies use cookies to pass the session ID. If the Web site visitor has cookies turned off, the session ID is not passed and session variables cannot be retrieved. You need to test your Web pages with cookies off before you accept that they work. If sessions do not work, check the documentation for your server technology for a solution.

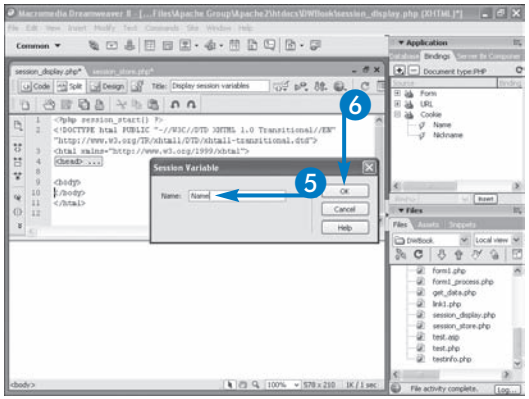
Using Session Information

1. Open a new page.
2. Add code to top of file.
3. Click ⊞.
4. Click Session Variable.

   The Session Variable dialog box opens.



5. Type a name.
6. Click OK.



The session variable is added to the Bindings panel.

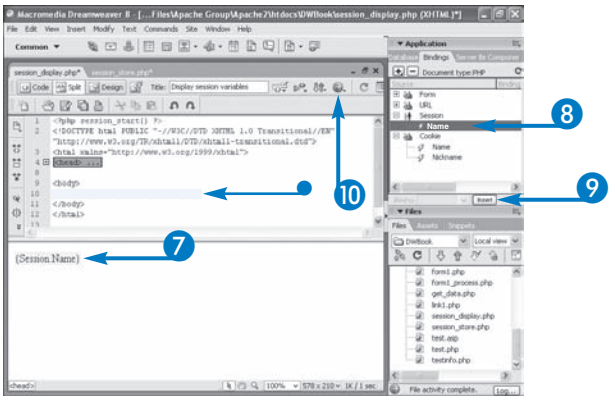
7. Click in the page.
8. Click a variable.
9. Click Insert.

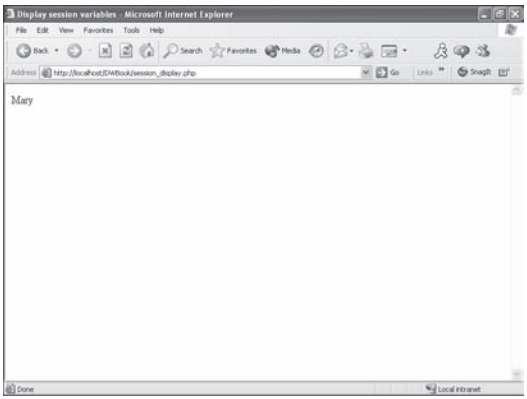
   Dreamweaver adds the session variable name to Design view.

   - Dreamweaver adds PHP code to the source file.

10. Click .

    The browser displays the information from the session.





Can my Web pages access session variables if the Web site visitor has cookies turned off?

Yes. There are techniques you can use to pass the session ID when cookies are turned off. One method is to pass the session ID in a hidden variable in a form. The session ID is in a PHP variable named PHPSESSID. Forms are discussed in Chapter 8.

You can change a setting in the PHP configuration file to facilitate the transfer of session IDs. Look for the following line in php.ini:

```
session.use_trans_sid = 0
```

Change the setting to 1. This options tells PHP to add the session ID to the URL when cookies are turned off.

I notice that the PHP programs have a line at the very top of the file that starts a session. Do I need this line in ColdFusion or ASP?

No. This code is specific to PHP. This line of code must be at the top of every PHP file that stores or uses session variables. It must be before any HTML or PHP statements that produce output.

In ColdFusion, you need to set up session support once, and then you do not need any further session support lines. Just use the variables. ColdFusion installs with session support turned on by default, so you should not have to do anything to use sessions.

Display Multiple Records with Paging

Dynamic tables display multiple records contained in a recordset. If the number of records is too large to fit comfortably on a page, you can display a limited number of records on a page, such as ten records per page. You then need a navigation bar so that a Web page visitor can travel forward and backward through the record list in the table.

Dreamweaver provides a navigation bar you can add to any Web page that contains a dynamic table. The navigation bar contains the common options for paging through a long list of items — Next, Previous, First, and Last. The navigation bar knows how many records are in the table and displays the appropriate options. It does not display Previous as an option when you are displaying the first set of records in the table and does not displays Next when the last record is currently displayed.

When Dreamweaver adds a navigation bar, it adds the dynamic language code to the source code file for the Web page. The navigation bar options display when the browser displays the Web page.

Display Multiple Records with Paging

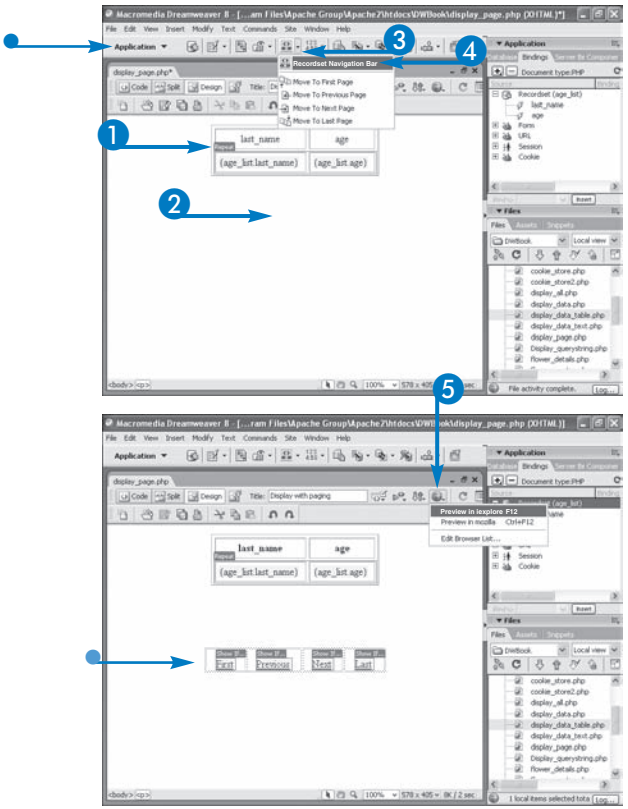
1. Create a dynamic page with a dynamic table.

Note: *Chapter 15 explains how to display multiple records in a dynamic table.*

Specify the number of records per page when you define the recordset.

2. Click in the page where the navigation bar should go.
   - The Application category of the Insert toolbar is open.
3. Click .
4. Click Recordset Navigation Bar.
   - Dreamweaver inserts a navigation bar.
5. Click and select a browser.

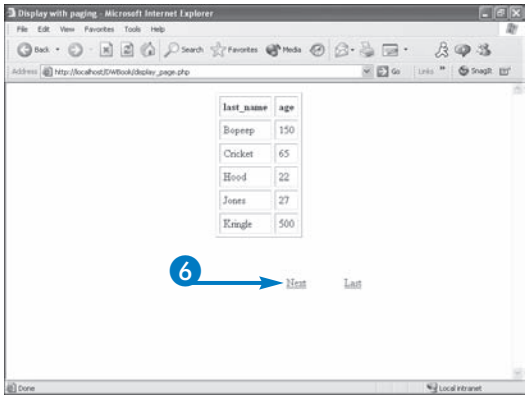
Test the navigation bar in a browser.



The browser displays the first page of records.

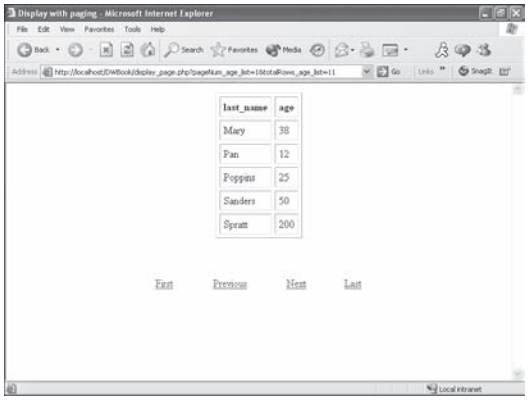
Here, the number of records per page is 5.

6 Click Next.



The browser displays the next page of records.

The navigation bar displays the appropriate links.



The navigation bar that Dreamweaver adds to the Web page displays links for the options. Can I use buttons for Next, Previous, and so on?

Yes. Dreamweaver does not provide buttons. If you want to use buttons, you must provide them yourself. You can create buttons in any Graphics software.

To use the buttons, just replace the text in the navigation bar with the button images. You can replace the text in Design view or Code view. Working with images is discussed in Chapter 5.

How do I add page counter information to my navigation bar?

Dreamweaver provides counter information. You can add a line that shows the current records in the recordset and the total number of records in the set. Such information offers the user context as they navigate through records in a table.

To add counter information, click Insert, select Application Objects, select Display Record Count, and click Recordset Navigation Status. The status line only displays if you have added a navigation bar.

Create a Search/Results Page Set

You can create a Web page that searches your database for records that match a text string. You create two pages — one that contains a search form and a second that displays the results of the search.

You create a search page that contains an HTML form with one text field and a submit button. The person who is searching types a search string into the text field and submits the search form. The search string is sent to the results page.

You create a results page that receives the search string sent from the form. A specific column in the database table is searched for any content that matches the search string.

A recordset retrieves all the records that match. The records in the recordset are displayed in a dynamic table on the results page.

To retrieve the results for a database search, Dreamweaver writes an SQL statement that accesses specific columns in a database table and filters the records using the search text. The SQL statement looks something like the following:

```
SELECT last_name,email FROM Customer WHERE
last_name="searchterm"
```

where *searchterm* is the search string typed by the searcher in the search form.

Create a Search/Results Page Set

1. Create a form with one text field for searching.

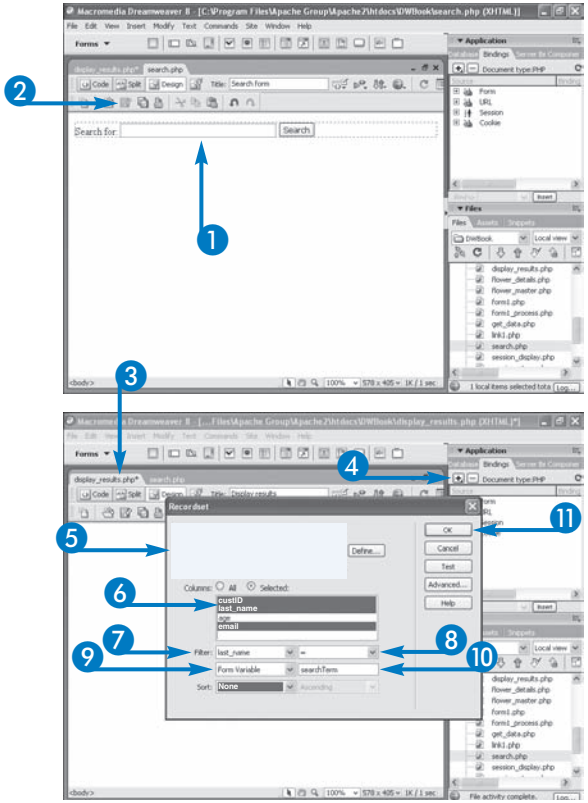
Note: *See Chapter 8 to create a form.*

The text field is named searchTerm.

2. Click .
3. Create a new page.
4. Click and select Recordset.

The Recordset dialog box opens.

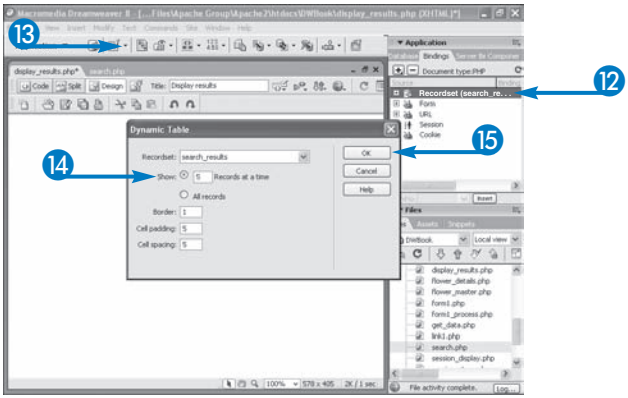
5. Type and select the first three fields.
6. Select the columns.
7. Select the column to search in.
8. Select =.
9. Click and select form variable.
10. Type the field name from the search form.
11. Click OK.



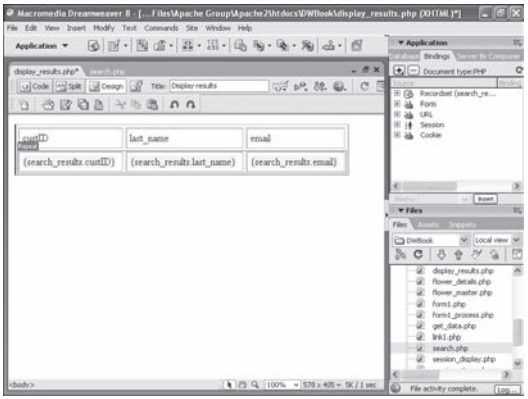
Dreamweaver adds the recordset.

12. Click the recordset.
13. Click here and select Dynamic Table.

    The Dynamic Table dialog box opens.
14. Type the number of records to display at once.
15. Click OK.



Dreamweaver adds a dynamic table to the results page.



Can I test the output of the search/result pages in Dreamweaver, without displaying them in a browser?

Dreamweaver provides the Live Data window for the purpose of viewing the dynamic Web page. Click View and select Live Data. The Live Data window replaces the Document window. The display is similar to the display in the browser, but it still does not look exactly as it will in the browser.

However, for the results page, the Live Data window will display an empty table. The result page does not have any data to display unless it is accessed by submitting the search form. The search form passes the search string to the results page.

I added some records to the database, but the new records are not displayed on the results page. How can I display new data?

When you create your recordset, the data is retrieved. If you modify your database data after the recordset is created, the recordset does not know about the modifications. To update the data, you need to refresh the recordset. Click the Refresh button (↻) in the upper right corner of the Bindings panel.

Create a Master/Detail Page Set

You can create a Master/Detail page set in Dreamweaver. The master page in the set displays a table with links to the detail page. One common use for a master/detail page set is to display product information. The master page displays a list of products, with each product name being a link that displays additional information about the product.

Your product information is in a database table. You create one recordset that contains all the data to be displayed on either Web page. Creating recordsets is described in Chapter 15.

The Insert Master-Detail Page Set dialog box contains a top section that defines the master page and a bottom section that defines the detail page. In each section, you add or remove column names from a list box to specify the columns to display in each page. In most cases, you need to remove some columns from the list for the master page, since you want to display more columns in the detail page than in the master page.

In the bottom section, you type a name for the detail page. Dreamweaver creates the detail page for you, with all the necessary dynamic code in the application language you are using.

Create a Master/Detail Page Set

1. Create a new dynamic page, create a recordset, and save the file.

Note: *Chapter 15 explains recordsets.*

2. Click Here.

   The Insert Master/Detail page dialog box opens.

3. Click ▼ and select a recordset.
4. Click a field.
5. Click the Remove button (−).
6. Click ▼ and select a field.
7. Type a filename.
8. Click OK.

   Dreamweaver adds the repeating table and navigation items.

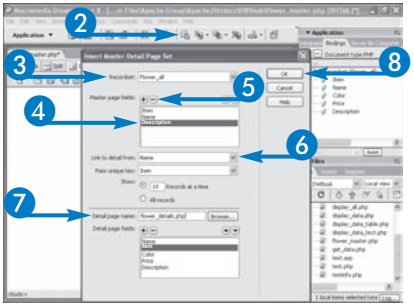
   Dreamweaver creates the detail page.

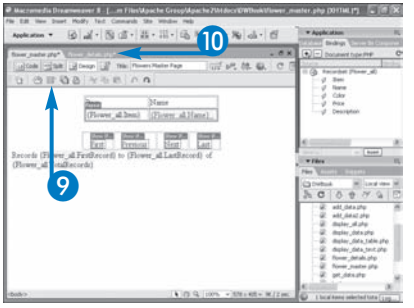
9. Click .
10. Click the detail page tab.

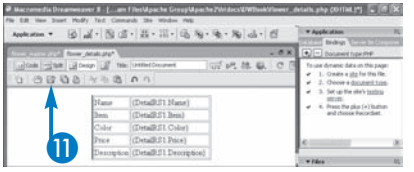
    The detail page opens.

    The detail page contains a repeating table.

11. Click .





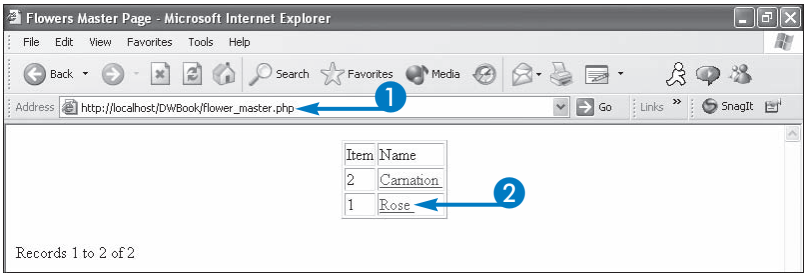


Test master/detail page set

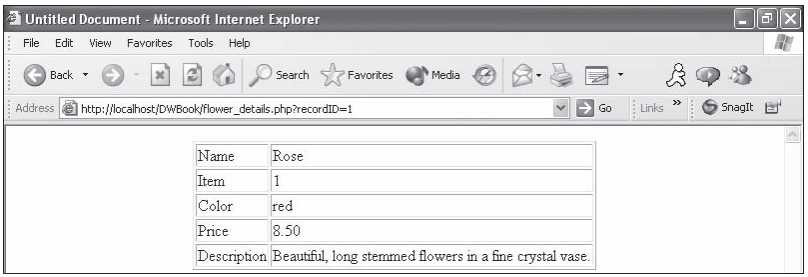
1. Open master page in browser.

   Browser displays list of items.

2. Click a link.



The browser displays details.



I do not like the appearance of the Master/Detail page set. Can I change them?

Yes. The pages are normal Web pages. You can customize your master and detail pages as completely as you want. You can add text, image, or other content. You can use any type of formatting for page, paragraph, text, and other content. You can layout your pages any way you want.

The dynamic tables are normal tables with repeating rows. You can align or resize the table, rows, or columns. You can format the text in the table cells. You can format the table borders and spacing. You can change the background colors of the table, rows, cells, and columns.

How can I change the number of records that display on the master page?

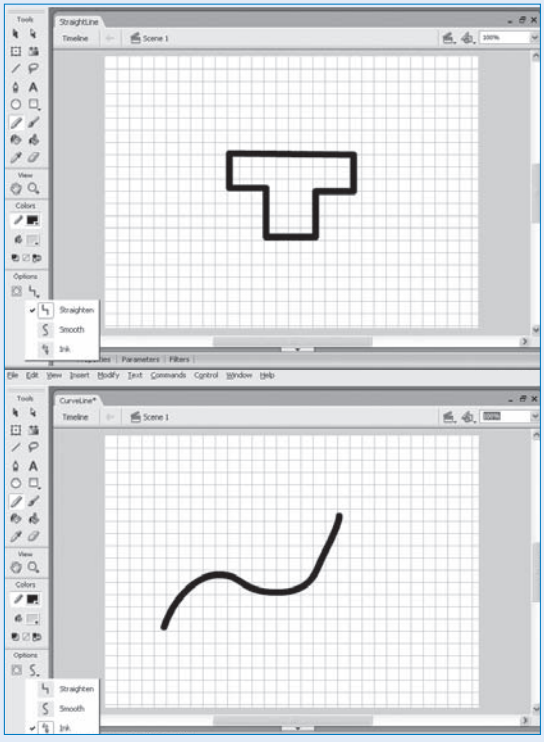
You can change the number of records that display on a page from the Server Behaviors panel. Double-click the Repeated Region behavior to open a dialog box. You can type the number of records on a page in the field. Click OK. When you next display the page in a browser, the number of records displayed will change.

17 Getting Started with Flash

Introducing Flash 324
Find Help 325
Open a Flash File 326
Save and Close a Flash File 328
Using Flash Templates 330
Understanding the Flash Window 332
Understanding the Flash Timeline 333
Understanding the Stage 334
Using Panels 336
Using the Property Inspector 338

18 Creating Objects

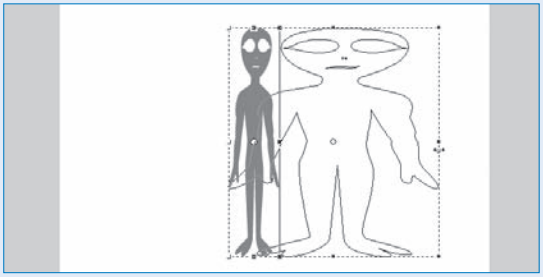
Introducing Flash Objects 340
Draw with the Line Tool 342
Draw with the Pencil Tool 344
Draw with the Oval and Rectangle Tools 346
Draw with the Brush Tool 348
Draw with the Pen Tool 350
Fill Objects with the Paint Bucket Tool 352
Draw with the PolyStar Tool 354
Using the Eraser Tool 356
Format Strokes 358
Create and Use Gradients 362
Import Graphics 366
Convert Bitmaps into Vector Graphics 368
Turn Bitmaps into Fills 370



PART V
MASTERING FLASH BASICS

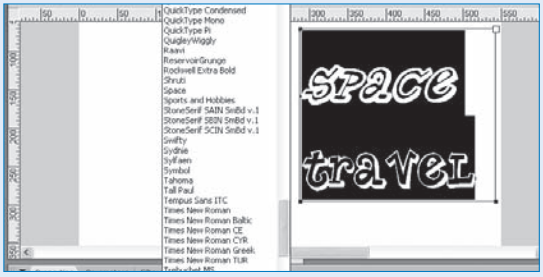
19 Editing Objects

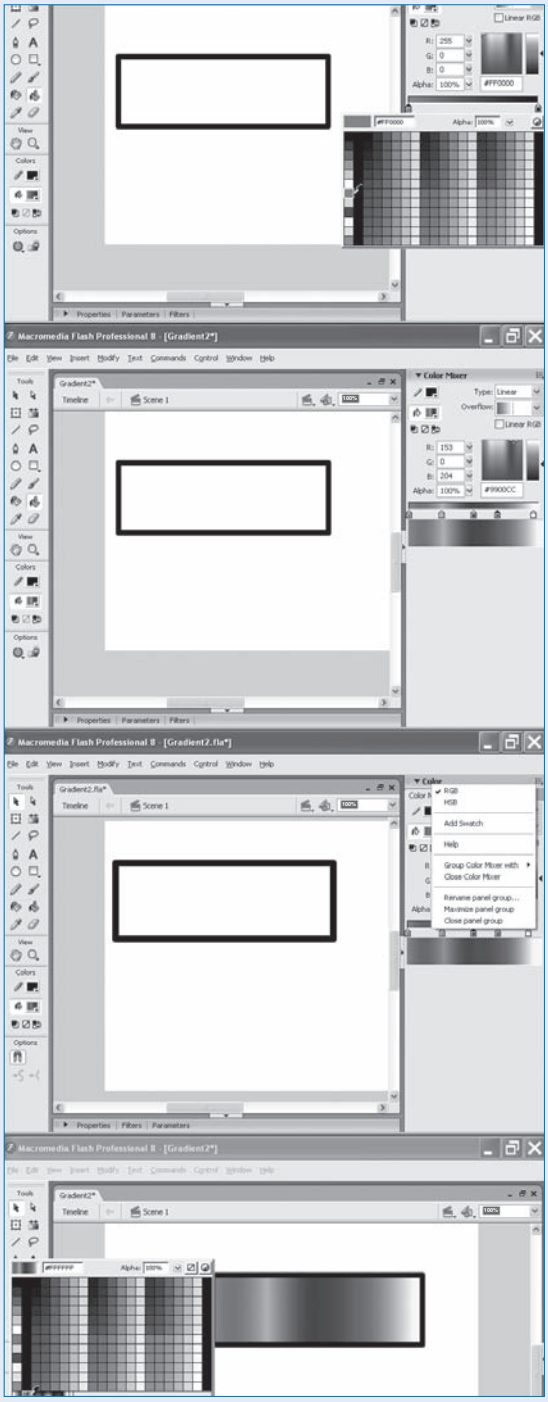
Select Objects 372
Move and Copy Objects 376
Copy Attributes.....378
Edit Objects with the Free Transform Tool.....380
Transform a Gradient Fill 384
Understanding Drawing Models 386
Stack Objects 388
Align Objects 389
Using the History Panel 390



20 Working with Text

Add Text with the Text Tool.....392
Format Text 394
Align and Kern Text 396
Set Text Box Margins and Indents 398
Move and Resize Text Boxes.....400
Break Apart Text.....402





Introducing Flash

Macromedia Flash is the standard for creating lively vector art and animation for the Web. Flash is the perfect tool for both new and experienced Web page designers who want to create expressive, dynamic Web pages. With the program's many tools, you can add interactivity to page elements such as banner ads and navigation buttons, and you can animate objects such as images and text. In addition, you can use Flash to create cartoons, videos, games, and movies. Flash files can be referred to as either *documents* or *movies*.

Using Vector-Based Graphics

Most graphics you encounter on the Web are bitmap graphics, such as Joint Photographic Experts Group (JPEG) and Graphics Interchange Format (GIF) graphics. Photographs usually display best as JPEG images and the GIF format is generally a good choice for displaying line art. Bitmap graphics use a series of squares, called pixels, which vary in intensity and color to display an image. Bitmap graphics, due to their size, take longer to display.

The graphics you create in Flash are vector-based graphics. Vector-based graphics use mathematical coordinates to define an image. As such, the image is much easier to scale and is incredibly compact in size. Vector graphics display much faster in a downloading Flash document. When possible, using vector graphics is a more efficient method of displaying images in your Flash document.

Animate with Flash

Flash uses frames to animate graphics, buttons, and even text. You can create movies that play on Web pages or as self-extracting files.

Flash bases its animation techniques on the same animation techniques employed by early cartoonists. Animators of yesteryear painstakingly drew graphic objects onto transparent cells and stacked the cells to create a single image for a single movie frame. They reused images that stayed the same throughout the animation, such as backgrounds, and added new images whenever there was a change in the animation sequence. Flash works in a similar fashion, allowing you to create backgrounds, layer objects, and reuse objects throughout a movie.

Add Sound

Flash has controls for adding and manipulating sound files. You can include sound effects or music files in an animation for added pizzazz and interest. For example, you can add a background sound to play along with your movie, or a narration that corresponds with several movie frames. You can also add sound effects to buttons, such as a click users hear when they click a button in your Flash document.

Add Interactivity

ActionScript is a scripting language with which you can add interactivity to your Flash document. For example, you can create a button that performs an action as soon as the user moves the mouse pointer over it, or a menu that, when activated, animates several menu choices. You can also use Flash ActionScript to create interactive elements such as forms, or complex interactive documents such as games. With a little imagination and skill, you can create a variety of exciting applications.

Flash Version

There are two versions of Flash 8 — Flash Basic 8 and Flash Professional 8. Flash Professional 8 is the advanced version of Flash Basic 8. Flash Professional 8 has all the features of Flash Basic 8, plus additional functionality that enables you to create more robust videos, forms, and other applications. This book is based on Flash Professional 8.

Find Help

While developing your Flash applications, if you encounter a program feature that you do not understand, you can consult the Flash Help system. The Flash 8 Help files offer a wide variety of topics ranging from basic Flash features, such as how to use menu commands and drawing tools, to advanced features, such as how to write ActionScripts. In fact, Flash Help includes a full reference dictionary of ActionScript commands, as well as tutorials that step you through common Flash tasks.

To utilize the Help features fully, you must have an Internet connection and a Web browser. When you click the appropriate option on the Help menu, your default browser takes you directly to the Macromedia Web site's Support Center, Developer Center, Documentation Resource Center, Online Forums, or Training pages.

The What's New option on the Help menu lists the new features found in Flash Professional 8, and the Getting Started option provides you with an introduction to Flash.

When you install Flash, a number of lessons and sample Flash files are loaded onto your computer. You can use these files to help you learn Flash.

Find Help

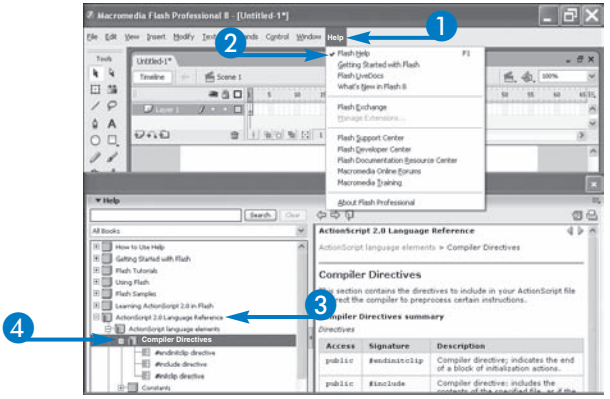
Find Help

1. Click Help.
2. Click Flash Help.

   The Help panel opens.
3. Click a book title to reveal topics.

   Scroll through the topics to find the information you want.
4. Click topic headings to drill down to the topic you want.

   Flash displays information on the topic you selected.

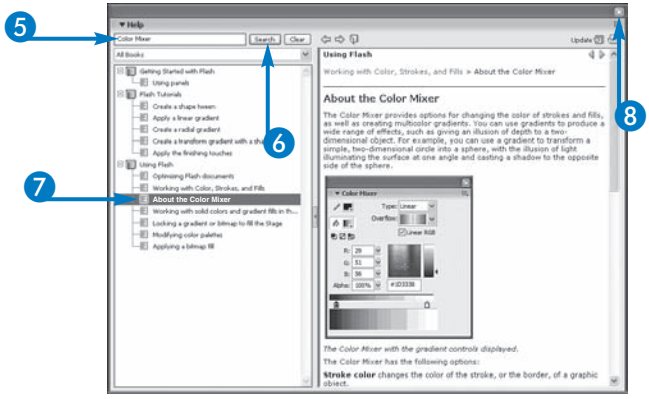


Search Help

5. Type the keyword or words you want to search for.
6. Click Search.

   A list of possible matches appears.
7. Click the topic that most closely matches the topic you want to learn about.

   The results of your search appear in the window, where you can read about the topic or click links to view related topics.
8. Click the Close button ( ) to close the window and return to Flash.



Open a Flash File

By default, when you launch Flash, Flash presents you with the Start Page. The Start Page has three menus: Open a Recent Item, Create New, and Create from Template. You can use these menus to create a new file or open an existing file.

The Open a Recent Item menu enables you to click a filename to open any one of the nine most recent files on which you have worked. Alternatively, you can click the Open icon to locate a file. If you click the Open icon, the Open dialog box appears. You can use the Open dialog box to navigate to the file you want to open.

On the Create New menu, you can choose to create a new Flash Document, Flash Slide Presentation, Flash Form Application, ActionScript File, ActionScript Communication File, Flash JavaScript File, or Flash project.

The Create from Template menu lists several preformatted layouts that you can use, such as Advertising, Form Applications, Global Phones, Photo Slideshows, Presentations, and more.

You can also use the main menu to open a document. Use the New command to open a new file; use the Open command to open a dialog box and navigate to a file.

Open a Flash File

Open a Flash file

1. Click a filename in the Open a Recent Item list.

   The file you selected opens.

   - You can also click the Open icon and use the Open dialog box to navigate to the file.

Note: *For more on using the Open dialog box, see the section "Use the Main Menu to Open a Saved File."*

Open a new file

2. Click the type of file you want to open from the Create New or Create from Template menu.

   Flash opens a new document.

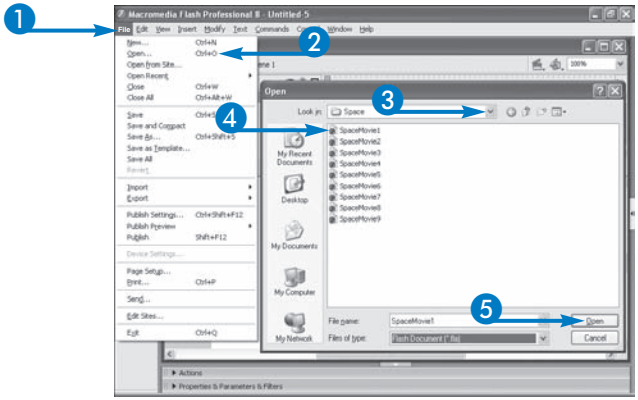
Use the main menu to open a saved file

1. Click File.
2. Click Open.

   The Open dialog box appears.

3. Click here and then select a drive and folder where it is saved.
4. Click the filename.
5. Click Open.

   The file you selected opens.

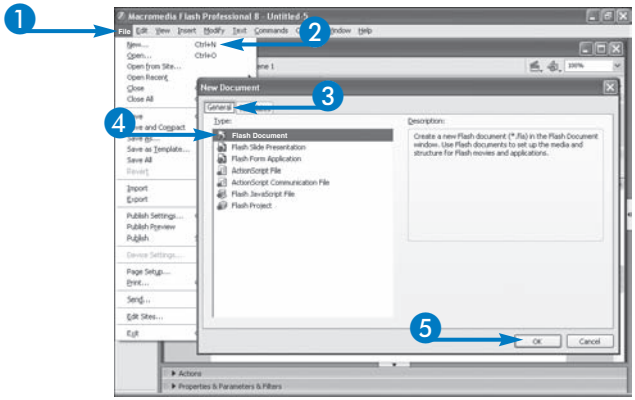


Use the main menu to open a new file

1. Click File.
2. Click New.

   The New Document dialog box appears.
3. Click the General tab.
4. Click an option.
5. Click OK.

   A new document opens.



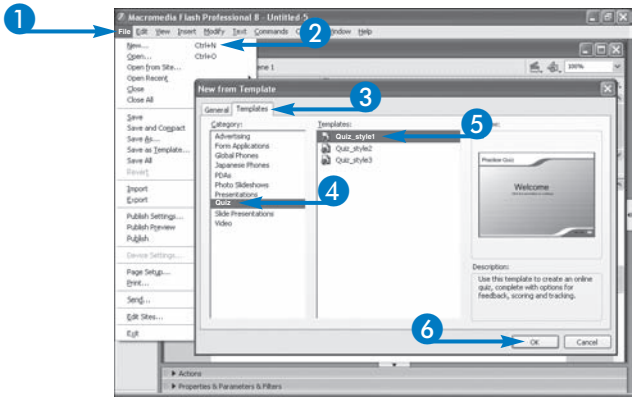
Use the main menu to open a template

1. Click File.
2. Click New.

   The New Document dialog box appears.
3. Click the Templates tab.

   The name of the dialog box changes to New From Template.
4. Click a Category.
5. Click a Template.
   - A preview of the template appears in the preview area.
6. Click OK.

   The template opens.



Can I have several Flash files open at the same time?

Yes. You can work on multiple files by having several Flash files open at the same time. If you have your document window maximized, Flash displays each open file's name on a tab below the main menu. To move to another open file, simply click on the file's name.

You can also move to another open file by clicking Window on the main menu and then clicking the file's name that displays at the bottom of the Window menu.

You can view multiple files at the same time by clicking Window and then Cascade, or Window and then Tile on the main menu.

Can I specify what should happen when I launch Flash?

Yes. To specify what happens when you launch Flash, click Edit and then Preferences on the main menu. The Preferences dialog box appears. Click General in the category box and then select one of the following On Launch field options: No Document, New Document, Last Documents Open, Show Start Page.

The No Document option launches Flash without opening a document. The New Document option opens Flash and opens a new document. The Last Documents Open option opens Flash and the last document on which you worked. The Show Start Page option opens Flash to the Start page. By default, Flash opens to the Start page.

Save and Close a Flash File

As you create documents in Flash, you must save your files before closing them so that Flash can record the changes and make the file available for you to work on again. Documents with unsaved changes in them have an asterisk after their names on the Title bar and document tab.

By default, Flash saves files using an FLA format. After you complete a Flash movie, you can publish it to a Web page or to a self-extracting file, both of which use other file formats. To learn more about the Flash publishing options, see Chapter 30.

You can save your file by using the Save or the Save As command. The Save command performs a quick save. Flash simply appends any new information to the current file. When you use the Save As command, Flash rearranges the data, thereby creating a smaller file.

The file menu has an option that enables you to revert to the last saved version of the current document. Be careful when reverting to the last saved version; the process cannot be undone.

If you make changes you do not want to save, close your document without saving.

Save and Close a Flash File

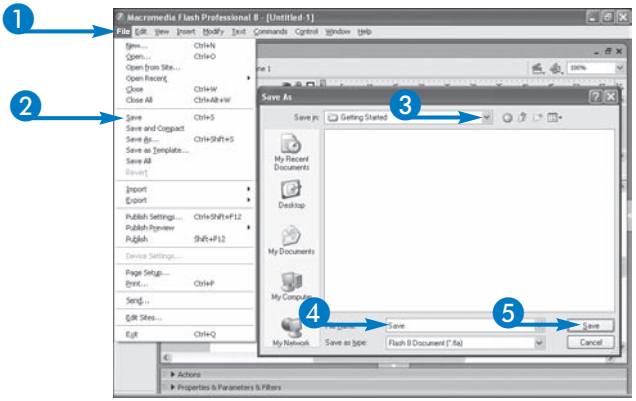
Use Save to save your file

1. Click File.
2. Click Save.

   Flash saves your file.

   If you have not previously saved your file, the Save As dialog box appears.
3. Click here and select a drive and folder in which to save your file.
4. Type a unique name for your file.
5. Click Save.

   Flash saves your file.

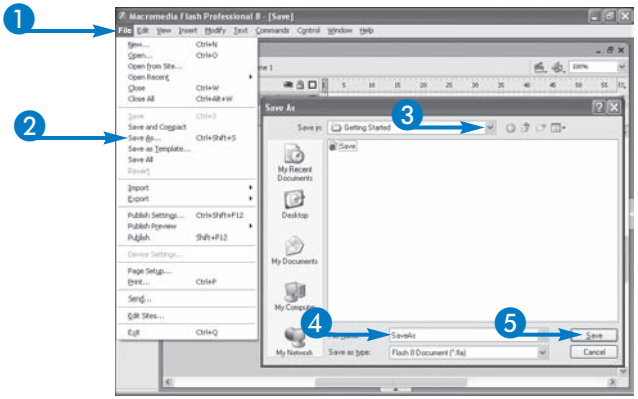


Use save as to save your file

1. Click File.
2. Click Save As.

   The Save As dialog box appears.
3. Click here and select a drive and folder in which to save your file.
4. Type a filename.
5. Click Save.

   Flash saves your file.

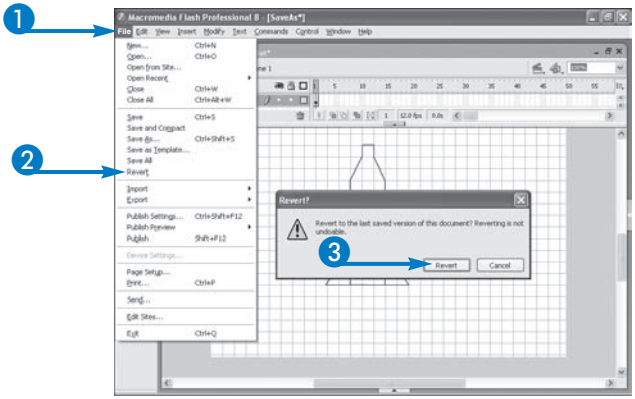


Revert to last saved version

1. Click File.
2. Click Revert.

   A prompt box opens asking if you want to revert to the last saved version of the file that is open, and warning you that reverting is not reversible.
3. Click Revert.

   Flash reverts to the last saved version of the file.

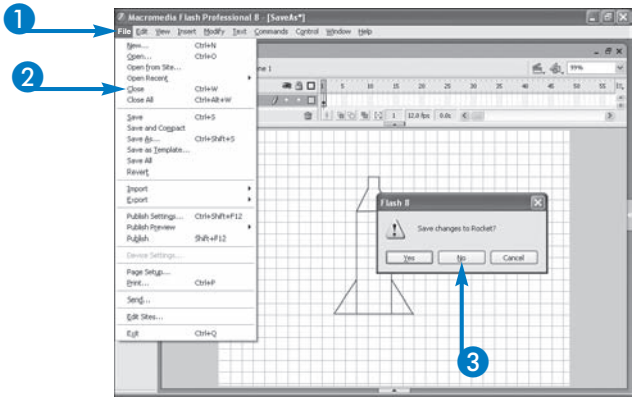


Close your file without saving

1. Click File.
2. Click Close.

   Flash prompts you to save changes to the file you have open.
3. Click No.

   Flash closes the file without saving the changes, and the program window remains open.



What is the purpose of Save and Compact?

As you create your document, you can use the Undo command or the History panel to remove items from your document. For example, you can use the Import option to import a video. Later you can undo the import. If, after undoing your import, you save your file, the file still includes your import and, as a result, your file size is larger than necessary. Flash keeps the item you removed in case you want to redo your change. To remove the item and decrease your file size, you must compact your file as you save by clicking File and then Save and Compact on the main menu.

How do I save a file under a new name?

You can make a copy of a previously saved file. You can then make changes to the file without worrying about changing the original file. To do so, click File and then Save As. This opens the Save As dialog box. Type a new name and then click Save.

Can I save a Flash file in another file format?

Yes. You can use the Save As dialog box to save your file in Flash MX 2004 format. In the Save As Type field, choose Flash MX 2004 Document. To save your file in any other format, you must use the Export Movie command.

Using Flash Templates

You can use a template to speed up document creation. A design template can also help you build specialized content for your projects. You can create your own templates or utilize Flash 8's built-in templates.

Flash installs with a library of sample templates in the following categories: Advertising, Form Applications, Global Phones, Japanese Phones, PDAs, Photo Slideshows, Presentations, Quiz, Slide Presentations, and Video. Each category includes a variety of templates, such as banner ads sizes and types, presentation styles, and more. You can choose which template you want to use. Form Applications, Slide Presentations, and Video are only available in Flash Professional 8.

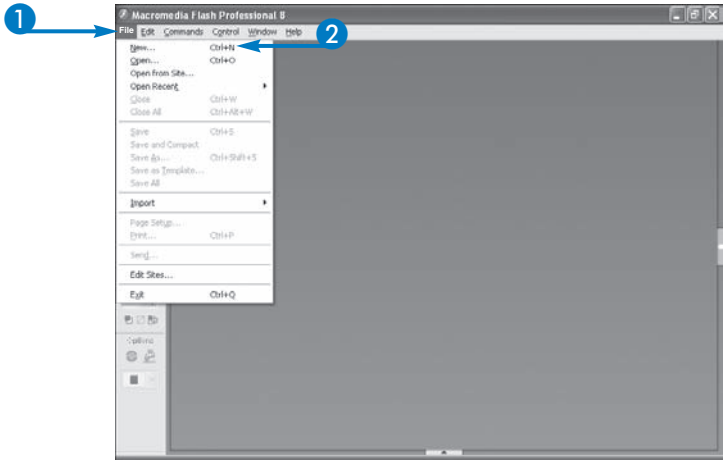
As an example, you can use the 468-x-60-pixel banner template under the Advertising category to help you create a Web page banner measuring 468 x 60 pixels. This particular banner size follows the Interactive Advertising Bureau (IAB) guidelines for creating advertising on the Web.

After choosing a template, you can add your objects and formatting and then save your work. You can also modify a new file or modify an existing template and save the file as a unique template that you can use repeatedly.

Using Flash Templates

Open a template

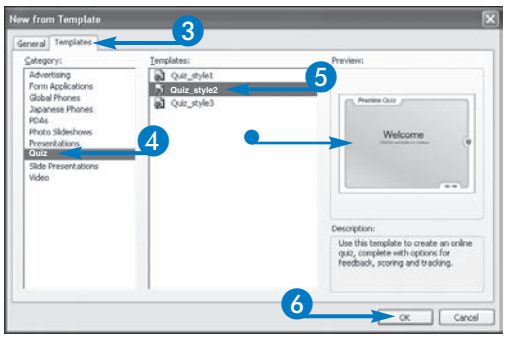
1. Click File.
2. Click New.



A dialog box appears.

3. Click the Templates tab.
4. Click a category.
5. Click a template.
   - You can preview the template here.
6. Click OK.

   Flash creates a new file based on the template you selected.



Save your own template

1. Create a document or modify a template, including all the elements and formatting you want to save.

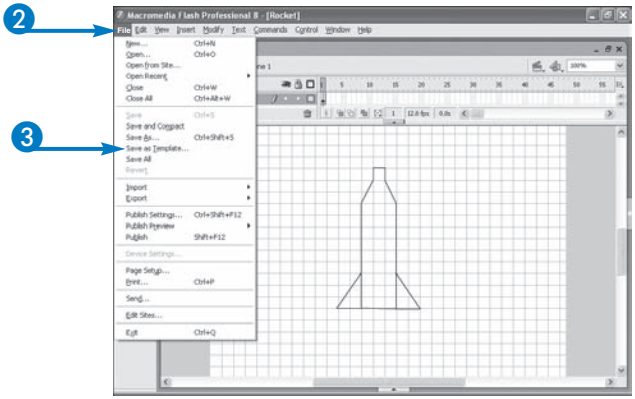
Note: *See the section "Open a Flash File" to learn how to create files; see the remaining chapters to learn how to create Flash documents.*

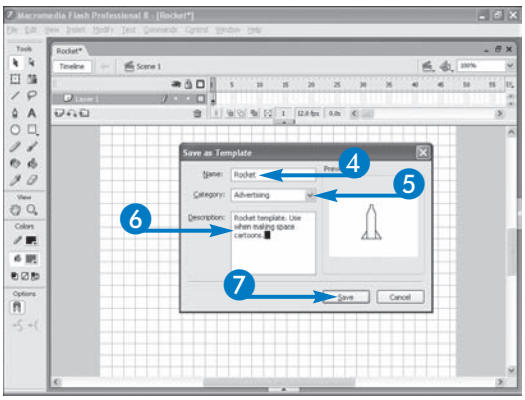
2. Click File.
3. Click Save as Template.

The Save as Template dialog box appears.

4. Type a unique name for the template.
5. Click here and select a category
6. Type a description.
7. Click Save.

Flash saves the template.





What do I use the the Modern Photo Slideshow template for?

You can use this template to create a photographic slideshow. Your photos should be 640 x 480 pixels and they should be named in sequence — photo1, photo2, photo3, and so on.

Delete the photos in each frame on the Picture layer. Select the first frame on the Picture layer and import your photographs in sequence.

By default, the template supports four photographs. To add more photographs, increase the number of blank keyframes on the Picture layer to the number of photographs you want to import, and then make every layer in the template the same length. Copy the contents of a Caption frame to the new frames on its layer.

How do I use a Presentation template?

Flash 8 ships with four presentation templates: Classic Presentation, Retro Presentation, Sharp Presentation, and Tech Presentation. You can use these templates to create PowerPoint-like presentations. The templates include basic elements, including navigation buttons. You create your presentation by modifying the text, images, and other objects you find in the template.

What is a PDA template?

The PDA device templates enable you to create applications for many mobile devices. Mobile devices do not have the memory or storage space found on laptop or desktop computers. Flash is ideal for creating content for these devices because it enables you to create compact applications.

Understanding the Flash Window

The Flash 8 program window has several features you can use to create graphics and other objects. Take time to familiarize yourself with the window.

A Title Bar

The Title bar displays the name of the open file.

B Menu Bar

The Menu bar displays the main menu.

C Tools Panel

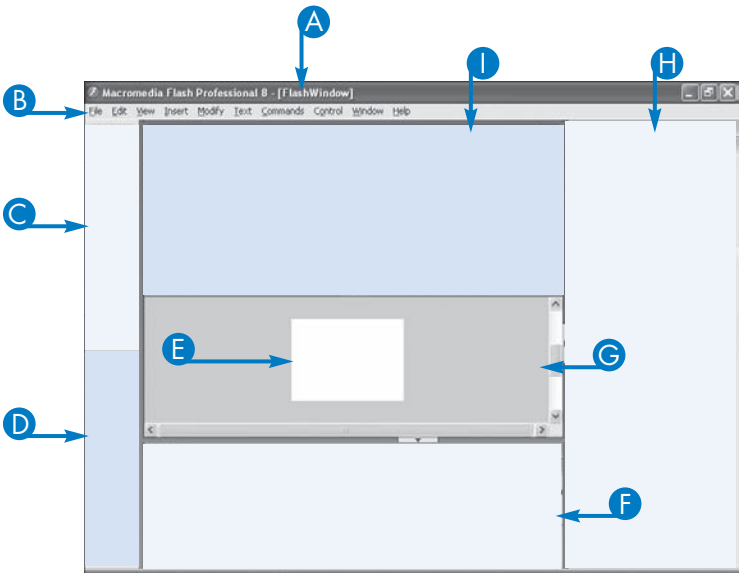
The Tools panel provides you with the tools that enable you to select objects on the Stage, draw and paint graphics, and create text boxes.

D Modifiers

After you select a tool, modifiers enable you to change the stroke color, the fill color, and the effect of tools.

E Stage

You use the Stage to create your animation by placing the objects you want to include in your movie on the Stage.



F Property Inspector

The Property inspector panel displays the properties of the selected object. You can use the Property inspector to change object properties.

G Pasteboard

The Pasteboard is the area that surrounds the Stage. Objects you place on the Pasteboard do not appear in your animation. You can use the Pasteboard to store objects that you will animate onto the Stage or that should not appear in your movie.

H Panels

Panels give you quick access to options for controlling and editing Flash movies.

I Timeline

You use the Timeline to lay out the sequence of your animation. The Timeline includes frames, layers, and a playhead.

Understanding the Flash Timeline

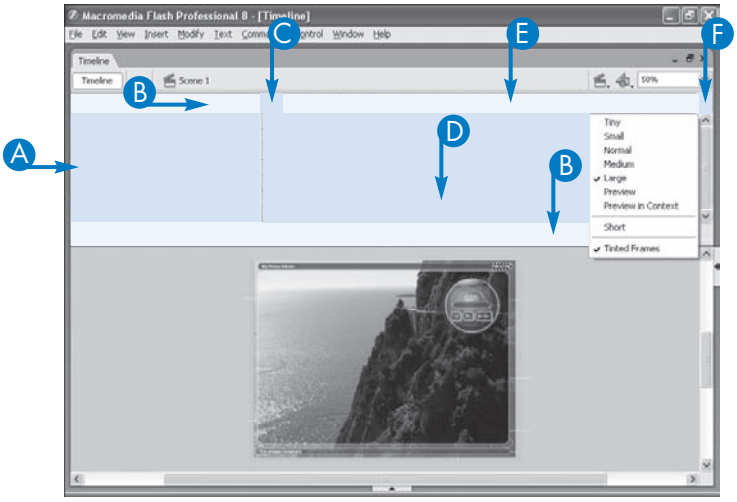
The Flash Timeline contains the frames and layers that make up a movie. You use the Timeline to organize and control your movies. By default, the Timeline appears docked near the top of the program window. If you are new to Flash, take a moment to familiarize yourself with the Timeline elements.

A Layers

Use layers to organize artwork, animation, sound, and ActionScript. With Layers, you can keep pieces of artwork separate. Flash 8 combines the artwork to form a cohesive image.

B Layer Buttons

Directly above the layer names are icons that represent the status of the layer, such as whether a layer is hidden, locked, or outlined on the Flash Stage. Below the layers are buttons for adding and deleting layers. For more information on working with the Timeline layers, see Chapter 22.



C Playhead

The playhead, also called the Current Frame Indicator, marks the current frame displayed on the Stage. Click a frame to display its contents on the Stage. You can drag the playhead across the frames to simulate the animation on the Stage.

D Frames

Flash divides documents into frames. You can use frames to control the sequence of the animation and the timing of sounds.

E Frame Numbers

Each frame has a number. Frames appear in numerical order across the Timeline.

F Timeline Controls

Click the Timeline options button to display a drop-down menu of options that control how Flash 8 displays frames. You can enlarge or shrink the frame size. This is particularly helpful if you have trouble seeing the individual frames on the Timeline.

Understanding the Stage

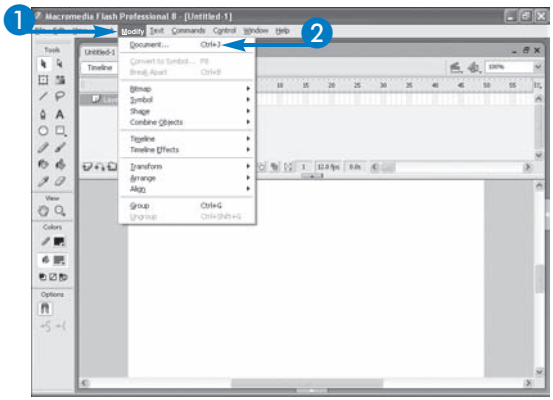
The Stage is the area where you place the contents of each frame. The objects you place on the Stage appear in your movie. You can change the size and appearance of the Stage.

The size of the Stage determines the dimensions of your Flash document. By default, Flash sets the Stage size to 550 x 400 pixels. If you do not want to use the default size, you can use the Document Properties dialog box to set your own dimensions. The minimum size you can set is 1 x 1 pixel; the maximum size you can set is 2880 x 2880 pixels.

The Document Properties dialog box offers three Match options to help you set the Stage size if you do not want to type a specific measurement: Match Printer, Match Contents, and Match Default. Use the Match Printer option to change the dimension settings to the maximum print area allowed by your printer settings; use the Match Contents option to set the Stage dimensions to fit all the content with an equal amount of space on all sides; and use the Match Default option to set the Stage dimensions to the default size.

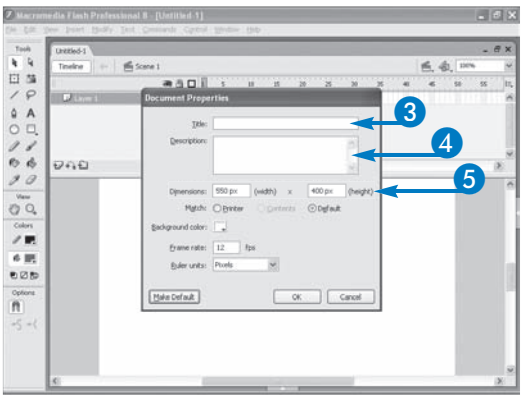
Understanding the Stage

1. Click Modify.
2. Click Document.

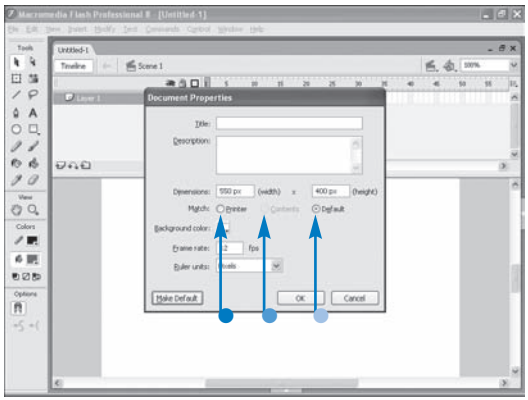


The Document Properties dialog box appears.

3. Type a title.
4. Type a description.
5. Type new dimensions in the Width and Height text boxes.

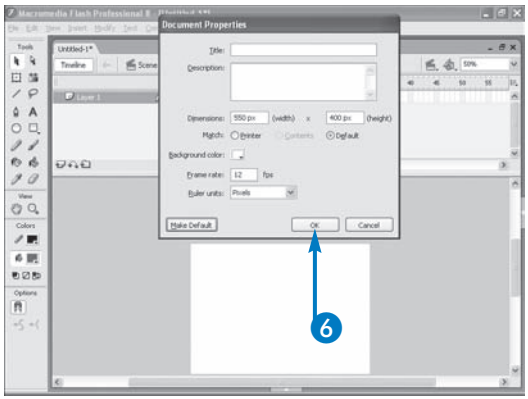


- Click the Printer option if you want to match the Stage dimensions to the maximum available print area size used for your printer (○ changes to ◉).
- Click the Contents option to change the Stage dimensions to match the contents of your movie with equal spacing all around (○ changes to ◉).
- Click the Default option to return the Stage size to the default size (○ changes to ◉).



6 Click OK.

Flash 8 changes the Stage area according to your new settings.



How do I specify the unit of measurement for the Stage?

You can use the Ruler Units field in the Document Properties dialog box to set the unit of measurement for the Stage. In the the Ruler Units field, select the unit of measurement you want to apply. The unit of measurement immediately changes in the Width and Height text boxes, and you can now set the appropriate measurements.

How can I change the default Stage settings?

Click Make Default in the Document Properties dialog box to save your settings as the default Stage measurements for all Flash movies. Any new Flash project files you create will use the new measurements.

How do I set a new background color?

By default, the Stage background color is white. To change the background color, click the Background color box in the Document Properties dialog box. A pop-up palette of color choices appears. Choose the color you want to apply. The color you choose will appear throughout your document as the Stage background color.

What is a frame rate? How do I set the frame rate?

The frame rate sets the number of frames that display per second when you play your movie. You use the Frame Rate field in the Document Properties dialog box to set the frame rate. For the Web you generally use between 8 and 12 frames per second (fps).

Using Panels

When creating your document, you use panels to set or change the characteristics of symbols, instances, frames, and other objects in your document. You can find panels listed under the Windows menu option on the main menu. Flash offers more than 15 panels, each displaying options related to a specific task.

The following are just a few of the many panels offered by Flash 8: Actions, Behaviors, Debugger, Movie Explorer, and Color Mixer. As an example, you can use the Color Mixer panel to create colors with which you can change the stroke or fill color of a selected object on the Stage.

Panels can appear docked on the bottom or far right side of the program window, or they can appear as floating panels. Flash 8 has a Default Layout panel set. The Default Layout panel set includes the Color Mixer and Library docked on the right side of the screen, and the Properties, Parameters, and Filters group and the Actions panel docked at the bottom of the screen.

You can move and dock panels and you can close panels to free up workspace.

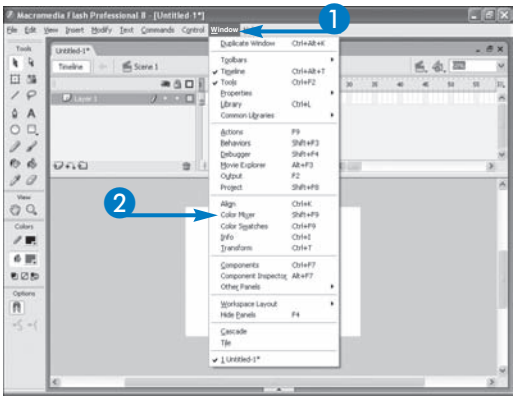
Using Panels

Open panels

1. Click Window.
2. Click the panel you want to open.

   The panel opens.

Note: *A check mark next to the panel name indicates the panel is open; no check mark means the panel is closed.*



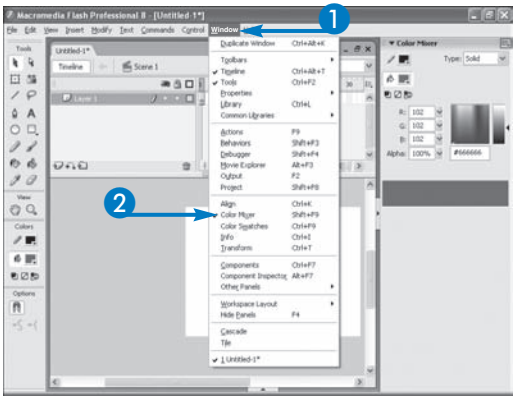
Close panels

1. Click Window.
2. Click the panel you want to close.

   The panel closes.

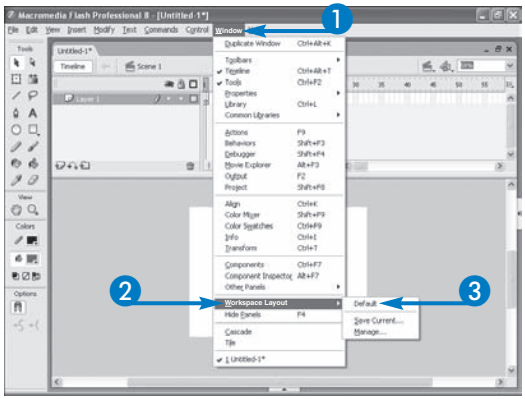
Note: *To collapse a panel instead of closing it, click the Collapse button (▼ changes to ▶).*

Note: *Closing panels frees up workspace.*

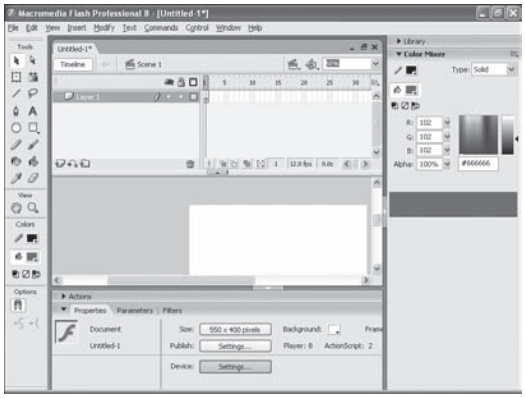


Open the default panel set

1. Click Window.
2. Click Workspace Layout.
3. Click Default.



The Default panel set opens.



How do I make my own panel set?

You can organize your workspace by opening, closing, and moving panels. To move a panel, click the panel's gripper and move the panel to the location you want.

After you have organized your workspace, you can save your preferences as a custom panel set. To save a custom panel set, on the Main menu click Window, Workspace Layout, and then Save Current. The Save Workspace Layout dialog box appears. Type a name for your layout in the Name field. Click OK. Flash saves your layout.

To open your custom layout, click Window, Workspace Layout, and the name of your layout.

How do I organize panels?

A panel group is a group of panels that appear together on the same Title bar. To create a panel group, open all the panels you want to group. Open the Options menu of a panel you want to add to another panel, click Group With, and then click the name of the panel to which you want to add your panel. Flash creates a panel group. A tab for each panel appears below the Title bar.

To remove a panel from a panel group, click the tab of the panel you want to remove. Open the Options menu. Click Group Properties With and then click New Panel Group.

Using the Property Inspector

You can use the Property inspector to view and make changes to the properties of any object you select. The Property inspector gives you quick and easy access to property controls, many of which you can also find on the menus and panels.

The Property inspector is a panel that you can collapse, hide from view, or move. By default, you find the Property inspector docked at the bottom of the Flash program window.

When you select an item on the Stage or Timeline, the Property inspector changes to reflect the properties associated with the object. For example, if you click on text, the Property inspector displays text properties, such as font and size. If you click on a graphic, such as a shape, the Property inspector displays properties related to the shape, such as its stroke and fill colors. If you click in a frame, the Property inspector displays properties related to a frame, such as tween and sound.

If an object includes numerous properties, the Property inspector grows in size. You can choose to collapse the Property inspector and view only the most frequently used properties.

Using the Property Inspector

Collapse and expand the Property inspector

1. Click the Collapse button (▼).

   ▼ changes to ▶.

   The Property inspector collapses.

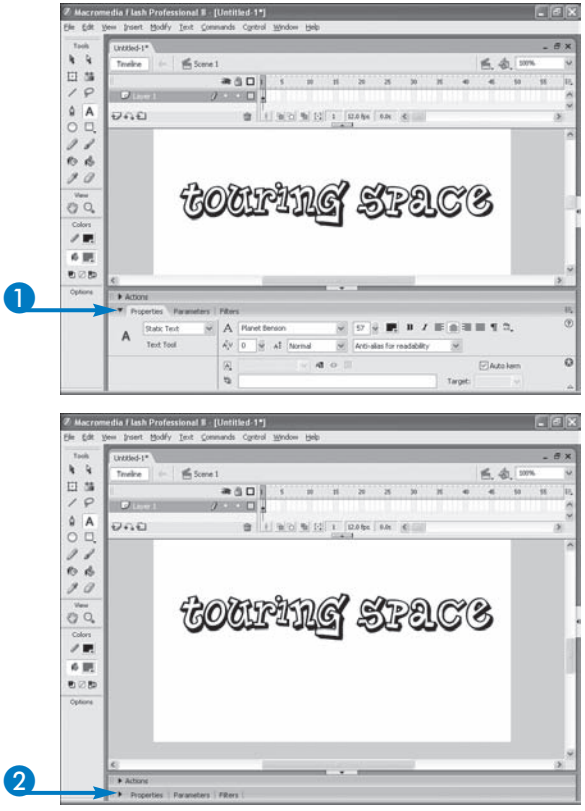
Note: *It is a good idea to collapse the Property inspector when not in use, to free up workspace.*

Note: *This example shows the text properties listed in the Property inspector.*

2. To expand the panel again, click the Expand button ▶.

   Your ▶ changes to ▼.

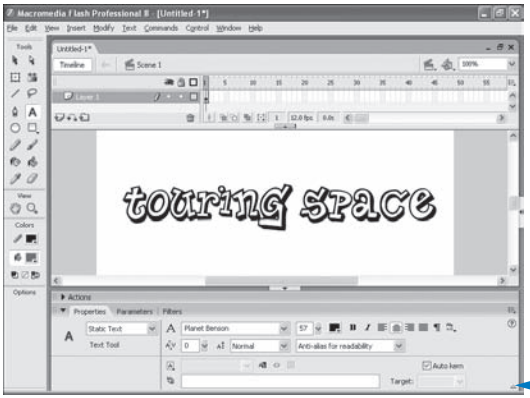
   The Property inspector expands.



Show and hide properties

1. Click the Collapse Properties button ( ).

   Your changes to .

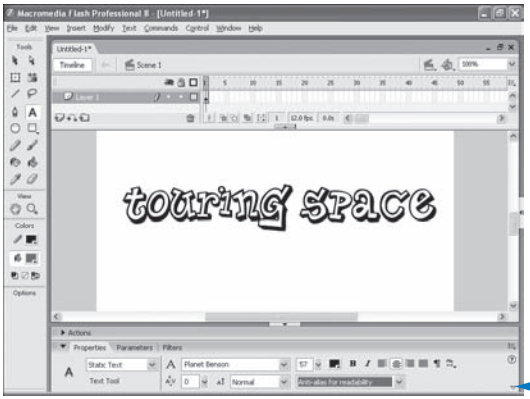


   A portion of the Property inspector collapses.

2. To view all properties again, click .

   Your changes to .

   The Property inspector expands.



MASTER IT

Can I close the Property inspector entirely?

Yes. As with all panels, there are several ways to open and close the Property inspector. Click the panel's Options Menu control to display a drop-down menu, and then click Close Properties. The Property inspector closes completely.

To open the Property inspector, click Window, Properties, and then Properties on the main menu. This menu option toggles the Property inspector open and closed. You can also toggle the Property inspector open and closed by pressing Ctrl+F3.

In addition, you can close the Property inspector by right-clicking the Property inspector's title bar. On the context menu that opens, click Close Properties to close the panel.

Can I move the Property inspector?

Yes. You can move the Property inspector and create a floating panel. To move the Property inspector, click and drag the gripper in the upper left corner of the panel. To collapse the floating panel, click the panel's Collapse button. To expand it again, click the Expand arrow.

What can I use the Property inspector for if I do not have anything selected?

If you do not have anything selected, you can use the Property inspector to set the Stage and publish settings. The Property inspector also lists the name of the current document and the version of Flash Player and ActionScript you are using.

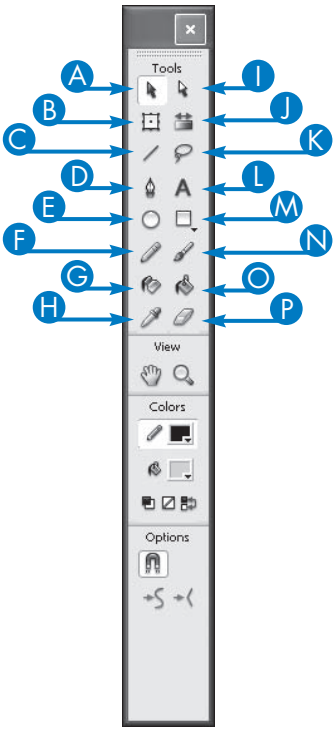
Introducing Flash Objects

You can use the tools found on the Tools panel to draw, modify, and edit objects. The drawings you create in Flash are composed of lines, called *strokes*, and solid colors, called *fills*, that generally fill the interiors of connected lines. You refer to the images you draw as *objects*. With the tools found on the Tools panel, you can create simple objects, such as rectangles or ovals, or complex objects that involve layers, grouped elements, and more.

Tools Panel

By default, the Tools panel is docked vertically on the far left side of the Flash program window, allowing you handy access to the many tools you need for creating objects on the Stage.

Before you start using the tools, take a moment to acquaint yourself with each tool and its function. ***Note:*** To display the PolyStar tool, click the Rectangle icon and hold down the mouse to display a pop-up menu. You can then click the PolyStar icon to activate the PolyStar tool.



A Selection

Use this tool to grab, select, and move items on the Stage.

B Free Transform

Use this tool to rotate, scale, skew, or distort objects.

C Line

Use this tool to draw straight lines.

D Pen

Use this tool to draw precise curves.

E Oval

Use this tool to draw circles or ovals.

F Pencil

Use this tool to draw freeform lines.

G Ink Bottle

Use this tool to change the style, thickness, and color of lines.

H Eye Dropper

Use this tool to copy the attributes of one object to another object.

I Subselection

Use this tool to display edit points that you can adjust to change the shape of a line.

J Gradient Transform

Use this tool to adjust the placement of a gradient or bitmap fill.

K Lasso

Use this tool to select irregularly shaped objects on the Stage

L Text

Use this tool to create text.

M Rectangle

Use this tool to draw squares or rectangles.

N Brush

Use this tool to draw a fill color. This tool works like a paintbrush.

O Paint bucket

Use this tool to fill shapes or outlines with color.

P Eraser

Use this tool to erase parts of an object.

Using the View Tools

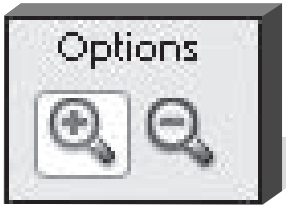
You can use the View tools, which are located on the Tools panel, to change your view of the Stage. There are two View tools: the Hand tool and the Zoom tool.

You can use the Hand tool to change what you see on the Stage. Click the Hand icon to choose the Hand tool and drag the Hand tool to change your view of the Stage.

You can use the Zoom tool to magnify the Stage or decrease the magnification of the Stage. Simply click the Zoom tool, click either the Enlarge or Reduce view option on the Options tray, and then click over the Stage. The more you click, the greater (or less) the magnification.

To zoom in or out by a percentage, use the Zoom box at the top of the Stage. Use the Zoom box's drop-down menu to select a zoom percentage, or type an exact zoom percentage directly in the Zoom box.

You can also find zoom options on the main menu. Click View and then Zoom In or Zoom Out. Alternatively, click View, Magnification, and then select from the list of magnification levels.



Using the Color Tools

You can use the Color tools to define stroke and fill colors for objects you draw on the Stage. You can click and hold the Stroke color box to display a palette of colors for lines. To select a color, drag the mouse pointer over your color choice and click to select the color, or type a hexadecimal code. *Hexadecimal codes* are six-character codes. Each code represents a different color that you can use when developing content for the Web.

To choose a fill color, click and hold the Fill color box, drag the mouse pointer over your color choice, and click to select the color; or you can type a hexadecimal code.

Use the buttons directly below the Stroke and Fill color boxes to modify an object's color. Click the Default Colors button to change the stroke color to black and the fill color to white. Click the No Color button to draw shapes without a stroke or without a fill. Click the Swap Colors button to switch the stroke color to the fill color and vice versa.

Using the Tool Modifiers

Some tools offer modifiers you can use to set additional controls for the tool. Any modifiers associated with a tool appear on the Options tray at the bottom of the Tools panel.

Draw with the Line Tool

The easiest way to draw straight lines in Flash is to use the Line tool. You control where the line starts and ends. Using the Line tool, you can draw all sorts of images to use in your Flash documents. The View menu has an option you can choose to display a grid to help you draw. As you draw, you can connect lines with other lines and shapes to create an image.

You can edit or modify a line segment by adjusting its length or reshaping its curve. By editing line segments, you can change the appearance of your drawing. For example, you might want to change the angle of a line or extend a line to make it longer.

You can edit any line segment by altering its endpoints. Dragging an endpoint shortens or lengthens the line. Unlike other editing techniques, you do not need to select the line to modify its endpoints.

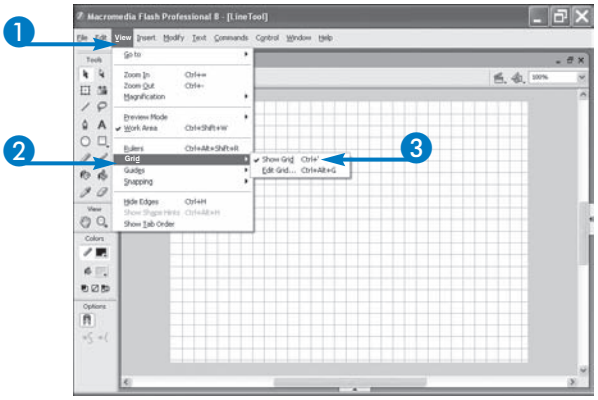
You can curve a line by dragging the area between the line's endpoints. Depending on the direction you drag, the line bends along with the pointer.

Draw with the Line Tool

Show grid

1. Click View.
2. Click Grid.
3. Click Show Grid.

   The grid appears on the Stage.

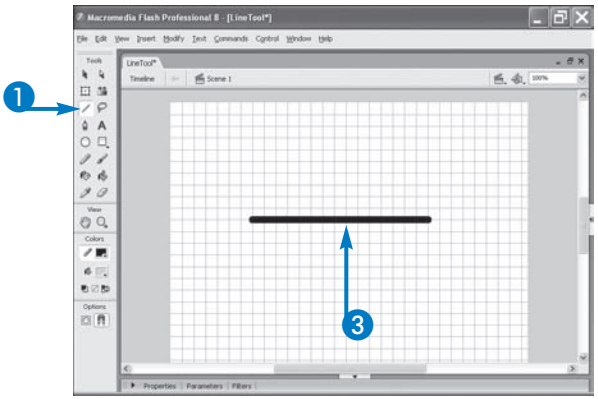


Draw a straight line

1. Click the Line tool (⟋).
2. Move the mouse pointer to the Stage.

   The mouse pointer changes to (+).
3. Click and drag to draw a line of the desired length.
4. Release the mouse button.

   The line is complete.



Change the length of a line

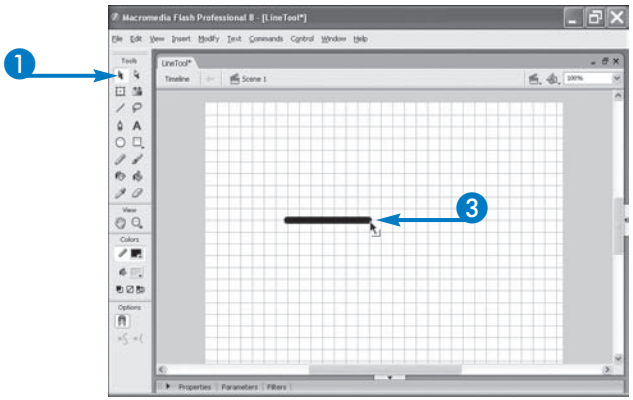
1. Click the Selection tool ( ).
2. Position the mouse pointer over the end of the line.

Note: *Do not click the line to select it.*

The mouse pointer changes to .

3. Click and drag the end of the line to shorten or lengthen the segment.
4. Release the mouse button.

Flash resizes the line.



Curve a line

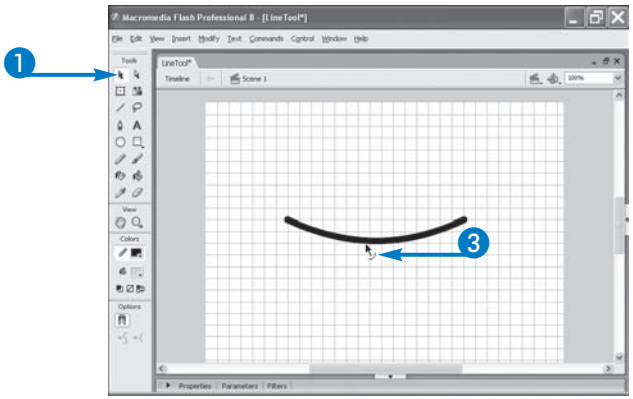
1. Click .
2. Position the mouse pointer over the area of the line that you want to curve.

Note: *Do not click the line to select it.*

The mouse pointer changes to .

3. Click and drag the line to add or reshape the curve.
4. Release the mouse button.

Flash curves the line.



How do I control line thickness?

You can set line thickness before you start drawing a line. The Property inspector displays options for controlling line thickness, style, and color. To change the thickness, drag the thickness slider up or down. You can apply a new line thickness to an existing line by selecting the line and then adjusting the slider.

When I draw with the Line tool, why does Flash connect the lines?

You may have the Snap to Objects option selected. To deselect the Snap to Objects option, click View and then click Snapping. If you see a check mark next to Snap to Objects, click Snap to Objects to deselect this option.

How do I keep a straight line vertical or horizontal?

To keep a line vertical or horizontal, click the Line tool, press and hold Shift, and draw a line that is as close as you can make it to vertical or horizontal. Flash makes the line perfectly vertical or horizontal for you.

Can I use rulers and guides to help me draw?

Flash has two features to help you draw: rulers and guides. To turn the rulers on, click View and then Rulers. Horizontal and vertical rulers appear around the workspace. To place guides on the Stage, click on the vertical or horizontal ruler and drag your mouse toward the Stage.

Draw with the Pencil Tool

You can use the Pencil tool to draw as if you were drawing with a pencil. The Pencil tool has three modes that control how a line is drawn: Straighten, Smooth, and Ink.

When you select the Straighten mode, any line you draw on the Stage straightens itself after you release the mouse button. When you select the Smooth mode, your curved lines appear smooth. When you select the Ink mode, the line you draw stays as is; no straightening or smoothing occurs.

The Smooth feature can take a curved line and smooth it as much or little as you need. Use the Smooth feature to smooth out rough corners or edges on a line or curve.

The Straighten feature turns a line with curves into a straight line. As with the Smooth feature, you can apply the Straighten feature as much as you need. Keep in mind that you can straighten only rough and curved lines — straightening an already straight line has no effect.

In addition to the Smooth and Straighten options on the Tools panel, you can also find the commands for smoothing and straightening on the Modify menu, the Main toolbar, and in the Property inspector.

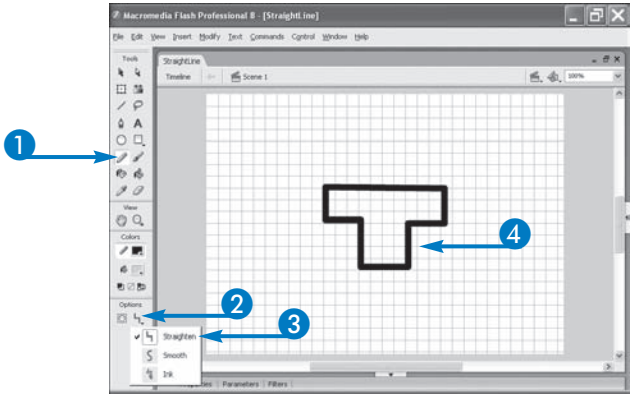
Draw with the Pencil Tool

Draw a straight line

1. Click the Pencil tool ( ).
2. Click the Line modifier button.

   A pop-up menu appears.
3. Click the Straighten Pencil mode ( ).
4. Click and drag to draw lines on the Stage.

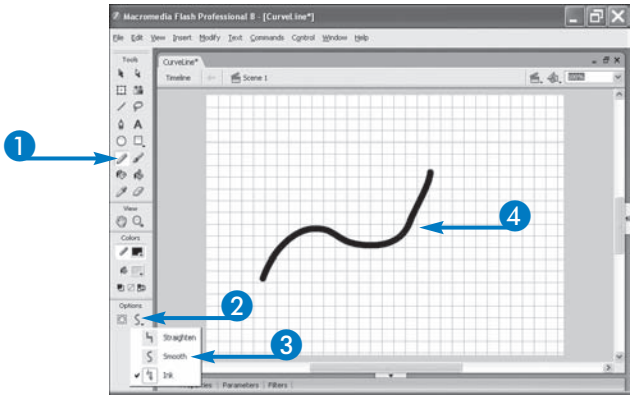
   Flash straightens the lines you draw.



Draw a smooth line

1. Click .
2. Click the Line modifier button.
3. Click the Smooth Pencil mode ( ).
4. Click and drag to draw curved lines on the Stage.

   Flash smoothes the curves.



Draw an ink line

1. Click .
2. Click the Line modifier button.
3. Click the Ink Pencil mode ( ).
4. Click and drag to draw ink lines on the Stage.

   Flash does not modify your line.

Smooth an existing line

1. Click .
2. Click the line you want to smooth.
3. Click the Smooth button ( ).

   Flash smoothes the line.

   Each time you click Flash smoothes the line a bit more.

   You can continue clicking until you get the desired effect.

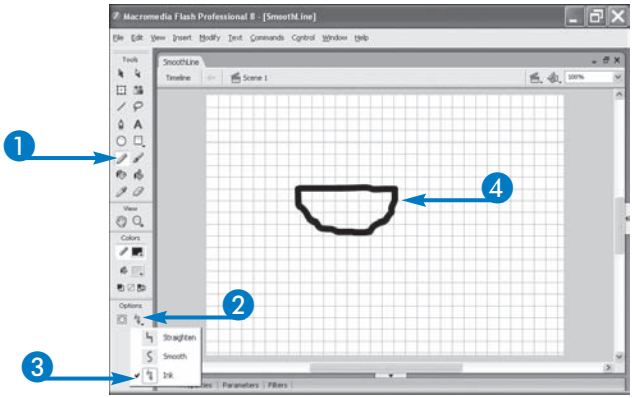
Straighten an existing line

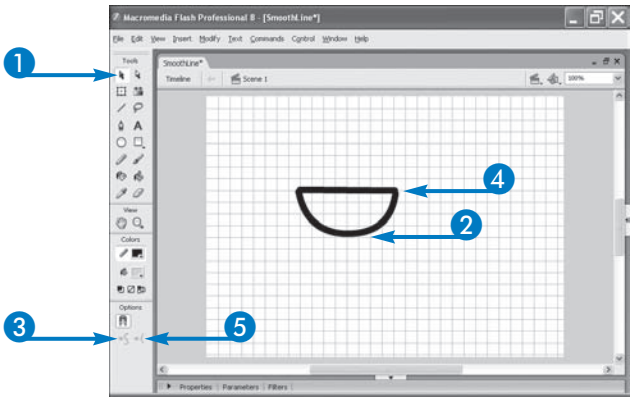
4. Click the line you want to straighten.
5. Click the Straighten button ( ).

   Flash straightens the line.

   Each time you click Flash straightens the line a bit more.

   You can continue clicking until you get the desired effect.





MASTER IT

Should I use the set of Smooth and Straighten options on the Tools panel, the Main toolbar, or the main menu?

You can use whichever set you want. When you click the Selection tool, Flash makes the Smooth and Straighten buttons available to you on the Options tray and the Main toolbar. To display the Main toolbar, click Window, Toolbars, and then Main. You can also smooth by clicking Modify, Shape, and then Smooth, or you can straighten by clicking Modify, Shape, and then Straighten on the main menu. You can apply the Smooth and Straighten options multiple times to the same line. Keep applying Smooth or Straighten until you get the effect you want.

Can I adjust the amount of smoothing that occurs?

Yes. You can adjust the setting for smoothing lines by using the Preferences dialog box. Click Edit and then Preferences to open the Preferences dialog box. In the Category box, click Drawing. Click in the Smooth Curves field and then click one of the following options: Off, Rough, Normal, or Smooth.

What is the purpose of the Optimize Curves dialog box?

The Optimize Curves dialog box provides you with another way to smooth curves: by reducing the number of curves. Open the Optimize Curves dialog box by clicking Modify, Shape, and then Optimize. The Smoothing slider determines the amount of smoothing Flash applies.

Draw with the Oval and Rectangle Tools

You can use the Oval and Rectangle tools to draw circles, ovals, squares, and rectangles. To draw a perfect circle or a perfect square, select the Oval or Rectangle tool and hold down the Shift key as you click and drag on the Stage.

The Oval tool can create oval or circular shapes. You can overlap the shapes to create more shapes. The Rectangle tool can create square or rectangular shapes. These also can be overlapped to make more shapes.

By default, objects you draw with the Oval and Rectangle tools consist of a stroke and a fill. The stroke outlines the object; the fill is the color, gradient, or bitmap that fills the inside of the object. By default, Flash uses the currently selected fill and stroke colors. You can turn the Fill or Stroke off or choose another color from the Fill or Stroke Color palette.

You can also change the fill or stroke color later. See the section "Fill Objects with the Paint Bucket Tool" to learn more about changing the fill. See Chapter 19 for more information about editing both strokes and fills.

Draw with the Oval and Rectangle Tools

Draw a stroked shape

1. Click the Oval ( ) or Rectangle ( ) tool.

Note: *If the Rectangle tool is not visible on the Tools panel, click and hold the mouse over the PolyStar tool until a pop-up menu opens, and then click the Rectangle tool.*

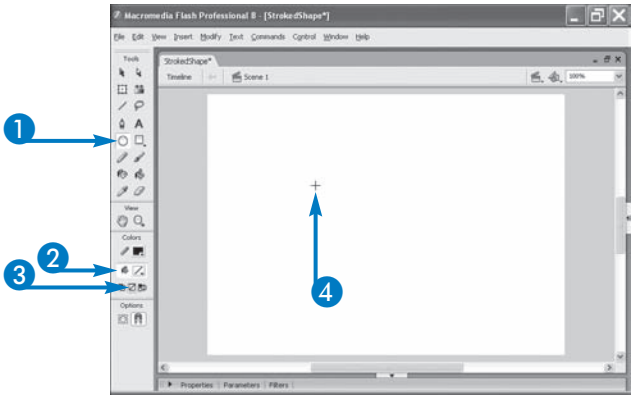
2. Click the Fill Color icon ( ).
3. Click the No Color icon ( ).
4. Move the mouse pointer over the Stage.

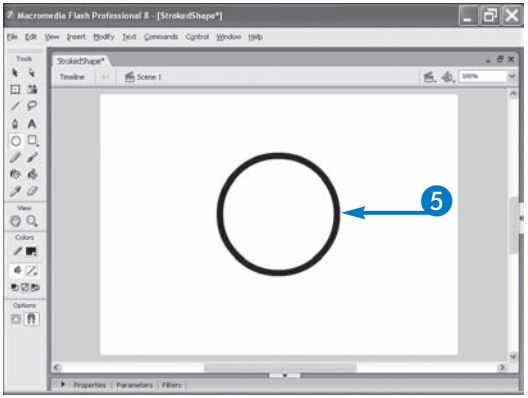
   The mouse pointer changes to +.
5. Click and drag to draw the shape you want.

Note: *To draw a perfect circle or square, press and hold Shift as you draw the shape.*

6. Release the mouse button.

   Flash creates the shape.



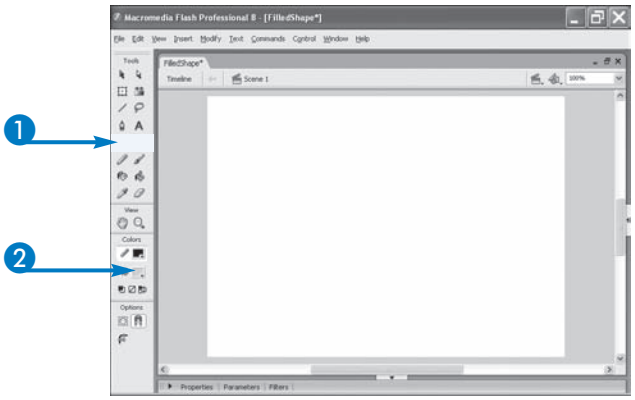


Draw a filled shape

1. Click ○ or □.

Note: *If the □ is not visible on the Tools panel, click and hold the mouse down over the PolyStar tool until a pop-up menu opens, and then click □.*

2. Click the Fill color box ( ).



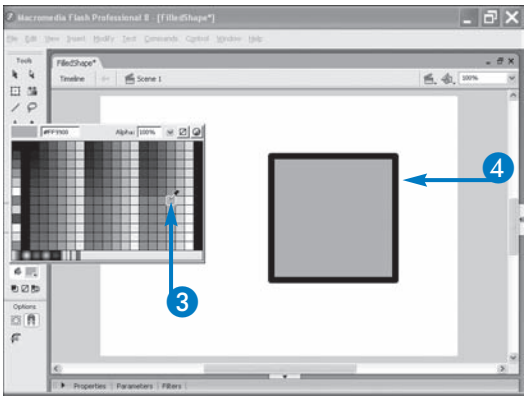
The Fill Color palette opens.

3. Click a fill color.
4. Click and drag to draw the shape.

Note: *To draw a perfect circle or square, press and hold Shift as you draw the shape.*

5. Release the mouse button.

Flash creates the shape.



Can I automatically create a rectangle or oval of a predetermined size?

Yes. You can use the Rectangle Settings or Oval Settings dialog box to create ovals and rectangles of a preset size. In the Rectangle Settings dialog box, you can also specify a corner radius. To open the Rectangle or Oval Settings dialog box, click ○ or □ and then Alt+click (Option+click) on the Stage. The Settings dialog box appears. Type the desired width, height, and, if applicable, the radius. When you click OK, Flash places the oval or rectangle at the location you clicked on the Stage.

How do I draw a rectangle with rounded corners?

Click the Rectangle tool and then click Set Corner Radius in the Options area of the Tools panel. The Rectangle Settings dialog box appears. Type a corner radius setting, such as 20, and click OK. Draw your rounded corner rectangle. To draw regular corners again, type **0** as the radius setting.

I cannot find the Rectangle tool. Where is it?

The Rectangle tool shares a spot on the Tools panel with the PolyStar tool. If the PolyStar icon is visible on the Tools panel, you must click the PolyStar icon and hold down the mouse to display a pop-up menu. You can then click the Rectangle icon to activate the Rectangle tool.

Draw with the Brush Tool

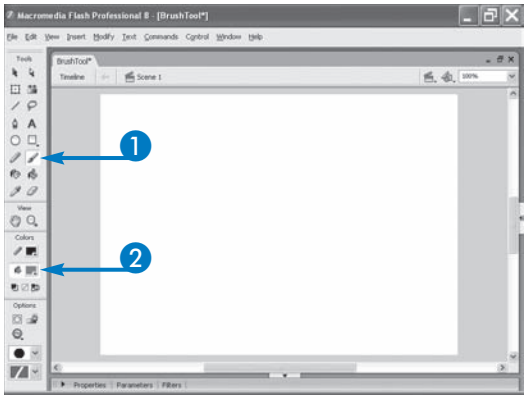
You can use the Brush tool to draw brush strokes, much like using a paintbrush. You can use brush strokes to create a variety of images. You can also control the size and shape of the brush as well as how the brush strokes appear on the Stage.

The Brush tool is handy when you want to draw varying sizes of freeform strokes on the Stage. You can choose a specific color to use with the Brush tool by first selecting a color from the Fill Color palette.

After you select the Brush tool, several Brush modifiers appear in the Options tray at the bottom of the Tools panel. You can use the Brush Shape modifiers to change the brush shape and the Brush Size modifiers to change the brush size. For example, you can use some of the brush shapes to create calligraphy effects, and you can modify the sizes to create large brush strokes or small brush strokes. With the Brush Mode modifier, you can choose to paint behind or in front of an existing shape on the Stage. Be sure to test all the Brush tool modifiers to see the interesting effects you can create.

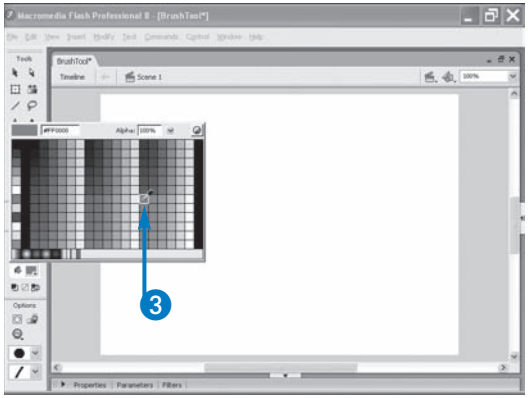
Draw with the Brush Tool

1. Click the Brush tool ( ).
2. Click .



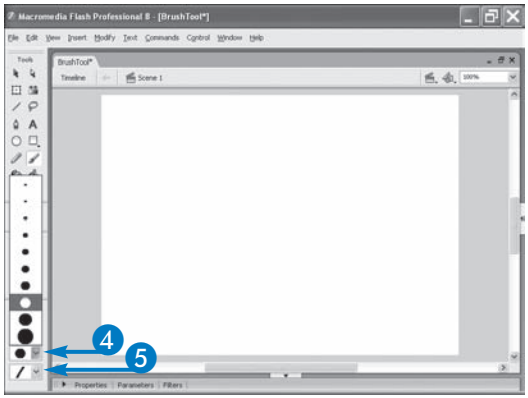
The Fill Color pallet opens.

3. Click a fill color.



4 Click here and then select a brush size.

5 Click here and then select a brush shape.

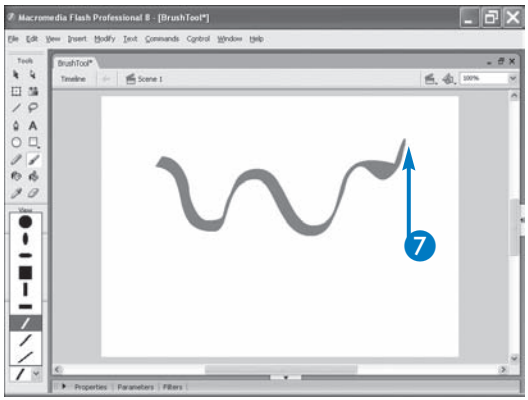


6 Move your mouse pointer over the Stage.

The mouse pointer is the brush size and shape you selected.

7 Click and drag to draw.

Flash creates a brush fill as you draw.



What do the brush modes do?

You find the five brush modes by clicking the Brush Mode button at the bottom of the Tools panel. Paint Normal lets you paint over anything on the Stage. Paint Fills paints inside fills but not on strokes. Paint Behind paints beneath existing objects on the Stage. Paint Selection paints only inside the selected area. If strokes surround an area, Paint Inside only paints inside the area in which the brush stroke begins.

How do I use the Brush tool with a pressure-sensitive tablet?

If you use a pressure-sensitive tablet to draw, you see an extra modifier for the Brush tool at the bottom of the Tools panel. Use the Pressure modifier to activate a finer degree of sensitivity in the Brush tool when drawing. You can toggle this feature on or off.

Can I smooth and straighten objects drawn with the Brush tool?

Yes. Objects you draw with the Brush tool are fills.When you use the Selection tool to select a fill, the Smooth and Straighten options become available to you on the Tool Options tray, Main toolbar, and main menu. You can use these options to smooth and straighten fills.

Draw with the Pen Tool

You can draw straight lines and smooth curves by using the Pen tool. This tool takes some getting used to, but with a little practice, you can draw like a pro.

The quickest way to draw curved lines is to drag the Pen tool, along with its curve bar, on the Stage. The *curve bar* is a straight line with solid points at both ends. You can rotate the curve bar to create different types of curves. The key to creating just the right curve is learning to drag the curve bar in the correct direction. This takes a bit of practice.

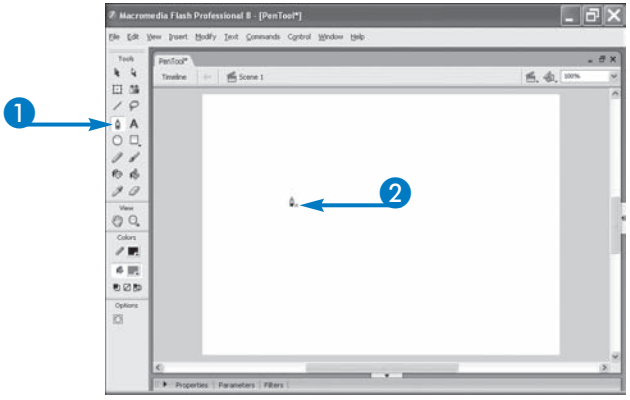
Lines you create with the Pen tool are composed of points. The points appear as dots on the line segment and represent changes in the line's curve. To keep adding to the line, keep clicking away from the end of the line, thus adding to the line.

If you create a loop in the line, Flash immediately fills the closed loop with the fill color. If you do not want a fill color in a loop, be sure to set the Fill Color to No Color before drawing with the Pen tool.

Draw with the Pen Tool

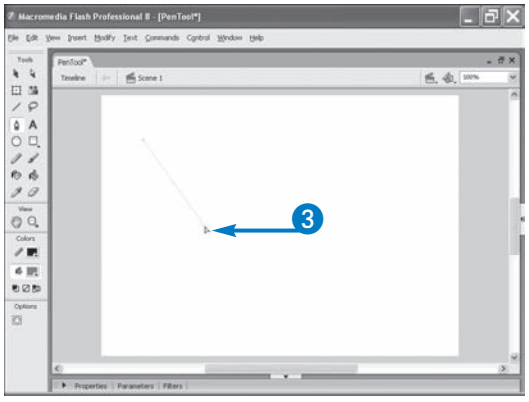
1. Click the Pen tool ( ).
2. Position the mouse pointer over the Stage.

   The mouse pointer changes to .



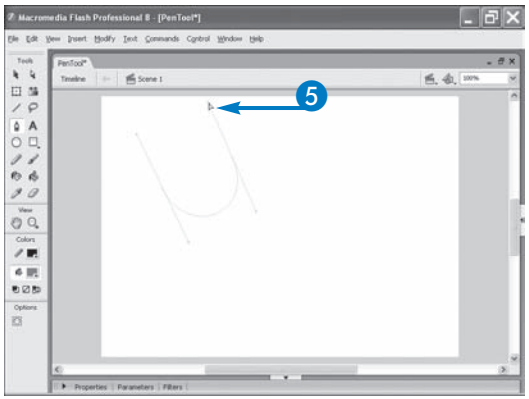
3. Click and drag.

   A curve bar appears.



4. Stop dragging and release the mouse button.
5. Click and hold down the mouse button as you drag the curve bar where you want the line to end.

   You can rotate the curve bar by dragging the mouse pointer to achieve the bend and line length you want for the curve.

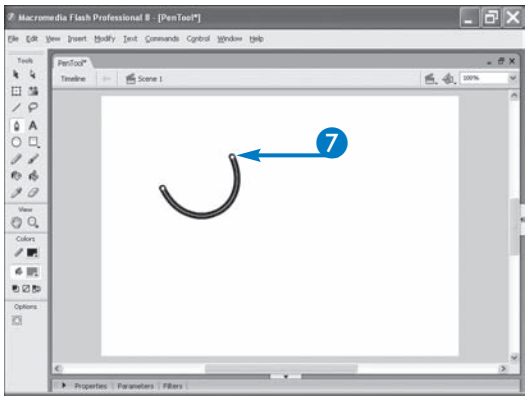


6. Release the mouse button.
7. Double-click the endpoint to end your drawing.

   The curved line appears on the Stage.

   Click the Stage to add more curves to an existing line.

   Click another tool to deactivate the Pen tool.



Can I customize the Pen tool?

Yes. You can use the Preferences dialog box to control how the tool's pointer appears, how lines display, and how line points display. Click Edit and then Preferences (Flash and then Preferences) to open the Preferences dialog box. In the Category box, click Drawing. The Pen tool options are at the top of the dialog box. Click Show Pen Preview if you want to see the resulting line segment as you draw. Click Show Solid Points if you prefer to see line points as solid dots. Click Show Precise Cursors to change the tool's pointer icon to a cross hair. Click OK to exit.

How can I edit the points of a stroke?

You can use the Subselection tool to make changes to strokes you have created with drawing tools. Click the Subselection tool and position the mouse pointer over an edit point on the line or at the end of the line. Drag to reposition and reshape the line or curve.

Is there a way to create perfectly straight lines by using the Pen tool?

Yes. To create a perfectly straight line while using the Pen tool, press and hold Shift as you click and drag. You can also press and hold Shift while dragging the Pen tool to keep the lines at a 45-degree angle.

Fill Objects with the Paint Bucket Tool

You can use the Paint Bucket tool to fill objects, such as shapes and outlines. You can fill objects with a color, a gradient effect, or even a bitmap image. The Flash Color palette comes with numerous colors and shades, as well as several built-in gradient effects to choose from.

The Paint Bucket tool uses the same Fill Color palette as the other drawing tools. The palette shows all the available colors plus some gradients. Color palettes are a common feature among most drawing programs, so if you have used a Color palette with other programs, you will find that the Flash Color palette works in much the same way.

When you select a color from the palette, you can then fill the inside of any closed shape with the selected color, gradient, or bitmap. If you try to fill a shape that is not closed or that has gaps in the line segments comprising the shape, you need to close the gaps before you fill the shape. Likewise, you cannot use the Paint Bucket to add color to the document background. You must set a background color using the Document Properties dialog box.

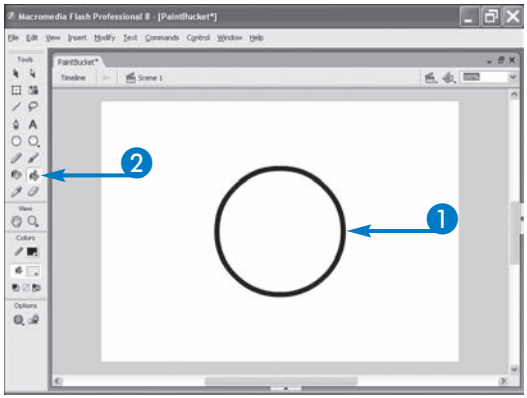
Fill Objects with the Paint Bucket Tool

Add a fill

1. Draw the object you want to fill.

Note: *See other sections of this chapter to learn how to use the drawing tools.*

2. Click the Paint Bucket tool ( ).

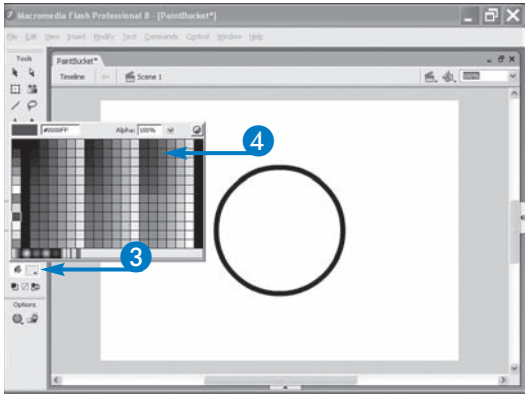


3. Click .

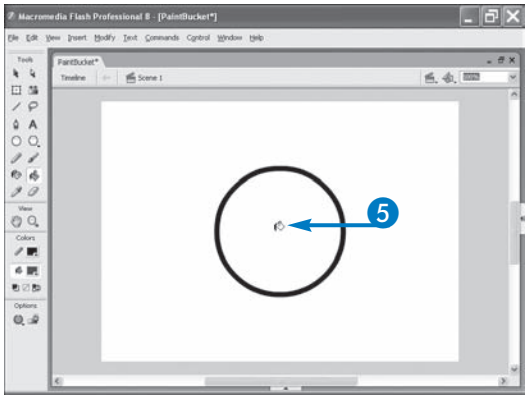
   The Fill Color palette opens.

4. Click a fill color.

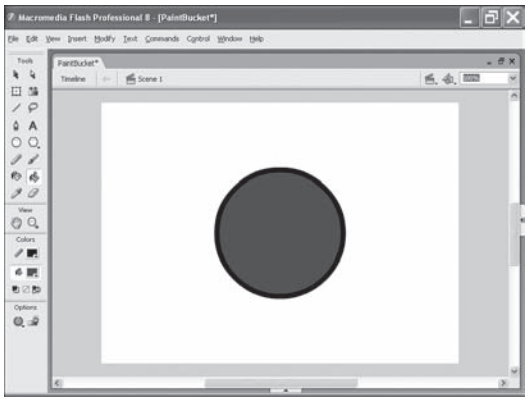
   The mouse pointer changes to a pail.



5 Click inside the shape you want to fill.



The color fills the shape.



MASTER IT

How do I use the Paint Bucket to fill an object with a gradient or bitmap?

A gradient is a color effect in which colors blend into each other. To learn more about gradients, see the section "Create and Use Gradients." To fill with a gradient, select the gradient from the Fill Color palette and use the Paint Bucket to fill your object.

To use the Paint Bucket to fill with a bitmap, you must first break the bitmap apart. After you break the bitmap apart, select the bitmap and then use the Paint Bucket to fill your object. To learn more about bitmap fills, see the section "Turn Bitmaps into Fills."

What does the Gap Size modifier do?

When you select the Paint Bucket tool, the Gap Size modifier appears on the Options tray at the bottom of the Tools panel. Click the Gap Size icon to display a menu list of settings. Normally, the Paint Bucket does not fill your object if there are gaps between line segments. The Gap Size modifier determines what types of gaps Flash should close for you, thereby allowing the Paint Bucket to create fills. You can have Flash not close any gaps, close small gaps, close medium gaps, or close large gaps. If the gaps are extremely large, you may have to close them manually.

Draw with the PolyStar Tool

Using the PolyStar tool, you can draw multisided objects — *polygons* — or you can draw stars. The PolyStar tool shares a spot on the Tools panel with the Rectangle tool. If the Tools panel displays the Rectangle icon, you must click the Rectangle icon and hold down the mouse to display a pop-up menu. You can then click the PolyStar icon to activate the PolyStar tool.

You use the Tool Settings dialog box to set the options for the PolyStar tool, such as choosing whether you want to draw a star or a polygon and the number of sides or points you want. Open the Tool Settings dialog box by clicking Option in the Property inspector. The polygons and stars you draw can have between 3 and 32 sides or points.

If you are drawing a star, you can also choose the depth of your star points. Your star points can have a depth between 0 and 1. The lower the depth, the more pointed your star points will be.

Polygons and stars consist of a stroke and a fill. By default, they use the currently selected stroke and fill colors.

Draw with the PolyStar Tool

Draw a polygon

1. Click the PolyStar tool ( ).

Note: *If the Tools panel does not display , click and hold the mouse down over until a pop-up menu appears, and then click .*

2. Open the Property inspector.

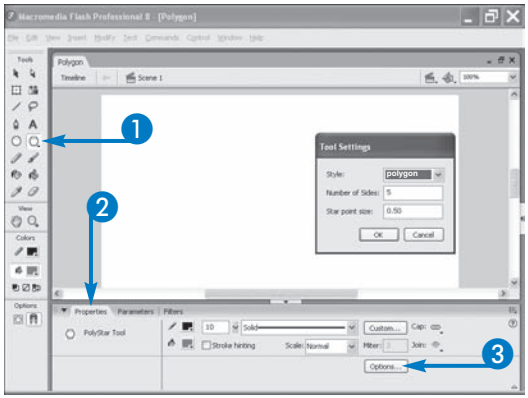
Note: *See Chapter 17 to learn how to open and close the Property inspector.*

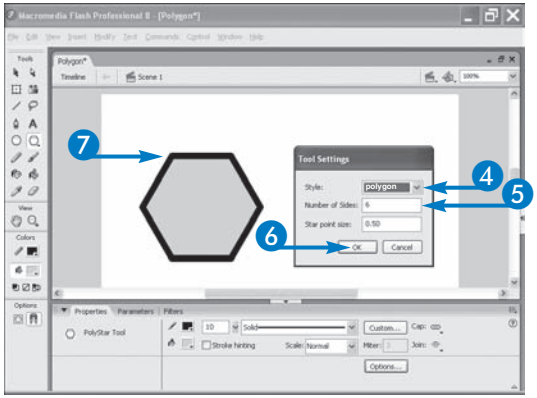
3. Click the Options button.

   The Tool Settings dialog box opens.

4. Click here and then select Polygon.
5. Type the number of sides you want your polygon to have.
6. Click OK.
7. Click and drag on the Stage to create your polygon.

   Flash creates your polygon.





Draw a star

1. Click ▭.

Note: *If ▭ does not appear on the Tools panel, click and hold the mouse down over ▭ until a pop-up menu opens, and then click ▭.*

2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

3. Click Options.

   The Tool Settings dialog box appears.

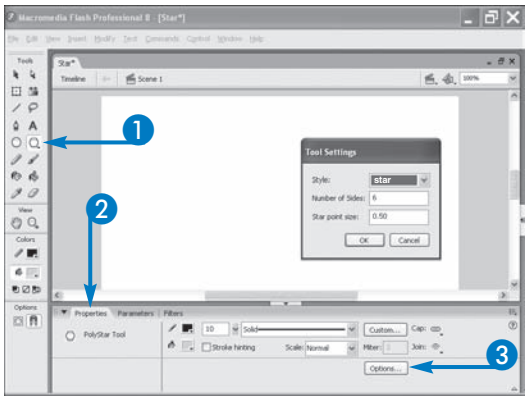
4. Click here and then select Star.
5. Type the number of points you want your star to have.
6. Type a star point depth.

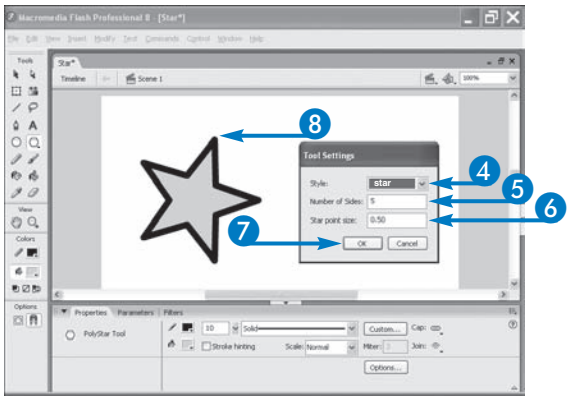
   Your star points can have a depth between 0 and 1.

Note: *The lower the depth, the more pointed your star points will be.*

7. Click OK.
8. Click and drag on the Stage to create your star.

   Flash creates your star.





PART V

MASTER IT

Can I change the stroke and fill colors associated with polygons and stars?

Yes. You can use the Stroke and Fill color boxes located on the Tools panel or the Stroke and Fill color boxes located in the Property inspector to set the stroke and fill color before you begin drawing your polygon or star.

After you draw your polygon or star, you can use the color boxes on the Tools panel or in the Property inspector to change the stroke and fill colors. You can also use the Paint Bucket tool to change the fill color and the Ink Bottle tool to change the stroke color.

What can I do to make sure that I align my polygon or star with a vertical or horizontal line?

To ensure that you align your polygon or star with a vertical or horizontal line, press and hold Shift as you click and drag to create your polygon or star.

What effect does the Point Size field have on a polygon?

The Point Size field has no effect on polygons. When you click the PolyStar tool and then click Options in the Property inspector, the Settings dialog box opens. You use the Point Size field to set the length of the points of the stars you create.

Using the Eraser Tool

You can use the Eraser tool to erase objects and mistakes in drawings, or you can use it to draw new shapes within an object. The Eraser tool does not really draw or paint: it eliminates drawings or parts of drawings from the Stage.

The Eraser tool has several modifiers you can use to control how the tool works. You can use the Eraser Shape modifier to specify the size and shape of the Eraser. For example, perhaps you need to erase a small portion of a line at the edge of a drawing. Such a task requires a small Eraser. A large Eraser may erase parts of your drawing that you do not want to erase. With the Faucet modifier, you can limit what you erase to a stroke or a fill.

You can use the Eraser tool to erase both strokes and fills. You cannot erase grouped objects, symbols, or text blocks unless you first apply the Break Apart command.

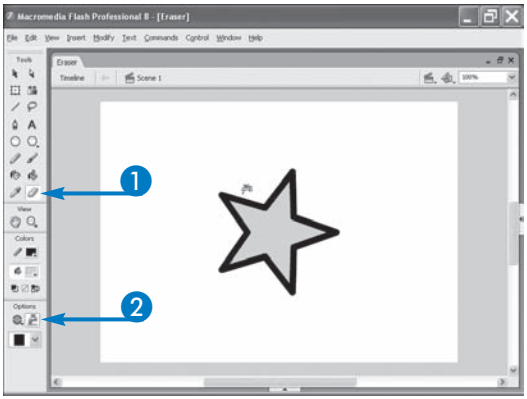
If you want to erase everything on the Stage, double-click the Eraser tool. If you accidentally erase part of the drawing, you can apply the Undo command to reverse the action.

Using the Eraser Tool

Erase a stroke or fill

1. Click the Eraser tool ( ).
2. Click the Faucet modifier ( ).

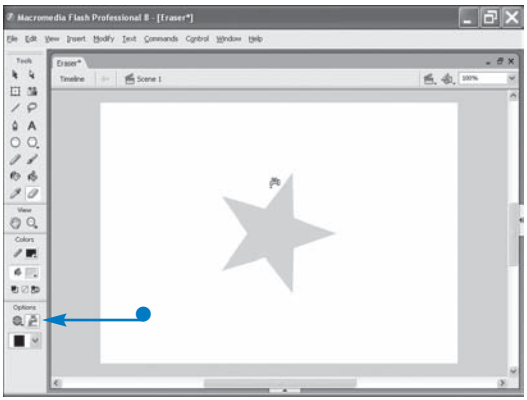
   Your mouse pointer changes to .



3. Click the item you want to erase — either the stroke or the fill.

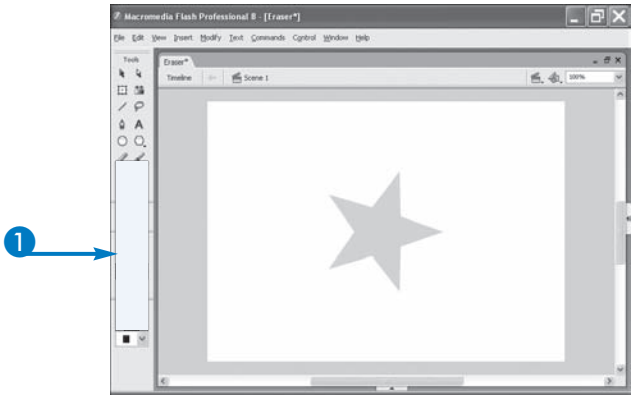
   Flash erases the stroke or the fill, whichever you chose.

   - Click again to toggle off the Faucet modifier.



Erase an area

1. Click here and then select an eraser size.



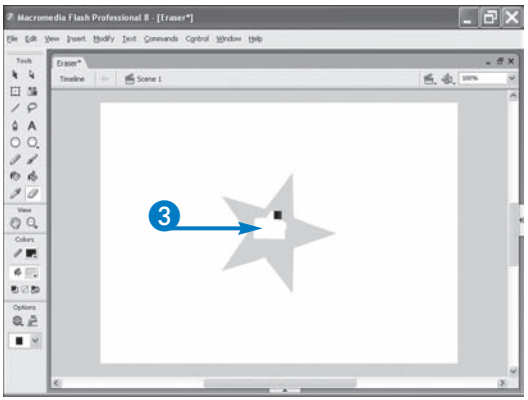
2. Position the mouse pointer over the object you want to erase.

   Your mouse pointer changes to the shape you selected.

3. Click and drag to begin erasing.

4. Release the mouse button when you finish erasing.

   The area over which you dragged is erased.



MASTER IT

How does the Eraser differ from a white fill?

When you use the Eraser tool, you literally erase strokes and fills from the Stage. If you set the color of your Stage to white and then paint with the Brush tool using the white fill color, you are not erasing but rather adding an object to the Stage. Even though you cannot see the object because you have painted it white and it blends with the Stage background color, the object is still there, and you can select and manipulate it. When you erase something from the Stage, Flash permanently removes it.

What do the Eraser modifiers do?

The Eraser tool has five modifiers: Erase Normal, Erase Fills, Erase Lines, Erase Selected Fills, and Erase Inside. Click the Eraser Mode button in the Options tray at the bottom of the Drawing toolbar to view the five modifiers. Erase Normal lets you erase anything on the Stage. Erase Fills erases inside fill areas but not strokes. Erase Lines erases only strokes. Erase Selected Fills erases only the selected fill. If you choose Selected Fills and begin erasing from an empty area, Flash does not erase anything. If strokes surround an area, Erase Inside only erases inside the area in which the brush stroke begins.

Format Strokes

You can quickly format or change the attributes of strokes. By default, strokes are solid black and one point thick with a round cap and a round join. You can control the thickness, style, color, cap, and join of a stroke by using the formatting controls found in the Property inspector.

The cap option determines what Flash places at the end of your stroke. The options are None, Round, or Square. The Join option determines how Flash joins strokes. The options are Miter, Round, or Bevel.

You can set the formatting options before you create a stroke, or you can assign formatting to an existing stroke.

For example, you might want to change the formatting for a particular line segment in a drawing, or you might want to draw a new line that is precisely 5 points thick and dashed. Use the Property inspector options to set your formatting.

You can use the options in the Property inspector to set the formatting of strokes you draw with the Line, Pen, or Pencil tool and any outline you create with the Oval, Rectangle, or PolyStar tools. Depending on the tool you select, the options that appear in the Property inspector vary.

Format Strokes

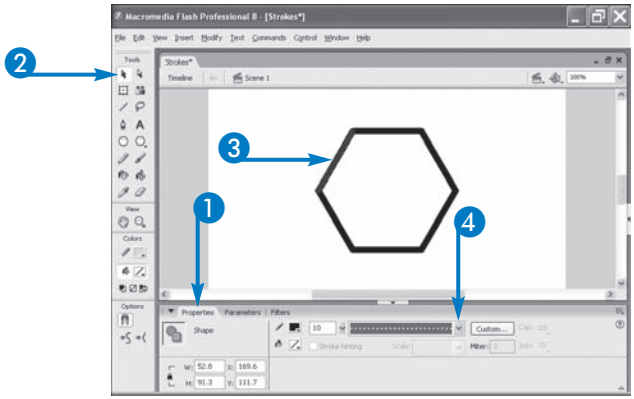
1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

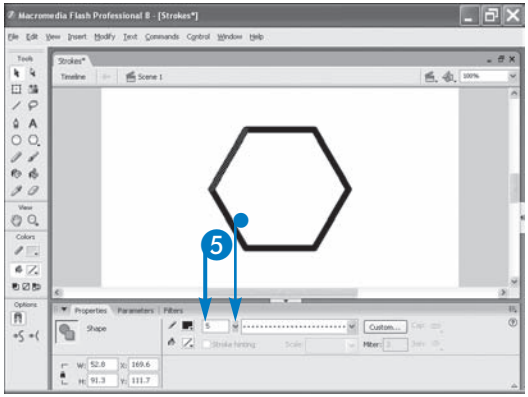
2. Click .
3. Select the line segment you want to format.

Note: *See Chapter 19 to select objects on the Stage.*

4. Click here and then select a stroke style.



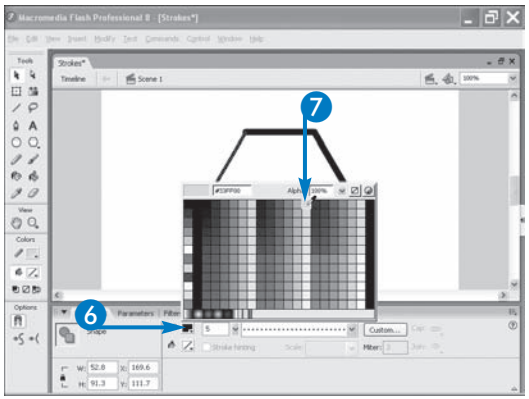
5. Type a line thickness.
   - Alternatively, you can click here and drag the slider to set the thickness.



6 Click the Stroke color box ( ).

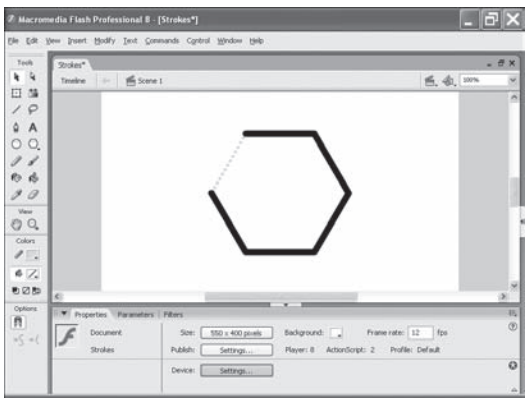
The stroke Color Pallet opens.

7 Click a color in the palette.



8 Click the Stage.

The line changes to your specifications.



What are caps and joins?

You can use the Property inspector to set the cap and join options. When you create a stroke, the cap option you select determines how the ends of your stroke appear on the Stage. Choosing None causes the ends of your stroke to be blunt. The stroke is square and ends where you stop dragging the tool. Choosing round adds a round end to your stroke. Choosing Square adds a square end to your stroke.

The Join option determines what appears when two strokes intersect to form a corner. Miter creates a squared-off intersection, Round creates a rounded intersection, and Bevel creates an angled intersection.

Can I set the formatting options before actually drawing a line segment?

You can set the formatting options in the Property inspector before you start drawing your line segment. If you know you want to draw a 10-point green line, you can set the formatting before you draw. The Property inspector settings stay in effect until you change them.

How do I select all the strokes on the Stage so that I can change the formatting of every stroke?

Right-click (Ctrl-click) over a line segment, and then click Select All from the pop-up menu. Flash selects everything on the Stage and any changes you make to the formatting of strokes affects all the strokes in the frame.

continued

Format Strokes
(Continued)

You can select a stroke style and customize its appearance by using the options in the Stroke Style dialog box. You activate the Stroke Style dialog box by clicking Custom in the Property inspector. This dialog box offers a variety of stroke styles ranging from dots to dashes to waves, thus allowing you to create unique or specialized stroke styles. With the options in the Stroke Style dialog box, you can specify the thickness of your stroke as well as how closely or loosely the dots or dashes appear, thus creating a multitude of line styles for your line segments.

Depending on the style you select, such as Dotted or Ragged, additional customizing options appear in the Stroke Style dialog box. For example, if you choose a Ragged line style, you can additionally set the wave pattern, height, length, and thickness.

In the preview area of the Stroke Style dialog box, you can see an example of what the selected options will look like when applied to a stroke. Experiment with the various dialog box settings to create just the right line style for your Flash drawing.

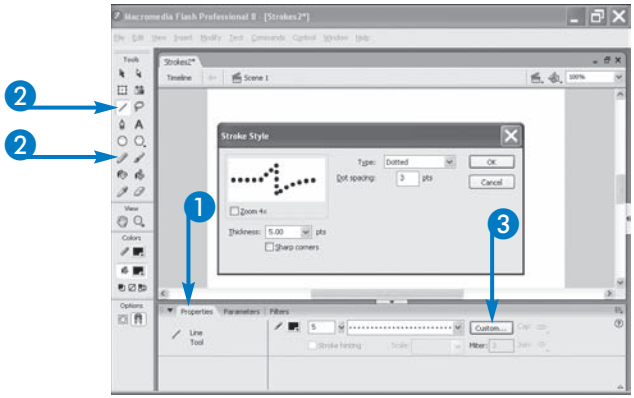
Format Strokes *(continued)*

1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

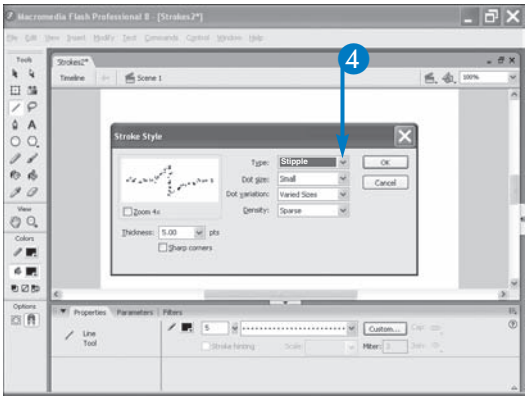
2. Click ⊘ or ⊘.
3. Click the Custom button.

   The Stroke Style dialog box appears.



4. Click here and then select a line type.

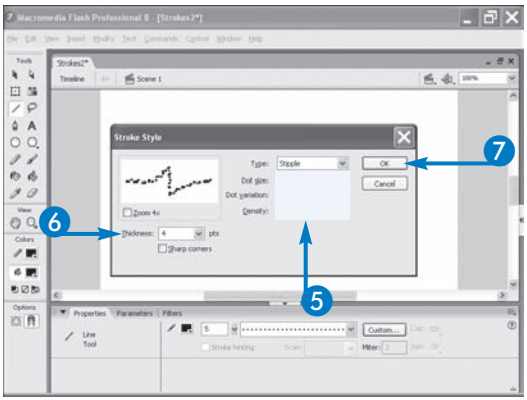
   Depending on the type you select, additional customizing options may appear.



5 Set your customizing options.

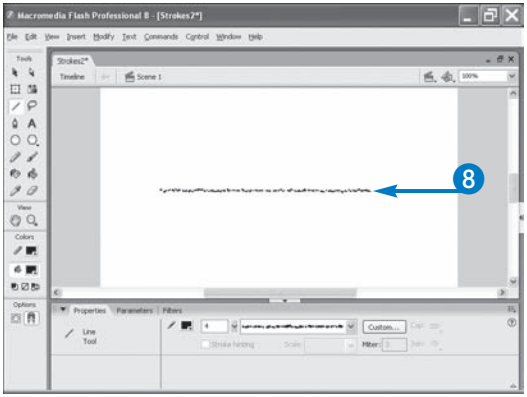
6 Click here and then select a thickness

7 Click OK.



8 Click and drag to draw your custom line on the Stage.

The line appears with your specifications.



MASTER IT

Can I convert a stroke to a fill?

You can expand the size of a fill by converting the strokes that surround it to a fill. After you convert the surrounding strokes to a fill, you can use the Expand Fill dialog box to expand the fill further or the Soften Fill dialog box to soften its edges.

To convert a stroke to a fill, select the stroke and then click Modify, Shape, and then Convert Lines to Fills on the main menu. To Expand a Fill, click Modify, Shape, and then Expand Fill on the main menu. To Soften Fill Edges, click Modify, Shape, and then Soften Fill Edges on the main menu.

Can I turn off the shape recognition feature?

Yes. By default, Flash's shape recognition feature tries to determine what type of object you are drawing and makes the shape geometrically perfect. For example, if you attempt to draw a three-sided figure by using the Pencil tool, Flash assumes that you want to draw a triangle and straightens the lines and perfects the shape. To keep Flash from doing so, click Edit and then Preferences. This opens the Preferences dialog box. In the Category box, click Drawing. In the Recognize Shapes field, choose from the four geometric shape recognition options — Off, Strict, Normal, and Tolerant — and then click OK to exit the dialog box.

Create and Use Gradients

You can use gradients to add interest, depth, and dimension to your Flash drawings. A *gradient* is a band of blended colors or shades of color. In Flash, you can use a gradient as a stroke or fill for any graphic.

By default, the Stroke and Fill Color palettes offer several gradients that you can use. You can choose from three vertical color bars, called *linear gradients*, and four circular gradients, called *radial gradients.* If you do not like the default choices, you can create your own linear and radial gradients.

You can save time if you plan which colors you want to use in a gradient and decide which type of gradient you want to apply. For example, if you want to create an illusion of depth and apply it to an interactive button you have created, experiment with a radial gradient. You can use a linear gradient to create the illusion of a gradually fading color.

This example shows you how to assign a default gradient from the Fill Color palette as well as how to create a new gradient. You can apply the steps in the example to any gradient.

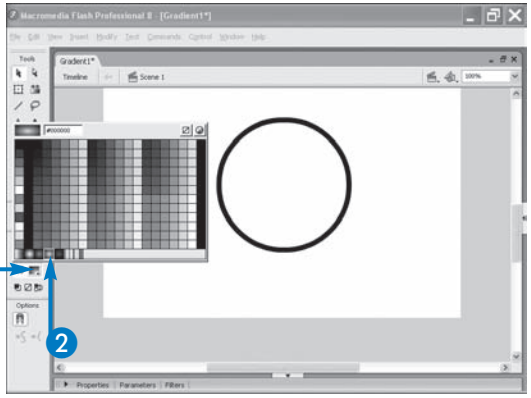
Create and Use Gradients

Assign a gradient

1. Click .

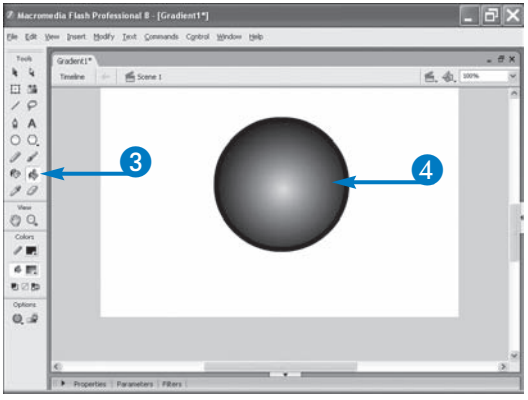
   The Color pallet opens.

2. Click a gradient.



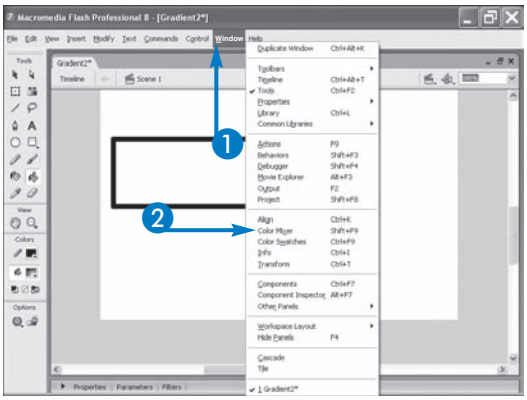
3. Click .
4. Click inside the shape you want to fill.

   The gradient fills the shape.



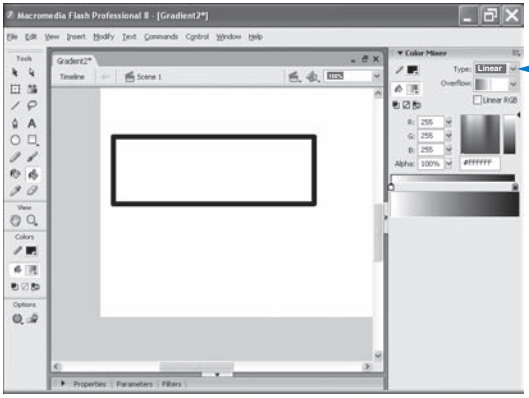
Create a new gradient

1. Click Window.
2. Click Color Mixer.



The Color Mixer panel opens.

3. Click here and then select Linear or Radial.



What exactly is a gradient?

The term *gradient* refers to an effect in which two or more colors graduate in color intensity from one color to another. For example, a two-color gradient might show the color red blending into yellow from the left to the right. The middle area of the gradient shows the subtle blending of the two colors. You can create linear gradients in Flash that blend colors from left to right. You can use gradients to create a three-dimensional appearance. You can also create a radial gradient that intensifies color from the middle to the outer edges or from the outer edges to the middle.

Can I use a gradient as a Brush color?

Yes. You can assign a gradient as the color you use with the Brush tool. You can choose a gradient from the Fill Color palette before you begin using the Brush tool, or you can use the Paint Bucket tool to fill the graphic after you draw the graphic.

Can I use a gradient as a Stroke color?

Yes. You can assign a gradient as the stroke color you use with the Line, Pen, Oval, Rectangle, or PolyStar tool. You can choose a gradient from the Stroke Color palette before you begin using a tool, or you can use the Property inspector to change a stroke.

continued

Create and Use Gradients *(Continued)*

Using the features on the Color Mixer panel, you can create your own unique gradient. You might like a certain color combination and arrangement for your gradient or you may need to match the colors of existing objects on a Web page. After you create a custom gradient, you can save it and access it again throughout your project or in future projects.

You can change the properties of a gradient by adjusting different colors and adding color markers to create several color bandwidths. Color markers are the tiny icons beneath the gradient bar in the Color Mixer panel. By dragging a marker on the gradient bar, you can create different shades of color, resulting in a gradient.

To get a feel for how the customizing works, start with one color and adjust the marker left and right across the color bar in the Color Mixer panel. After you create a gradient, you can save it as a swatch in the Color palette to reuse again. You can add and subtract additional color markers as needed to create just the right effect.

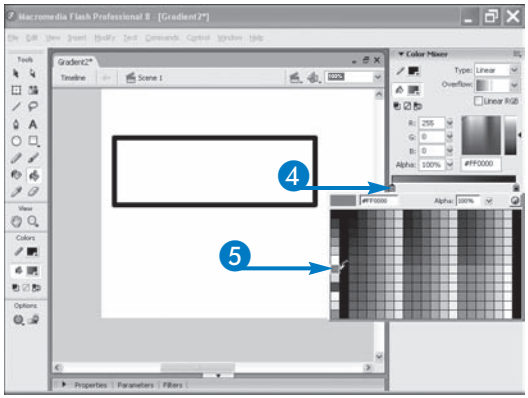
Create and Use Gradients *(continued)*

4. Double-click a color marker ( ).

   The Color Palette opens.

5. Click a color.

   The gradient bar changes color.

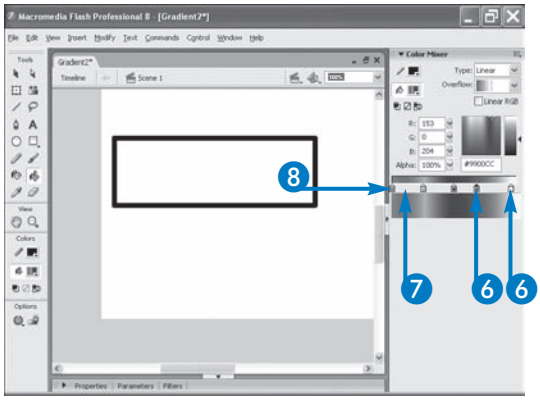


6. Drag the icons left or right to adjust the color intensity and bandwidth.

7. To add another to the gradient, click below the gradient bar.

8. To remove a , click and drag it off the panel.

   Flash creates a gradient.

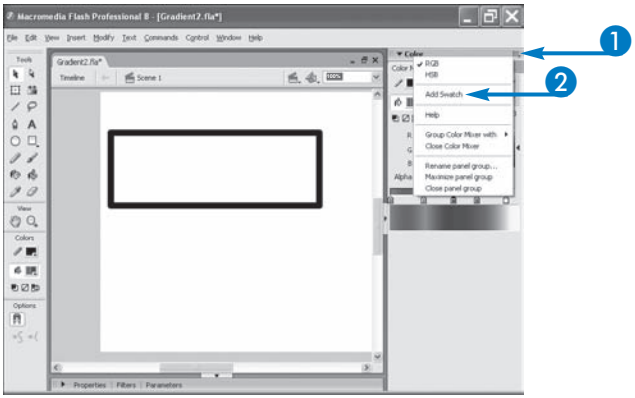


Note: *You can continue creating the gradient by adding color markers, assigning colors, and dragging the markers to change the intensity.*

Save the new gradient

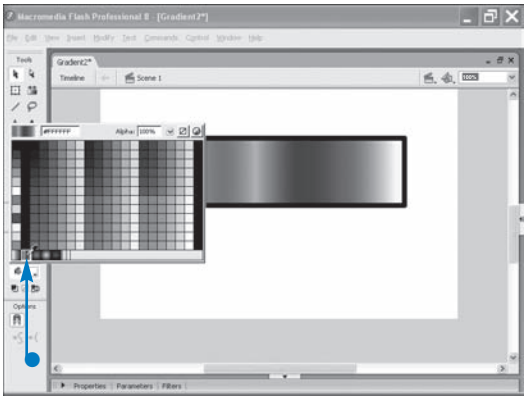
1. Click the Options menu ( ).
2. Click Add Swatch.

   Flash adds the gradient to the Stroke and Fill color boxes.



To view the new gradient in the palette, click or .

- The new gradient appears as a swatch in the Color palette, ready to use.



How do I control where the highlight in the center of a radial gradient appears?

You control where the highlighted center of a radial gradient fill appears when using the Paint Bucket tool by where you click on the shape. Click left of center to make the fill highlight appear on the left, click right of center to make the fill highlight appear on the right, and click the center to make the fill highlight appear in the center.

Can I make changes to an existing gradient in the palette?

Yes. Start by selecting the gradient to which you want to make modifications. Then open the Color Mixer panel to view the gradient swatch you want to edit. You can now make changes to the color markers or shades of color and save the edits as a new gradient color swatch.

Can I delete a custom gradient I no longer need?

Yes. Click Window and then Color Swatches to display the Color Swatches panel. Click the gradient swatch you want to delete. Click the Color Swatches Option menu at the top of the panel and then click Delete Swatch. Flash permanently deletes the gradient from all Color palettes.

Import Graphics

You can import graphics, including vector or bitmap graphics, from other sources to use in Flash. See Chapter 17 for more information on bitmap and vector graphics. You can use imported graphics to add to an existing drawing you create in Flash and in animations you build for export to the Web or for other purposes. For example, you may have a product logo created in Macromedia's FreeHand program that you want to place in a Flash document, or you might want to use a clip-art image in a Flash document. After you import an image, you can manipulate it with Flash commands. When you import a graphic, you have a choice of importing it either to the Stage or to the Flash Library.

Flash treats imported graphics as a grouped object. For example, if you import a detailed graphic, you can move and resize it as a single object rather than as separate elements.

In addition to importing graphics, you can also use the Paste command to paste graphics you cut or copy from other programs. The Cut, Copy, and Paste commands work the same way in Flash as they do in other programs.

Import Graphics

Import a graphic file

1. Click File.
2. Click Import.
3. Click Import to Stage.

   Flash places the graphic on the Stage and in the Library if you choose Import to Stage.

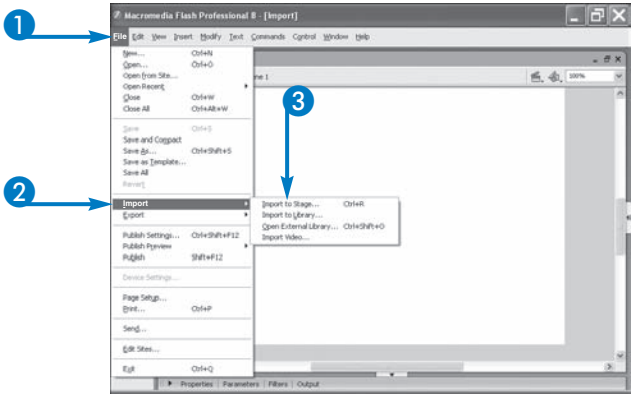
   You can also click File, Import, and then Import to Library.

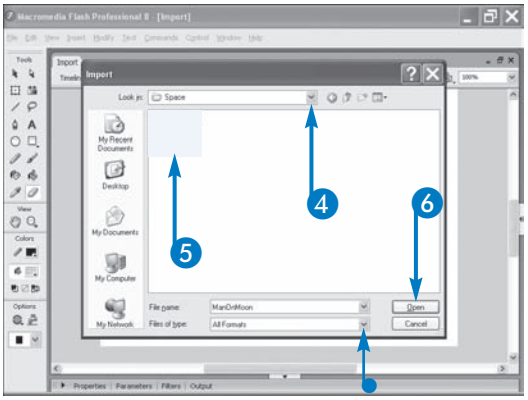
   Flash places the graphic in the Library but not on the Stage if you choose Import to Library.

Note: *See Chapter 21 to learn more about the Library.*

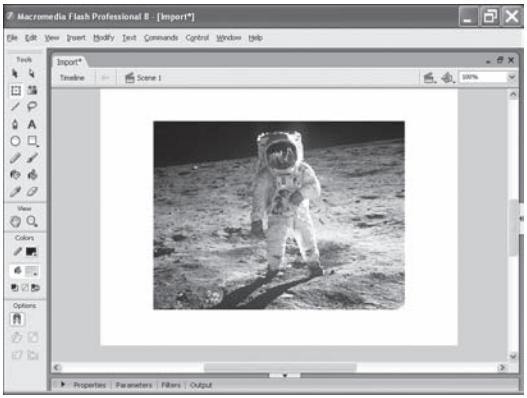
   The Import dialog box appears.

4. Click here and then select the folder or drive from which you want to import the image.
   - You can click here to select a file type.
5. Click the file you want to import.
6. Click Open.





Flash imports the graphic.



Copy and paste a graphic

1. Copy a graphic from another program.
2. Switch back to Flash.
3. Click Edit.
4. Click Paste in Center.

   Flash pastes the graphic in the center of the Stage.

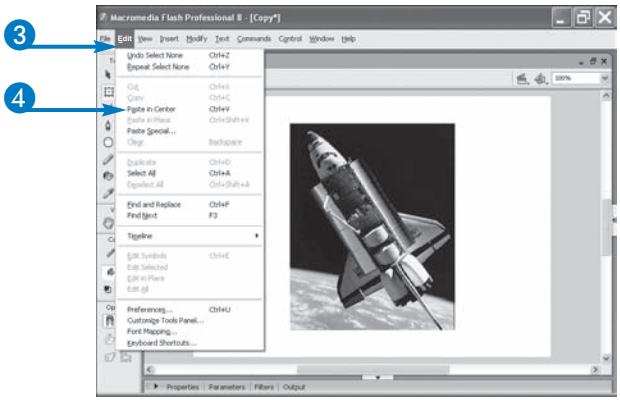


Photo courtesy of NASA

Can I reuse the same graphic without reimporting each time I need to use it?

Yes. You do not have to repeat the import procedure to reuse the same image. Any time you import a graphic, Flash immediately adds it to the Library. You can use the graphic as often as you like. To view the Library, click Window and then click Library. To learn more about using Library images, see Chapter 21.

Can I import a series of images?

Yes. If you want to include a series of images in sequential keyframes, such as an animation sequence or a slideshow, you can easily import all the files at once. Flash recognizes sequentially numbered files in the Import dialog box and offers to import the entire sequence. Click Yes to import sequential files; click No to import only the selected files.

How do I remove an imported file I no longer want to include in my movie?

To remove an imported file, open the Library window and delete the file. On the main menu, click Window and then click Library. Click the imported file in the Library list and click the Delete icon. Flash removes the file. To learn more about the Flash Library feature, see Chapter 21.

Convert Bitmaps into Vector Graphics

You can use the Trace Bitmap command to convert a bitmap graphic into a vector graphic. By turning a bitmap graphic into a vector graphic, you can decrease your file size and use the Flash tools to manipulate the graphic. Keep in mind, however, that by changing the file format, you may lose some of the detail or photorealism exhibited in the original bitmap image.

When you apply the Trace Bitmap command, you can adjust several parameters that define the rendering of the image, including how Flash handles the color variances, the pixel size translation, and the smoothness of curves or sharpness of corners. These parameters control how closely the bitmap image matches the vector graphic image.

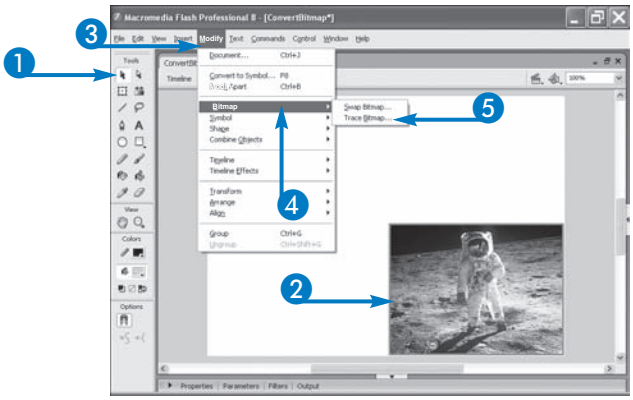
During conversion, Flash examines how the pixels in the bitmap relate to one another. You can specify a color threshold setting that instructs Flash on how to treat bordering pixels of the same or similar colors. A higher color threshold setting groups subtle color changes into a single vector object, thus decreasing the number of overall colors in the image. A lower setting results in more vector objects, and more colors display in the image.

Convert Bitmaps into Vector Graphics

1. Click .
2. Click the bitmap image to select it.

Note: *See Chapter 19 to learn more about selecting objects.*

3. Click Modify.
4. Click Bitmap.
5. Click Trace Bitmap.

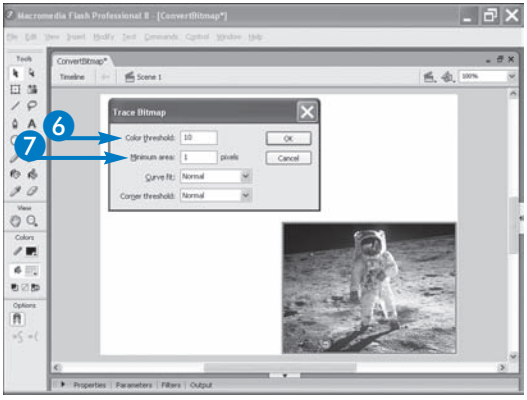


The Trace Bitmap dialog box appears.

6. Type a Color Threshold setting.

Note: *A smaller value results in many vector shapes; a larger value results in fewer vectors.*

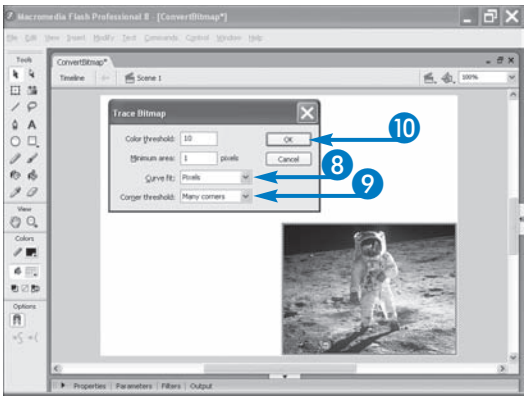
7. Type a minimum area.



8. Click here and then select a Curve Fit.
9. Click here and then select a corner threshold.
10. Click OK.

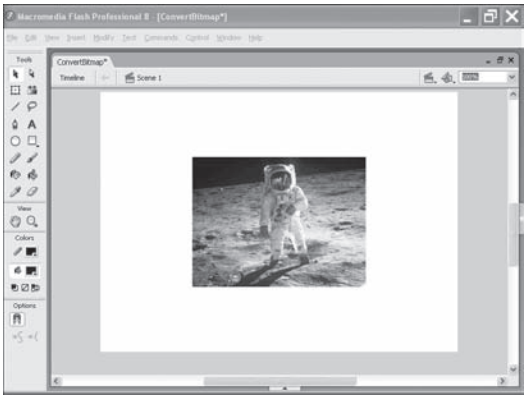
    Flash traces the graphic and, when finished, replaces the bitmap with vector shapes.

    By default, Flash selects all the vector shapes.



11. Click the Stage to deselect the vector shapes Flash selected by default.

    Flash converts your bitmap into a vector graphic.



What is Color Threshold?

- The Color Threshold determines the number of colors converted into vectors. For example, say your image is a boat on water, and the water consists of shades of blue. A high Color Threshold may result in a single vector object for the water — one shade of blue. A low Color Threshold may result in dozens of vector objects for the water — one for each shade change in the image. Flash compares the RGB color values for each neighboring pixel. If the difference between the RGB values is less than the Color Threshold, Flash considers the colors the same color. You can set the Color Threshold value to any number between 1 and 500.

What are Minimum Area, Curve Fit, and Corner Threshold?

- Minimum Area sets the number of neighboring pixels to consider when assigning a color to a pixel. Type a value between 1 and 1000. Curve Fit controls how smoothly outlines are drawn. Corner Threshold determines whether Flash should smooth edges or retain sharp edges.

Is there an ideal setting for converting a bitmap image to a vector image?

- To obtain the most realistic image, Macromedia recommends the following settings: Color Threshold: 10; Minimum Area: 1 pixel; Curve Fit: Pixels; and Corner Threshold: Many Corners. When applying the Trace Bitmap controls, you might need to experiment with the settings to get the results you want.

Turn Bitmaps into Fills

You can turn a bitmap image into a fill for use with Flash drawing tools that use fills, such as the Oval, Rectangle, or Brush. *Fills* are solid colors or patterns that fill a shape. Conventional fills include colors and gradients. You can also use a bitmap image, such as a photo, as a fill. Depending on the size of the shape, Flash may *tile* or repeat the image within the shape.

Bitmap photos make good fills. For example, you might have a photo of a face that you fill into an oval shape or a photo that makes a good repeat background pattern. You can use a variety of bitmap fills to create texture and depth in your Flash drawings.

To prepare a bitmap image as a fill, you must use the Break Apart command. This command converts the image into separate pieces. After you separate the image, you can use the Eyedropper tool to duplicate the image as a fill. Using layers in your Flash Timeline helps you organize different objects in your document, such as bitmaps you turn into fills.

Turn Bitmaps into Fills

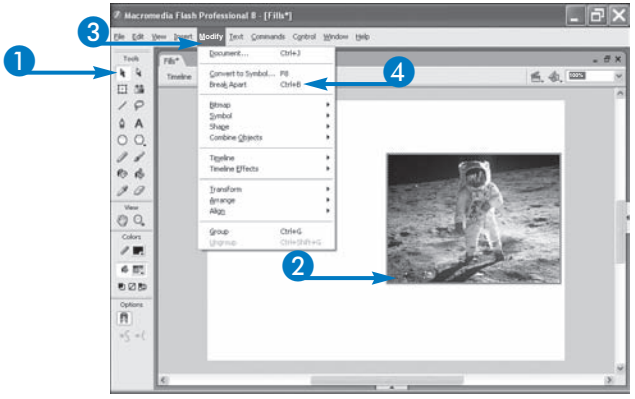
Break apart the bitmap

1. Click .

Note: *See Chapter 19 to learn more about selecting objects.*

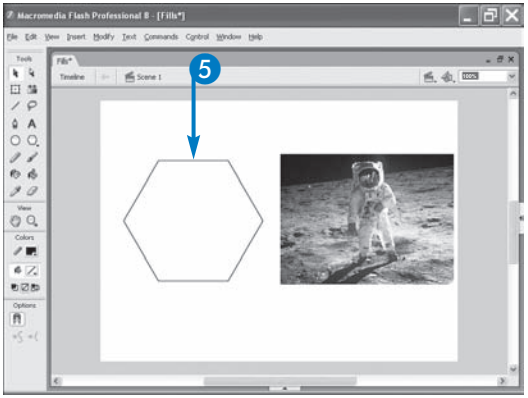
2. Click the bitmap image.
3. Click Modify.
4. Click Break Apart.

   Flash breaks apart the bitmap image.



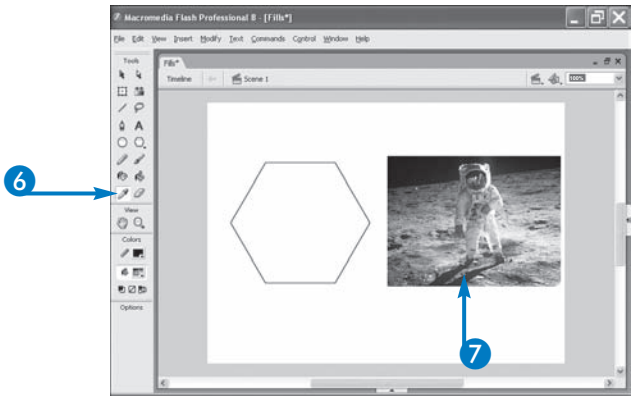
5. Draw the object you want to fill.

Note: *See other sections of this chapter to learn how to use the drawing tools.*



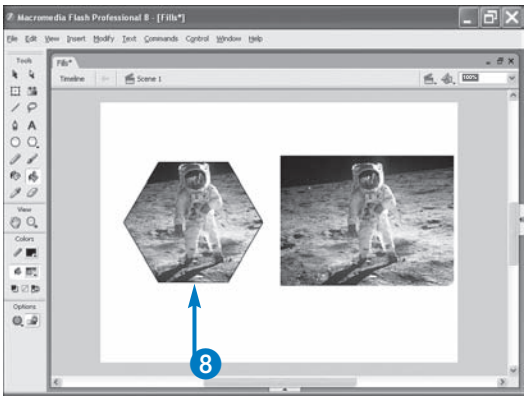
6 Click .

7 Click the bitmap image.



8 Click the object you want to fill.

The bitmap image appears as a fill.



MASTER IT

How do I use a bitmap fill with the Brush tool?

Turn the bitmap into a fill using the steps in this section. Click the Brush tool, select a brush size or shape, and then draw brush strokes on the Stage. Everywhere you draw, Flash uses the bitmap image as your "paint color." To learn more about the Brush tool and its options, see section "Draw with the Brush Tool."

How do I use a bitmap image as a tiled pattern?

Click the Window menu and click Color Mixer to open the Color Mixer panel. In the Fill Style field, choose Bitmap. Click the image you want to use, and then click the Paint Bucket tool. You can now fill any shape with a tiled pattern of the bitmap image.

What types of edits can I perform on a bitmap fill?

You can edit a bitmap fill just as you can any other fill, including rotating the image and scaling it to another size.

How do I change the position of a bitmap fill?

To change the position of a bitmap fill, use the Gradient Transform tool. You can use the Gradient Tranform tool to change the way the fill is positioned within a shape.

Select Objects

You can select objects on the Flash Stage so that you can modify them. For example, you might want to change the color of the stroke outlining a fill or modify the curve of a particular line segment. Alternatively, you may want to group several strokes and fills into a single object and save the object as a symbol in your document. To do so, you must first select the objects you want to edit. The more graphics on the Stage, the trickier it is to select only the strokes and fills you want.

You can use several techniques to select objects. You can use the Selection tool to quickly select any single object, such as a line segment or fill. To select several objects, such as several shapes or an entire drawing, you can drag a frame, also called a *marquee*, around the items. Flash selects anything inside the marquee. Any edits you make affect all the selected items.

When selecting objects, you can select both the fill and the stroke. Alternatively, you can select just the fill or just the stroke.

Select Objects

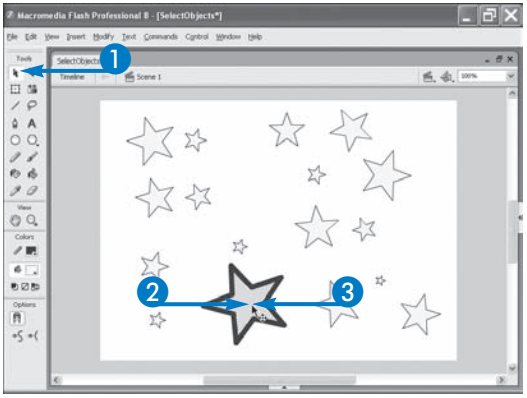
Click to select objects

1. Click the Selection tool ( ).
2. Position the mouse pointer over the fill you want to select.

   changes to .
3. Click the fill.

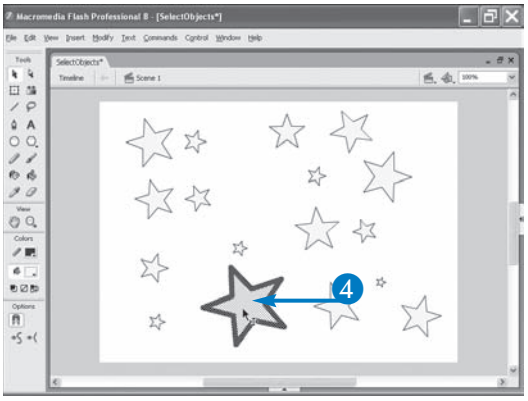
   Flash selects the fill.

   Flash highlights selected objects.



4. Double-click the object.

   Flash selects the fill and the surrounding strokes.

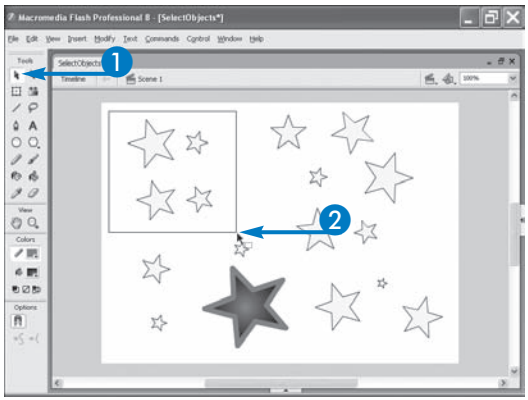


Select by dragging

1. Click .

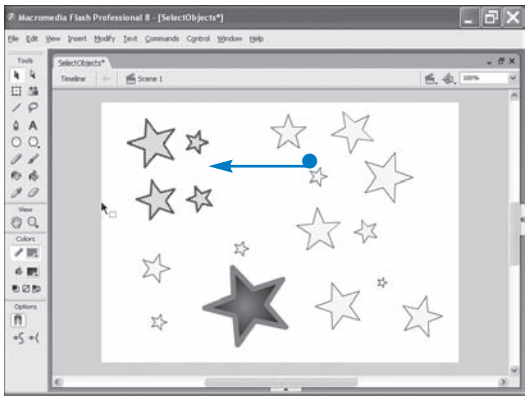
   changes to .

2. Click and drag a marquee around the objects you want to select.



3. Release the mouse button.

   - Flash selects everything inside the marquee.



MASTER IT

How do I select multiple objects?

To modify multiple objects at the same time, you must select them all. To select multiple objects, click the Selection tool, and then hold down the Shift key as you click each object you want to select. It does not matter which layer contains the object. As you press and hold the Shift key, you can select items on multiple layers.

Is there an easy way to select or deselect everything on every layer of a scene?

Yes. Click Edit, Select All on the main menu to select everything on every layer of a scene. To deselect everything on every layer of a scene, click Edit, Deselect All on the main menu.

Can I remove the highlighting from a selected object?

Yes. Removing the highlighting from a selected object enables you to see what the object will look like when you complete your modifications. When you select an object, Flash highlights the object. To remove the highlighting, on the main menu click View and then Hide Edges. To restore the highlighting, click View and then Hide Edges again.

continued

Select Objects
(Continued)

If you are working with several objects that have an unusual shape, or you want to select only an unusually shaped portion of an object, you can use the Lasso tool. For example, say you have several circles that overlap and you need to select only one section, or perhaps you have several objects drawn close together but you want to select only one object. You can use the Lasso tool to help you select only what you want and nothing more.

Using the Lasso tool, you can draw freehand around the objects you want to select. You must, however, close the loop that you create with the Lasso tool to complete your selection. If you do not close the loop, Flash will close it for you. After the loop is closed, Flash selects everything inside it.

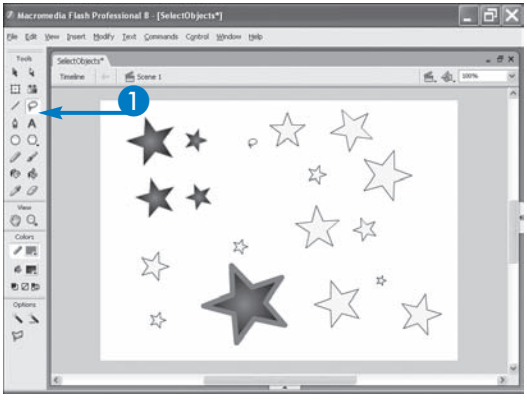
Using the Lasso tool takes a steady hand and a bit of practice. If you make a mistake and lasso a part of the drawing that you do not want to select, you can click the mouse to start the lassoing process again. If you want to deselect objects you have selected, click outside the selected area, or just press the Esc key.

Select Objects *(continued)*

Lasso an object

1. Click the Lasso tool ( ).

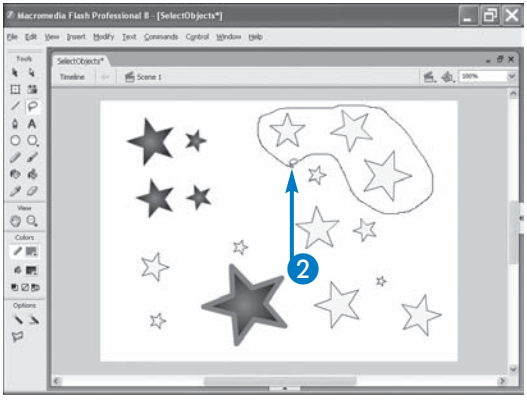
   changes to .



2. Click and drag the lasso around the object until you reach the point at which you started.
3. Release the mouse button.

   Flash selects the lassoed area.

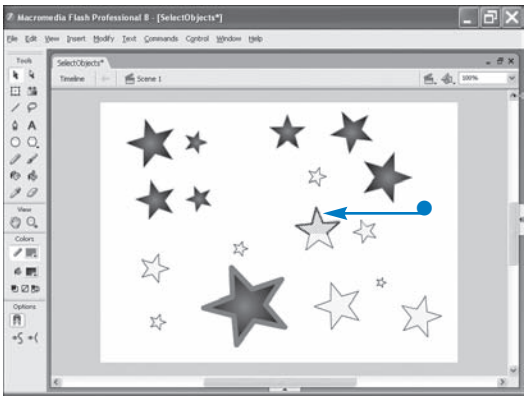
   Flash highlights the selected items.



Select part of an object

1. Click or .
   changes to .
2. Drag to surround the part of the object you want to select.

3. Release the mouse button.
   - Flash selects everything inside the selected area.



MASTER IT

How do I use the Polygon Mode option?

You may find drawing around objects with the Lasso tool difficult. You can use the Lasso tool's Polygon Mode modifier to help. Click the Lasso tool, and then click Polygon Mode modifier in the Options tray. Now click your way around the object you want to select. Every click creates a line connected to the last line. To turn off the Polygon Mode, double-click the Stage.

What does the Magic Wand modifier do?

The Magic Wand modifier appears in the Options tray when you select the Lasso tool. You use it with the Lasso tool to help you select areas of a bitmap image. Before you can use the Magic Wand modifier, the bitmap image must be broken apart. To break apart a bitmap image, click Modify and then Break Apart. See Chapters 17 and 18 to learn more about bitmap images.

Can I customize the Magic Wand settings?

Yes, you can customize the Magic Wand Threshold and the Smoothing settings. You click the Magic Wand Setting icon in the Modifiers tray. The Magic Wand Settings dialog box opens. Use the Threshold setting to define how close color values of adjacent pixels must match to be included in the Lasso selection. Use the Smoothing setting to specify the amount of smoothing Flash should apply to the edges of the selected area.

Move and Copy Objects

You can easily reposition objects on the Flash Stage to change the layout of a frame. Flash lets you quickly move an object from one area to another. You can also make copies of an object. For example, you may need to move an object from the left to the right side of the Stage, or you may want to copy an object to create a new object.

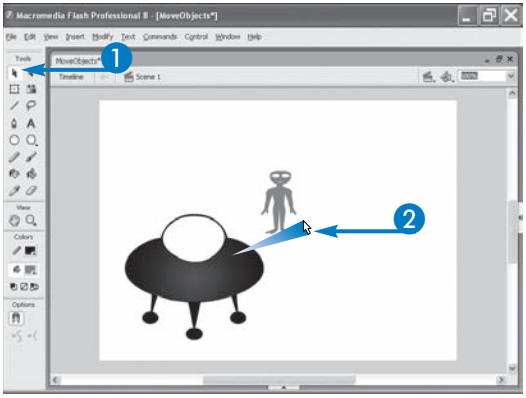
The Cut, Copy, and Paste commands in Flash work the same way as they do in other programs. In Flash, the Cut, Copy, and Paste commands are available as toolbar buttons on the Main toolbar or as menu commands on the Edit menu. Copying an object allows you to paste a duplicate of the object in the same frame or another frame. Cutting an object removes the object from the Stage so you can paste it somewhere else in the same frame or another frame.

You can move an object by selecting and dragging it around the Stage. Dragging an object is the quickest way to place an object where you want it.

Move and Copy Objects

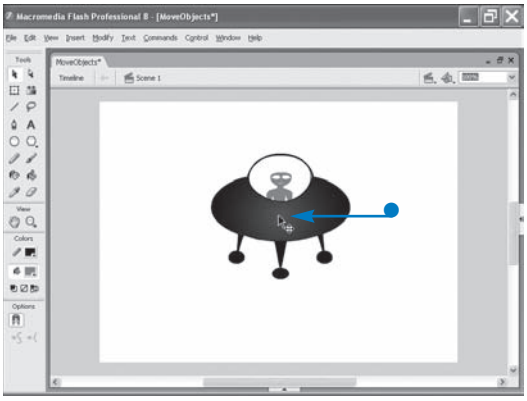
Move an object

1. Click .
2. Click and drag the object to a new position.



changes to .

3. Release the mouse button.
   - Flash moves the object to the location you selected.



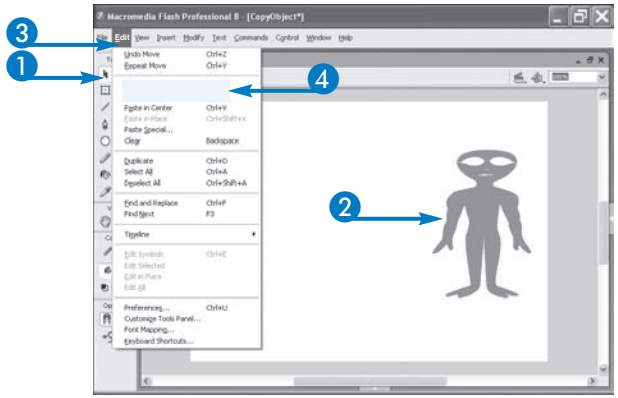
Cut or copy an object

1. Click .
2. Select the object you want to cut or copy.

Note: *See the section "Select Objects" to learn how to select an object.*

3. Click Edit.
4. Click either Copy or Cut.

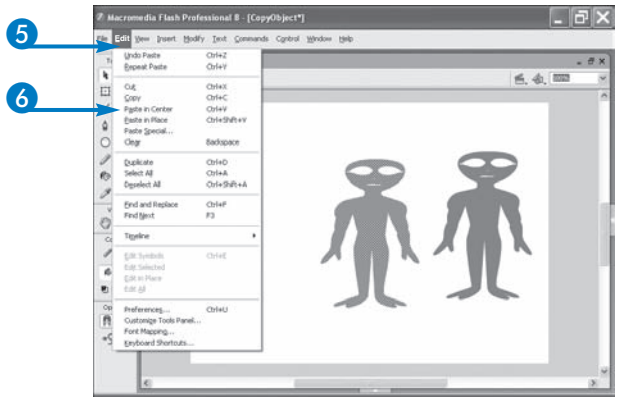
   Flash copies or cuts the object you selected.



5. Click Edit.
6. Click Paste in Center.

   A copy of the object appears in the center of the Stage.

Note: *If you want to place the copy on top of the original, click the Paste in Place command.*



What other methods can I use to move objects that are located on the Stage?

You can select an object and then use the arrow keys to move the object up, down, left, or right. The arrow keys move your object one pixel at a time.

You can also select an object and use the X and Y fields in the Property inspector to position the object. The X field determines the location of your object along the horizontal axis of your screen. The Y field determines the location of your object along the vertical axis of your screen. You can type values into these fields to specify exactly where to position your object.

Are the Cut, Copy, and Paste keyboard shortcuts the same in Flash as they are in other programs?

Yes, whether you are using Windows or Mac, the keyboard shortcuts work the same way in Flash as they do in most other programs. Press Ctrl+X (⌘+X) to cut an object and place it on the Clipboard. Press Ctrl+V (⌘+V) to paste an object. Press Ctrl+C (⌘+C) to place a duplicate of a selected object on the Clipboard. Objects you place on the Clipboard can be pasted into Flash or into another program.

Copy Attributes

You can use the Eyedropper tool to quickly copy attributes from one object to another. Copying attributes, rather than reassigning them one at a time, can save you time and effort. The Eyedropper tool copies fills and strokes, and it enables you to apply those fills and strokes to other objects.

Much like a real-life eyedropper, the Eyedropper tool "absorbs" the formatting you have applied to a particular fill or stroke. Position the Eyedropper over a stroke and a tiny pencil appears next to the dropper icon. The pencil icon lets you know you have placed the Eyedropper over a stroke. When you click the Eyedropper, it absorbs the formatting applied to the stroke.

Position the Eyedropper over a fill and a tiny paintbrush appears next to the Eyedropper. The paintbrush icon lets you know you have placed the Eyedropper over a fill.

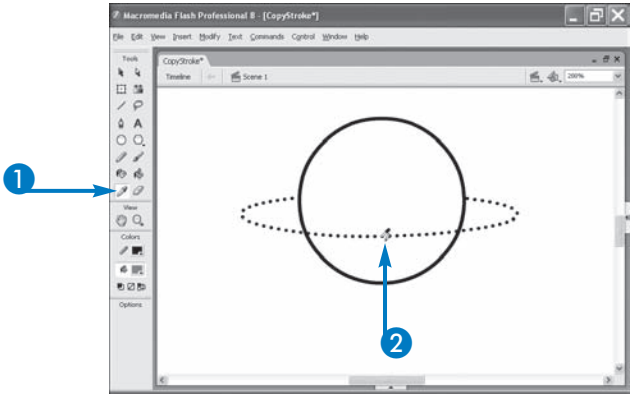
After you have picked up the attributes you want to copy, the Eyedropper becomes an Ink Bottle icon if you clicked a stroke or a Locked Paint Bucket icon if you clicked a fill. You can then position the Eyedropper over the Stage and "drop" the formatting onto another stroke or fill.

Copy Attributes

Copy a stroke

1. Click the Eyedropper tool ( ).
2. Position the mouse pointer over the stroke from which you want to copy attributes.

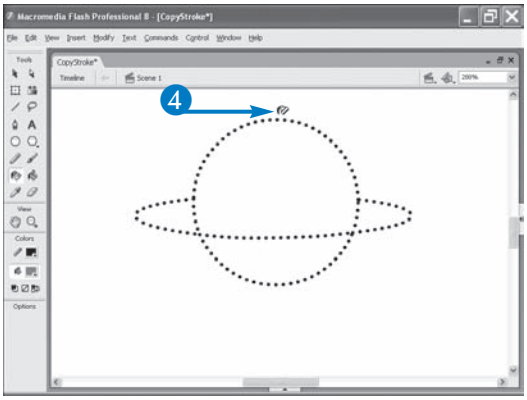
   changes to .



3. Click the stroke.

   changes to .
4. Position the mouse pointer over the stroke to which you want to copy attributes.
5. Click the stroke.

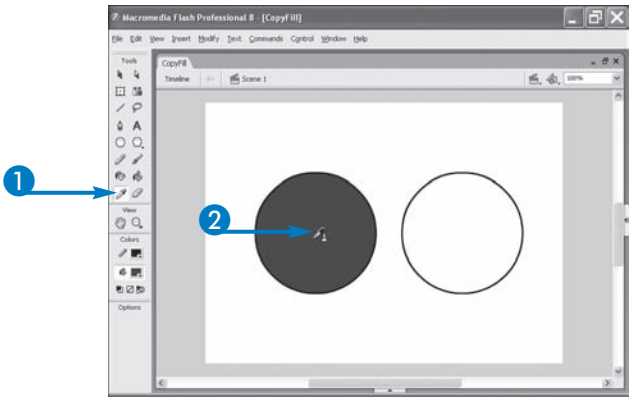
   Flash changes the attributes of the stroke.



Copy a fill

1. Click .
2. Position the mouse pointer over the fill from which you want to copy attributes.

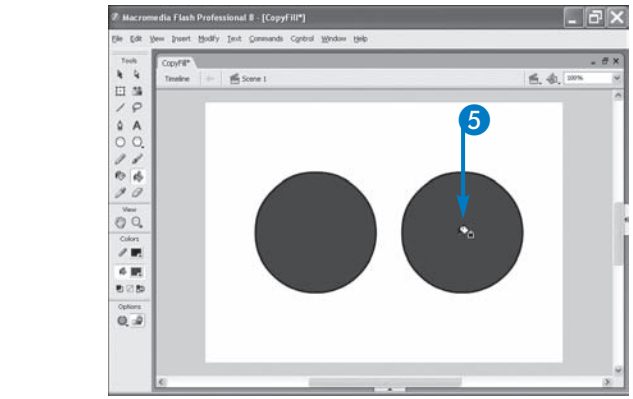
   changes to .



3. Click the fill.

   changes to .
4. Position the mouse pointer over the fill to which you want to copy attributes.
5. Click the fill.

   Flash changes the attributes of the fill.



Will you explain the Ink Bottle tool?

You use the Ink Bottle tool to change the format of strokes. You click the Ink Bottle tool and then use the Property inspector to select stroke attributes. After you have selected the stroke attributes, you can click any stroke and the attributes of that stroke become the ones you selected. For example, if you select the Ink Bottle tool and then select the color blue and a ragged line, any stroke you click on the Stage becomes a blue ragged line. The Ink Bottle tool, when used in conjunction with the Eyedropper, copies the attributes of one stroke to another stroke.

My Ink Bottle and Eyedropper do not work. Why?

You cannot use the Ink Bottle or Eyedropper on grouped objects. You must ungroup the objects by clicking Modify, Ungroup on the main menu before trying to copy stroke or fill attributes from a grouped object to another object on the Stage, and before changing attributes by using the Ink Bottle tool.

Can I copy attributes before I draw a stroke or fill on the Stage?

You can use the Eyedropper to copy the attributes of an existing stroke or fill. You can then select a tool and draw on the Stage. The object you draw will have the same attributes as the stroke or fill you selected with the Eyedropper tool.

Edit Objects with the Free Transform Tool

You can use the Free Transform tool to alter graphics, groups, text blocks, and instances. The Free Transform tool, located on the Tools panel, includes four modifiers: Rotate and Skew, Scale, Distort, and Envelope.

You can apply the Scale modifier and the Rotate and Skew modifier to objects you create or import. For example, you can use the Scale modifier to change the size of a vector graphic you create in Flash, or you can use the Rotate and Skew modifier to rotate a photograph you import into Flash.

You use the Scale modifier to resize objects by using edit points or handles. The direction in which you drag an edit point determines whether the object grows or shrinks. For example, if you drag any corner edit point, Flash scales the object in proportion to its original size. If you drag a center edit point on any side of the selected object, the object appears to stretch or condense, depending on which way you move your mouse. When you rotate an object, you use rotation handles. You can achieve different degrees of rotation, depending on the amount and direction you drag the rotation handles.

Edit Objects with the Free Transform Tool

Rotate an object

1. Click the Free Transform tool ( ).
2. Drag a rectangle around the object you want to transform.

   A bounding box with Transformation handles appears.
3. Click the Rotate and Skew modifier ( ).
4. Drag a corner handle to rotate the object.

   changes to .

   Flash rotates the object.

   Clicking the Stage removes the bounding box.

Skew an object

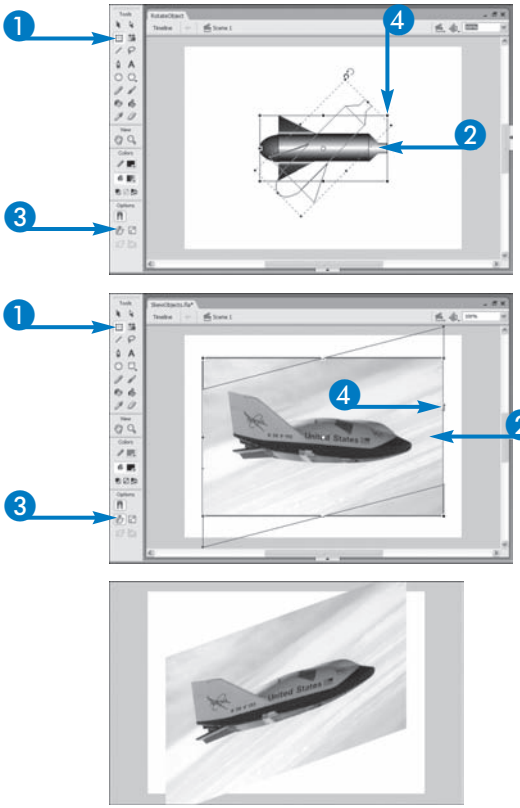
1. Click .
2. Drag a rectangle around the object you want to transform.

   A bounding box with handles appears.
3. Click .
4. Position the mouse pointer over a side handle and drag a handle horizontally or vertically to skew the object.

   changes to .

   Flash skews the object.

   Clicking the Stage removes the bounding box.



Scale an object

1. Click ⊡.
2. Drag a rectangle around the object you want to transform.

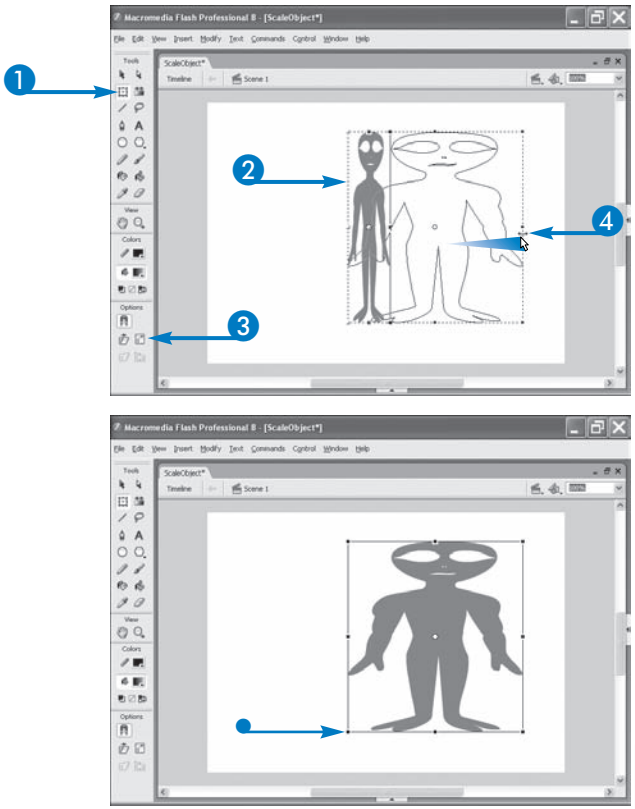
   A bounding box with Transformation handles appears.
3. Click the Scale modifier (⊡).
4. Drag a handle outward to enlarge the object or inward to reduce it.

   ↖ changes to ↔.

   Flash scales the object.

   You can click the Stage to remove the bounding box.

   - Dragging a corner handle reduces the size of the object proportionately on all sides.



MASTER IT

Can I specify the exact number of degrees I want to rotate my object and the exact percentage I want to scale my object?

Yes. If you want to rotate your object 90 degrees clockwise, select the object and click Modify, Transform, Rotate 90 CW. If you want to rotate your object 90 degrees counterclockwise, select the object and click Modify, Transform, Rotate 90 CCW.

You can also select the object and click Modify, Transform, Scale and Rotate to open the Scale and Rotate dialog box. Enter the exact number of degrees you want to rotate your object in the Rotate field, or enter the percent you want to scale your object in the Scale field.

What is the center point?

When rotating a graphic, group, or text block, and when skewing and scaling instances, the center point is the point of origin. By default, the center point is usually located in the middle of the object. To change the center point, select the object and then click the Free Transform tool. The center point appears as a tiny circle, usually in the middle of the object. To change the center point, drag it to a new location. If you later want to return the center point to its original location, double-click it. When you skew or scale a graphic, group, or text block, the point of origin is the point opposite the point you drag.

continued

Edit Objects with the Free Transform Tool *(Continued)*

You can use the Envelope modifier to change the shape of objects you draw in Flash. The Envelope modifier encloses the object with an envelope of edit points. You can use the edit points to change the object's shape. The Envelope modifier uses two types of edit points: regular edit points and tangent handles. Regular edit points are square, and when manipulated, can change the corners and sides of an object. Tangent handles are circles that adjust additional points along the edges of a selected object.

You can use the Distort modifier to move the corner points of an object in any direction: left, right, up, or down.

Holding down the Shift key as you drag a corner handle also moves the adjacent corner proportionately on the same axis. The Distort Modifier also has side handles that you can move in any direction.

You can only use the Distort and Envelope modifiers to change vector graphics. You cannot use these modifiers to alter grouped objects, bitmaps, symbols, text boxes, or video objects.

After you have applied a transform, you can remove it by clicking Modify, Transform, Remove Transform on the main menu.

Edit Objects with the Free Transform Tool *(continued)*

Distort an object

1. Click ⬚.

Note: *You can use the Distort modifier only on vector graphics.*

2. Drag to form a rectangle around the object you want to transform.

   A bounding box with Transformation handles appears.

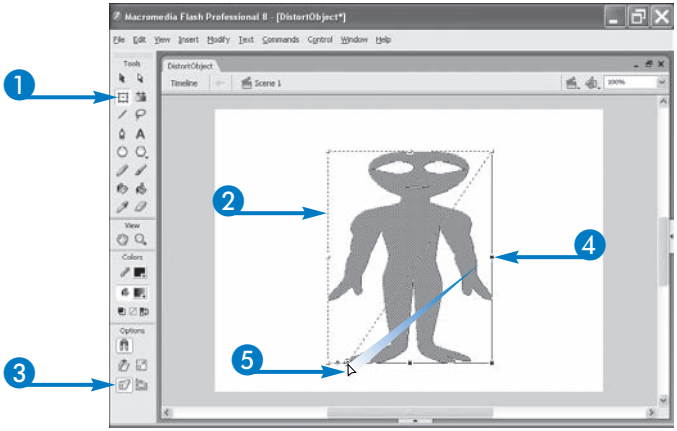
3. Click the Distort modifier (⬚).
4. Point to a handle.

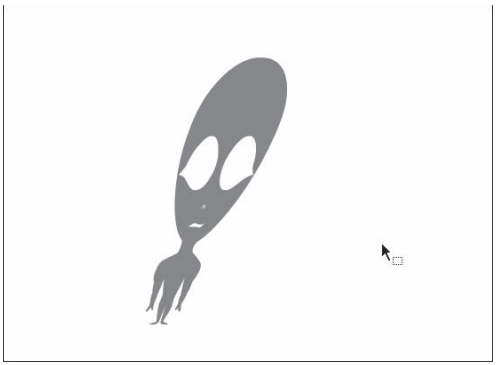
   ↖ changes to ↖.

5. Click and drag the mouse pointer.

   Flash distorts the object.

   You can click the Stage to remove the bounding box.





Use the envelope modifier

1. Click .

Note: *You can use the Envelope modifier only on vector graphics.*

2. Drag to form a rectangle around the object.

   A bounding box with Transformation handles appears.

3. Click the Envelope modifier ( ).

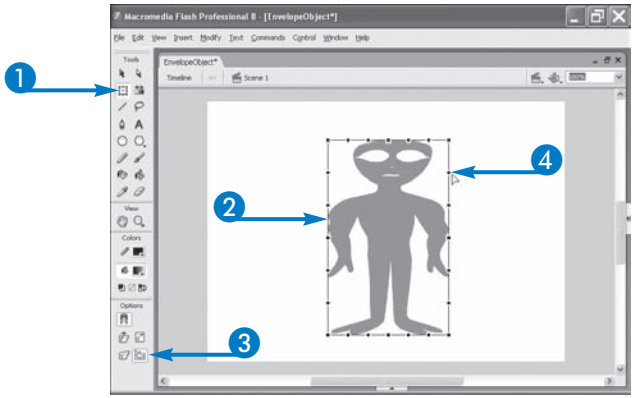
4. Move the mouse pointer to a side or corner handle.

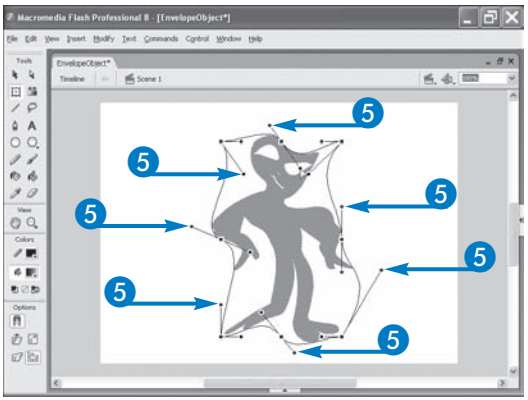
   changes to .

5. Drag the handles to change the shape of your object.

   Flash changes the shape of the object.

   You can click the Stage to remove the bounding box.





MASTER IT

How does the Transform panel work?

You can use the Transform panel to change the size, rotation, or skew of an object you have selected with the Free Transform tool. You open the Transform panel by clicking Window, Transform. Then you enter the size change in the Size fields, the degree of rotation in the Rotate field, or the degree of skew in the Skew fields.

Can I flip an object vertically and horizontally?

Yes. To flip an object, select the object by using a Selection tool and then click Modify, Transform, Flip Vertical or Modify, Transform, Flip Horizontal. Flash flips your object.

How do I set an object to a specific size?

If you need your object to be a specific size, use the Property inspector. Using the Property inspector, you can set the size of an object by using the width (W) and height (H) fields. Simply type the measurement you want, and then click outside the panel to see the change.

Can I use the menu to access transform options?

Yes, you can select an object and then click Modify, Transform on the main menu to access the Free Transform, Distort, Envelope, Scale, and Rotate and Scale features.

Transform a Gradient Fill

You can use the Gradient Transform tool on the Tools panel to transform gradient and bitmap fills. Gradient fills blend two or more colors, and bitmap fills utilize an image or pattern as the fill rather than a color. There are two types of gradient fills: linear and radial. The Gradient Transform tool enables you to change the placement and appearance of linear, gradient, and bitmap fills.

By default, a radial fill changes color from a focal point outward. The focal point is usually lighter than the surrounding color. With the Gradient Transform tool, you can change the position of the focal point, thus changing where the lightest area appears on the object. With a linear fill, one color blends into another. Linear fills change color either horizontally or vertically.

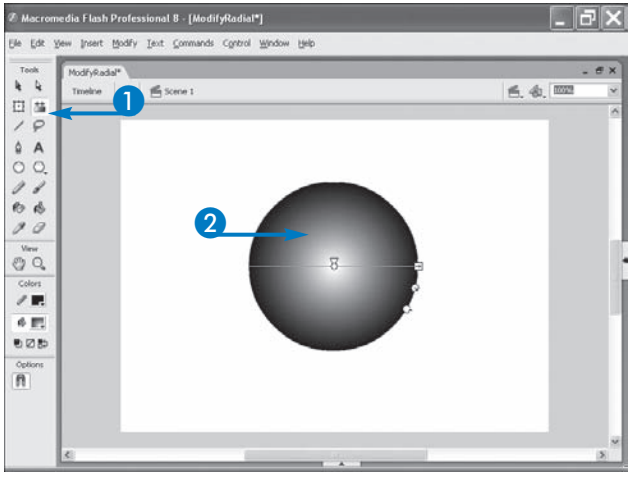
When working with radial, linear, and bitmap fills, you can reposition, rotate, and resize the fills both horizontally and vertically. You have two additional options when you are working with a bitmap image: you can skew and tile a bitmap. A bitmap tile repeats the image vertically and horizontally. To tile a bitmap within a shape, use the Size control to make the bitmap smaller.

Transform a Gradient Fill

Modify a radial fill

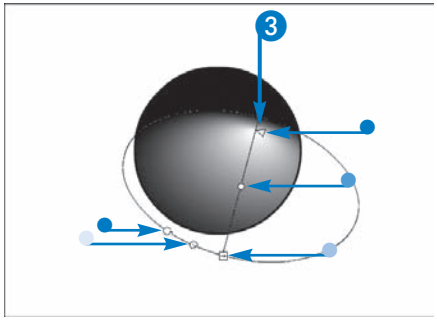
1. Click the Gradient Transform tool ( ).
2. Click a radial fill.

   Edit point controls appear on the fill.



3. Drag control points to achieve the look you want:
   - ▽ repositions the focal point.
   - ○ repositions the gradient.
   - ⇥ changes the width of the gradient.
   - ↘ changes the size or radius of the gradient.
   - ↻ rotates the gradient.

   Flash changes the radial gradient.

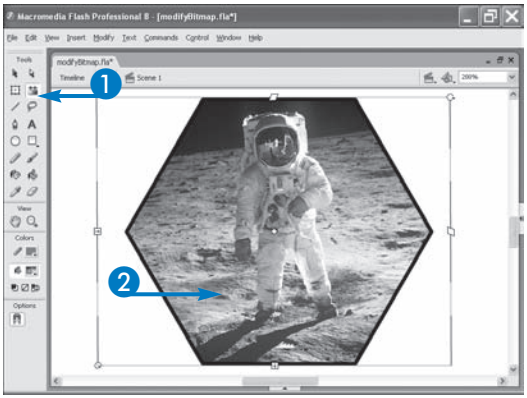


Modify a bitmap fill

1. Click .
2. Click the bitmap fill.

Note: *See Chapter 18 create bitmap fills.*

A bounding box and edit point controls appear around the fill.



3. Drag control points to achieve the look you want:
   - changes the size of the fill vertically or horizontally.
   - rotates the bitmap fill.
   - skews the bitmap fill.
   - repositions the bitmap fill.
   - changes the size of the bitmap fill.

Flash makes the adjustments you specified.

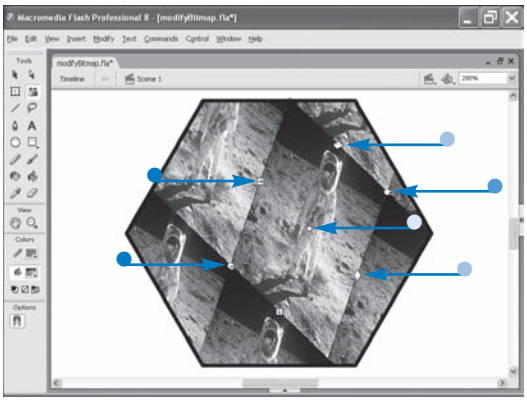


Photo courtesy of NASA

What does the Lock Fill option do?

You can use the Lock Fill modifier to lock a gradient or bitmap fill and make the fill appear to extend across the Stage. For example, if you have several shapes across the Stage, you can lock the fill and have the gradient or bitmap fill each shape with a different portion of the gradient, much like a mask effect. To use the Lock Fill modifier, simply select a gradient or bitmap fill, click the Paint Bucket tool, and then click the Lock Fill modifier. You can now use the Paint Bucket to fill objects on the Stage with the fill you selected.

What kinds of modifications can I make to a linear fill?

You can rotate, reposition, or resize a linear fill. Linear fills work like bitmap fills, except there are fewer options. When working with a linear fill, you click the Gradient Transform tool and then click the linear fill. Edit points appear on the fill. You can use the Rotation control to rotate the fill clockwise or counterclockwise. You can use the Width and Height controls to resize the bitmap, and you can use the Center Point control to reposition the linear fill. You can hold down the Shift key as you rotate a linear gradient to constrain the rotation of the linear gradient to multiples of 45 degrees.

Understanding Drawing Models

When you draw in Flash, you can use either the Merge Drawing model or the Object Drawing model. When you draw by using the Merge Drawing model, Flash automatically merges shapes that overlap. If you have two shapes of the same color and you overlap them, the shapes merge and you cannot separate the shapes. If you have two shapes of different colors and you overlap them, when you select and move the shape that overlaid the original shape, Flash removes the portion of the original shape over which you placed the new shape.

When you draw by using the Object Drawing model, Flash groups your objects and does not merge shapes. Each shape you draw is a separate object you can manipulate without affecting any other object. In the Object Drawing model, as you create your shapes, Flash surrounds them with a rectangular bounding box. You can use the Selection tool to click and drag each object around the Stage. To draw by using the Object Drawing Model, select the Object Drawing modifier before you begin drawing. You can find the Object Drawing modifier on the Options tray of each drawing tool.

Understanding Drawing Models

Merge shapes of the same color

1. Create graphics of the same color.

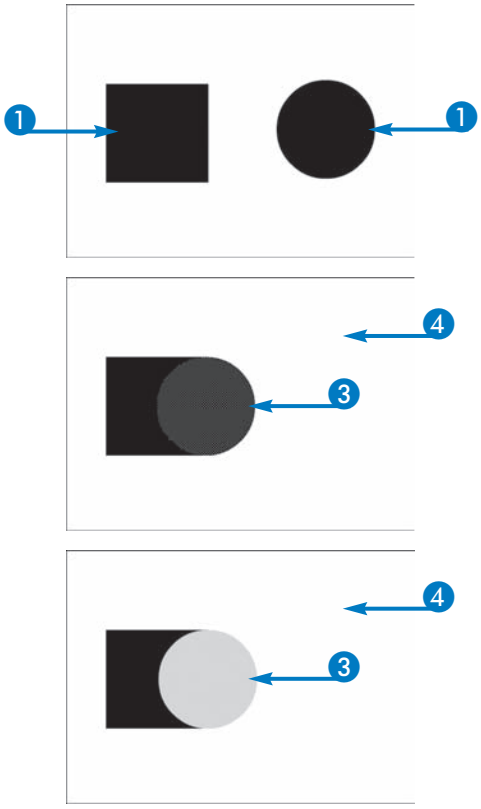
Note: *See Chapter 18 to learn how to use the drawing tools.*

2. Click .
3. Click and drag one graphic so that it overlaps another graphic.
4. Click the Stage to complete your action.

   Flash merges the graphics. You can no longer select one graphic without selecting the other graphic.

Merge shapes of different colors

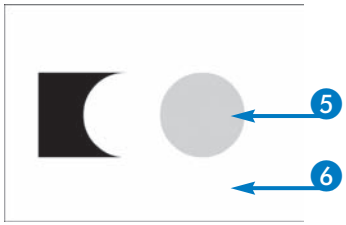
1. Create two graphics, each of a different color.
2. Click .
3. Drag one graphic so that it overlaps the other graphic.
4. Click the Stage.



5 Select one of the graphics and separate it from the other graphic.

6 Click the Stage.

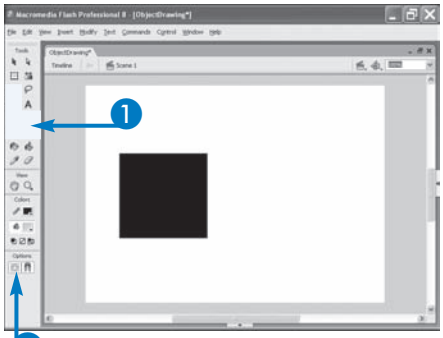
Flash removes the portion of the original shape over which you placed the new shape.



Use the object drawing model

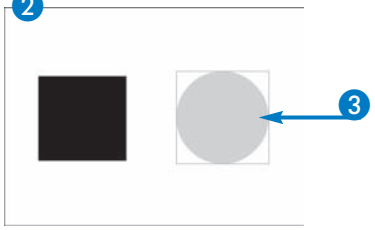
1 Click a drawing tool.

2 Click the Object Drawing modifier ( ).



3 Draw on the Stage.

Each shape you draw is a grouped object surrounded by a bounding box. You can move the object and manipulate it without affecting any other graphics on the Stage.



What is grouping and ungrouping?

After you have drawn an object by using the Merge Drawing model, you may want to manipulate the object without worrying about whether it will merge with other objects. To manipulate the object without it merging with other objects, you must group it. Objects you draw by using the Object Drawing model are already grouped.

You can also work on multiple items at the same time by placing the objects in a group. A group enables you to treat several items as a single unit. To create a group, select the objects and then, on the main menu, click Modify, Group. To ungroup objects, on the main menu, click Modify, Ungroup.

Can I edit a group?

Yes. Click the Selection tool, and then double-click the group you want to edit, or click Edit, Edit Selected on the main menu. Everything on the Stage dims except the items in the selected group. When you finish editing, double-click anywhere outside the group, or click Edit, Edit All on the main menu.

How can I avoid changing a group?

If you have grouped objects that you do not want to change as you modify other objects on the Stage, select the objects and then click Modify, Arrange, and then Lock. Flash locks the objects and you cannot move or edit them. To unlock the group, click Modify, Arrange, and then Unlock.

Stack Objects

Within a layer, Flash stacks grouped objects and symbols in the order in which you create them. See Chapter 21 to learn more about symbols. Flash places each new grouped object or symbol above any previously created grouped objects or symbols. When objects overlap, objects higher in the stacking order appear to be on top of objects lower in the stacking order. You can change the stacking order of grouped objects. In fact, you can control exactly where an object appears in the stack.

Flash places all ungrouped objects on the same level — the bottom of the stack. To move ungrouped objects up the stacking order, you must group them or change them into a symbol.

You select objects and then use menu commands to change the stacking order. If you select several groups and symbols that you want to move in tandem, they maintain their relative stacking order as they move in front of or behind other groups and symbols.

You can also use layers to control the stacking order of objects. See Chapter 22 to learn more about layers.

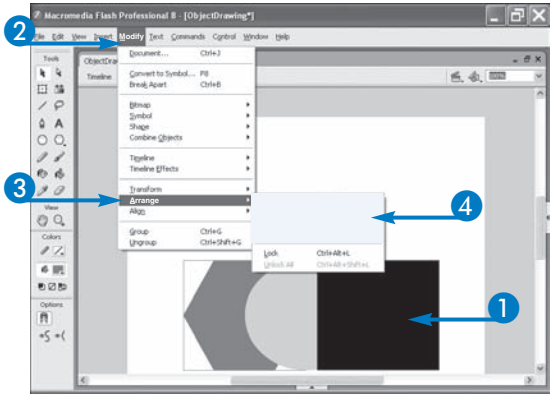
Stack Objects

1. Select the symbol or group you want to reorder.

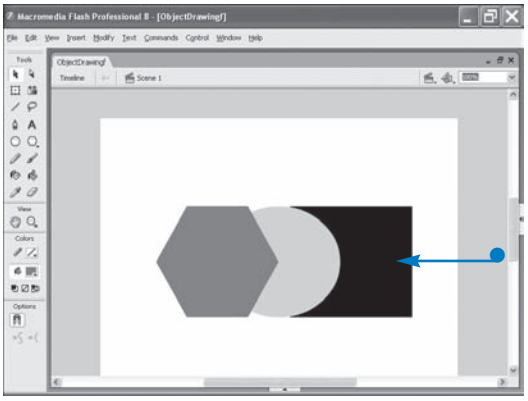
Note: *See the section "Select Objects" to select items on the Flash Stage.*

2. Click Modify.
3. Click Arrange.
4. Click a command that tells Flash where you want to send the object.

   Here, Send to Back is chosen.



- Flash sends the object to the very bottom of the stack.



Align Objects

Using the Align panel, you can control precisely where an object sits on the Stage. You can open and display the Align panel for as long as you need it. Like the other panels available in Flash you can move, resize, and collapse the panel as needed to free up workspace. Using the Align panel, you can align objects left, right, or center — horizontally or vertically. You can use the Align panel to make two or more objects match in size. You can make them the same width, the same height, or the same width and height. You can also use the Align panel to evenly space and distribute objects.

You can make object alignments reference other objects or reference the Stage.

The alignment commands come in handy when you are trying to position several objects on the Stage, and dragging them around manually does not seem to create the results you want. Although the Flash rulers and grid can help you line things up on the Stage, applying alignment options is much faster and easier.

To align an object, select the object you want to align and click Window, Align to open the Align panel.

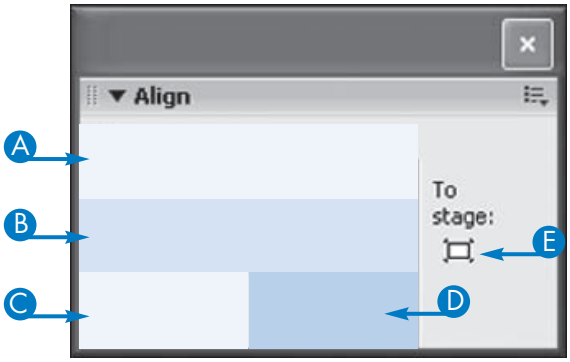
A Align Objects

B Distribute Objects

C Match Size

D Space Objects

E Align/distribute to Stage Icon



Using the History Panel

The History panel saves each action you perform as you use Flash. You can use the History panel to undo one or more actions or to redo one or more actions. When you redo actions, you can apply the actions to the same object or to a different object.

When you open the History panel, the panel shows a list of the steps you have performed in the current document; in the order you performed them. A slider located on the left side of the History panel points to the last step you performed. If you undo actions and then perform another action, you cannot redo the undone actions. Flash removes them from the History panel.

By default, Flash supports 100 levels of undo. You can use the Preference dialog box to reset the level of undo to any number between 2 and 9999.

You can clear the history list by clicking Clear History on the History panel's options menu. Clearing history does not undo your actions, but after you clear history, you cannot redo cleared actions. Closing a document also clears history. However, you can save steps so that you can use them in the current document or another document.

Using the History Panel

Undoing steps

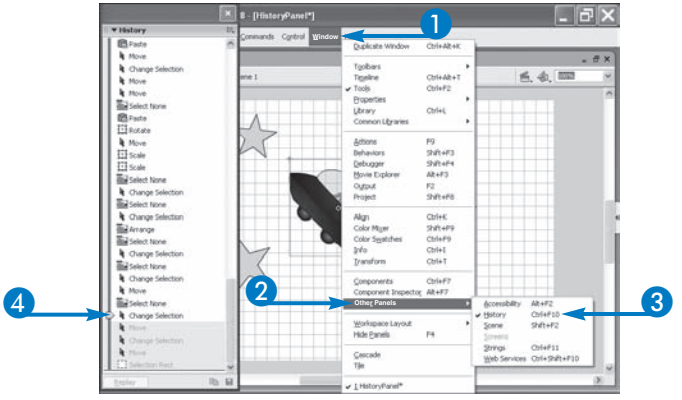
1. Click Window.
2. Click Other Panels.
3. Click History.

   The History panel opens.

4. Drag ▣ back to the step before the last step you want to undo.

Note: *You can also click to the left of the step before the last step you want to undo.*

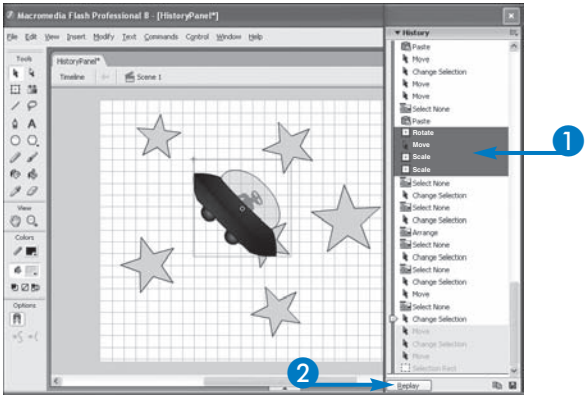
Flash undoes the steps.



Replaying steps

1. Click and drag over the text of the steps you want to replay.
2. Click Replay.

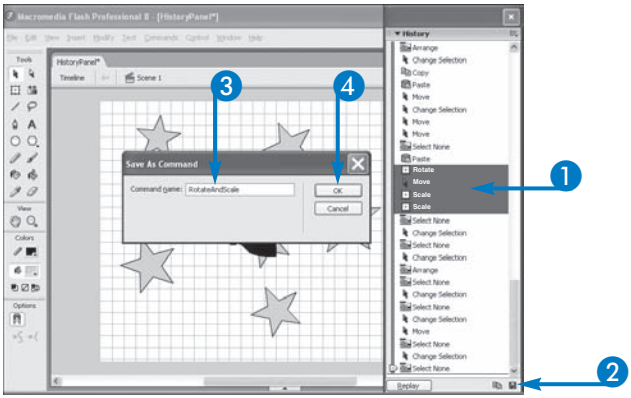
Flash replays the steps.



Automating tasks

1. Click and drag over the steps you want to save.
2. Click the Save icon ( ).

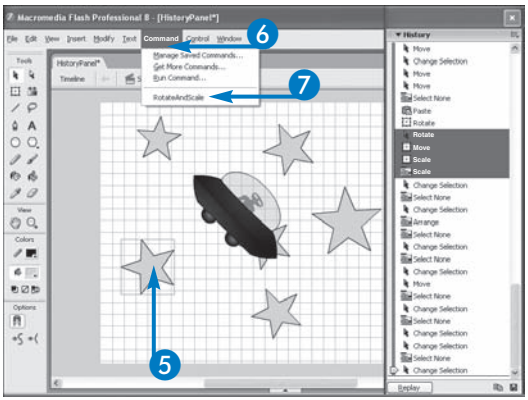
   The Save As Command dialog box appears.
3. Type a command name.
4. Click OK.



Execute an automated task

5. Select an object.
6. Click Command.
7. Click the command name you created in step three.

   Flash executes the command.



Can I rename and delete saved commands?

Yes, you can use the Manage Saved Commands dialog box to rename or delete a task you have saved. To open the Manage Saved Commands dialog box, click Commands and then click Manage Saved Commands on the main menu. To rename a command, click the command name and then click the Rename button. The Rename Command Dialog box opens. Type the new name and then click OK.

To delete a command, click the command and then click Delete. You will be prompted with "Deleted commands cannot be undone. Are you sure you want to continue?" Click Yes. Flash deletes the command.

Can I use the menu to undo, redo, and repeat?

Yes. To undo the last command you executed, click Edit, Undo. To redo the command you just undid, click Edit, Redo. If you execute a command and you want to repeat the action on another object, click Edit Repeat. You can apply the Undo, Redo, and Edit Repeat commands multiple times.

How do I reset the level of undo?

A small level of undo does not give you flexibility. A large level of undo uses more memory. To reset the level of undo, click Edit, Preferences to open the Preference dialog box. In the Category box, click General. Enter a value between 2 and 9999 in the Levels text box.

Add Text with the Text Tool

You can use the Text tool located on the Tools panel to add text to a Flash document. You can even animate text the same way you animate a graphic object.

You can use three types of text in Flash: static, dynamic, and input. Static text, the default text property, is text that does not change. Dynamic text is text you insert into your document that changes in value. Input text is text that a user types into a field. You use dynamic and input text with Flash ActionScript. See Chapter 31 to learn more about Dynamic and Input text.

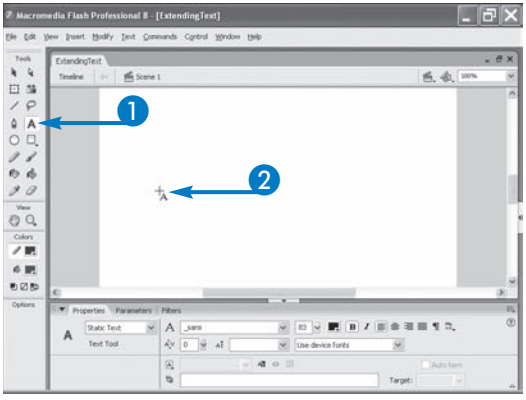
You add text to the Stage by using text boxes, which you can reposition or resize as needed. There are two types of text boxes: extending text boxes and fixed text boxes. To create an extending text box, click the Stage where you want the box to appear and start typing. To create a fixed text box, define the text box size by clicking and dragging to create the box's dimensions on the Stage. When you create a text box on the Stage, Flash applies the text attributes or formatting you assigned to previously added text boxes.

Add Text with the Text Tool

Add an extending text box

1. Click the Text tool (A).
2. Click the Stage area.

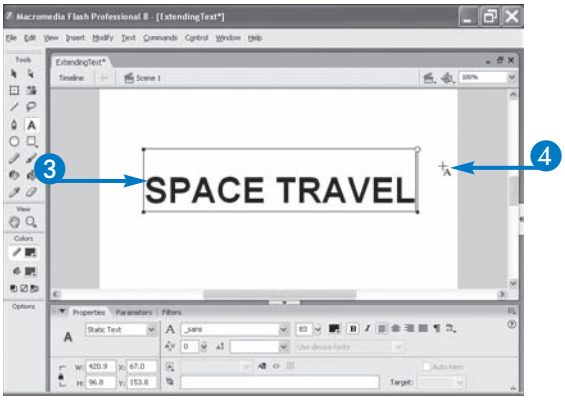
   changes to .



   A text box appears on the screen.

3. Type your text.
4. Click outside the text box to end your text entry.

   Flash adds your text to the Stage



Note: *If you select the Selection tool, you can double-click a text box to switch to Edit mode and make changes to text; if you select the Text tool, you can click the text box and make edits.*

Note: *See the section "Format Text" to learn how to assign text attributes.*

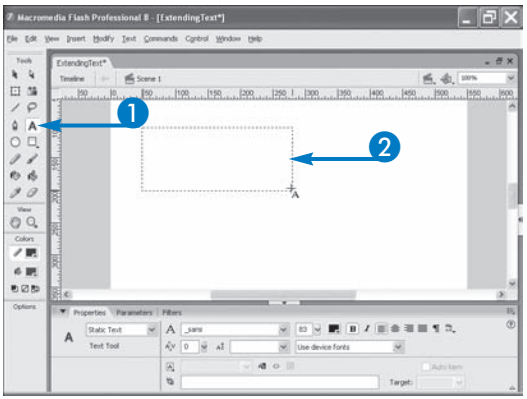
Add a fixed text box

Note: *Use fixed text boxes to type lines of text that you want to stay within the boundaries of the width of the box.*

1. Click A.

   The mouse pointer changes to .

2. Move the mouse pointer to the Stage, and click and drag the width you want to use for your text box.

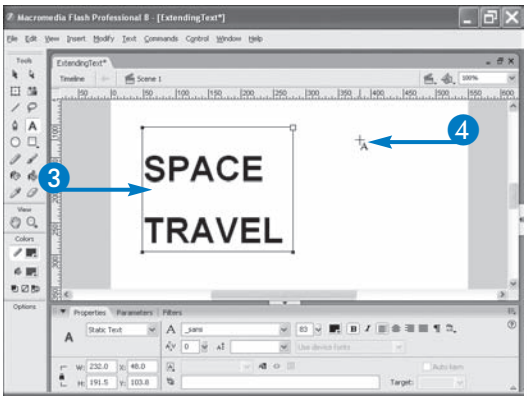


3. Type your text.

   Flash encloses your text in a text box.

4. Click outside the text box to end your text entry.

   Flash adds your text to the Stage.



Note: *See the section "Format Text" to learn how to assign text attributes.*

What is the difference between an extending text box and a fixed text box?

When you type text into an extending text box, text does not wrap. The width of the text box keeps expanding as you type. Press Enter to move to a new line. With a fixed text box, you specify a width. When the text you type reaches the end of the block, it wraps to the next line. To discern which method you are using, look at the icon in the upper right corner of the text box. Extending text boxes display a tiny circle, and fixed text boxes display a tiny square.

How do I turn an extending text box into a fixed text box and vice versa?

Using the Text tool, click inside the text box and then move the mouse pointer over the circle in the upper right corner of the text box. The mouse pointer becomes a double arrow. Drag the double arrow to the right and release the mouse button. The extending text box becomes a fixed text box. To turn a fixed text box into an extending text box, place the mouse pointer over the square in the upper right corner of the text box. The mouse pointer becomes a double arrow. Double-click to change the fixed text box to an extending text box.

Format Text

You can format text in your Flash document to change the appearance of words and characters. You can easily format text by using the Property inspector. It has all the controls for changing text attributes located in one convenient panel. You can quickly change the font, font size, font color, and spacing.

You can choose text attributes before you start typing text or apply formatting to existing text. Leave the Property inspector open to keep the formatting controls handy as you work with text on the Stage.

The Property inspector offers many of the same formatting controls you find in word processing programs. For example, you can click the Bold icon to make your text bold. When you click the Font drop-down list, you see the names and samples of available fonts you can use. See Chapter 17 to learn more about using the Property inspector.

Regardless of which attributes you assign to your text, it is important to make the text legible. Although special effects can add pizzazz to any message, the effects should never take precedence over the readability of your text.

Format Text

Create bold and italics

1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

2. Click [A].
3. Click and drag to highlight the text you want to format.

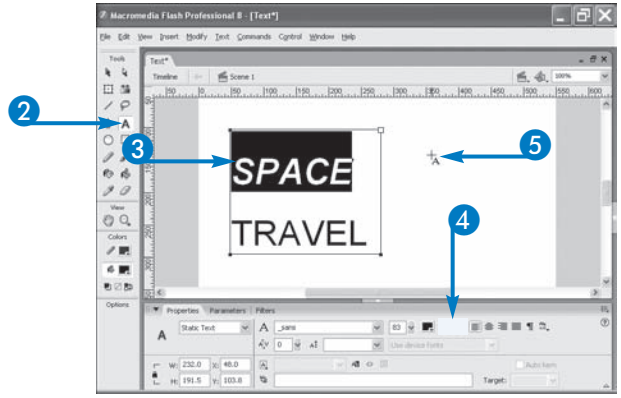
Note: *If you select the Text tool, you can click the text box and make edits; if you select the Selection tool, you can double-click a text box and make edits.*

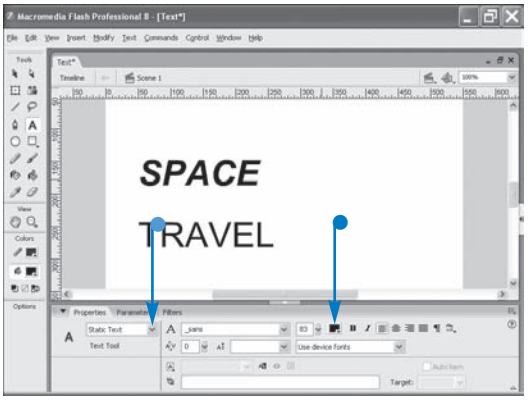
4. Click the Bold button ([B]) to apply bold or the Italic button ([I]) to apply italic.
5. Click outside the text box to end your text entry.

   The text changes appearance.

   - You can click the Text Fill color box ([■]) to open the Color palette and choose another color for the selected text.
   - To change the text type from static to dynamic or input, click here and click another text type.

Note: *See Chapter 31 to learn more about using dynamic and input text with Flash ActionScript.*





Change the text font

1. Open the Property inspector.

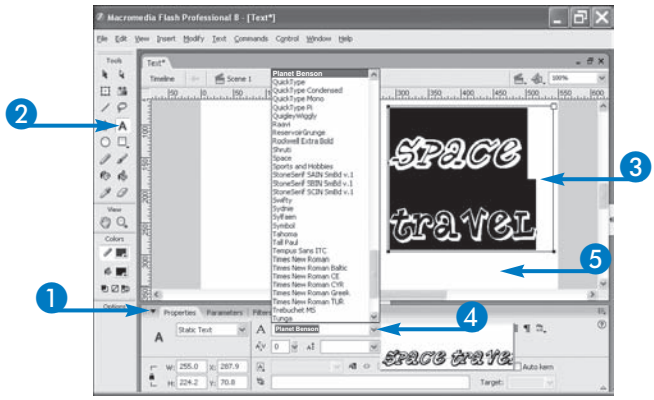
Note: *See Chapter 17 to learn how to open and close the Property inspector.*

2. Click A.
3. Click and drag to highlight the text you want to format.
4. Click here and then select a font name.

   A list of available fonts appears, along with a sample box.

5. Click outside the text box to end your text entry.

   The text changes font type.



Change the font size

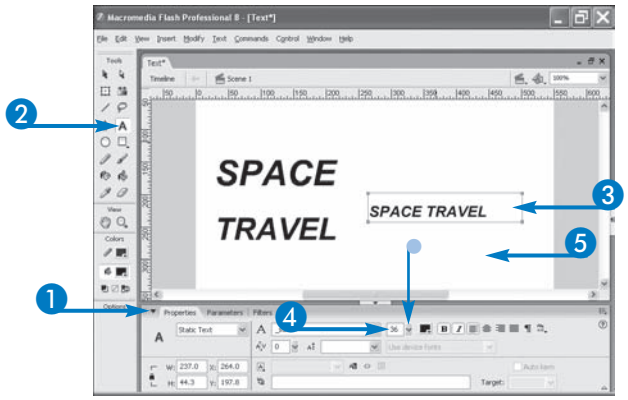
1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

2. Click A.
3. Click and drag to highlight the text you want to format.
4. Type a size in the Font Size field.
5. Click outside the text box to end your text entry.

   The text size changes.

   - You can also select a font size by clicking here and then using the slider ( ).



What are device fonts?

Flash publishes documents in SWF format. Device fonts result in smaller SWF files. Normally, when you publish or export static text, Flash embeds an outline of the font in the SWF file. Flash does not embed device fonts. Instead, Flash Player uses the font on the local computer that most resembles the font you selected. As a result, device fonts result in smaller SWF files with sharper fonts that are easier to read, particularly for fonts less than 10 points in size. The disadvantage of using a device font is that the font may look different from what you expected when played back. Flash includes three device fonts: _sans, _serif, and _typewriter.

Do I have to use the Property inspector to format text?

No. You can also use the Text options on the main menu to format your text. By using the Text options, you can change your font and font size, or make your text bold, italic, and more.

Can I use a gradient as a font color?

No. If you want to apply a gradient to text, you must first break the text apart and apply the gradient to the fill. To learn more about breaking text apart, see the section "Break Apart Text."

Align and Kern Text

You can control the position of text within a text box by using the alignment options in the Property inspector or on the Text menu. Alignment options include setting horizontal controls for the positioning of text, such as left, center, right, or fully justified.

Left alignment moves the text to the far left side of the text box. Right alignment moves the text to the right side. Center alignment centers the text between the left and right edges of the text box. Fully justified alignment spaces out the text evenly between the left and right edges so that both margins are flush with the edges of the text box. To learn how to set margins for text boxes, see the section "Set Text Box Margins and Indents."

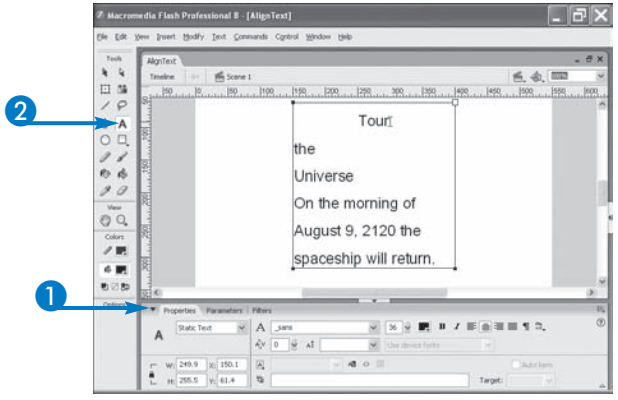
Another way to control the positioning of text is with *kerning*. Kerning refers to the spacing between characters. By changing the kerning setting, which changes the space between characters, you can make your text aesthetically more pleasing. You can find kerning controls in the Property inspector. To apply alignment or kerning options to a text box, you must first select the text.

Align Text

1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

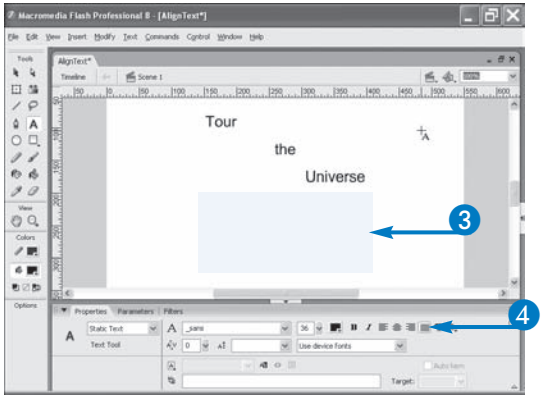
2. Click A.



3. Click and drag to highlight the text you want to align.
4. Click one of the alignment buttons.

   You can click the Align Left button (), the Align Center button (), the Align Right button (), or the Justify button ().
5. Click outside the text box to end your text entry.

   Flash aligns the text.



Kern text

1. Open the Property inspector.

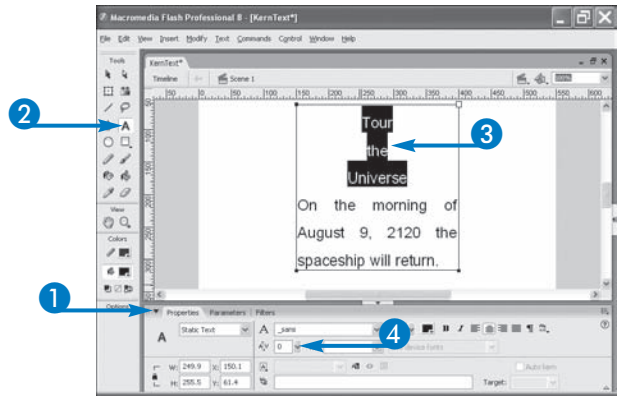
Note: *See Chapter 17 to learn how to open and close the Property inspector.*

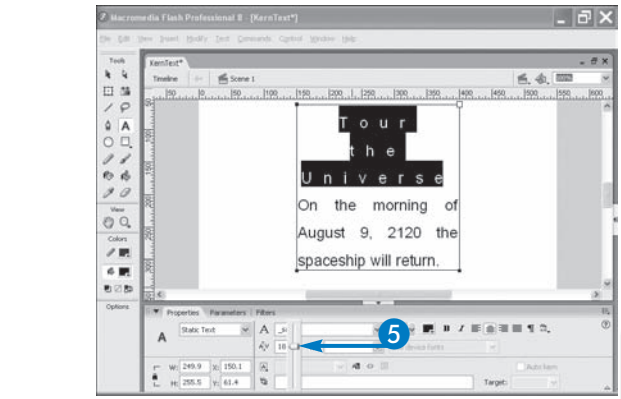
2. Click A.
3. Click and drag to highlight the text you want to kern.
4. Click here.

   The kerning slider ( ) appears.

5. Drag up to add space between characters or down to remove space between characters.

   Flash kerns the characters in the text box.





MASTER IT

How do I create vertical text?

You can create vertical text that flows from left to right as you create each line of text, or vertical text that flows from right to left as you create each line of text. To create vertical text, click the Text tool and then click the Change Orientation of Text icon located in the upper right corner of the Property inspector. A pop-up menu appears. Click Vertical, Left to Right or Vertical, Right to Left. Click on the Stage to create an extending text box, and then begin typing. To change existing text to vertical text, your text must be in an extending text box.

Does the Property inspector save my current formatting settings?

The Property inspector retains your last formatting settings as long as you have Flash open. If you add another text box to the Stage, the text will have the attributes you previously assigned. The next time you launch Flash and open the Property inspector, the default settings are in effect until you change them.

How do I copy attributes from one text box to another?

Click the Selection tool and then click a character in the text box containing the text to which you want to copy attributes. Click the Eyedropper tool ( ) on the Tools panel and then click the text box containing the attributes from which you want to copy. Flash copies the attributes.

Set Text Box Margins and Indents

Set margins and indents within text boxes for greater control of text positioning in your Flash documents. You can find margin and indent commands in the Format Options dialog box. This dialog box is accessible through the Property inspector.

Margins define the distance between the edge of the text box and the text inside. For example, if a text box appears next to another graphic object on the Stage, you may want to specify a margin within the text box to make sure the text does not appear too close to the bordering graphic. You can define left and right margins, as well as top and bottom margins.

Indents are used to control where a line of text sits within the margins. For example, you might choose to indent the first line in a paragraph by several pixels or points.

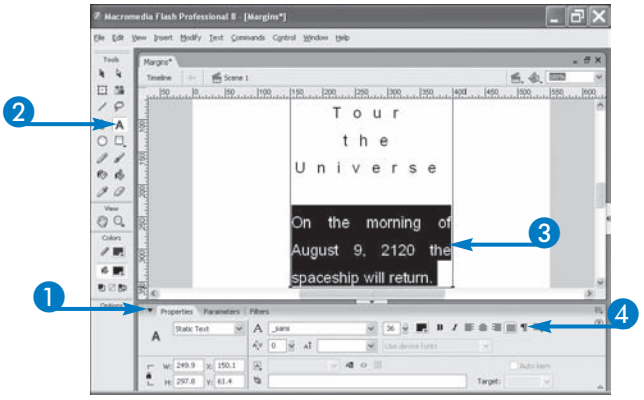
In addition to margin and indent controls, the Property inspector also has controls for line spacing. Line spacing is the distance between lines of text. Increase the line spacing to add space between lines or decrease the spacing to bring the lines closer together.

Set the Margins

1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

2. Click A.
3. Click and drag to highlight the text for which you want to set the margins.
4. Click the Edit Format options button (¶).



The Format Options dialog box appears.

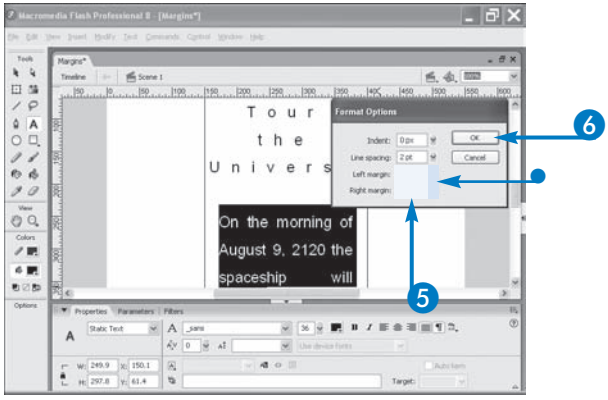
5. Set the left and right margins.

You can type a value in the margin text box.

- Alternatively, you can click here and drag the slider to the desired value.

6. Click OK.

Flash adjusts the margins.

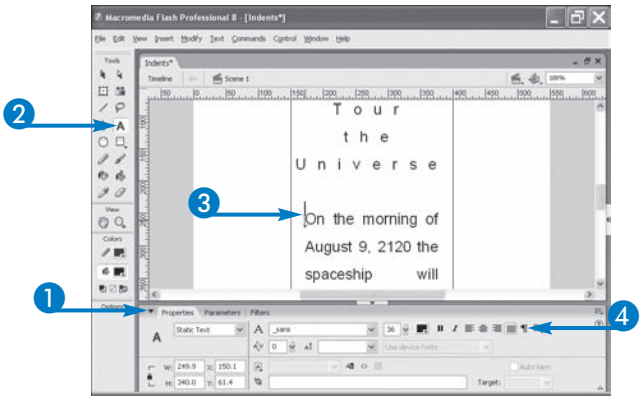


Set an indent and line spacing

1. Open the Property inspector.

Note: *See Chapter 17 to learn how to open and close the Property inspector.*

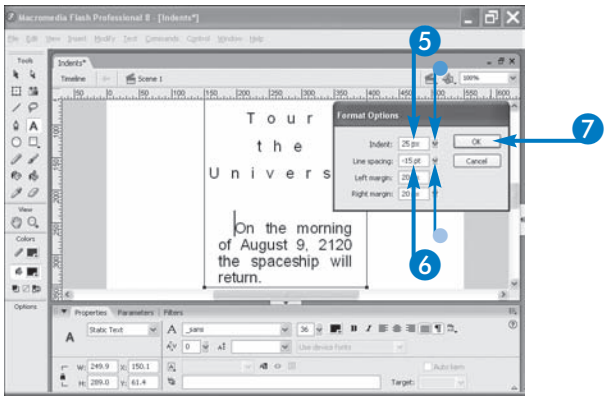
2. Click A.
3. Click at the beginning of the text line you want to indent.
4. Click ¶.



The Format Options dialog box appears.

5. Type an indent value in the Indent field.
   - Alternatively, click here and drag the slider to change the value.
6. Type a line spacing value in the Line Spacing field.
   - Alternatively, click here and drag the slider to change the value.
7. Click OK.

Flash changes the indentation and the line spacing.



How do I change the margin's unit of measurement?

By default, Flash assumes you work with pixels as your unit of measurement, but you can change the unit of measurement to points, inches, centimeters, or millimeters. Click Modify and then Document. The Document Properties dialog box appears. Click the down arrow for the Ruler Units field and select a unit. Click OK. When you open the Format Options dialog box, the indent and margin values reflect the unit of measurement you defined.

Should I use the Line Spacing slider to set superscript or subscript characters in Flash?

No. You cannot use Line Spacing on individual characters — only entire lines. To set superscript or subscript characters, first select the text you want to superscript or subscript. Next, display the Property inspector. Click the down arrow for the Character Position field; a list of choices appears. Click Superscript or Subscript. Flash superscripts or subscripts the characters you selected.

Can I make text selectable?

Yes. Selectable text is text that the user can copy or cut. Once the user has copied or cut the text, he or she can then paste the text into another document. In Flash, you can make static horizontal text selectable by selecting the text and clicking the Selectable button on the Property inspector panel.

Move and Resize Text Boxes

You can move text boxes around on the Flash Stage or resize them as needed. Text boxes are as mobile and scalable as other objects you add to the Stage.

You can position a text box anywhere on the Stage. Alternatively, you can move a text box off the Stage onto the Pasteboard. Nothing you place on the Pasteboard appears in your Flash document. However, you can move items to the Pasteboard and move them back onto the Stage when you need them, such as when you want to place an item into a particular Flash frame. See Chapter 23 to learn more about working with frames.

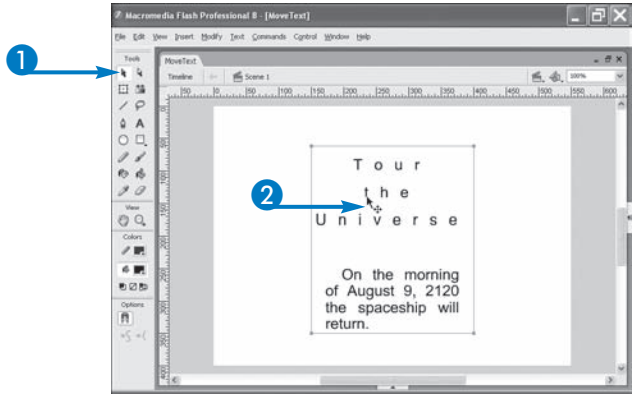
When you free transform a text box, small handles appear on the corners and sides of the box. You can use these handles to resize the text box. When you resize a text box, depending on the direction you choose to scale the box, Flash resizes the text. Flash overrides any font sizes you have previously set. If you want the text set at a certain size, you must manually change the font size.

Move and Resize Text Boxes

Move a text box

1. Click the Selection tool ( ).
2. Click a character inside the text box you want to move.

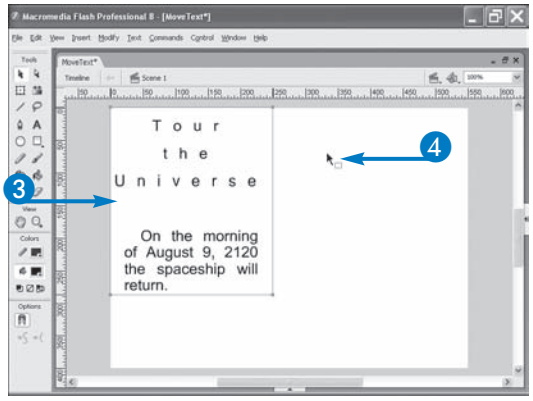
   changes to , and a bounding box forms around the text.



3. Click and drag the box to a new location and release the mouse button.

   Flash moves the text box.

4. Click anywhere outside the text box to remove the bounding box.



Resize a text box

1. Click the Free Transform tool ( ).

Note: *See Chapter 19 to learn about the Free Transform tool.*

2. Click a character inside the text box.

   A bounding box with handles appears around the text box.

3. Move over a handle.

   changes to ↔.

4. Click and drag a handle.

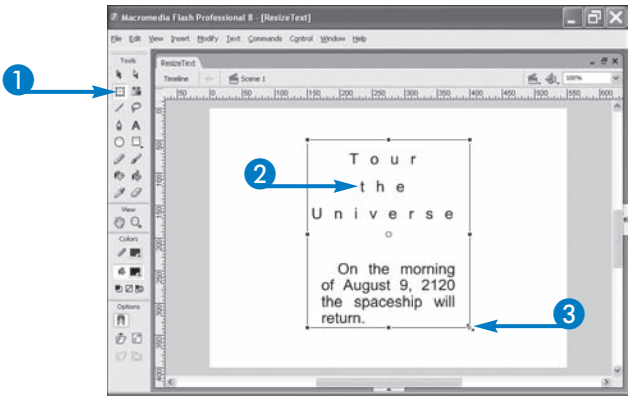
   You can use a side handle to increase the size of the box horizontally.

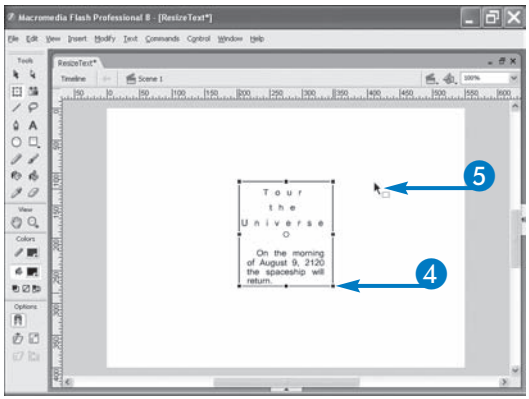
   You can use a top or bottom handle to change the height of the box.

   You can use a corner handle to change all sides of the box proportionately.

   Flash resizes the text box.

5. Click anywhere outside the text box to remove the bounding box.





Can I rotate, skew, or resize a text box?

Yes. Click the Selection tool and then click a character in the text box to activate the text box. After you activate the text box, click the Free Transform tool, and then click either the Rotate and Skew modifier or the Scale modifier on the Tools panel. Click and drag edit points to rotate, skew, or resize the text box. You can create a variety of interesting effects by using the Free Transform tool on a text box. You can find out more about rotating, skewing, and resizing objects in Chapter 19.

Can I spell check text?

Yes. Click Text and then Spelling Setup on the main menu to open the Spelling Setup dialog box. You can use the Spelling Setup dialog box to select the spell-check options you want to use.

You spell check your document by clicking Text and then Check Spelling on the main menu. If you have spelling errors in your document, Flash offers a list of suggestions. You can accept a suggestion, or you can ignore, change, or delete the misspelled word. If it is a word you use often, but it is not in the Flash dictionary, you can add it to your personal dictionary.

Break Apart Text

You can use the Break Apart command to turn text into graphics and then manipulate the text with the various Flash drawing and editing tools. For example, you can break text into separate blocks and distribute them to different layers in your animation, or you can break text apart to make modifications on each character in a word.

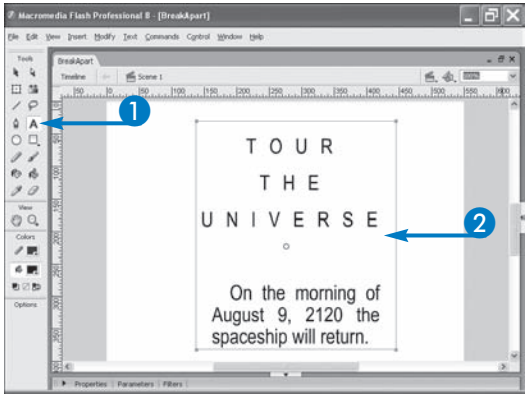
When you apply the Break Apart command to a text block, Flash treats each character of text as an object or graphic shape. Apply the command once to turn text into individual objects, an object for each character in the text. Apply the command a second time to convert the text into shapes. You can then modify the text shapes just as you modify other shapes you draw in Flash. See Chapters 18 and 19 to learn more about the Flash drawing tools.

After you apply the Break Apart command to a text block, you can no longer make edits to the text, such as changing the font or font size. For that reason, be sure you apply all your text formatting before applying the Break Apart command.

Break Apart Text

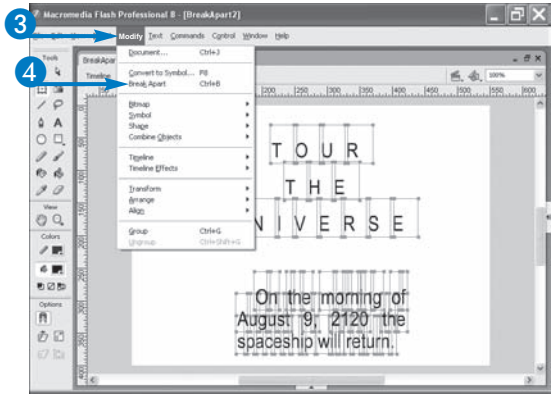
1. Click A.
2. Click inside the text box.

   Flash activates the text box.



3. Click Modify.
4. Click Break Apart.

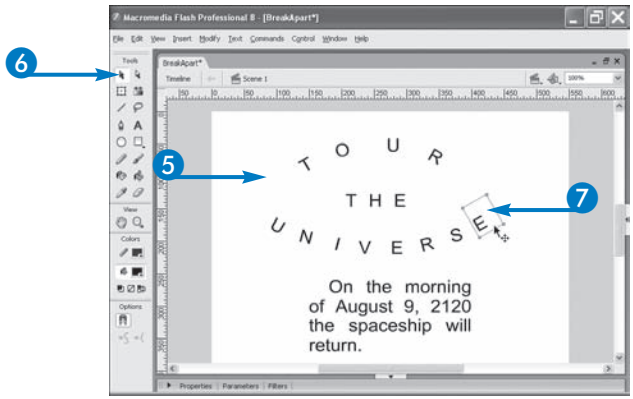
   Flash breaks the text into character blocks, where each character is an object you can manipulate.



5. Click anywhere on the Stage to deselect the characters.
6. Click .
7. Click each character and place it on the Stage where you want it.

   You can also use the Free Transform tool to manipulate each character.

Note: *See Chapter 19 to learn how to use the Free Transform tool.*

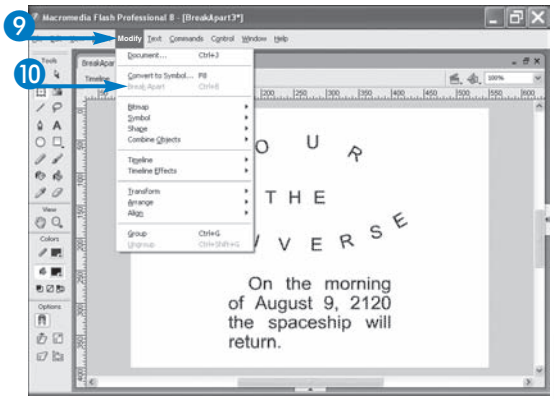


8. Select all the characters.

Note: *See Chapter 19 to learn how to select everything on the Stage.*

9. Click Modify.
10. Click Break Apart.

    When you click Modify and then Break Apart a second time, Flash turns each character into a fill, and you can manipulate the characters as you would any other fill.



Can I use the Transform tool's Envelope modifier on text?

Yes. You can use the Free Transform tool's Envelope modifier to change the appearance of text. For example, you can exaggerate the size of some letters while keeping the other letters the same size, or you can make the text appear to follow a path.

Before using the Envelope modifier, you must apply the Break Apart command to your text box twice. The Envelope modifier uses two types of edit points: regular edit points and tangent handles. Regular edit points are square, and you can manipulate them to change the corners and sides of an object. Tangent handles are circles that adjust points along the edges of a selected object.

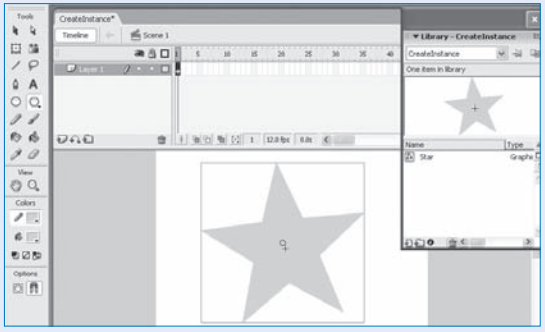
How do I use the Transform tool's Envelope modifier on text?

You can use the Free Transform tool's Envelope modifier to enclose the text with an envelope of edit points and then use the edit points to shape or flow the text.

To shape text by using the Envelope modifier, apply the Break Apart command twice to the text box you want to edit. Click the Free Transform tool, and then click the Envelop modifier. Edit points appear around the text. Click and drag the edit points to change the appearance of the text. Flash modifies the shape or flow of the text.

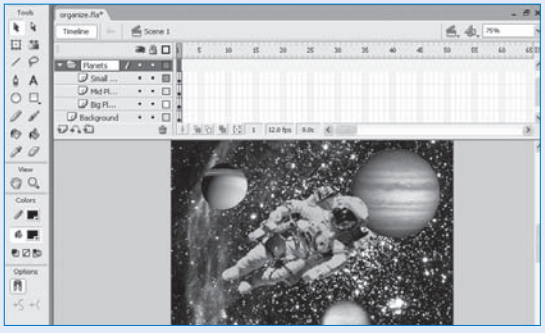
21 Working with Symbols and Instances

Create a Symbol 406
Create an Instance.....408
Modify an Instance 410
Edit a Symbol 412
Understanding the Library 414



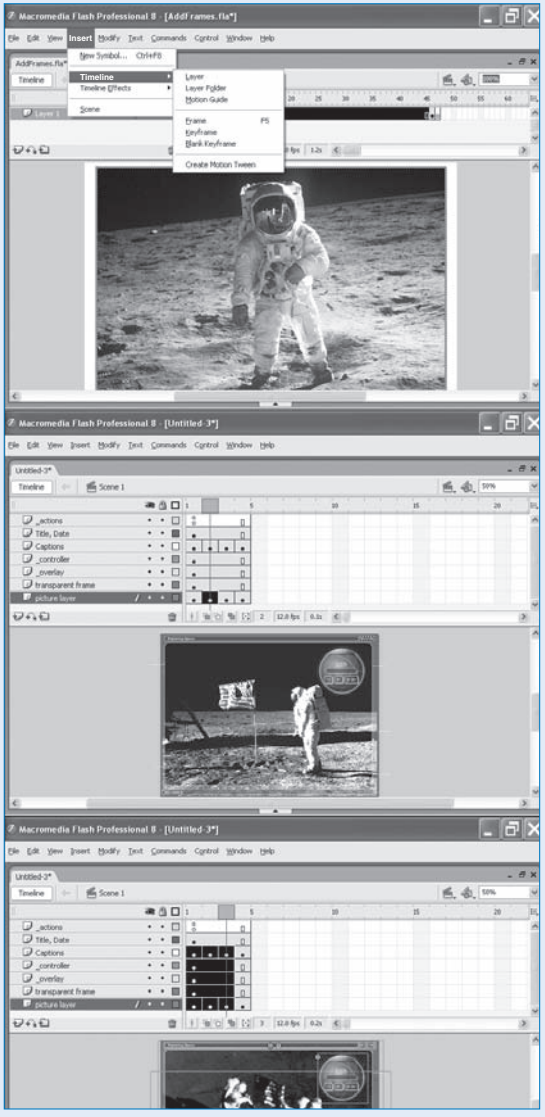
22 Working with Layers

Add and Delete Layers 418
Set Layer Properties 420
Work with Layers on the Timeline.....422
Stack Layers 424
Organize Layers into Folders.....426
Add Guide Layers 428
Add and Create a Mask Layer 430
Distribute Objects to Layers 432

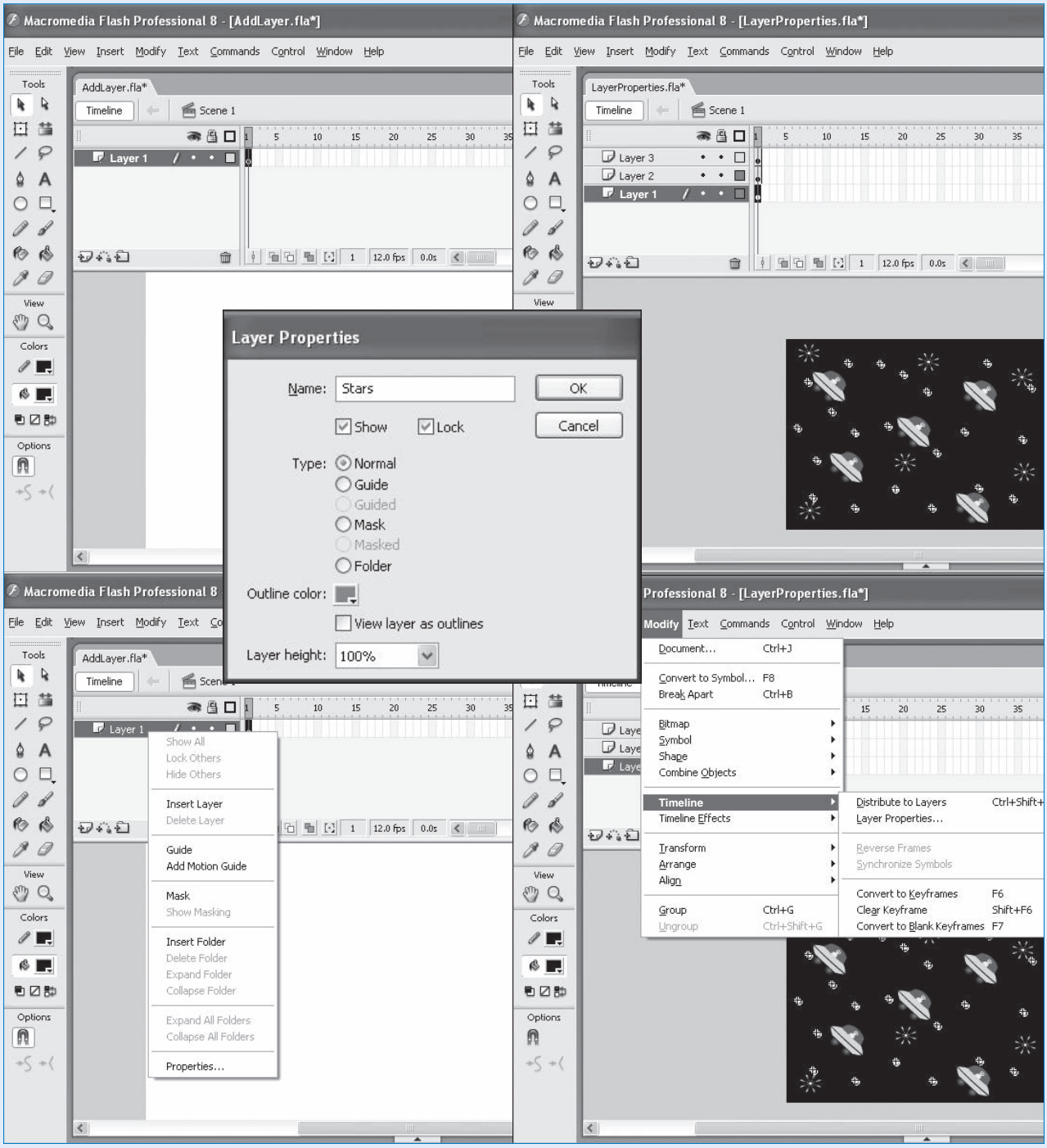


23 Working with Frames

Add Frames.....434
Select Frames 438
Remove Frames.....439
Modify Frame Properties.....440
Move and Copy Frames 442



PART VI
BUILDING YOUR FLASH MOVIE



Create a Symbol

A *symbol* is a reusable graphic, button, or movie clip. Creating and using symbols speeds the playback of your movie and enables you to share graphics, movie clips, and buttons among movies. Every Flash movie has a Library. When you create a symbol, it automatically becomes part of the Library.

Graphics are static images. You can place graphics on the main Timeline of a document, but you cannot attach ActionScript to a graphic symbol and you cannot make a graphic interactive.

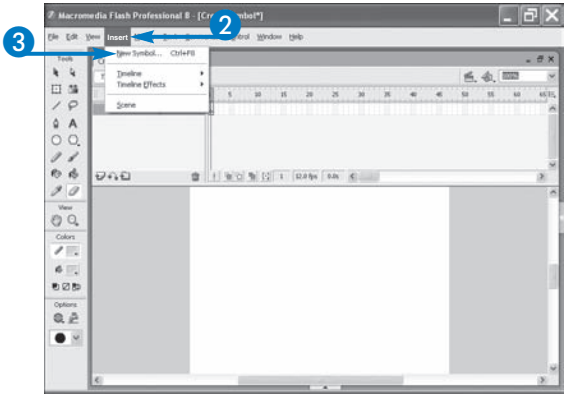
Buttons are interactive graphics. Buttons can respond to user actions. You use ActionScript to give Flash instructions on how to respond when the user clicks on, rolls the pointer over, or performs some other action in relation to a button. Buttons have their own Timeline.

Movie clips are reusable animations that have their own Timeline. You can attach ActionScript to a movie clip.

Symbols speed up the playback of your document because Flash needs to download a symbol to a browser only once. You can create a symbol or convert an object on the Stage into a symbol. You create symbols in the symbol-editing mode.

Create a Symbol

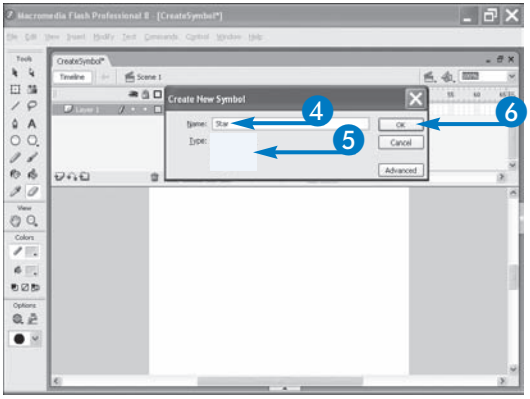
1. Make sure nothing on the Stage is selected.
2. Click Insert.
3. Click New Symbol.



The Create New Symbol dialog box opens.

4. Type a name.
5. Click a behavior (○ changes to ◉).
6. Click OK.

Flash changes to the symbol-editing mode.



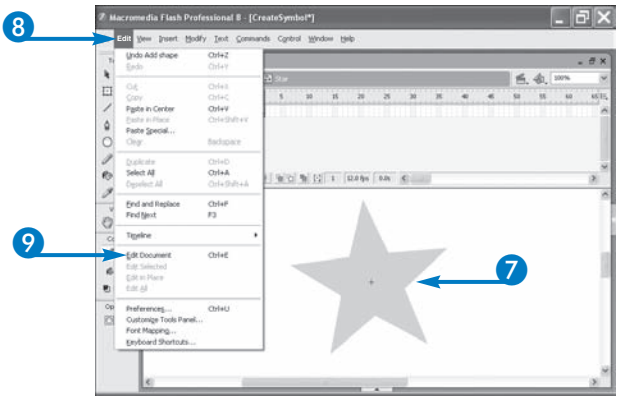
7. Create the symbol content.

   Draw with the drawing tools or import a graphic by clicking File, Import.

Note: *See Chapters 18 and 19 to learn how to use the drawing tools and to learn how to import graphics.*

8. Click Edit.
9. Click Edit Document.

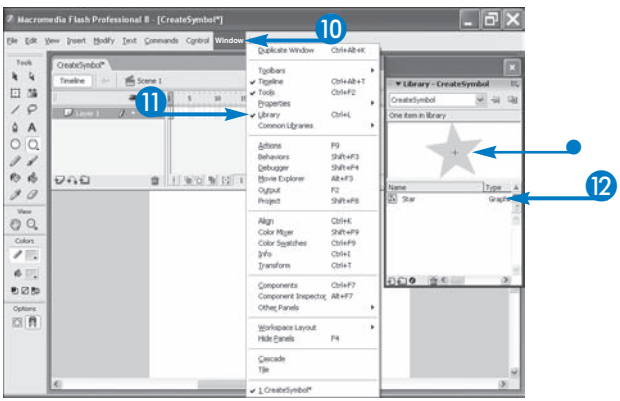
   Flash exits the symbol-editing mode.



10. Click Window.
11. Click Library.

    Flash opens the Library.

12. Click the symbol name.
    - Flash displays the symbol in the Preview window of the Library.



How do I convert an object on the Stage into a symbol?

You can change any selection into a symbol. To reduce the file size of your movies, consider turning background images into symbols so you can reuse them. To convert an object on the Stage into a symbol, select the object. On the main menu, click Modify and then click Convert to Symbol to open the Convert to Symbol dialog box. Type the name of the symbol and click to select from Movie Clip, Graphic, or Button as the behavior. Click OK. Flash turns your selection into a symbol and adds it to the Library.

Can I make a copy of a symbol?

Yes, you can duplicate a symbol by using one of two methods: by using the Library panel or by selecting an instance on the Stage. To use the Library panel to duplicate a symbol, click the symbol name in the Library panel, and then select Duplicate from the Library Options menu. To duplicate the symbol by selecting an instance, select an instance of the symbol on the Stage, and then on the main menu click Modify, Symbol, Duplicate Symbol. When you duplicate an image by selecting an instance, Flash makes a duplicate of the symbol and replaces the instance on the Stage with an instance of the duplicate symbol.

Create an Instance

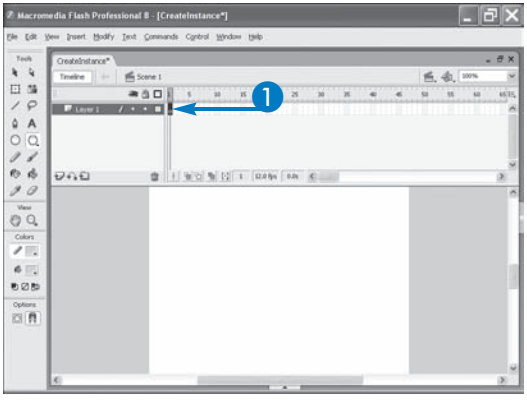
Creating and using instances of a symbol can dramatically reduce the size of your Flash movie. An *instance* is a copy of a symbol. Each symbol can have an unlimited number of copies, or *instances*. An instance can have a behavior type of Graphic, Button, or Movie Clip. Instances inherit their behavior type from the symbol. To change an instance's behavior type, select the instance and then choose from Graphic, Button, or Movie Clip in the Symbol Behavior field of the Property inspector.

Using instances of a symbol dramatically reduces the file size of your movie because saving instances of an image requires less space than saving a complete description of an image each time you use it. You create an instance by opening the Library and dragging the symbol from the Library onto the Stage. You use keyframes to define changes in an animation. See Chapter 23 to learn more about keyframes. You can place an instance only in a keyframe. If you attempt to place an instance in a frame that is not a keyframe, Flash automatically moves the instance to the nearest keyframe.

Create an Instance

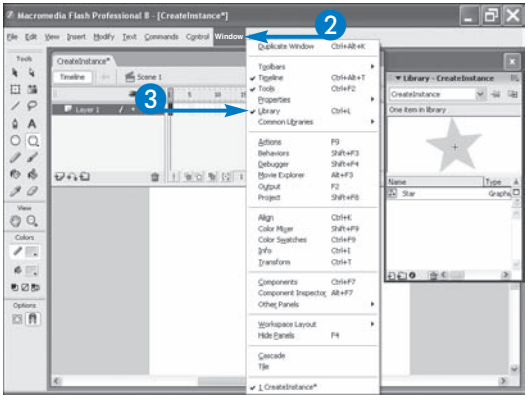
1. Click a keyframe.

Note: *See Chapter 23 to learn how to work with keyframes.*

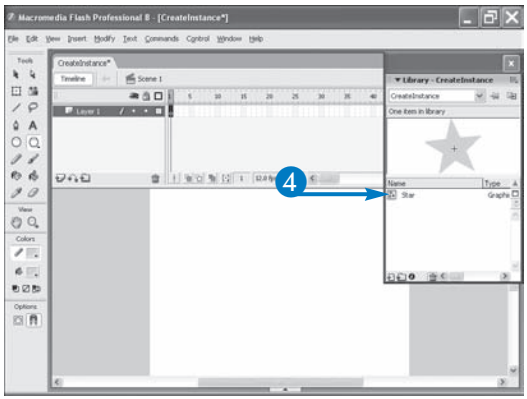


2. Click Window.
3. Click Library.

   The Library opens.

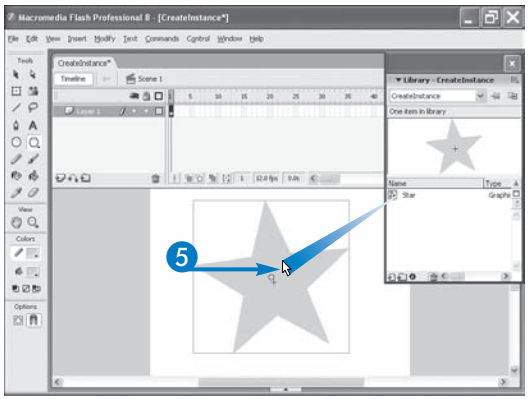


4 Click the symbol name.



5 Drag the symbol from the Library onto the Stage.

An instance of the symbol appears on the Stage.



Can I break the link between an instance and a symbol?

Yes, you can break the link between an instance and a symbol by selecting the instance and clicking Modify, Break Apart on the main menu. The instance breaks into an ungrouped collection of shapes and lines. This is useful if you need to make substantial changes to an instance or if you want to change the instance into a new symbol.

Can I change an instance of one symbol to an instance of another symbol?

Yes. For example, if you have an instance of Jupiter on the Stage and you want to replace it with an instance of Saturn, you would select the instance of Jupiter, click the Swap button in the Property inspector to open the Swap Symbol dialog box, select the Saturn symbol, and then click OK.

Can I delete an instance?

Yes, deleting an instance is simple. To delete an instance, select the instance and then press the Delete key. You can also delete an instance by selecting the instance and then pressing the Backspace key. If you want to use the main menu to delete an instance, select the instance, click Edit, and then click Clear.

Modify an Instance

Each instance of a symbol has its own properties, which are separate from the symbol. Changing the properties of an instance enables you to use a single symbol is a variety of ways. Changes you make to an instance do not change the symbol or other instances of the symbol.

You can change the properties of an instance by using the Property inspector. The Color field in the Property inspector provides you with the following options: Tint, Alpha, and Brightness. Tint refers to the color of an instance. You can use the Color box in the Property inspector to select a color. You can also use the slider to adjust the amount of tint. Alpha refers to the transparency of an instance. An instance with an alpha property of 0% is completely transparent. An instance with an alpha property of 100% is completely opaque. Brightness refers to the relative lightness or darkness of an image. Black has a brightness of –100%. White has a brightness of +100%.

You can use the Free Transform tool to change the size, rotation, and skew of an instance.

Modify an Instance

Change the color of an instance

1. Select the instance you want to modify.

Note: *See Chapter 19 to learn how to select objects.*

2. Click here and then select Tint.

   Tint options appear in the Property inspector.

3. Click the Color box ( ).

   The Color palette opens.

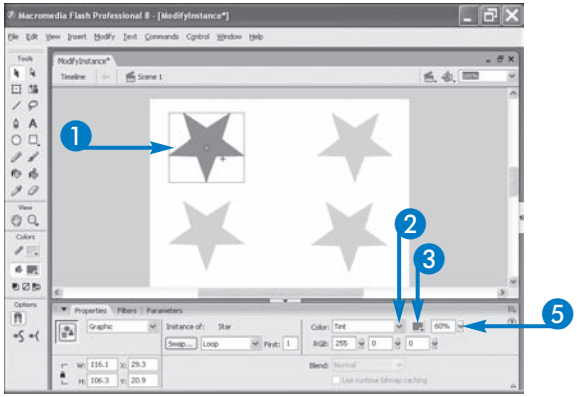
   changes to .

4. Click the color you want.

   Flash changes the color of the instance.

5. Click here and then drag to adjust the amount of tint.

   Drag down to reduce the tint. Drag up to increase the tint



Change the brightness of an instance

1. Select the instance you want to modify.

Note: *See Chapter 19 to learn how to select objects.*

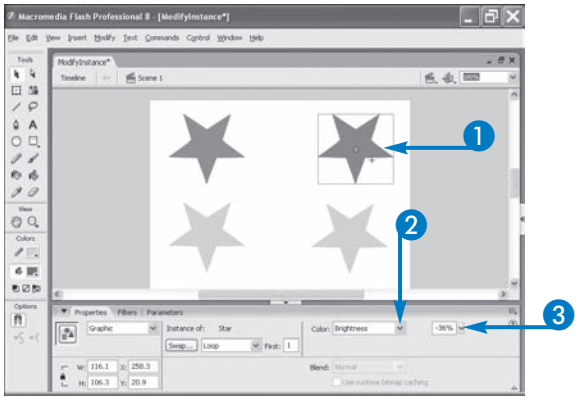
2. Click here and then select Brightness.

   The Brightness option appears in the Property inspector.

3. Click here and then drag to adjust the brightness.

   Drag up to increase the brightness. Drag down to decrease the brightness.

   Flash adjusts the brightness of your instance.



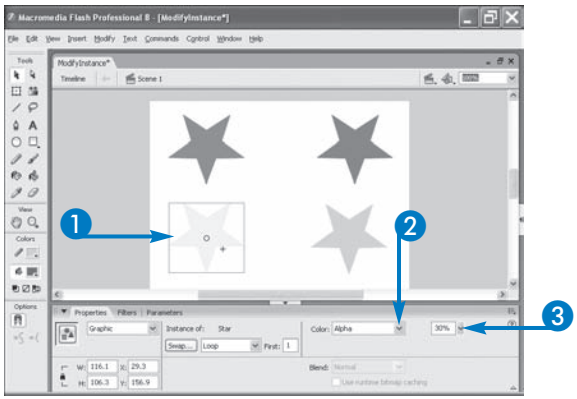
Change the transparency of an instance

1. Select the instance you want to modify.

Note: *See Chapter 19 to learn how to select objects.*

2. Click here and select Alpha.
3. Click here and then drag to adjust the transparency.

   A transparency of 100% makes the instance completely opaque. A transparency of 0% makes the instance completely transparent.



Change the size, rotation, or skew of an instance

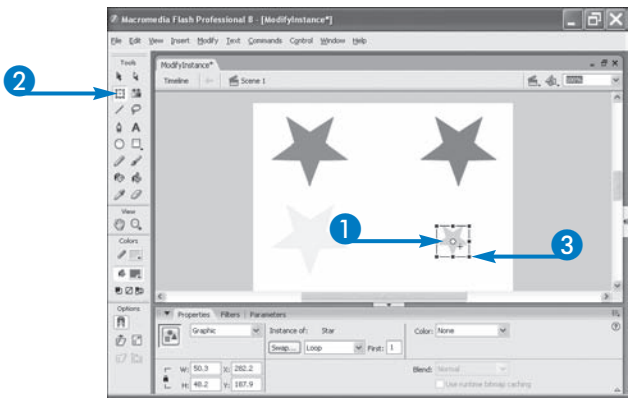
1. Select the instance you want to modify.

Note: *See Chapter 19 to select objects.*

2. Click the Free Transform tool ( ).
3. Change the size, rotation, or skew of your instance.

Note: *See Chapter 19 to learn how to use the Free Transform tool.*

Flash applies the modifications.



How do I change the width, height, or location of an instance?

You can change the width and height of an instance by using the Free Transform tool or by entering a width and height in the W and H fields of the Property inspector. You can change the location of an instance by choosing the Selection tool and then clicking and dragging or by typing the X (horizontal) and Y (vertical) location in the X and Y fields of the Property inspector. On the main menu, click Modify, Scale or Modify, Scale and Rotate to change the size of an instance. If you click Modify Scale and Rotate, you can also rotate the instance in addition to changing the scale.

Can I flip an instance?

Yes. Flipping changes the orientation of an instance. For example, flipping horizontally changes the orientation of an instance that faces right so that it faces left, or vice versa. Flipping vertically changes the orientation of an image that faces down so that it faces up, or vice versa. To flip an instance horizontally, select the instance and then on the main menu click Modify, Transform, Flip Horizontal. To flip an instance vertically, select the instance and then on the main menu click Modify, Transform, Flip Vertical.

Edit a Symbol

Editing a symbol gives you the ability to change all instances of a symbol simultaneously, because any change you make to the symbol affects all instances of the symbol. Flash provides you with three ways to edit a symbol: Edit in Place, Edit in New Window, and the symbol-editing mode.

If you use Edit in Place, the item you edit must be on the Stage. With Edit in Place, you can edit the symbol while viewing all the other items that are on the Stage. As you edit the symbol, the other items appear dimmed.

If you use Edit in a New Window, Flash provides you with a new window in which you can edit your symbol. The only thing that appears on the Stage is the image, and you can see the Timeline associated with the image at the top of the screen.

To use the symbol-editing mode, change the Stage from Stage view to View Only Symbol.

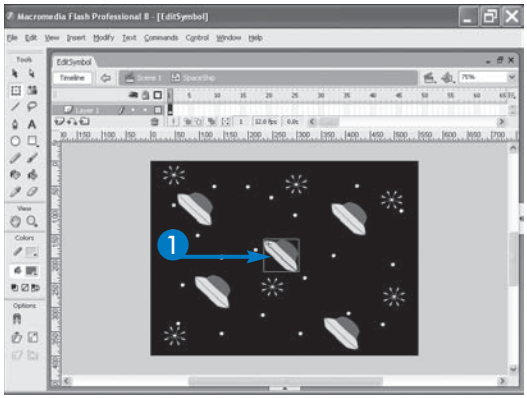
Regardless of the edit mode you choose, the symbol appears on the Stage with its registration point displayed, and you can use all the tools on the Tools panel to edit it.

Edit a Symbol

Edit in place

1. Double-click the instance you want to modify.

   Flash dims all other objects on the Stage and changes to the Edit in Place mode.

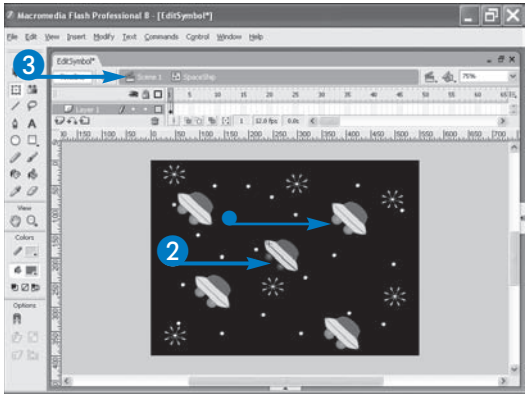


2. Use the Property inspector, menu, Library, or tools in the toolbox to make changes to the symbol.

Note: *See Chapter 19 to learn how to edit objects.*

3. Click the scene name to exit the Edit in Place mode.

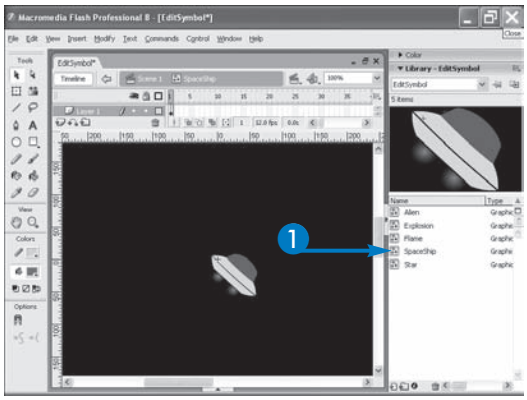
   - Flash changes all instances of the symbol.



Edit in a new window

1. Double-click the symbol's icon.

   Flash changes to the Edit in New Window mode.

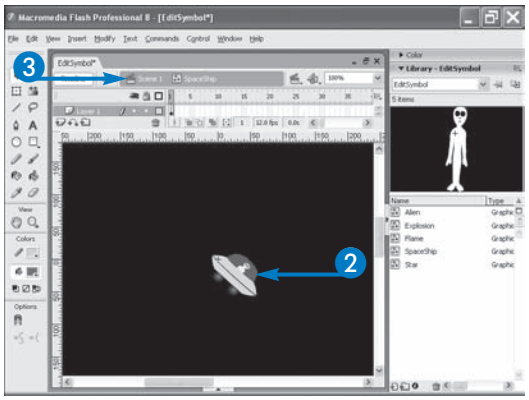


2. Use the Property inspector, menu, Library, or tools in the toolbox to make changes to the symbol.

Note: *See Chapter 19 to learn how to edit objects.*

3. Click the scene name to exit the Edit in New Window mode.

   Flash makes the changes to all instances of the symbol.



How do I edit a symbol using the symbol-editing mode?

To edit a symbol using the symbol-editing mode, select an instance of the symbol you want to edit. Then, on the main menu, click Edit, Edit Symbols. The symbol appears alone on the Stage. Edit the symbol as necessary and then exit the symbol-editing mode by clicking Edit, Edit Document on the main menu, or by clicking the scene name on the Edit bar. When you are in symbol-editing mode, the name of the symbol you are editing appears on the Edit bar above the Timeline next to the Scene name.

What is a registration point and how can I change it?

All symbols, groups, instances, type blocks, and bitmaps have a registration point. A cross hair indicates the location. Flash uses the registration point when you are positioning an object or applying transformations. When positioning an object, the registration point is used as the X and Y coordinate. When applying a transformation, it may be used as the point of origin. You can set the registration point when you create a new symbol. While editing your symbol, you can change the location of the registration point by moving the object relative to the cross hair.

Understanding the Library

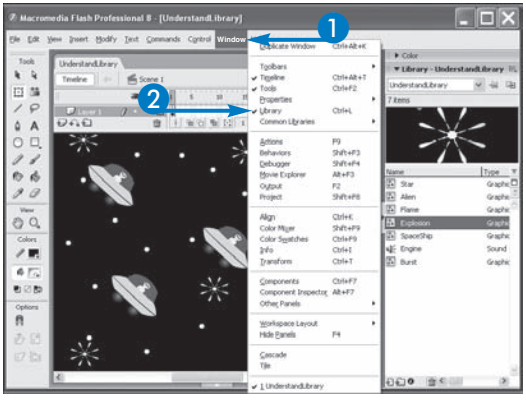
You use the Flash Library to organize and store the symbols you create in Flash and the symbols you import into Flash. The Library panel provides you with many options. You can select an option by clicking an icon or by selecting the option from the Library Options menu. You can preview an item, sort items, view the window in the wide or narrow state, delete an item, view item properties, create a new folder, or create a new symbol by using the Library panel. The icon next to a Library item indicates the file type.

Flash displays Library items in the Preview window at the top of the Library panel. Flash lists Library items at the bottom of the Library panel. The item list consists of the name of the item, the kind of item, the number of times you have used the item, linkage information, and the date you last modified the item. Kind refers to whether the item is a movie clip, button, graphic, or other type of item. The linkage column indicates whether the item is from a shared Library. You can use a shared Library when you want to use assets from one Library in multiple Flash movies.

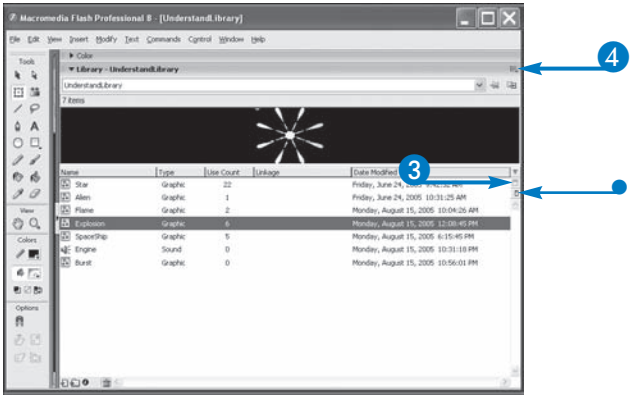
Understanding the Library

1. Click Window.
2. Click Library.

   The Library window opens.

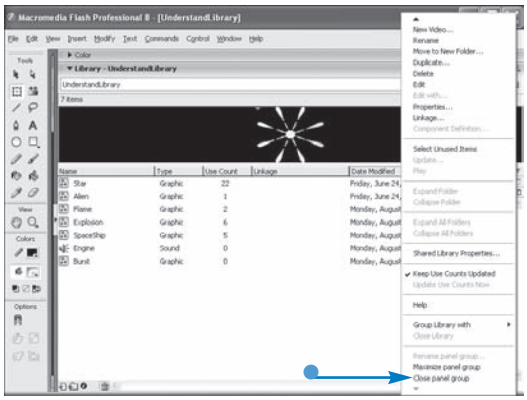


3. Click the Wide Library View button ( ) to display the full Library window.
   - You can return the window to Narrow state by clicking the Narrow Library View button ( ).
4. Click the Library Options menu button ( ).



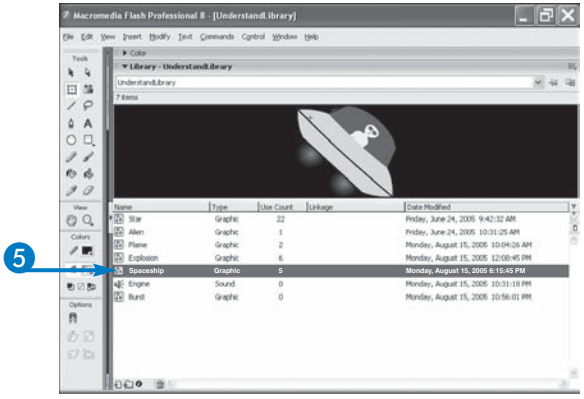
Flash opens the Library Options menu.

- Click Close panel group to close the Library panel.



5 Click a symbol name.

Flash displays the symbol in the Preview window.



Can I rename a Library item?

Yes. To rename an item, you can use any one of the following four methods: 1) Double-click the item name. The name field changes to Edit mode. Type the new item name and press Enter. 2) Click the item name and then click the Properties icon. The Symbol Properties dialog box opens. Type the new name and click OK. 3) Right-click the item. Choose Rename from the context menu; the name changes to Edit mode. Type the new item name and press Enter. 4) Click the item name. Open the Options menu. Choose Rename; the name changes to Edit mode. Type the new item name and press Enter.

My use counts are not correct. What should I do?

To have Flash automatically keep your use count up to date, you must choose Keep Use Counts Updated from the Library Options menu. You can manually update your use counts by choosing Update Use Counts Now on the Library Options menu.

Is there a way to update Library files that have been imported?

Yes. After importing a file into Flash, if you use another product to modify that file, you may want to update Flash. You update Flash by clicking Update on the Library Options menu. The Update Library Items dialog box opens. Click the Update button.

continued

Understanding the Library *(Continued)*

You can sort the Library item list by name, kind, use count, linkage, or date modified by clicking the column head. To expand or decrease the size of a column, click the line that separates the columns and drag.

You can also organize items into folders. You might want to put all the graphics related to a movie clip or button into a single folder. You use the New Folder button to create a folder. To place an item in a folder, drag the item over the folder. To toggle a folder between open and closed, you can double-click the folder. You can also open and close a folder by clicking the folder to select it and then clicking Expand Folder or Collapse Folder on the Library Options menu. You can expand or close all folders by clicking Expand All Folders or Collapse All Folders on the Library Options menu.

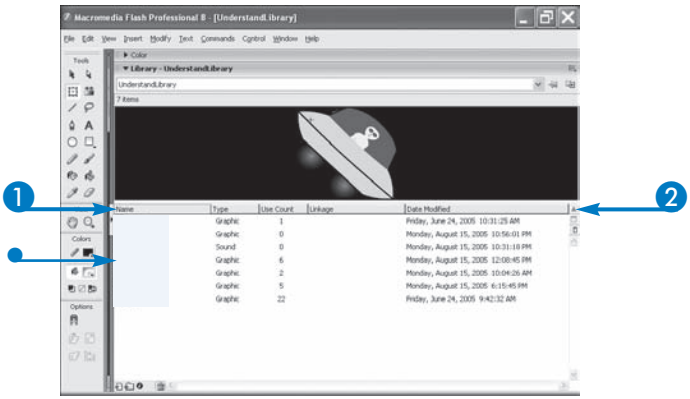
In addition to buttons, graphics, and movie clips, you can store sounds and fonts in the Library. You can play sounds and movie clips by clicking the Play button in the Preview window.

Understanding the Library *(continued)*

Sort columns

1. Click a column heading.
   - Flash sorts the Library by the column heading you clicked.
2. Click the Toggle Sorting Order button ( ) to toggle the sort order from ascending to descending or from descending to ascending.

   Flash changes the sort order.

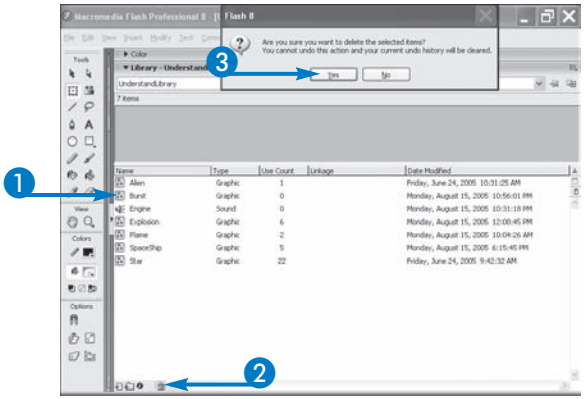


Delete a symbol

1. Click a symbol name.
2. Click the Delete icon ( ).

   Flash prompts you.
3. Click Yes.

   Flash deletes the symbol from the Library.



Create and use folders

1. Click the New Folder button ( ).

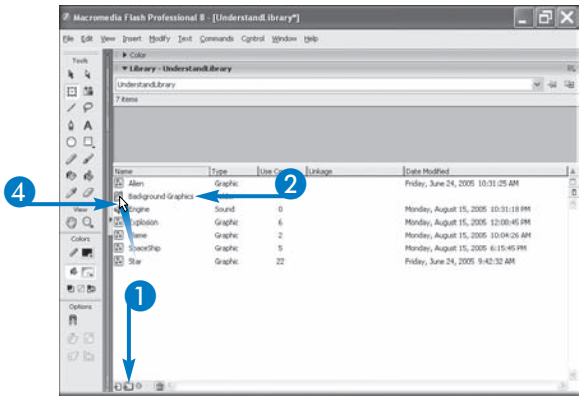
   Flash creates a new folder.

2. Type a folder name.
3. Press the Enter key.

   Flash creates a folder.

4. Click and drag a file over the folder.

   Flash places the file in the folder.



Play a movie clip or sound

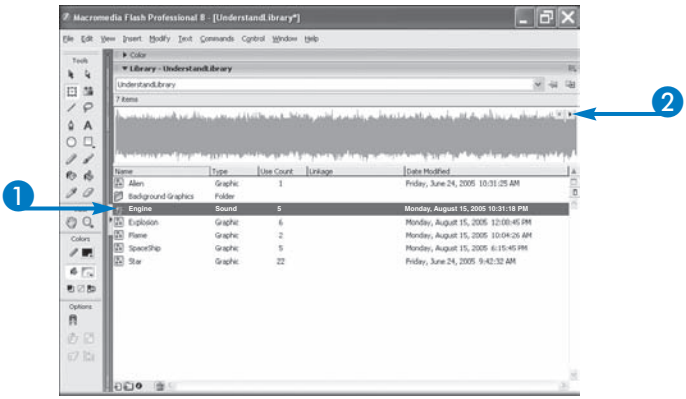
1. Click the symbol name of a movie clip, button, or sound.

   Flash displays the symbol in the Preview window.

2. Click the Play button ( ).

   Flash plays the movie clip, button, or sound.

   - To stop the movie clip, button, or sound, click the Stop button ( ).



Is there a quick and easy way to delete all unused items from a folder?

You can reduce the size of your FLA file by deleting unused items from the Library. Click Select Unused Items on the Library Options menu. Flash finds and selects all unused items. Click the Delete icon to delete the unused items. You do not need to delete unused items to reduce the size of a SWF file because unused items are not included in a SWF file. You can also find unused items by updating your use count and then sorting items by the Use Count field.

What is the common library?

The common library stores buttons, movie clips, and sounds that you can use in any Flash movie. To access the common library, click Window, Common Libraries. You can create your own common library by creating a file with the items you want to make common and placing the file in the Libraries folder under the Flash application.

Can I use items from the Library of another Flash movie in my current movie?

Yes. Click File, Import, Open External Library. Locate the Flash movie whose content you want to use and click Open. The file's Library opens. Drag the items from the Library onto the Stage or into the Library window of your current movie.

Add and Delete Layers

Layers can help you organize the objects you use in your Flash projects. When you open a new document, the Flash Timeline has a single layer. You can add layers to the Timeline. The bigger your project, the more objects it is likely to have. Rather than placing all objects on a single layer, which makes objects difficult to locate and edit, you can organize and place objects on separate layers.

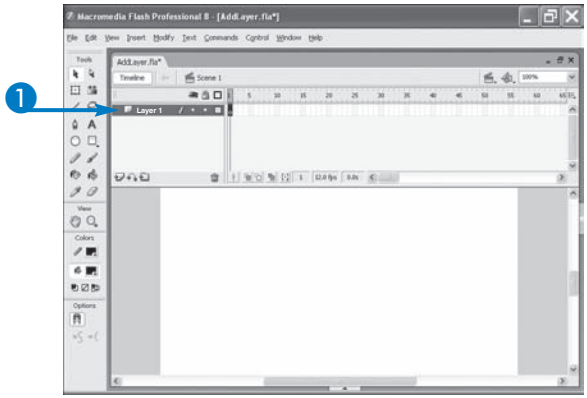
Layers are similar to transparent sheets stacked on top of each other. Each layer lets you see through to the layer below until you add an object. On the Stage, objects you place on higher layers appear to be in front of objects placed on lower layers. When creating your Flash document, place backgrounds on the bottom layer and add other objects to higher layers to create the perception of depth.

You click a layer to make it active. A pencil icon appears next to the active layer's name. You can add layers to the Timeline or delete layers you no longer need. Additional layers do not affect the file size, so you can add as many layers as your project requires.

Add and Delete Layers

Add a layer

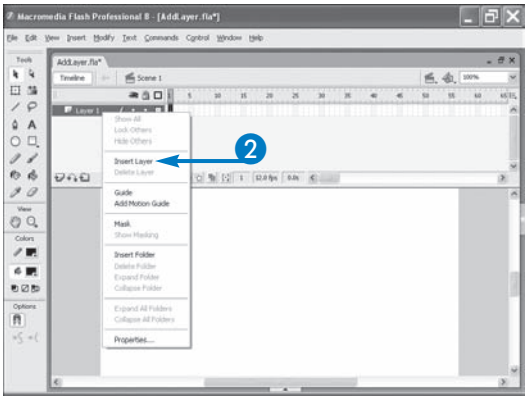
1. Right-click (Ctrl-click) the layer above which you want to insert a new layer.



A context menu appears.

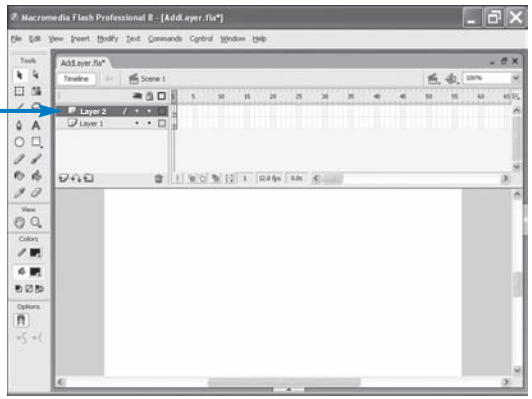
2. Click Insert Layer.

Flash inserts a new layer.



Delete a layer

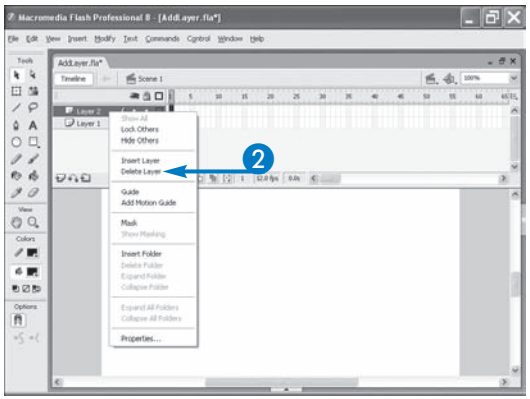
1. Right-click (Ctrl-click) the layer you want to delete.



A context menu appears.

2. Click Delete Layer.

Flash deletes the layer.



Are there other methods I can use to insert a layer?

Yes. You can click the layer above which you want to insert a layer and then, on the main menu, click Insert, Timeline, Layer. Flash inserts a new layer. Alternatively, you can click the layer above which you want to add a layer and then click the Insert Layer icon.

Are there other methods I can use to delete a layer?

Yes. You can click the layer you want to delete and then drag it over the Delete Layer icon on the Timeline. Alternatively, you can click the layer you want to delete and then click the Delete Layer icon on the Timeline.

Can I delete several layers at the same time?

To delete contiguous layers in a stack, press and hold Shift and click the first layer you want to delete. While still holding down the the Shift key, click the last layer you want to delete. Then click the Delete icon. If the layers are noncontiguous, press and hold Ctrl, click each layer you want to delete, and then click the Delete icon.

Set Layer Properties

You can define the properties of a layer by using the Layer Properties dialog box. The Layer Properties dialog box is a one-stop shop for controlling a layer's name, function, and appearance.

Using the Layer Properties dialog box, you can assign layer properties to the currently selected layer on the Flash Timeline. An important property to set is the layer name. By assigning a name to each layer on the Timeline, you can easily keep track of layer content and the position of the content. By default, Flash names layers in the order you create them, starting with Layer 1, continuing with Layer 2, and so on. Layer names can use upper- and lowercase letters.

You also have the option of hiding the layer to remove its contents from view. To keep the layer's contents safe from editing, you can lock the layer.

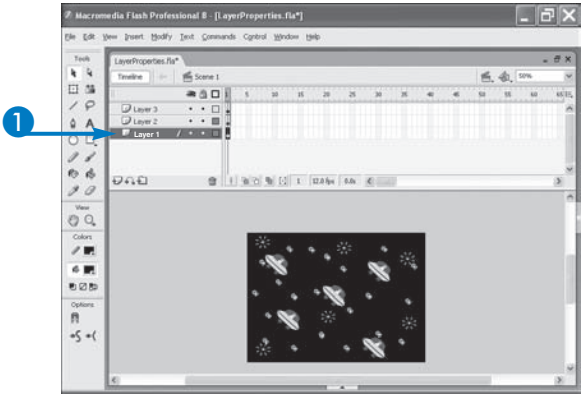
The Layer Properties dialog box has options for changing the layer type. You can also use the Layer Properties dialog box to change how you view layers. You can view a layer's contents as colored outlines on the Stage, or you can change the height of a layer.

Set Layer Properties

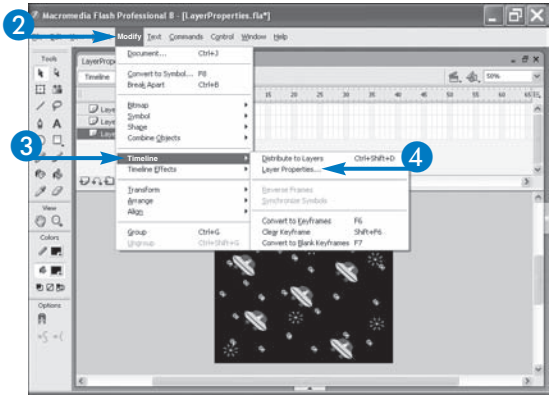
Note: *This example uses the file LayerProperties.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the layer for which you want to set layer properties.

Note: *Flash automatically selects all objects associated with the selected layer.*



2. Click Modify.
3. Click Timeline.
4. Click Layer Properties.



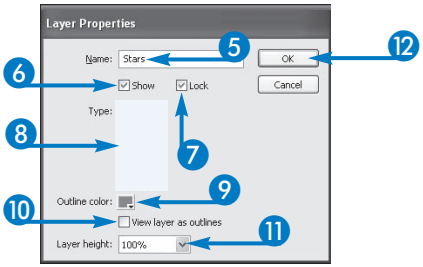
The Layer Properties dialog box appears.

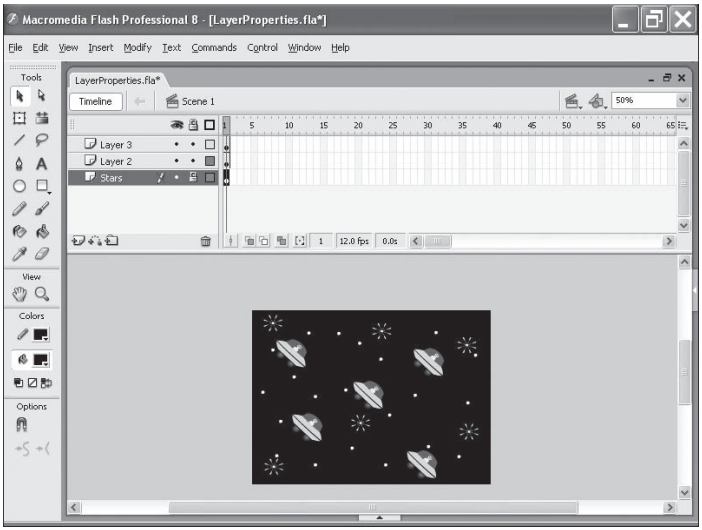
5. Type a name for the layer.
6. To hide the layer, deselect the Show option (☑ changes to ☐).
7. To lock the layer, select the Lock option (☐ changes to ☑).
8. Select a layer type option (◯ changes to ◉).
9. Click here and then click to select an Outline color.
10. To view a layer as an outline, select the View layer as outlines option (☐ changes to ☑).
11. Click here and then select a layer height.

Note: *An increased height is useful for viewing sound waveforms in the layer.*

12. Click OK.

Flash changes the layer properties.





What are layer types?

There are several types of layers. A *normal layer* holds various elements such as graphics, sounds, and movie clips.

A *guide layer* can help you with the layout and positioning of objects on other layers. You most often use guides with *motion tween* animations — animations that follow a specified path in your Flash document. See Chapter 25 to learn more about creating motion tween animations.

Mask layers enable you to hide elements in underlying layers from view. You can create an opening in the mask layer that lets you view the layers below.

A *layer folder* enables you to organize layers. Layer folders work like folders on your hard drive. You can place other layers inside a layer folder.

What happens when I choose an outline color?

The outlining feature helps you to assess exactly which objects on the Stage are on which layer by assigning each layer's objects an outline color. When you click a layer's Layer Outline button, Flash outlines all objects on the layer in the assigned outline color.

Why would I lock or hide a layer?

You lock a layer to prevent inadvertent changes to the layer. You cannot add, edit, or move objects on a locked layer. When you hide a layer, you cannot see the content of the layer. This allows you to focus on other objects on the Stage.

Work with Layers on the Timeline

Controlling layers is easy with the Flash Timeline. You can quickly rename, hide, or lock a layer. The Timeline has buttons and toggles you can use to control a layer.

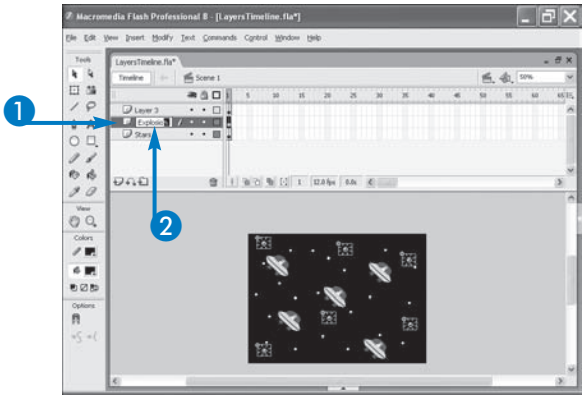
For example, you may want to hide a layer to remove the layer objects from view on the Stage so you can focus on other objects you want to edit. If you leave the layer in view and click an object on the layer by mistake, you may change something you did not want to change.

The bar above the layer names has three icons that help you set the status of each layer. Each icon indicates a specific setting for the column below it. For example, the eye icon indicates whether the layer is visible. The lock icon tells you whether you have locked the layer. The outline icon enables you to view a layer's contents as outlines on the Flash Stage. You can toggle the status of all three icons on and off. You can also quickly name layers by typing a new name directly on the layer name list.

Work with Layers on the Timeline

Rename a layer

Note: *This example uses the file LayersTimeline.fla, which you can find on the CD-ROM that accompanies this book.*



1. Double-click the layer name.

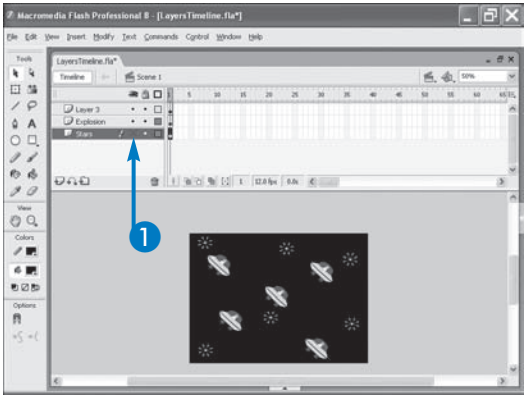
   The Name field changes to edit mode.

2. Type a new name.

3. Press the Enter key.

   Flash changes the layer's name.

Hide a layer



1. On the layer you want to hide, click here beneath the Show/Hide All Layers icon ( ).

   The bullet changes to .

   Flash hides all the objects on the layer.

   To show the layer, click under again.

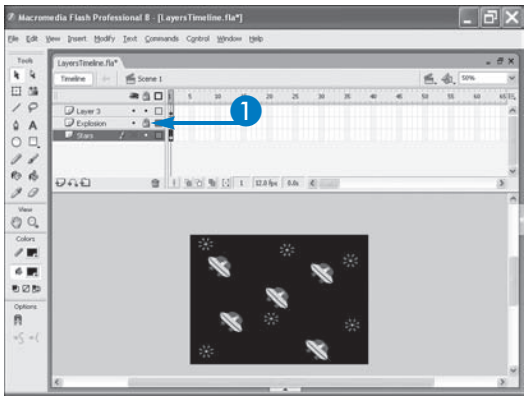
Lock a layer

1. On the layer you want to lock, click here under the Lock/Unlock All Layers icon ( ).

   The bullet changes to a padlock.

   Flash locks the layer and you cannot edit the contents.

Note: *To unlock the layer, click under* *again.*

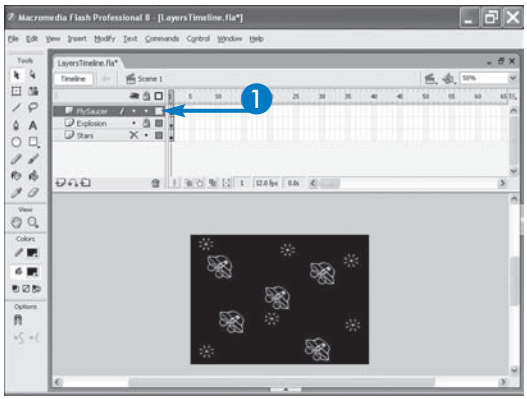


Change to outline view

1. On the layer you want to show as outlines, click here under the Show All Layers as Outlines icon ( ).

   The square changes to an outline of a square.

   Flash changes the object on the layer to outlines.



Can I hide multiple layers?

The Show/Hide All Layers icon is also a toggle button. To hide all layers, click the Show/Hide All Layers icon. To show all layers, click the Show/Hide All Layers icon again or right-click (Ctrl-click) while the mouse pointer is over a layer and then click Show All on the context menu. To hide all layers except one, right-click (Ctrl-click) the layer you want to show and then click Hide Others on the context menu.

Can I lock multiple layers?

Yes. The Lock/Unlock All Layers icon located above the stack is a toggle button. To lock all layers, click the Lock/Unlock All Layers icon. To unlock all layers, click the Lock/Unlock All Layers icon again. To lock all layers except one, right-click (Ctrl-click) the layer you want to remain unlocked and then click Lock Others on the context menu.

How do I outline multiple layers?

You can choose to view the contents of all layers as outlines. The Show All Layers as Outlines icon at the top of the stack toggles the outline feature for all layers on and off. Click it once if you want to show all layers as outlines; click it again if you do not want all layers to show as outlines.

Stack Layers

To rearrange how objects appear in your Flash project, you can stack Flash layers the same way you might stack objects in a drawing. Each Flash layer acts like a transparent sheet. You can see through the sheet to the layer below until you add an object. Objects on higher layers appear to be in front of objects on lower layers.

For example, if you have a layer containing a background scene, you can move it to the bottom of the layer stack. Any objects you place on layers above the bottom layer appear to be in front of the background. Stacking layers in this manner creates the illusion of depth in your movie.

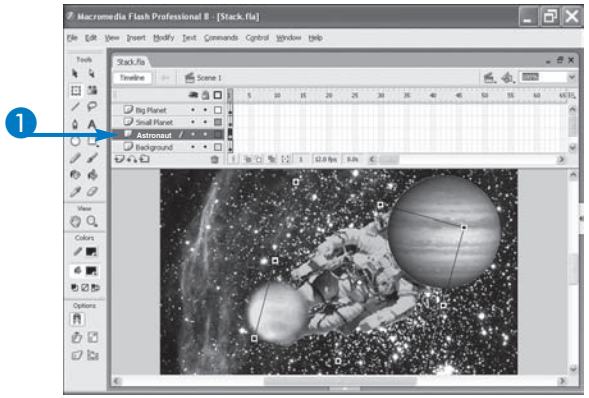
You can change the order of layers by moving them up or down the stack list. The layer at the top of the list is on the top of the stack, and the layer at the bottom of the list is at the bottom of the stack. All other layers appear in the middle, in the order listed.

You can change the position of locked and hidden layers.

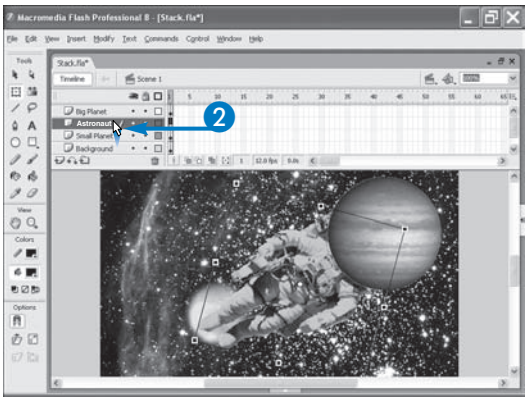
Stack Layers

Note: *This example uses the file Stack.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the layer you want to move.



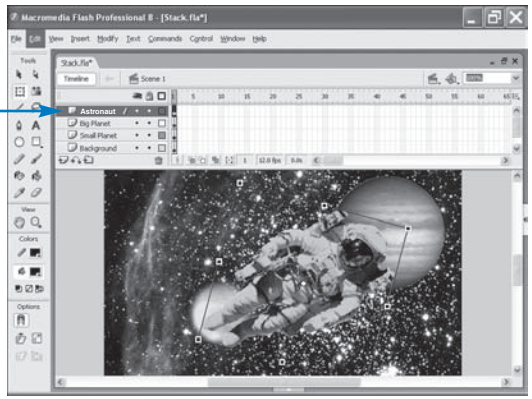
2. Drag the layer up or down to its new location in the stack.



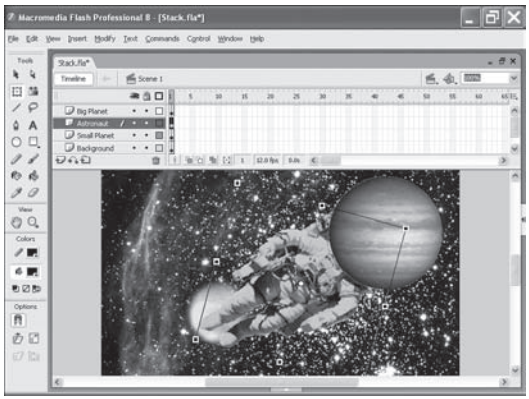
3 Release the mouse button.

- Flash moves the layer to its new position.

In this example, the layer moves up in the stacking order, and objects on lower layers appear to be behind the object.



In this example, the object moves back down in the stacking order, and objects in the layers above it now appear to be in front of the object.



I cannot see all of my layers. Why?

The more layers you add to the Timeline, the longer the list of layer names becomes and not all the layers stay in view. Use the scrollbar at the far right end of the Timeline to scroll up and down the layer list to view other layers. You can also use Flash layer folders to organize layers on the Timeline. See the section "Organize Layers into Folders" for information on organizing your layers for viewing.

How can I see more layers at a time in my Timeline?

You can resize the Timeline to see more of your layers. Move the mouse pointer over the bottom border of the Timeline until the mouse pointer becomes a double-sided arrow. Click and drag the border down to increase the size of the Timeline. This enables you to see more of the layers on the Timeline.

Can I copy a layer?

Yes. First, create a new layer by using the steps in the section "Add and Delete Layers," and then click the layer you want to copy. Click Edit and then Copy. Click the new layer, click Edit, and then click Paste. Flash copies the contents of the first layer and places them in the second layer.

Organize Layers into Folders

You can use layer folders to organize the numerous layers you use in a Flash project. Layer folders act just like the folders on the hard drive of your computer. For example, if you have several layers pertaining to a particular animation sequence, you can place all the related layers into one layer folder on the Flash Timeline. This makes it much easier to find a layer for editing. Flash identifies folders with a tiny folder icon next to the folder name.

Layer folders can expand and collapse so you can view or hide the layer folder content. You can tidy up the Timeline by collapsing layers you are not currently using. You can also put layer folders inside other layer folders.

By default, Flash names "layer folders" in the order you create them, starting with Folder 1, continuing with Folder 2, and so on. You can rename folders so the folder name describes its contents. Layer names can use upper- and lowercase letters. It is a good practice to name all the layers and folders you use in your project.

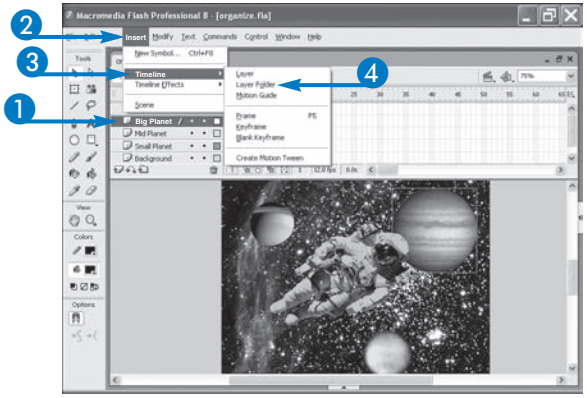
Organize Layers into Folders

Create a folder

Note: *This example uses the file Organize.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the layer above which you want to add a folder.
2. Click Insert.
3. Click Timeline.
4. Click Layer Folder.

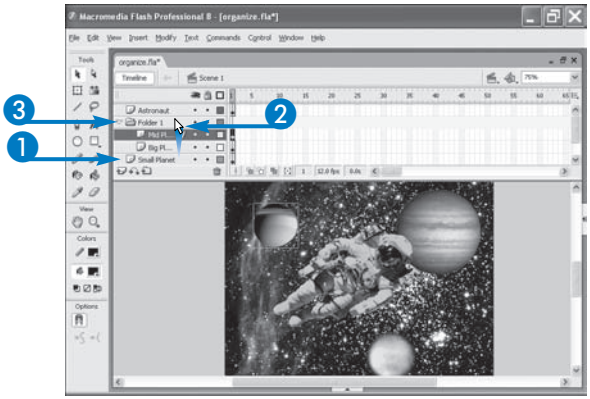
   Flash adds a layer folder to the Timeline.



Add a layer to a folder

1. Click the layer you want to move into a folder.
2. Drag the layer over the folder.
3. Release the mouse button.

   Flash places the layer in the folder.

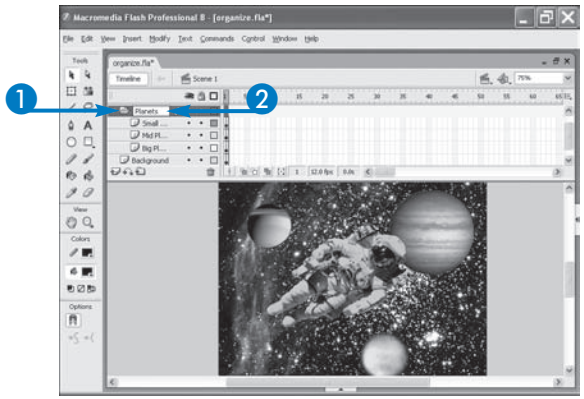


Rename a folder

1. Double-click the folder name you want to change.

   The Name field changes to edit mode.
2. Type a new name.
3. Press the Enter key.

   Flash changes the name of the folder.



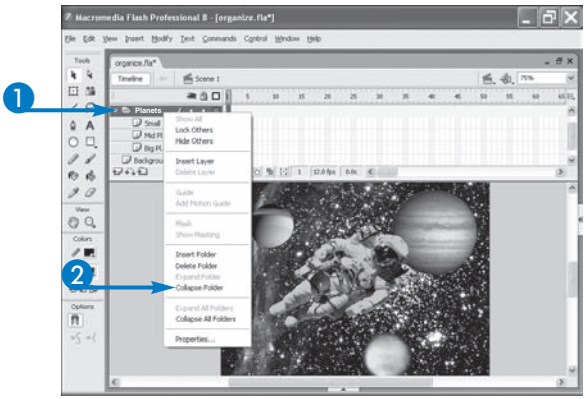
Expand and collapse a folder

1. Right-click (Ctrl-click) the folder name.

   A context menu appears.
2. Click Collapse Folder.

   Flash collapses the folder.

   You can click Expand Folder to expand a folder.



Can I change the stacking order of a folder?

Yes. You can move layer folders the same way you move layers. Drag the folder name up or down on the Timeline to change the stacking order of the folder. See the section "Work With Layers on the Timeline" to learn more.

How do I remove a layer from a folder?

Display the content of the folder layer, drag the layer you want to remove from the folder, and then drop the layer where you want it to appear in the layer stacking order. To remove the layer completely from the Timeline, right-click (Ctrl-click) the layer name and click Delete Layer.

Can I lock and hide layer folders?

Yes. You can lock and hide layer folders just as you can lock and hide layers. Locking a folder locks all the layers included within the folder. Click the layer under the Lock/Unlock All Layers icon to lock a folder. Flash locks the folder and any layers associated with the folder.

How do I delete a layer folder I no longer need?

To delete a layer folder, click the folder name to select it and then click the Delete icon. The following prompt appears, "Deleting this layer folder will also delete the layers nested within it. Are you sure you want to delete this layer folder?" Click Yes.

Add Guide Layers

Guide layers help you position objects. There are two types of guide layers in Flash: *plain* and *motion*. A plain guide layer helps you position objects on the Stage, but it does not appear in your final movie. You can use a plain guide layer to keep your layout consistent, trace objects, or generally assist you in lining things up.

You use a motion guide layer to animate an object along a path. For example, you can create a motion guide layer that specifies a path of flight for a rocket on another layer. Flash exports motion guide layers with the document, but the guide layers are not visible in the movie. See Chapter 25 to learn more about using a motion guide layer when creating a motion tween animation.

Flash notes all guide layers on the Timeline with a unique icon. Plain guide layers have a T-square icon, and motion guide layers have a dotted-arch icon. You can move guide and motion guide layers. When you move a motion guide layer the associated layer moves as well. Because plain guide layers are not associated with a specific layer, other layers do not move as you move a plain guide layer.

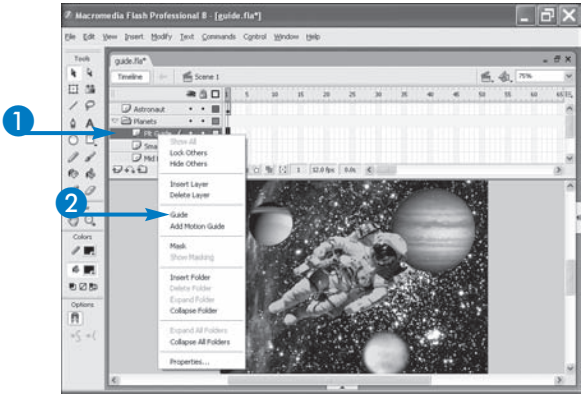
Add Guide Layers

Add a plain guide layer

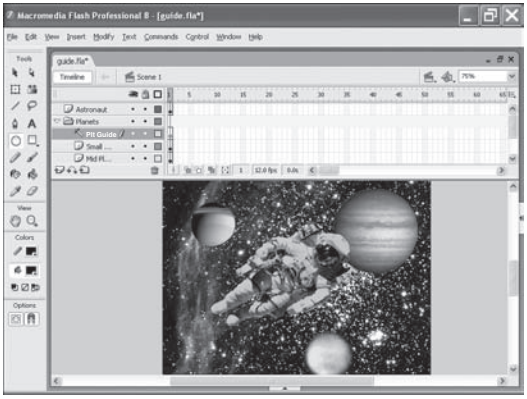
1. Right-click (Ctrl-click) the layer you want to turn into a guide layer.

   A context menu appears.

2. Click Guide.



The layer becomes a guide layer, noted by its guide ruler icon, and you can place objects on the layer or use it to create a layout.

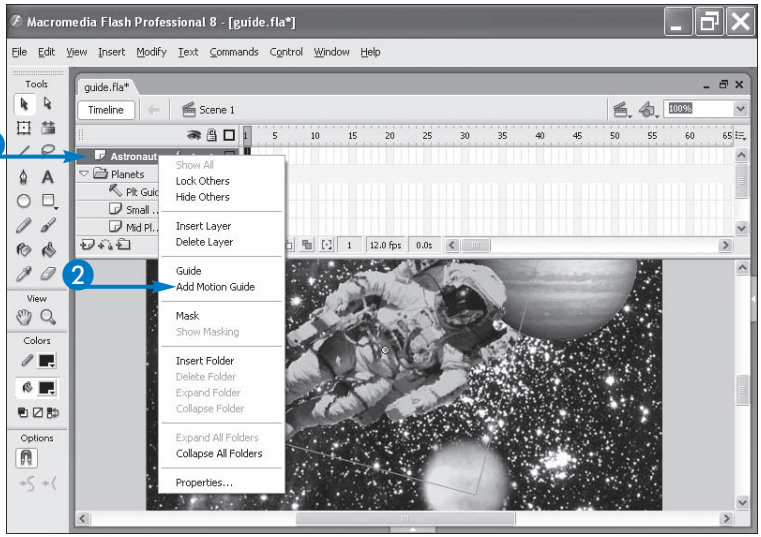


Add a motion guide layer

1. Right-click (Ctrl-click) the layer above which you want to add a motion guide layer.

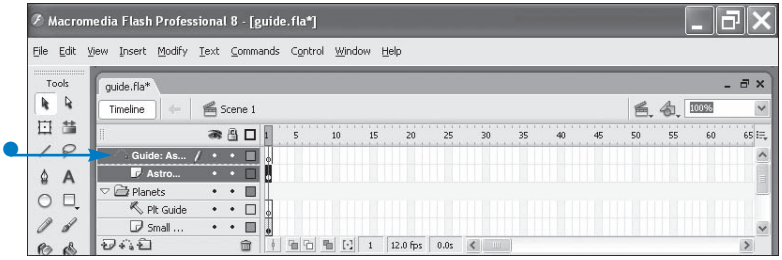
   A context menu appears.

2. Click Add Motion Guide.



Flash adds the motion guide layer above the layer you selected.

- You can distinguish a motion guide layer by its unique arch icon.



How exactly does a motion guide layer work?

Flash links motion guide layers to layers containing objects you want to animate along a given path. The motion guide layer contains the path, and you can link it to one or more layers. The motion guide layer always appears directly above the layer (or layers) to which it links. To learn more about animating in Flash, see Chapter 25.

Flash will not let me add a motion guide layer. Why?

Flash will not allow you to add a motion guide layer to an existing guide layer. When you want to create a motion guide layer, make sure you are adding it to a regular layer.

Can I lock my guide layer in place?

Yes. In fact, it is a good idea to lock guide layers and motion guide layers in place so you do not accidentally move anything on them. To lock a layer, click below the Lock/Unlock All Layers icon on the guide layer. To unlock the layer again, click below the Lock/Unlock All Layers icon on the guide layer again.

Add and Create a Mask Layer

You can use mask layers to hide parts of underlying layers. The mask is like a window that lets you see through to the layers below, while other parts of the layers are hidden, or *masked*.

You might create a mask layer that is a filled star shape that acts like a window to the layer below. The window — or star shape — lets you see anything directly beneath, but the remainder of the mask layer hides anything that lies outside the window. A mask layer can contain multiple fill shapes, but it cannot contain a fill and a symbol or grouped object or multiple symbols and grouped objects. Tweens enable you to animate objects. You can motion and shape-tween a mask to create interesting effects. For more information on creating tweens, see Chapter 25. You can also group several layers together under a single mask.

Mask layers appear with a unique icon on the Timeline. You can link a mask layer only to layers directly below it. As you create a mask, you may want to change the alpha value of the object so you can preview the effect. Flash links masked layers to layers and exports them in the final document file.

Add and Create a Mask Layer

Note: *This example uses the file Mask.fla, which you can find on the CD-ROM that accompanies this book.*

1. On a layer directly above the layers you want to mask, create or import the object you want to act as the mask.

Note: *See Chapters 18 and 19 to learn how to create, edit, and import objects.*

2. Select the object you want to act as a mask.

Note: *See Chapter 19 to learn how to select objects.*

3. Click the Fill Color box.
4. Click here and then use the slider that appears to set an Alpha value.

   Flash changes the Alpha value of your object.

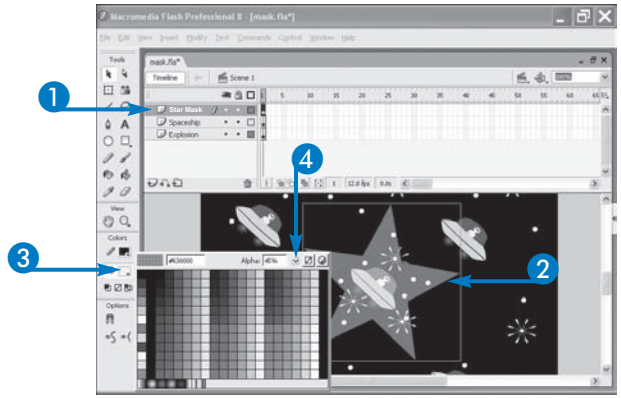
   You can also type an Alpha value in the field.

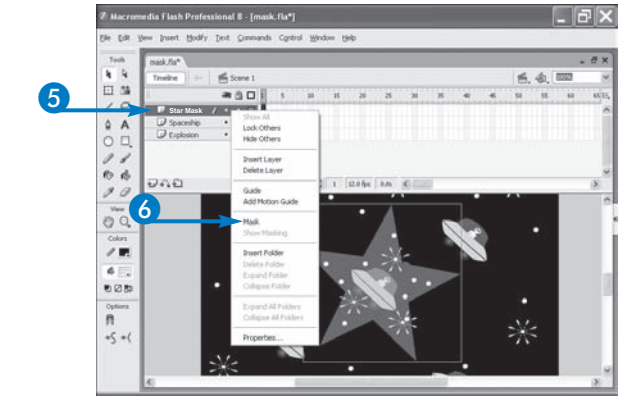
Note: *If you are working with a symbol, use the Property inspector to change the alpha value.*

5. Right-click (Ctrl-click) the mask layer.

   A context menu appears.

6. Click Mask.





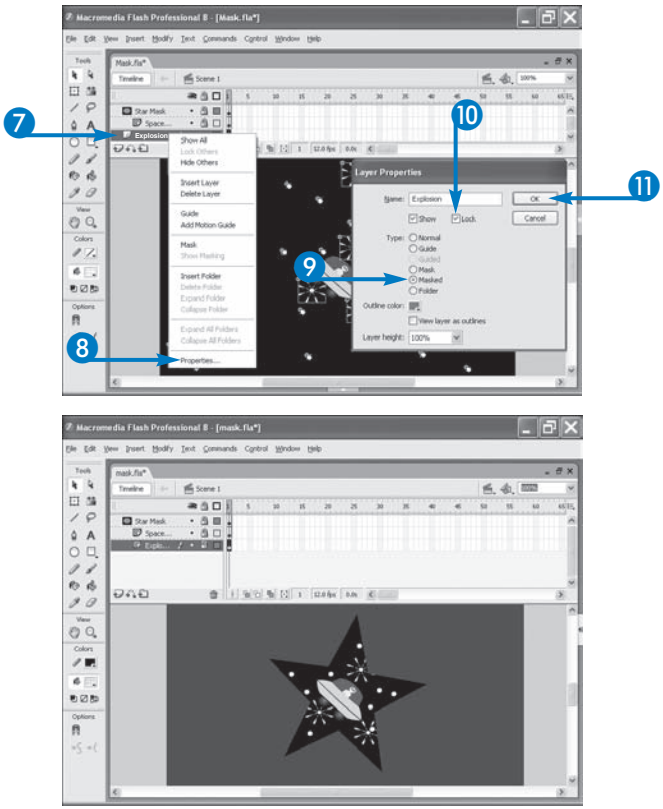
Flash turns the layer into a mask layer, masking the layer directly below the layer and locking both layers.

7. Right-click (Ctrl-click) the next layer you want to mask.
8. Click Properties.

   The Layer Properties dialog box appears.
9. Select the Masked option (◯ changes to ◉).
10. Click Lock (☐ changes to ☑).
11. Click OK.

    Flash locks and adds the layer to the masked layers.

    Flash displays the image as a masked image.



What sort of fill should I draw for my mask shape?

You can use any kind of fill color or pattern to create a mask. Regardless of what makes up your fill, Flash treats the shape as a window to the linked layers below. For that reason, you should use a transparent fill rather than a solid one so you can see through the fill to position the fill exactly where you want it on the Stage. To make objects transparent, adjust the alpha value. You can use the color box to adjust the alpha value of vector graphics. You can use the Property inspector to adjust the alpha value of symbols.

I cannot see the mask effect. Why?

The layer may be unlocked. You must first lock the mask layer and each masked layer to see the mask effect. You can also see the effect if you run the movie in test mode — click Control and then click Test Movie on the main menu. The Flash Player window opens and runs the movie.

Can I convert a mask layer into a normal layer?

Yes. Open the Layer Properties dialog box by right-clicking (Ctrl-clicking) the mask layer and then clicking Properties. The Layer Properties dialog box appears. Click Normal and then click OK. Flash resets the layer to normal and removes the mask.

Distribute Objects to Layers

The Distribute to Layers command distributes objects to different layers in your document, enabling you to animate each object separately. You can use the Distribute to Layers command to create layered animations. For example, you can use Distribute to Layers to assist you in animating individual letters in a text block.

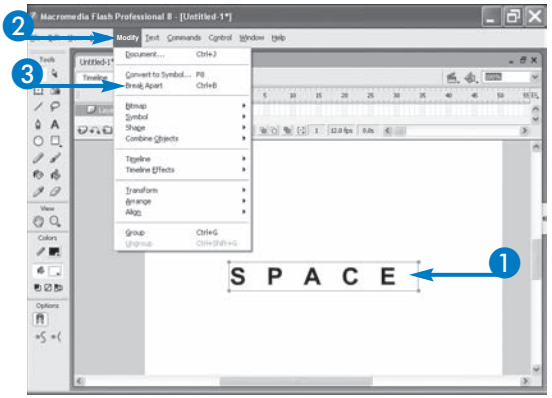
Using the Distribute to Layers command in conjunction with the Break Apart command, you can separate individual pieces of text, distribute the characters to different layers, and animate them separately. The Break Apart command literally breaks apart the selected object into editable pieces. If you apply the command to a text block, for example, you can break each character into a separate graphic object. Then you can animate each character. When you apply the Distribute to Layers command to the text, Flash moves each character to a separate layer and makes the character the layer name. You can then create motion or shape tweens to make each letter come alive. See Chapter 20 to learn more about the Break Apart command.

Objects you distribute using the Distribute to Layers command do not have to be on the same layer.

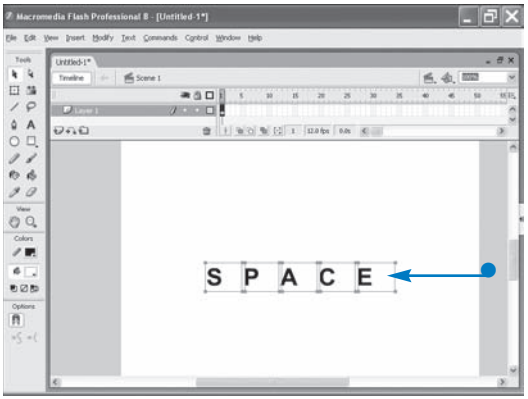
Distribute Objects to Layers

Note: *This example uses the file Distribute.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the object you want to break apart into separate objects.
2. Click Modify.
3. Click Break Apart.

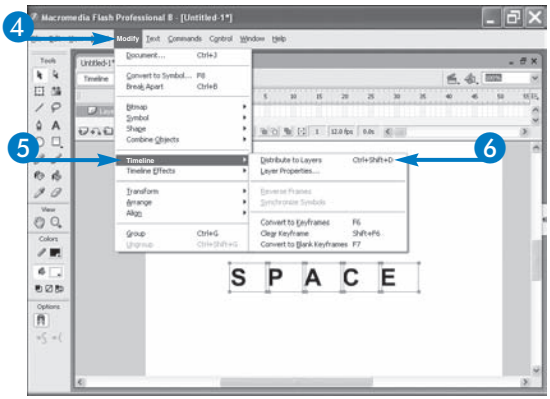


- Flash breaks apart the object



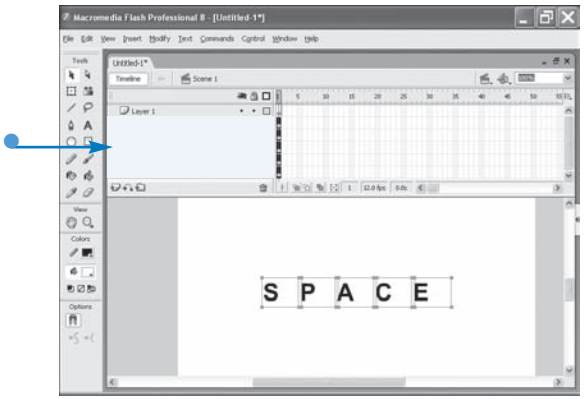
4. Click Modify.
5. Click Timeline.
6. Click Distribute to Layers.

Note: *You must select all objects you want to distribute to layers before applying the command.*



- Flash distributes each object to a separate layer.

You can now manipulate or animate each object separately.



After I distribute my objects, how do I tell which object is on which layer?

The Show All Layers as Outlines column on the Timeline outlines each layer in a different color. If you click the Show All Layers as Outlines icon located above all the columns, Flash displays each layer's contents outlined in a color that corresponds with the layer's Outline Color.

I have several objects. I want to distribute some, but not all of the objects, to other layers. What should I do?

Use the Selection tool to select the objects you want to distribute to other layers. To select some objects while not selecting others, press and hold Shift as you click each object you want to select. If you want to select everything on a particular layer, click the layer name.

Is there a shortcut I can use to distribute objects to layers?

Yes. Say you want to distribute a block of text to separate layers. You can select the block of text, right-click (Ctrl-click) and then click Break Apart on the context menu. Flash breaks apart the text. You can then right-click (Ctrl-click) again and click Distribute to Layers on the context menu. Flash distributes the text to layers.

Add Frames

Animation is the most exciting aspect of Flash. You can animate objects; synchronize the animation with sounds, animate buttons, and much more. Frames are the backbone of your animation. Before you start animating objects, you must understand frames.

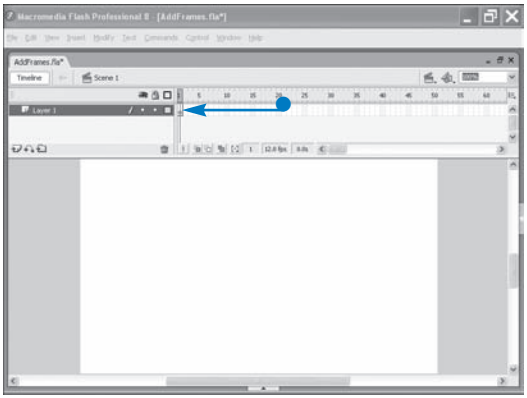
When you open a new Flash document, it opens with a Timeline that contains a single layer and hundreds of frames. The first frame is a blank keyframe; the remaining frames are placeholder frames. Frames appear to the right of layers. Each frame is numbered, and a Timeline header at the top of the Timeline displays the frame numbers. The Timeline header also contains a playhead. You drag the playhead across the Timeline header to see the contents of frames.

There are several types of frames. A *blank keyframe* is a keyframe that does not contain content. When you add objects to the Stage while in a blank keyframe, the blank keyframe becomes a *keyframe*. When you add a new keyframe to the Timeline, Flash copies the content in the previous keyframe and inserts the content into the new keyframe. Flash also places the content from the previous keyframe in all the frames between the previous keyframe and the new keyframe.

Add Frames

Add content to a blank keyframe

- New files open with one layer and a blank keyframe. Blank keyframes are white and contain an unfilled circle.

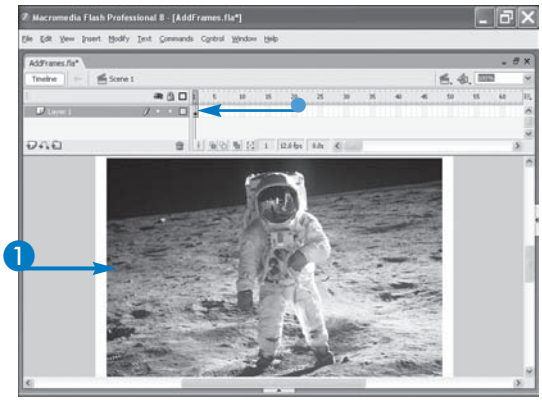


1 Place an object on the Stage.

Note: *See Chapters 18 and 19 to learn how to create and import objects. See Chapter 21 to learn how to add an instance to the Stage.*

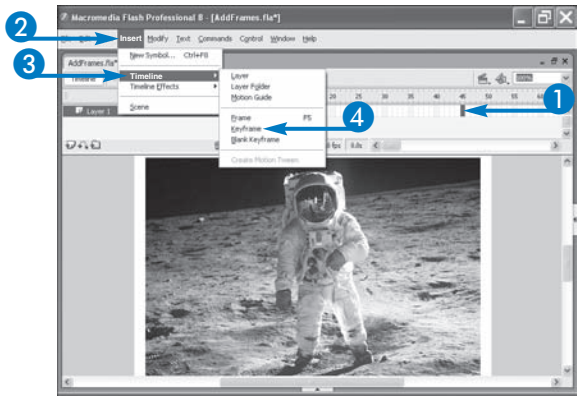
The blank keyframe becomes a keyframe.

- Keyframes are gray and contain a filled circle.

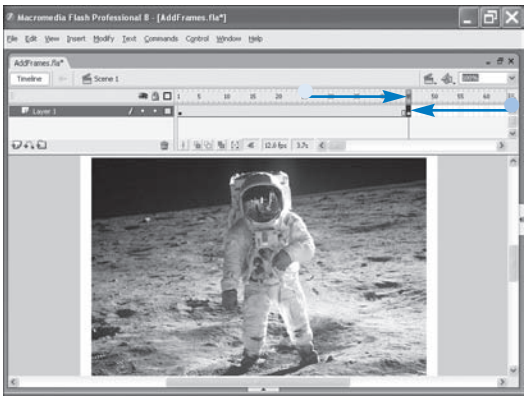


Add a keyframe

1. Click the frame you want to turn into a keyframe.
2. Click Insert.
3. Click Timeline.
4. Click Keyframe.



- Flash creates a new keyframe. Flash fills the frames between the original keyframe and the new keyframe with the contents of the original keyframe.
- Drag the playhead across the Timeline to view the content of the frames.



MASTER IT

Can you explain the different types of frames?

Frames appear as tiny boxes on the Timeline. There are several types of frames: placeholder frames, blank keyframes, keyframes, frames, and tweened frames. A *placeholder frame* is an unused frame. When your movie reaches a placeholder frame, it stops playing. A *blank keyframe* defines a change in animation, but it does not contain content. When you place an object on the Stage in a blank keyframe, the blank keyframe becomes a keyframe. A *keyframe* defines a change in animation, and contains content. A *tweened frame* is a frame that contains a tweened animation. *Frames* contain content but do not mark changes in the animation.

Can you explain tweened animations?

You can use tweens to create animations easily. You define the keyframe that starts the animation and the keyframe that ends the animation. Flash calculates the motion between the two keyframes. Tweened frames have an arrow extending between the start and end keyframes. You can learn more about creating tweens in Chapter 25.

Can I add frames to a motion or shape tween?

Yes. Tweened frames work the same way as other frames. You can add frames and keyframes to motion and shape tweens. Adding frames makes the tween longer. Adding keyframes splits the tween. You can scale, rotate, or make other changes in newly added keyframes.

continued

Add Frames
(Continued)

You can add blank keyframes to your document when you do not want anything to appear on the Stage on the layer on which you are working. Add one blank keyframe where you want the blank Stage to begin and another blank keyframe where you want the blank Stage to end.

You can also insert a blank keyframe when you want to introduce new content. Unlike a keyframe, which copies the content from the previous keyframe, a new blank keyframe contains no content unless you add objects to the Stage while in the blank keyframe.

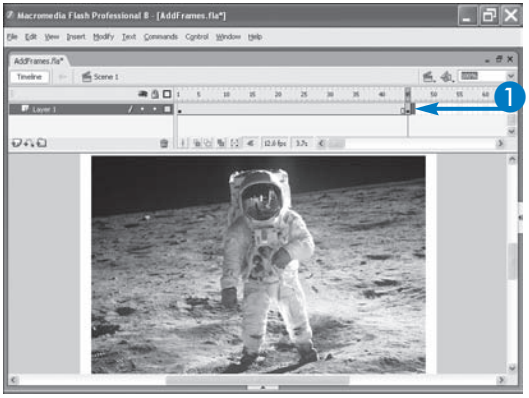
The number of frames you use in your Flash document, combined with the speed at which they play, determines how long an image stays on the screen. You can add additional frames between two blank keyframes or between two keyframes. Adding frames causes an image to remain on the screen longer.

The number of frames in your movie determines the length of you movie. Adding frames increases the length of your move. Removing frames decreases the length of your movie. The frame rate determines the speed at which frames play. Increasing the frame rate can make the movie run smoother.

Add Frames *(continued)*

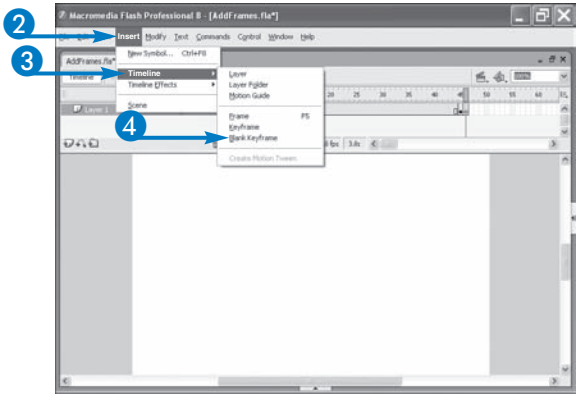
Add a blank keyframe

1. Click the frame on the Timeline where you want to insert a blank keyframe.



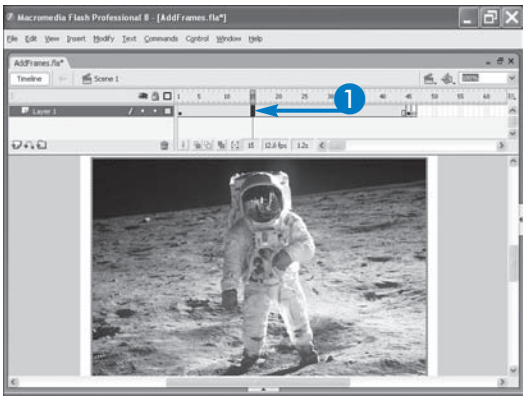
2. Click Insert.
3. Click Timeline.
4. Click Blank Keyframe.

   Flash inserts a blank keyframe.



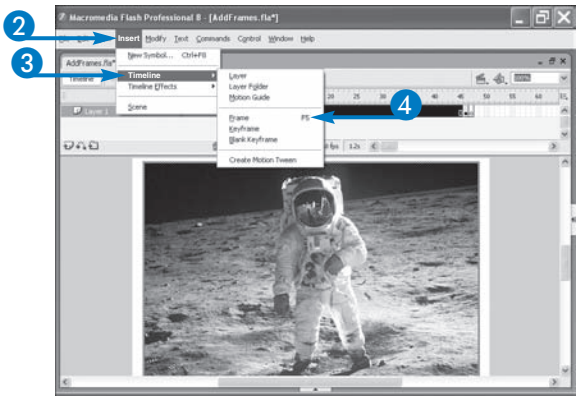
Add frames

1. Click the Timeline where you want to insert the new frame.



2. Click Insert.
3. Click Timeline.
4. Click Frame.

   Flash inserts a frame.



Explain how Flash determines the length of a movie.

The number of frames you use in your Flash document, combined with the speed at which it plays, determines the length of your movie. By default, new Flash files you create use a frame rate of 12 frames per second, or 12 fps. You can use the Document Properties dialog box to set a frame rate higher or lower than the default. You open the Document Properties dialog box by clicking Modify, Document on the main menu. When you set a frame rate in Flash, you are setting the maximum rate at which the movie can play. A frame rate between 8 and 12 fps is generally best for the Web.

How do I add multiple frames?

You add multiple frames to the Timeline by first selecting the number of frames you want to add. See section "Select Frames" to learn how to select frames. Then, on the main menu, click Insert, click Timeline and then click Frame. Flash inserts the number of frames you selected.

Is there a shortcut for adding frames?

There is a shortcut for adding frames. You can right-click (Ctrl-click) a frame to view a menu of commands related to frames, including the commands for adding different types of frames. Right-click and then click Insert Frame, Insert Keyframe, or Insert Blank Keyframe and Flash inserts the frame type you selected.

Select Frames

You select frames on the Flash Timeline to add, to move, or edit the content of frames. You must also select frames if you want to remove them from the Timeline.

You can select a single frame, multiple frames, or all the frames on the Timeline. In fact, you can select multiple frames on multiple layers. When you select multiple frames, they can be contiguous or noncontiguous.

When you select a single frame, it appears highlighted on the Timeline and the frame number appears on the status bar at the bottom of the Timeline. The playhead also appears directly above the selected frame. When you select multiple frames, Flash highlights the frames you selected, and the number of the last frame in the group appears on the Timeline status bar.

Can you provide me with any tips on selecting frames?

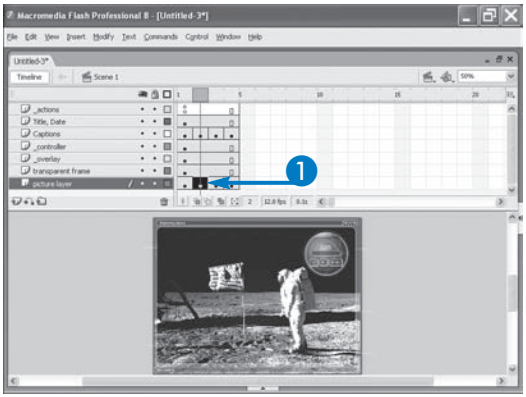
To select multiple noncontiguous frames, hold down the Ctrl key and click each frame you want to select. To select every frame on a layer, click the layer name. To select every frame on the Timeline, click Edit, Timeline, Select All Frames. To deselect a frame or range of frames, simply click anywhere outside the selected frames.

Select Frames

Select a single frame

1. Click a frame to select it.

   Flash highlights the frame on the Timeline.



Select contiguous multiple frames

1. Click the first frame in the range of frames you want to select.
2. Hold down the Shift key and click the last frame in the range.

   Flash selects all the frames in the range you selected.

Note: *You can use this method to select frames on multiple layers.*

You can also click the first frame and drag to the last frame you want to select.

Remove Frames

You can remove frames you no longer need from your document. For example, you may decide a particular animation sequence runs too slowly during playback. You can remove several of the frames between the two keyframes to speed up the sequence. Alternatively, you might want to remove frames from your animation because you have decided you no longer need a particular sequence of frames.

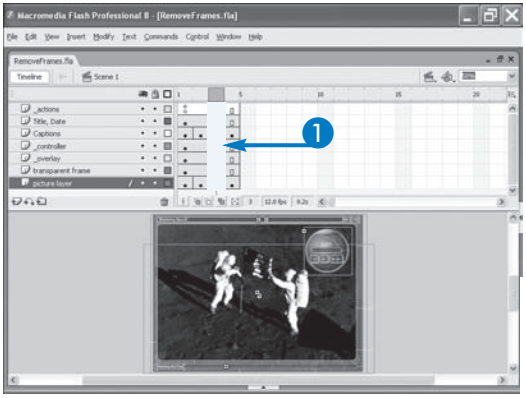
You use the Remove Frames command to remove a single frame or several frames completely from the Timeline. To remove frames, you must select the frames you want to remove and then apply the Remove Frames command. To remove a keyframe from the Timeline, you must select both the keyframe and all the frames associated with it; otherwise, the Remove Frames command simply removes the number of frames you select.

If you have assigned a label to a frame, when you delete the frame, Flash deletes the label as well. Deleting frames is undoable. You can use the Edit menu or the History panel to undo the deletion. See Chapter 19 to learn more about the undo command and the History panel.

Remove Frames

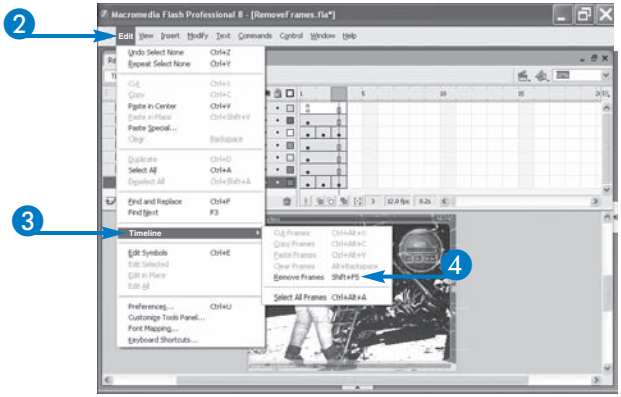
1. Click a frame or click and drag to select the frames you want to delete.

   Flash highlights the frames.



2. Click Edit.
3. Click Timeline.
4. Click Remove Frames.

   Flash removes the frame. Any frames to the right move left to fill the void.



Modify Frame Properties

You can change the appearance of the frames on the Timeline by using the Timeline Options menu. By default, the frames appear Normal size. You can change the size to Tiny or Small to fit more frames on the Timeline, or to Medium or Large to make the frames easier to see. The menu's preview options let you see thumbnails of frame content on the Timeline.

You can use the Property inspector to label frames. By default, you identify a frame by the frame number. However, you may want to identify frames by descriptive labels, especially when using behaviors or ActionScript. A label can help you immediately recognize the contents of a frame. In addition, frame labels do not change as you add and delete frames. Frame labels appear on the Timeline with tiny red flag icons. Depending on the length of the label, some labels appear cut off. You can view the full frame label name by clicking in the frame and viewing the label name in the Property inspector.

You can use menu options to modify a frame. You can convert a frame to a keyframe, clear a keyframe, or convert a frame to a blank keyframe.

Modify Frame Properties

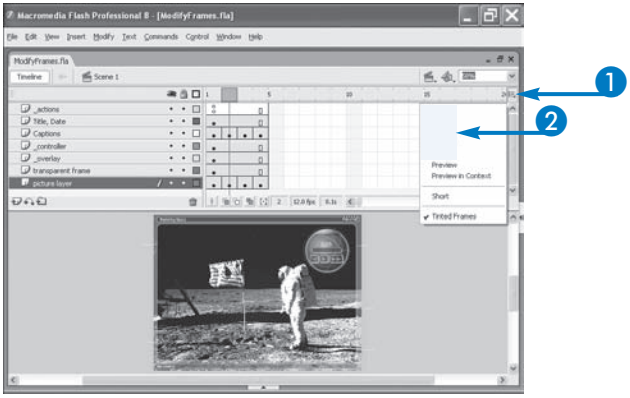
Change the size of timeline frames

1. Click the Timeline's Options Menu button ( ).

   The Options menu appears.

2. Click a frame size.

   Flash changes the size of the frames on the Timeline.



Display frame content

1. Click .

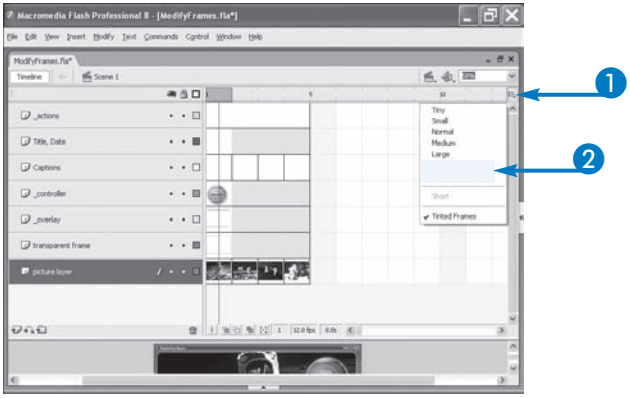
   The Options menu appears.

2. Click a type of preview.

   Preview options enable you to see thumbnails of frame content on the Timeline.

   Click Preview to view the frame contents scaled upward to fill the frame. Click Preview in Context to include everything in the thumbnail including white space.

   The Timeline changes to the preview mode you selected.



Label a frame

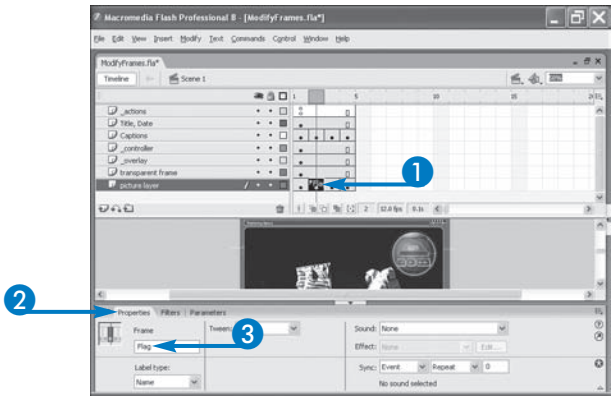
1. Click the frame you want to label.
2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Type a name for the frame.

   The label name appears on the Timeline.

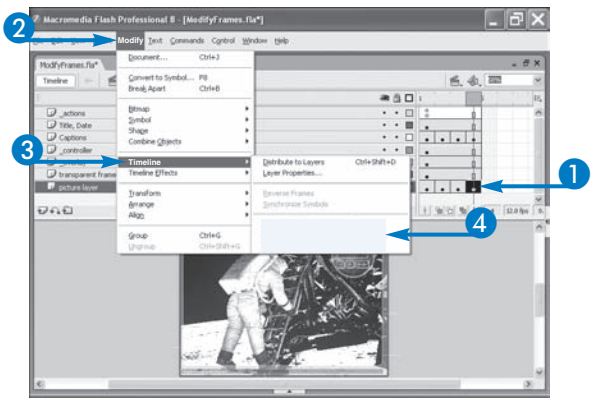
Note: *See Chapter 17 to learn how to work with the Property inspector.*



Change the frame type

1. Click the frame you want to change.
2. Click Modify.
3. Click Timeline.
4. Click Convert to Keyframes, Clear Keyframe, or Convert to Blank Keyframes.

   Flash changes the frame to the frame type your specified.



What is the difference between Preview and Preview in Context?

Preview displays the contents of frames scaled upward so the thumbnail of the content fills the inside of the frame. Preview in Context displays a thumbnail of each frame and attempts to include everything in the thumbnail including white space. The thumbnails used with Preview in Context are generally smaller, but they enable you to preview how the animation progresses.

Explain Convert to Keyframes, Clear Keyframe, and Convert to Blank Keyframes.

Convert to Keyframes converts the selected frame into a keyframe. Clear Keyframe changes a keyframe to a frame and removes the frame from the Timeline. Convert to Blank Keyframes changes the frame next to the selected frame to a blank keyframe and deletes the content of the frame and the content of all frames up to the next keyframe or blank keyframe.

Is there another way to access the Convert to Keyframe, Clear Keyframe and Convert to Blank Keyframe commands?

Yes, you can access the Convert to Keyframe, Clear Keyframe and Convert to Blank Keyframe commands by selecting the frame you want to change and then right-clicking. A context-menu appears. Select the command you want from the context menu. Flash applies the change.

Move and Copy Frames

You can move and copy the frames in your movie to change the sequence of your movie. Moving and copying frames is one way you can edit your Flash movie. For example, you might want to move a sequence of frames forward or backward on the Timeline, or you may want to copy multiple frames and paste them elsewhere on the Timeline so that the sequence plays twice.

When you copy frames in Flash, you should use the Copy Frames and Paste Frames commands found on the Edit menu. Using the standard Copy and Paste commands may not give you the results you want. Copying and pasting frames extends the length of your movie.

You can also use drag-and-drop to move frames. Using the drag-and-drop feature, you can drag frames around on the Timeline and drop them into new locations. You can also drag a frame to another layer. You can even select multiple frames and relocate them as a group by dragging them around the Timeline.

If you accidentally move or copy frames, you can activate the Undo command or the History panel to reverse the move or copy action.

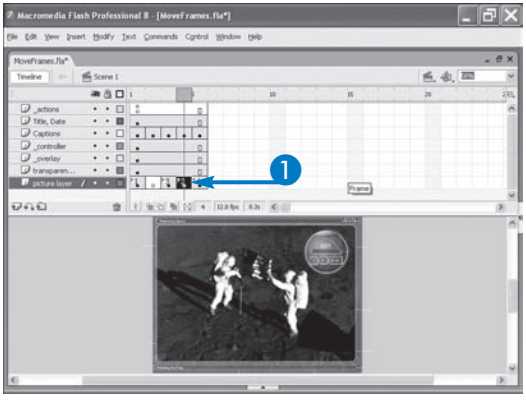
Move and Copy Frames

Move a frame

1. Select the frame or frames you want to move.

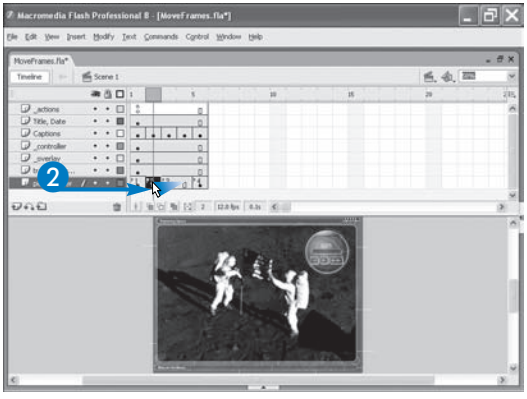
Note: *See the section "Select a Frame" to learn how to select frames.*

Flash highlights the frames on the Timeline.



2. Drag and then drop the frame at the new location on the Timeline.

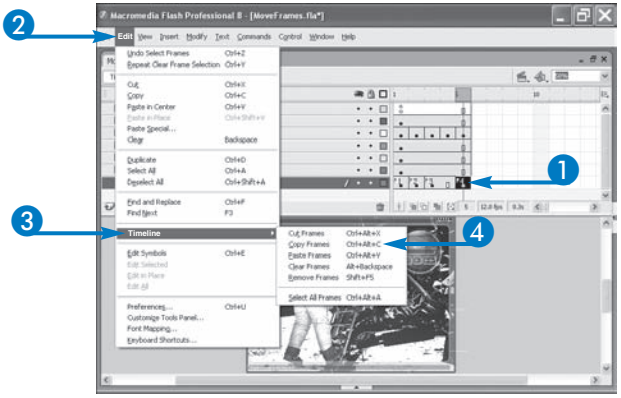
Flash moves the frame.



Copy a frame

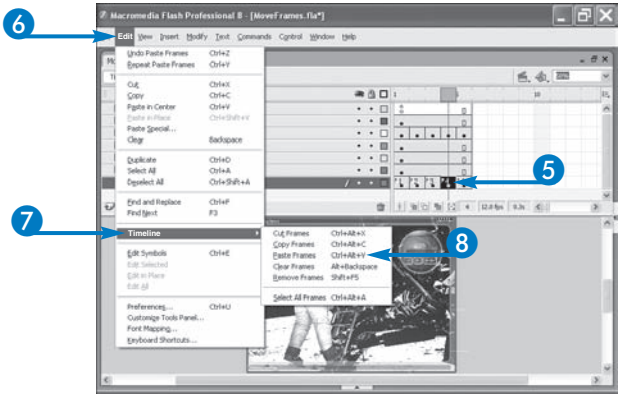
1. Click a frame or click and drag to select the frames you want to copy.

   Flash highlights the frames on the Timeline.
2. Click Edit.
3. Click Timeline
4. Click Copy Frames.



5. Click the frame in which you want to place the copy.
6. Click Edit.
7. Click Timeline
8. Click Paste Frames.

   Flash pastes the copied frame into the selected frame.



Can I use the drag-and-drop technique to copy frames?

Yes. First, select the frame or frames you want to copy. Press and hold the Alt key (Windows) or the Option key (Mac) and then drag the frame or frames and drop them into the new location on the Timeline. Flash duplicates the frames.

Can you explain Cut Frames, Copy Frames, and Paste Frames?

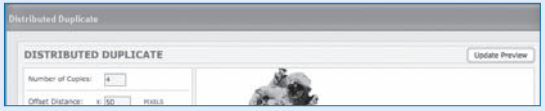
The Cut Frames, Copy Frames, and Paste Frames commands work a lot like the cut, copy, and paste commands except you use them exclusively with frames. When you cut frames, Flash removes the frames from the Timeline and makes them available for you to paste into another location. When you copy frames, Flash makes a copy of the frames and makes them available for you to paste them into another location.

Can I move an entire movie from one file to another file?

Yes. To start, on the main menu click Edit, Timeline, Select All Frames. Then click Edit, Timeline, Copy Frames. Flash copies the entire document. Open the new file. Click the frame into which you want to paste and click Edit, Timeline, Paste Frames. Flash pastes the movie into the new file.

24 Creating Timeline Effects

Preview Flash Animations 446
Understanding Timeline Effects 450
Create a Grid 452
Create Distributed Duplicates 454
Create a Blur.....456
Create a Drop Shadow 457
Create an Expand 458
Create an Explode.....459
Create Transforms.....460
Create Transitions 464

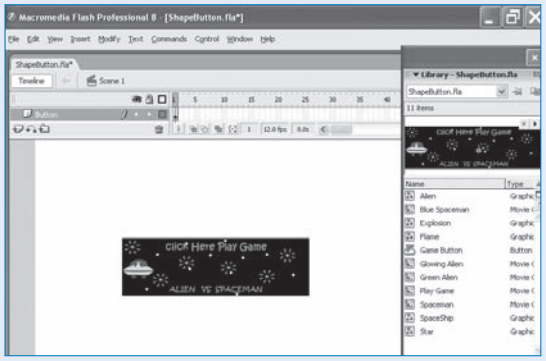


25 Creating Animations

Create a Motion Tween 466
Reverse Frames 468
Create a Rotating Motion Tween 469
Using Transform to Create Tweens.....470
Animate an Object along a Path 474
Motion Tween Opacity, Color, and Brightness 476
Create a Shape Tween.....478
Assign Shape Hints 480
Animate a Mask 482
Set Tween Speed.....484
Create Frame-by-Frame Animation 486
Onion Skin an Animation 488
Create Scenes 490
Create a Movie Clip 492
Using Movie Explorer.....494

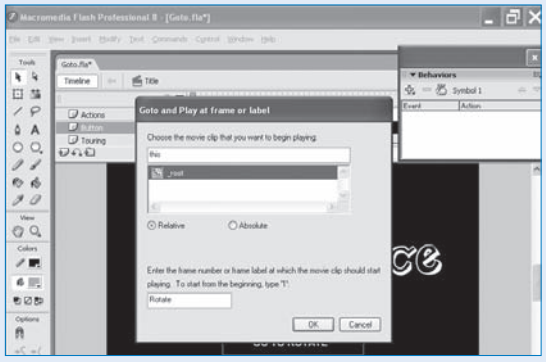
26 Understanding Buttons and Behaviors

Create a Button 496
Create Shape-Changing or Animated Buttons 500
Understanding Behaviors 504
Using the Behaviors Panel.....508



27 Adding Movie Clip Behaviors

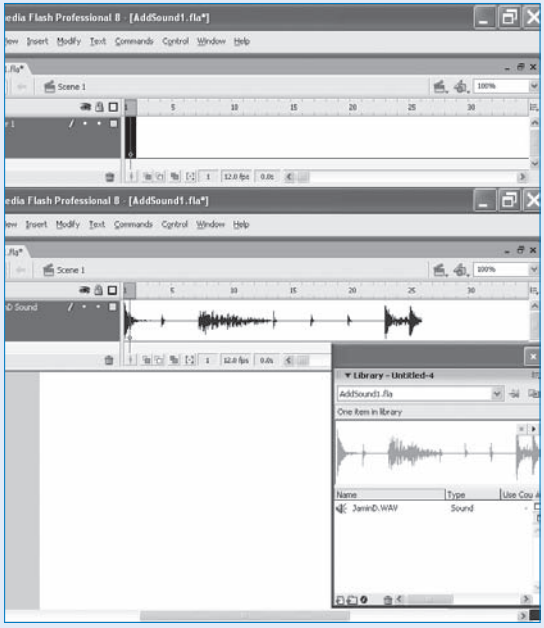
Understanding Paths.....510
Name an Instance 511
Using Goto Behaviors.....512
Create Objects Users Can Drag.....514
Using the Duplicate Movieclip Behavior 516
Load External Movie Clips 518
Change the Stacking Order.....522



PART VII
ADDING FINISHING TOUCHES

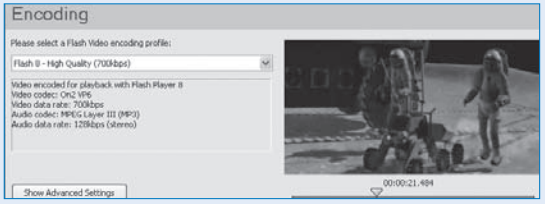
28 Adding Sound

Import a Sound File 524
Assign a Sound to a Frame 526
Assign a Sound to a Button.....528
Create Event Sounds.....530
Assign Start Sounds.....532
Assign Stop Sounds.....534
Assign Streaming Sounds 536
Loop Sounds.....538
Add Sound Effects 540
Set Audio Output for Export 542
Understanding Sound Behaviors 544
Using the Load Sound from Library Behavior 545
Using the Play Sound Behavior.....546
Using the Stop Sound Behavior 547
Using the Stop All Sounds Behavior 548
Using the Load Streaming MP3 File Behavior 549



29 Working with Video

Using Progressive Download to Play a Video 550
Embed Video in Your Flash File 552
Using the Embedded Video Stop Behavior 554
Using the Embedded Video Hide Behavior 555
Using the Embedded Video Show Behavior 556
Using the Embedded Video Play Behavior....557
Using the Embedded Video Pause Behavior 558
Using the Embedded Video Fast Forward and Rewind Behaviors 559



30 Distributing Flash Movies

Publish a Movie 560
Publish a Movie in Flash Format.....562
Publish a Movie in HTML Format 564
Create a Flash Projector 568
Export to Another Format 570
Print Movie Frames.....572

Preview Flash Animations

You should preview your Flash documents to ensure your animations work properly. You can preview your documents in the authoring environment, in the test environment, or in a Web browser.

You can easily test your movie in the authoring environment by pressing Enter (Windows) or Return (Mac). You can also use the commands on the Control menu to test your movie. The Play option plays your movie. The Rewind option returns your movie to the first frame. The Step Forward option moves your movie forward one frame. The Step Backward option moves your movie backward one frame. Loop Playback causes your movie to play continuously. The Play All Scenes option causes all scenes to play. The Mute Sounds option causes your movie to play without sound. By default, Flash disables buttons and actions, enabling you to manipulate buttons, movie clips, and frames as you work. Click Enable Simple Buttons and Enable Simple Frame Actions to test buttons and actions in the authoring environment.

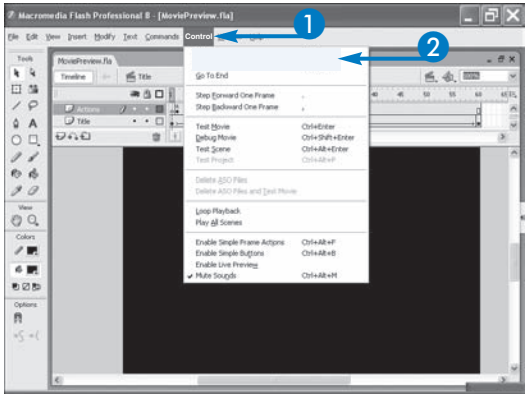
Not all animations work in the authoring environment. Click Control, Test Movie on the main menu to move to the test environment and play your movie. Click Control, Test Scene to play the current scene.

Preview Flash Animations

Play or rewind a movie

1. Click Control.
2. Click Play or Rewind.

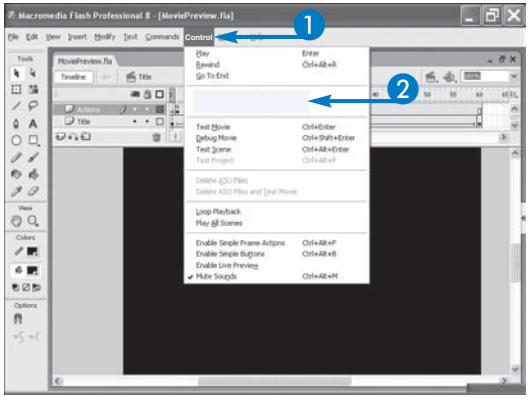
   If you click Play, Flash plays your movie; if you click Rewind, Flash returns to the first frame.



Move forward or backward one frame

1. Click Control.
2. Click Step Forward One Frame or Step Backward One Frame.

   Flash moves forward or backward one frame.

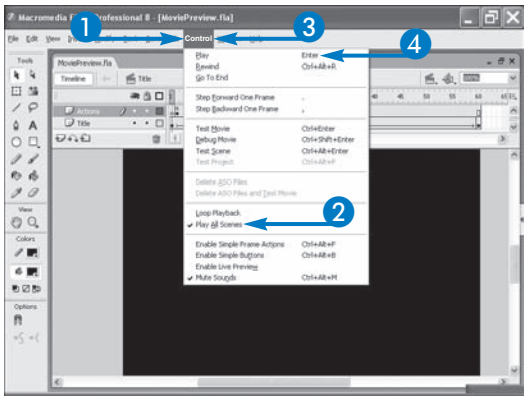


Play all scenes

1. Click Control.
2. Click Play All Scenes.

   A check mark appears next to a selected option. Clicking Play All Scenes toggles the option on and off.
3. Click Control.
4. Click Play.

   Flash plays all scenes.

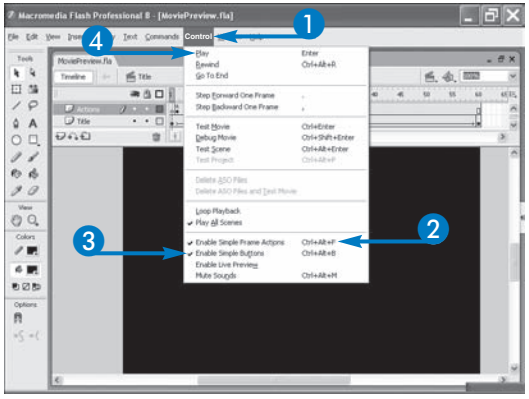


Enable frame actions and buttons

1. Click Control.
2. Click Enable Simple Frame Actions.
3. Click Enable Simple Buttons.

   A check mark appears next to a selected option. Clicking Enable Simple Actions or Enable Simple Buttons toggles the option on and off.
4. Click Play.

   Flash enables you to test frame actions and buttons.



Is there another method I can use to test my movie?

Yes. You can use the Controller. Click Window, Toolbar, Controller in Windows, or Window, Controller on a Macintosh to open the Controller bar. The Play button plays your movie. The Stop button stops your movie. The Rewind button returns your movie to frame 1. Step Back steps you back one frame. Step Forward steps you forward one frame. Go To End takes you to the last frame.

Why should I use the test enviroment?

When you view your movie in the test environment, you are seeing your movie as others will see it. When you click File, Save, Flash saves the movie you are authoring in the FLA format. To view your animation on the Web, your file must be in SWF format. Clicking Control, Test Movie on the main menu creates an SWF file, moves you to the test environment, and plays the SWF file.

How do I test my movie in a Web browser?

To test your movie in a Web browser, click File, Publish Preview, Default on the main menu. Flash opens and plays your movie in your default Web browser. You can also test your movie in a Web browser by clicking File, Publish Preview, HTML. You should test your movie in a Web browser before posting it on the Web.

continued

Preview Flash Animations *(Continued)*

Any data in a frame not downloaded when your movie reaches the frame causes your movie to pause until the data downloads. In the test environment, you can view a graphical representation of movie performance at various modem speeds. This enables you to see which frames will cause your movie to pause.

You select the modem speed you want to simulate. Typically, the stated modem speed is higher than the typical speed a user experiences. The Bandwidth Profiler estimates typical Internet speed and calculates performance based on that speed. For example, the Bandwidth Profiler uses 2.3KB/s for a 28.8 modem.

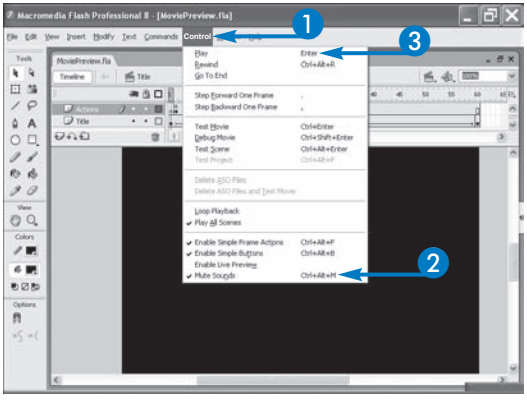
The left side of the Bandwidth Profiler displays the movie clip dimension, frame rate, size, duration in frames and seconds, and the preloaded frames in seconds. The right side of the Bandwidth Profiler displays a graph. A red line runs across the graph. Each bar in the graph represents a frame. If a bar is below the red line, the frame streams in real time. If a bar is above the red line, the frame must wait to stream.

Preview Flash Animations *(continued)*

Mute sounds

1. Click Control.
2. Click Mute Sounds.
3. Click Play.

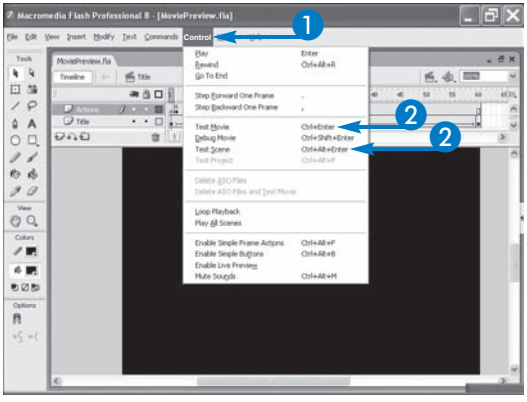
   Flash plays the movie without sound.



Test a movie or scene

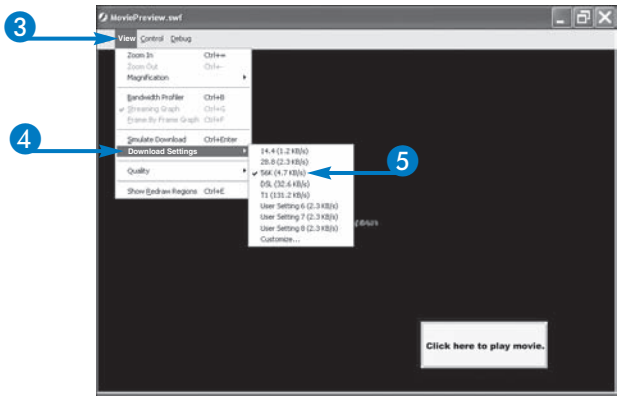
1. Click Control.
2. Click Test Movie or Test Scene.

   The test environment appears. Your movie begins to play.



Set modem speed

3. Click View.
4. Click Download Settings.
5. Click the modem speed at which you want to test your movie (a check mark appears).

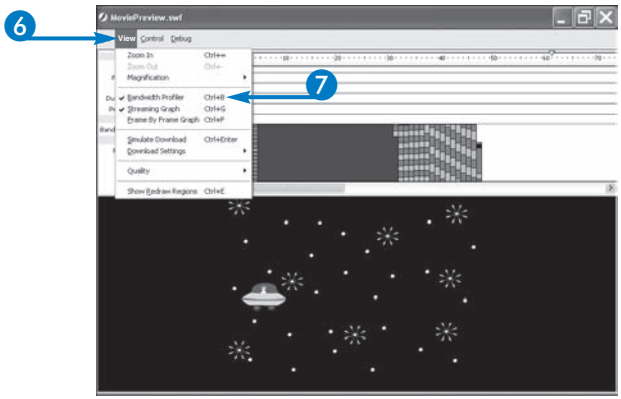


View the bandwidth profiler

6. Click View.
7. Click Bandwidth Profiler.

   Flash simulates the streaming of your movie at the modem speed you selected.

   The Bandwidth Profiler provides you with information about the dimensions, size, duration, and preload of your movie.



What is the Bandwidth Profiler?

When you click View, Bandwidth Profiler, Flash presents you with a graph that depicts the download performance of your movie. The graph displays alternating light and dark gray bars. Each bar represents a frame. The size of the bar corresponds to the size of the frame in bytes. Bars that extend above the red line do not stream in real time. You can click View, Streaming Graph to determine the point at which each frame has downloaded. The first frame is usually large because it contains symbol content. You can click View, Frame by Frame Graph to view the performance of each frame.

What other features does the test environment have?

In the test environment, you can zoom in on your movie by clicking View, Zoom In. You can zoom out by clicking View, Zoom Out. You specify a magnification level by selecting View, Magnification and clicking a magnification level.

You can also click Control, Stop to stop your movie; Control, Rewind to rewind your movie; Control, Step Forward One Frame to move forward one frame; and Control, Step Backward to move backward one frame.

By default, your movie plays and then loops back to the beginning and plays again. To stop your movie from looping, click Control, Loop.

Understanding Timeline Effects

You can use Timeline effects to animate objects in your Flash document quickly. Among other things, Timeline effects enable you to add motion, fades, and color transitions to your document. You can apply Timeline effects to text, shapes, ungrouped objects, grouped objects, bitmap images, graphics, buttons, and movie clips.

You begin the process of creating a Timeline effect by selecting the object to which you want to apply the effect and then selecting the Timeline effect you want to apply from the menu. The dialog box for the Timeline effect opens enabling you to set options. After you set the options, Flash creates a new layer, transfers the object to the new layer, and places the object on the Timeline of the effect. Flash gives the layer the same name as the effect, appended with a sequential number.

When you complete your Timeline effect, Flash automatically adds it to the Library along with a folder containing the elements used to create the effect. Flash gives the Library item the same name it gave the layer. You can edit or remove the Timeline effects you assign to an object. Subsequent sections of this chapter discuss how to create each Timeline effect in detail.

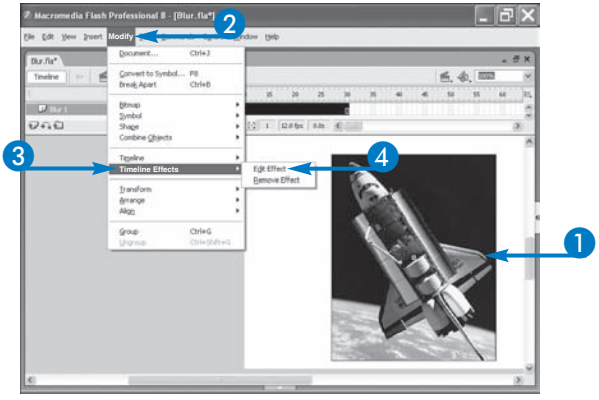
Understanding Timeline Effects

Edit a timeline effect

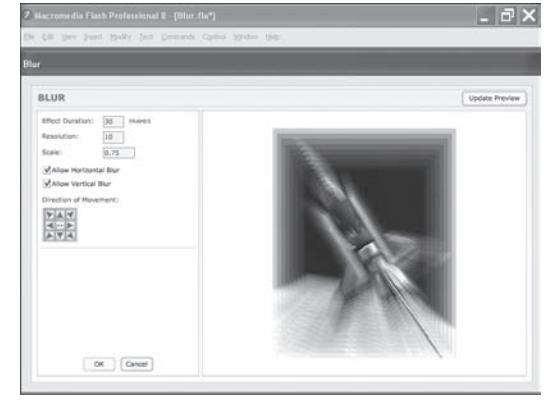
1. Select the object whose effect you want to edit.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Modify.
3. Click Timeline Effects.
4. Click Edit Effect.



Flash opens a dialog box. You can edit the effect.

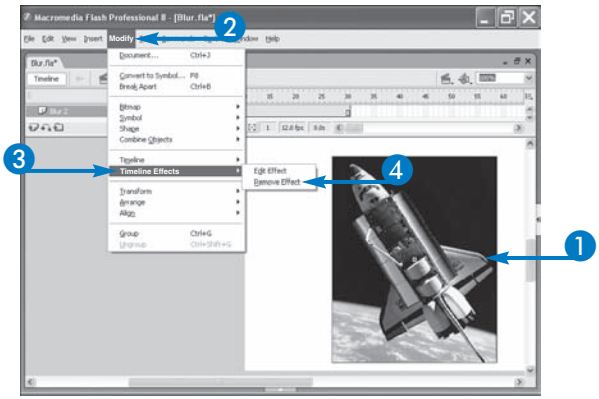


Remove a timeline effect

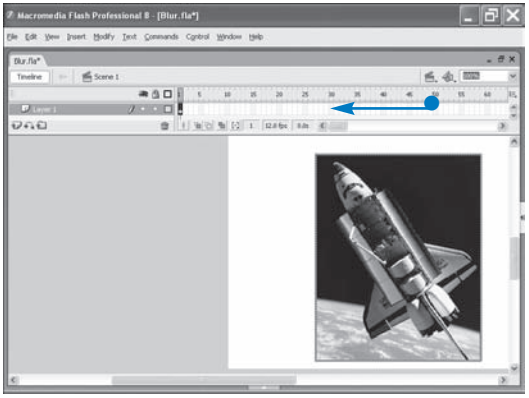
1. Select the object whose effect you want to remove.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Modify.
3. Click Timeline Effects.
4. Click Remove Effect.



- Flash removes the effect.



What types of Timeline effects are there?

Flash provides you with several types of Timeline effects. Each type enables you to manipulate an object in a different way. Flash divides Timeline effects into three categories: Assistants, Effects, and Transform/Transition. The Assistants category includes two effects: Copy to Grid and Distributed Objects. The Effects category includes four effects: Blur, Drop Shadow, Expand, and Explode. The Transforms/Transition category includes two effects: Transform and Transition. This chapter discusses each type of Timeline effect.

Is there a shortcut for creating Timeline effects?

You can right-click (Ctrl-click) on the object to which you want to add a Timeline effect. A context menu appears. On the menu, click Timeline Effect. Flash provides you with the options which enable you to edit an effect, remove an effect, or select an effect to apply from the Assistants, Effects, or Transform/Transition category.

Can I rename the layer and Library item Flash created?

Yes. To rename the layer, double-click the layer name. Flash changes to edit mode. Type a new name and then press Enter. To rename the Library item, open the Library, double-click the Library item. Flash changes to edit mode. Type the new name and then press Enter.

Create a Grid

If you need to present objects in a series of rows and columns, you can easily create a grid by using the Copy to Grid command. The Copy to Grid command places the objects you select in rows and columns. The Copy to Grid command has options for entering the number of rows and the number of columns you need. You can also specify the distance between the rows and columns.

Like all Timeline effect dialog boxes, the Copy to Grid dialog box plays a preview of the effect you have created. Each time you change a set of options, you must click the Update Preview button to see the effect of your changes. When you are satisfied with your grid, you click OK and Flash places a copy of your grid on the Stage as a grouped object as well as placing a copy in the Library.

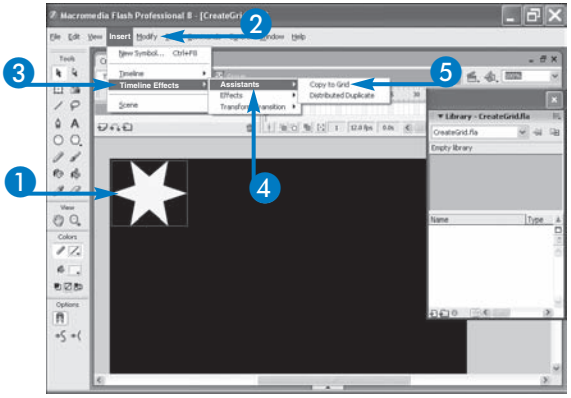
You can delete the copy of the instance Flash placed on the Stage, but you will not be able to undo your deletion and Flash clears the history panel.

Create a Grid

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Assistants.
5. Click Copy to Grid.



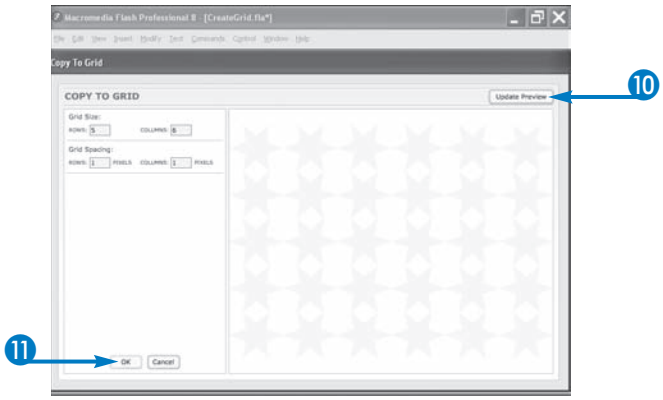
The Copy To Grid dialog box appears.

6. Type the number of rows.
7. Type the number of columns.
8. Type the space between rows.
9. Type the space between columns.

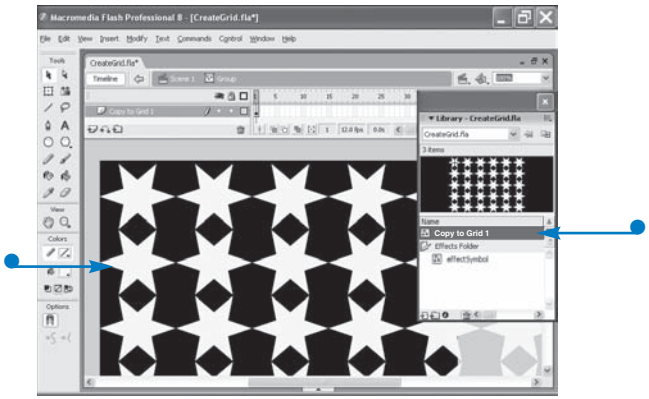
10 Click Update Preview.

Flash displays a preview of your grid.

11 Click OK.



- Flash places a copy of your grid on the Stage and in the Library.



If I delete the instance of my grid that Flash placed on the Stage, can I still take an instance of the grid out of the Library?

If you delete the instance of the grid Flash placed on the Stage, you can still take an instance of the grid from the Library, but you will no longer be able to edit the Timeline effect.

After I break a grid apart, can I undo my action?

Yes. After you break a grid apart you can use the Undo command or the History panel to undo your action.

Can I modify a grid that I have created?

Yes. After creating a grid, you can modify it. You can click Modify, Break Apart on the main menu to ungroup the objects in the grid. This allows you to manipulate each object separately. However, after applying the Break Apart command you can no longer edit the Timeline effect. You can, however, retreive an intact instance of the grid from the Library.

Can I motion tween my grid?

Yes. Motion tweening allows you to animate an object. You can motion tween a grid. Motion tweening is discussed in detail in Chapter 25.

Create Distributed Duplicates

With the Distributed Duplicate Timeline effect, you can make copies of objects. In addition, you can set several parameters, such as number of copies, offset distance, rotation, frame, scale, color, and alpha value. You can create an unlimited number of effects by manipulating the settings of these parameters.

In the Distributed Duplicate dialog box, the Number of Copies field tells Flash how many copies of the object you want to make. The Offset Distance fields tell Flash the distance from the original object in pixels you want to place each copy. The X field sets the horizontal distance, and the Y field sets the vertical distance.

The Rotation field tells Flash the number of degrees to rotate each new copy. The Offset Start frame tells Flash the number of frames after the current frame to place the duplicate. Setting the Offset Start field to zero creates a static image. Setting the value higher than zero creates an animation — the higher the number, the slower the animation.

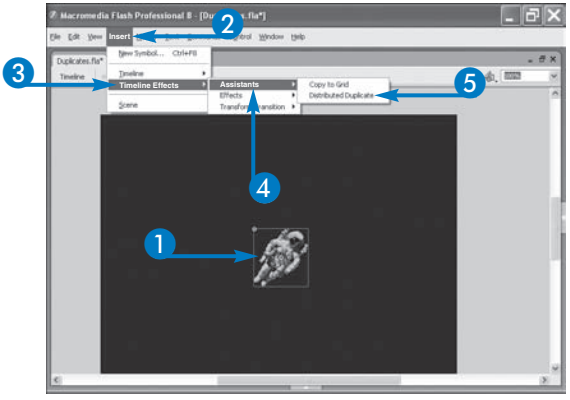
You can also use the Distributed Duplicate dialog box to change incrementally the size, color, and alpha value as Flash creates each copy of the object.

Create Distributed Duplicates

1. Select an object.

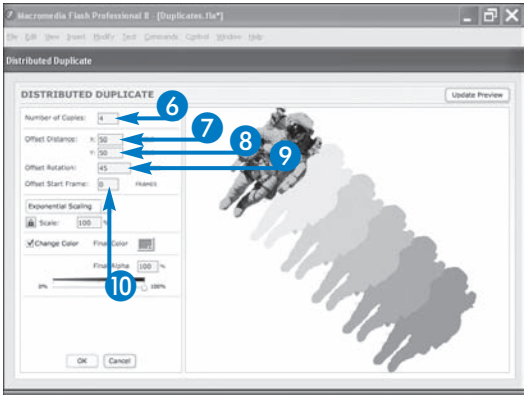
Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Assistants.
5. Click Distributed Duplicate.



The Distributed Duplicate dialog box opens.

6. Type the Number of Copies.
7. Type the horizontal offset distance.
8. Type the vertical offset distance.
9. Type the Offset Rotation.
10. Type the Offset Start Frame.



11 Click here and then click Exponential Scaling or Linear Scaling.

12 Type the Scale percentage.

Note: *If you click the Scale icon (🔒), Flash enables you to set the horizontal and vertical scale independently.*

13 Click the Change Color box if you do not want to change the color of your object (☑ changes to ☐).

- Click here to use the Color box to select the color to which you want to change your object.

14 Type a Final Alpha percentage.

You can also drag the slider to adjust the Final Alpha percentage.

15 Click Update Preview.

Flash displays a preview of the Timeline effect you created.

MASTER IT

How do I change the size of an object?

You can change the size of your object by using either Exponential Scaling or Linear Scaling. In the Distributed Duplicate dialog box, use the Scale field to set the percentage by which you want to scale the object. If you set the percentage to an amount greater than 100, the size of the object increases. If you set the percentage to an amount less than 100, the size of the object decreases. By default, Flash enables you to scale your object proportionately. Alternatively, you can press the Scale button and then use the X field to set the horizontal scale and the Y field to set the vertical scale.

How do I change the color and alpha value of objects?

You can use the Color box in the Distributed Duplicate dialog box to change the color of your objects. You must click Change Color and then use the Color box to select the color to which you want to change the object. Flash makes successive changes of color to each copy of the object until it reaches the color you selected.

Use Final Alpha to set the transparency or opacity of the last copy of your objects. Flash makes successive changes to the transparency of each copy of the object until it reaches the value you selected.

Create a Blur

The Blur Timeline effect creates an animation in which your object blurs and fades out over time. In the Blur dialog box, you can set parameters such as the duration, resolution, scale, and direction of the blur.

In the Blur dialog box, the Effect Duration field tells Flash the number of frames over which the blur should occur — the higher the number, the longer the animation. The Resolution field determines the clarity of the object as it blurs. The Scale field changes the size of the object as it blurs — the higher the number, the larger the object grows. A value of less than one causes the objects to shrink and blur.

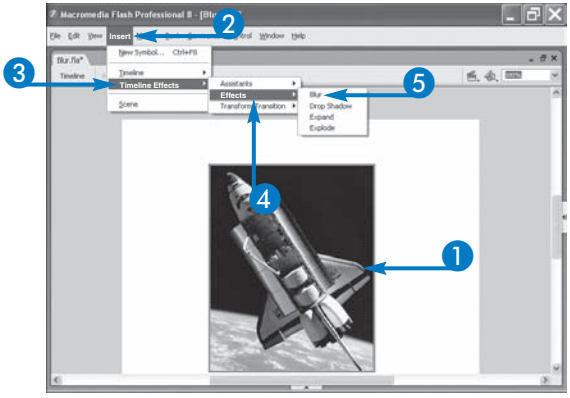
You can also tell Flash whether the blur effect should be horizontal, vertical, or both. Checking Allow Horizontal Blur allows your objects to blur horizontally. Checking Allow Vertical Blur allows your objects to blur vertically. Checking both boxes allows your objects to blur in both directions at once. Use the Direction of Movement icons to tell Flash the direction in which you want the blur to move.

Create a Blur

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

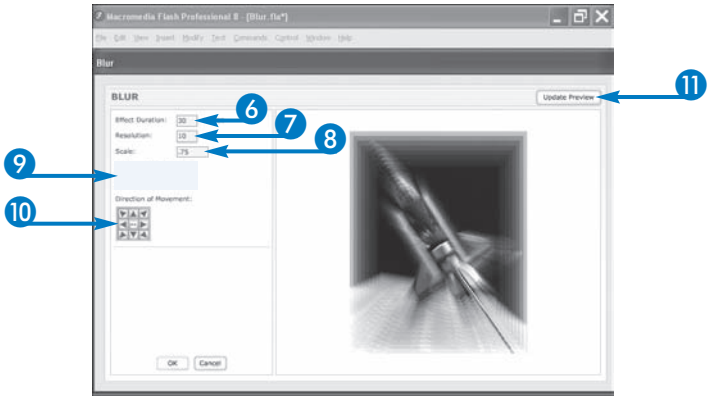
2. Click Insert.
3. Click Timeline Effects.
4. Click Effects.
5. Click Blur.



The Blur dialog box opens.

6. Type the Effect Duration.
7. Type the Resolution.
8. Type the Scale.
9. Click to prevent a horizontal blur or vertical blur (changes to).
10. Click a Direction of Movement icon ( ) to select the direction of the blur.
11. Click Update Preview.

Flash plays a preview of the Timeline effect you created.



Create a Drop Shadow

The Drop Shadow Timeline effect creates a shadow behind the object you select. You can change the color, transparency, and offset of the shadow.

By default, Flash creates a gray shadow. You can change the color by clicking the color box and selecting a new color. You can click the color you want or you can enter a hexadecimal color code. Flash changes the shadow to the color you selected.

The Alpha Transparency field changes the transparency or opacity of the shadow. An Alpha Transparency value of 100 percent makes the shadow completely opaque, and an Alpha Transparency value of 0 percent makes the shadow completely transparent. You can type an Alpha Transparency percentage or use the slider to select a value.

The Shadow Offset X field sets the horizontal distance in pixels of the shadow from the location of the original object. The Shadow Offset Y field sets the vertical distance in pixels of the shadow from the location of the original object.

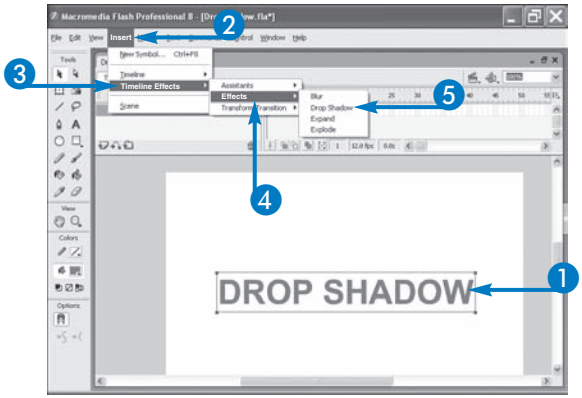
You can use the Drop Shadow Timeline effect with text to create block letters quickly.

Create a Drop Shadow

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Effects.
5. Click Drop Shadow.



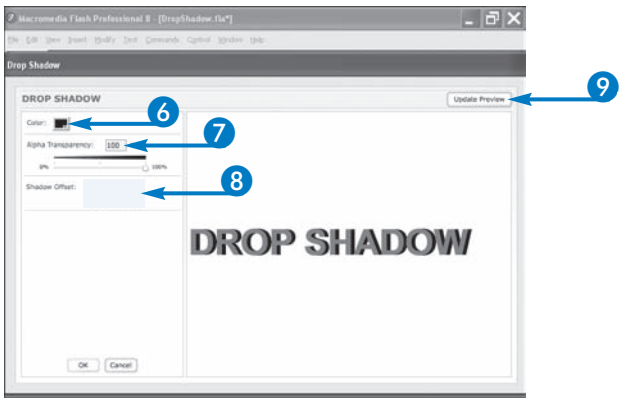
The Drop Shadow dialog box opens.

6. Click here and then select a color.
7. Type an Alpha Transparency percentage.

Note: *You can also use the slider to adjust the Alpha Transparency.*

8. Type the Shadow Offset.
9. Click Update Preview.

Flash displays a preview of the Timeline effect you created.



Create an Expand

The Expand Timeline effect works best with two or more objects. Flash expands objects by moving them away from each other, and/or squeezes objects by moving them closer to each other. You can use the Expand dialog box to set parameters such as duration, direction, shift, and size.

In the Expand dialog box, the Effect Duration field tells Flash the number of frames over which the Expand should occur — the higher the number, the longer the animation. Selecting the Expand option causes the objects to expand; selecting the Squeeze option causes the objects to squeeze. Selecting the Both option causes the objects to expand and squeeze.

You can use the Direction of Movement options to specify the direction of the Expand or Squeeze. The Shift Group Center By X field causes all the objects to move horizontally by the number of pixels specified; the Shift Group Center By Y field causes all the objects to move vertically by the number of pixels specified.

The Fragment Offset field tells Flash how much the object should expand or squeeze. You can set this value to a negative number. The Change Fragment Size By fields change the width and/or height of the objects.

Create an Expand

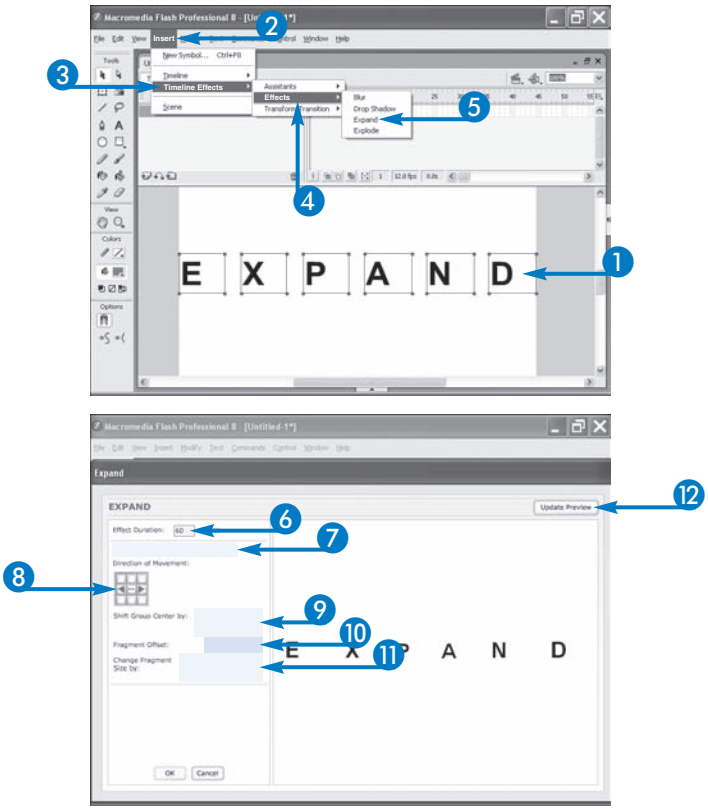
1. Select several objects.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Effects.
5. Click Expand.
6. Type the Effect Duration.
7. Click Expand, Squeeze, or Both (◯ changes to ◉).

   Click Expand to have the objects move apart. Click Squeeze to have the objects move closer together. Click Both to expand *and* squeeze.
8. Click ⊞ to select the direction.
9. Type the Shift Group Center by amounts.
10. Type the Fragment Offset amounts.
11. Type the Change Fragment Size by amounts.
12. Click Update Preview.

    Flash plays a preview of the Timeline effect you created.



Create an Explode

The Explode Timeline effect makes an object appear to explode. Flash explodes an object by breaking the object apart and moving the pieces outward in an arch. You can use the Explode dialog box to set parameters such as duration, direction, arc size, rotation, fragment size, and alpha value.

In the Explode dialog box, the Effect Duration field tells Flash the number of frames over which the Explode should occur — the higher the number, the longer the animation. You click a Direction of Explosion icon to set the direction in which the object explodes. The Arc X and Y fields set the arc of the exploding pieces in pixels. Arc X sets the horizontal arc; Arc Y sets the vertical arc.

The Rotate Fragment By field tells Flash the number of degrees to rotate fragments as they explode. The Change Fragments Size By field tells Flash the number of pixels by which the fragments should change size.

The Alpha Transparency field gradually changes the transparency of the exploding object as it explodes. An Alpha Transparency value of 100 percent makes the object opaque, and an Alpha Transparency value of 0 percent makes the object completely transparent.

Create an Explode

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

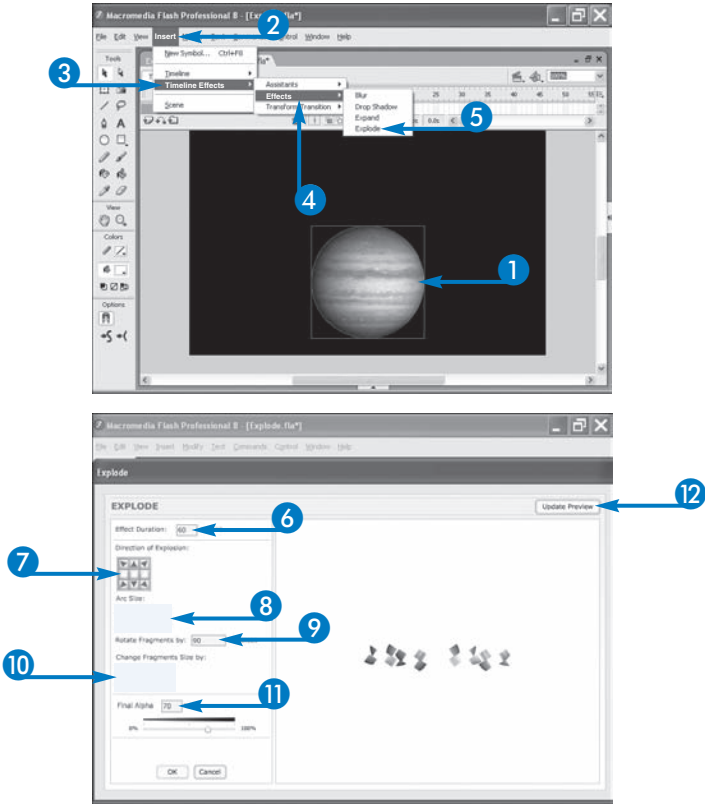
2. Click Insert.
3. Click Timeline Effects.
4. Click Effects.
5. Click Explode.

   The Explode dialog box opens.
6. Type the Effect Duration.
7. Click to set the Direction of the Explosion.
8. Type the Arc Size.
9. Type the Rotate Fragments by amount.
10. Type the Change Fragments Size by amount.
11. Type the Final Alpha value.

Note: *You can also use the slider to adjust the Final Alpha value.*

12. Click Update Preview.

    Flash plays a preview of the Timeline effect you created.



Create Transforms

Using the Transform dialog box, you can create an animation that changes the position, size, rotation, color, or alpha value of an object. You can use any one of these options individually or you can combine them. The Effect Duration field tells Flash the number of frames over which the Transform should occur — the higher the number, the longer the animation.

The Create Transform dialog box provides two methods you can use to change the position of an object: Change Position by and Move to Position. Both methods enable you to create an animation that moves an object from one position to another position on the Stage.

The Scale option enables you to create an animation that changes the size of an object over time. Setting the Scale option to less than 100 percent causes the object to shrink in size. Setting the option to greater than 100 percent causes the object to grow in size. By default, Flash provides you with the option to scale an object proportionately.

You can use the Rotate option in the Transform dialog box to create an animation that rotates an object a specified number of degrees.

Create Transforms

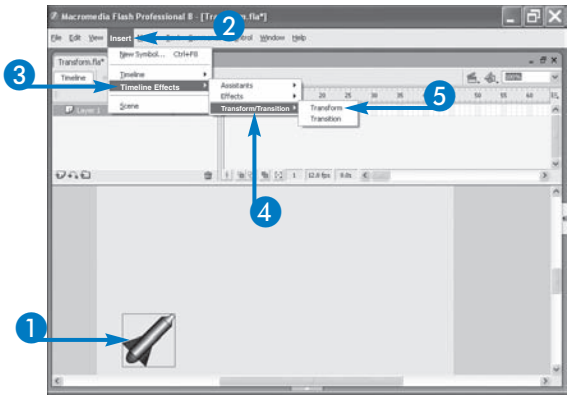
Open the Transform dialog box

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Transform/Transition.
5. Click Transform.

   The Transform dialog box opens.



Move an object by using Change Position by

1. Select an object.

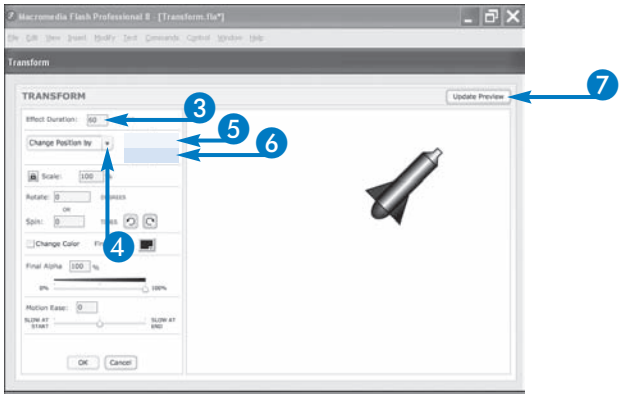
Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Type the Effect Duration.
4. Click here and then select Change Position by.
5. Type the number of pixels you want to move the object across the Stage.
6. Type the number of pixels you want to move the object up or down the Stage,

Note: *If you want to move the object diagonally, type a value in both the X and Y fields.*

7. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.



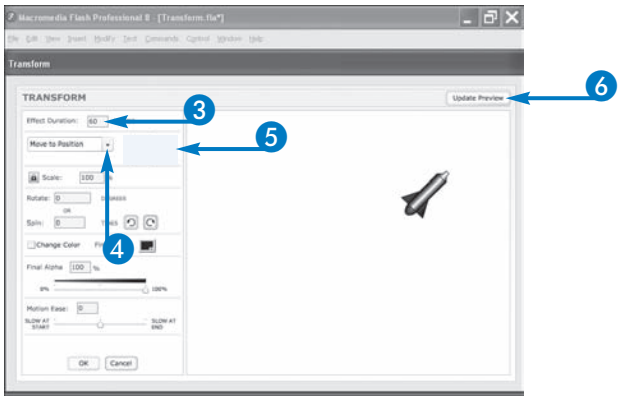
Move an object by using Move to Position

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Type the Effect Duration.
4. Click here and then click Move to Position.
5. Type the X and Y location to which you want to move the object.
6. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.



Change an object's size

1. Select an object.

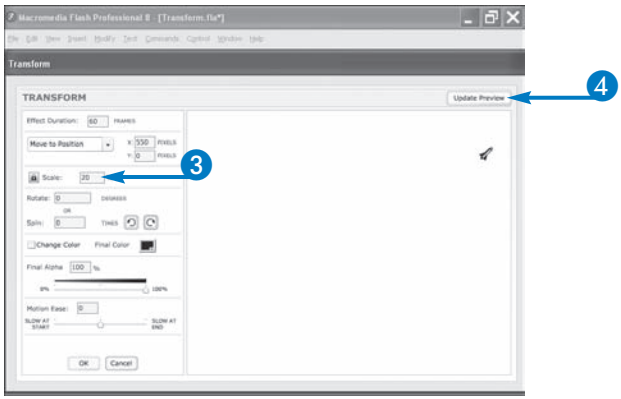
Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Type the percentage by which you want to change the object's size.

   To shrink the object, type an amount less than 100 percent. To enlarge the object, type an amount greater than 100 percent.

4. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.



Will you explain Change Position by?

The Change Position by X and Y fields tell Flash the number of pixels it should move the object. The X field moves the object from its current location across the Stage horizontally. A positive number in the X field moves the object from its current position to the right; a negative number moves the object from its current position to the left. The Y field moves the object vertically. A positive number in the Y field moves the object from its current position down; a negative number moves the object from its current position up. To move the object diagonally, set both the X field and Y field options.

Will you explain Move to Position?

When you choose the Move to Position option in the Transform dialog box, the values you enter in the X and Y fields tell Flash the exact location to which you want to move the object. The Stage has X and Y coordinates. The X coordinate measures the distance from the left edge of the Stage in pixels. A zero X coordinate marks the left edge of the Stage. The X coordinate increases as you move to the right. The Y coordinate measures the distance from the top of the Stage in pixels. A zero Y coordinate marks the top of the Stage. The Y coordinate increases as you move downward.

continued

Create Transforms *(Continued)*

You can use the Spin Option to create an animation that rotates an object 360 degrees, the number of times you specify. You can click one of the Times icons to tell Flash whether you want to rotate the object clockwise or counterclockwise.

The Change Color option enables you to create an animation that changes the color of an object over time. You must click the Change Color box to activate the Change Color option. The Change Color option, among other things, enables you to create interesting text effects. If an object consists of many colors, Flash changes the object to one color.

You can use the Final Alpha option to create an animation that changes the transparency of an object. Flash gradually changes the transparency until it reaches the transparency value you select. You can use this option to cause objects to fade in or fade out.

The Motion Ease option enables you to change the speed of any transform. You can start your animation slowly and have it end fast or you can start your animation fast and have it end slowly.

Create Transforms *(continued)*

Rotate an object

1. Select an object.

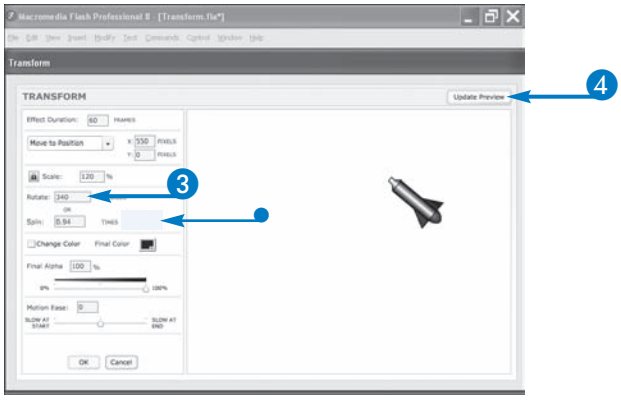
Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Type the number of degrees to rotate the object.
   - By default, Flash rotates the object clockwise ( ). Click the counterclockwise icon ( ) to rotate the object counterclockwise.

Note: *You can spin an object by entering the number of times you want the object to spin in the Spin field.*

4. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.



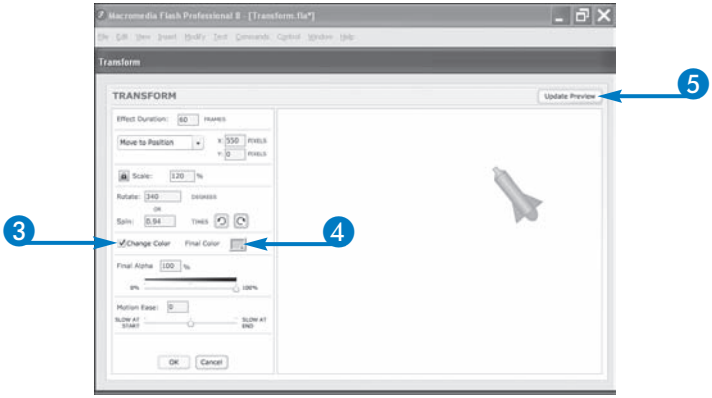
Change the color of an object

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Click the Change Color check box (changes to).
4. Click the Final Color box and select a color.
5. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.



Change the transparency of an object

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Open the Transform dialog box.
3. Type the Final Alpha percentage.

Note: *You can also use the slider to adjust the Final Alpha percentage.*

4. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.

Add a Motion Ease

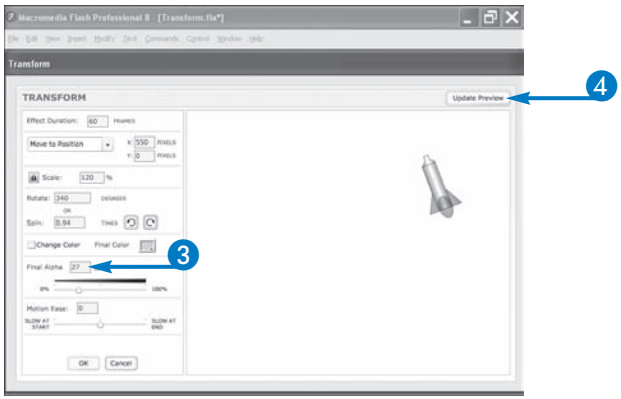
5. Set all your Transform options.
6. Type a Motion Ease value.

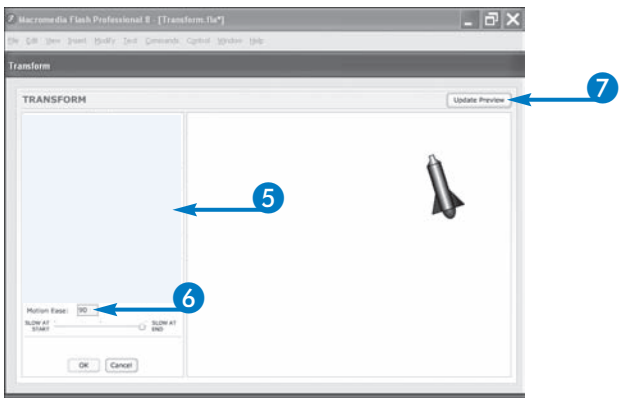
   Type a negative value to have the Motion Ease start slowly and end fast. Type a positive value to have the Motion Ease start fast and end slowly.

Note: *You can also use the slider to adjust the Final Alpha percentage.*

7. Click Update Preview.

   Flash plays a preview of the Timeline effect you created.





How do I make an object fade in?

To make an object fade in, you must set the object's alpha value to zero before you apply the Transform Timeline effect. To set the alpha value of a shape or text to zero, select the shape or text, click the Color box on the Tools panel or in the Property inspector, and set the Alpha field in the upper right corner of the Color Swatches panel to zero. To set the alpha value of a symbol to zero, select the symbol, choose Alpha in the Color field of the Property inspector, and set the value to zero.

I cannot find the color I want to use in the Final Color box. What should I do?

You select a Final Color by clicking the Color box and then selecting a color. If you do not see the color you want to use, you can enter the hexadecimal value that represents the color. There are 16.7 million colors represented by hexadecimal values.

I do not want to scale my object proportionately. What should I do?

If you click the Scale icon in the Transform dialog box, Flash toggles to X and Y fields. You can use the X field to scale the object horizontally and the Y field to scale the object vertically.

Create Transitions

You can use the Transition Timeline effect to fade an object in or out or to wipe an object in or out. These two effects are extremely useful when you are creating PowerPoint-like presentations or photographic slideshows. Flash provides you with options for setting the duration, direction, and speed of the transition.

The Effect Duration field tells Flash the number of frames over which the transition should occur — the higher the number, the longer the animation. Use the direction icons to specify the direction of the fade or wipe. You can fade or wipe up, down, left, or right.

The Motion Ease option enables you to change the speed of any transform. You can start your animation slowly and have it end fast, or you can start your animation fast and have it end slowly. The lowest motion ease value is –100; the highest motion ease value is 100. Lowering the Motion Ease value causes the transition to start slower and end faster. Increasing the Motion Ease value causes the transition to start faster and end slower. Setting the Motion Ease value to zero causes the transition to occur at a constant rate of speed.

Create Transitions

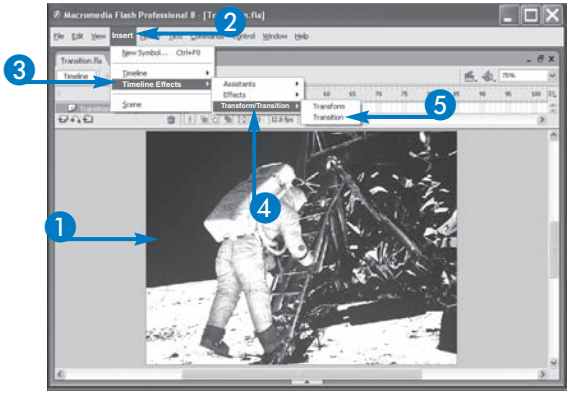
Open the Transition dialog box

1. Select an object.

Note: *See Chapter 19 to learn how to select objects.*

2. Click Insert.
3. Click Timeline Effects.
4. Click Transform/Transition.
5. Click Transition.

   The Transition dialog box opens.



Create a fade

6. Type the Effect Duration.
7. Click In or Out (○ changes to ◉).

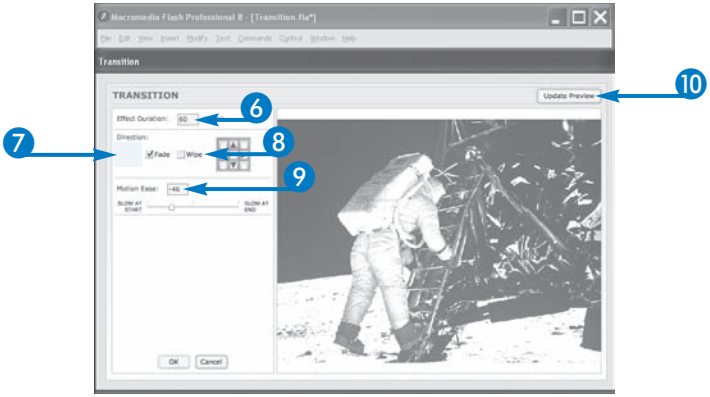
   Clicking In fades the object in; clicking Out fades the object out.

8. Click Wipe (☑ changes to ☐).
9. Type a Motion Ease value.

   Type a negative value to have the Motion Ease start slowly and end fast. Type a positive value to have the Motion Ease start fast and end slowly.

10. Click Update Preview.

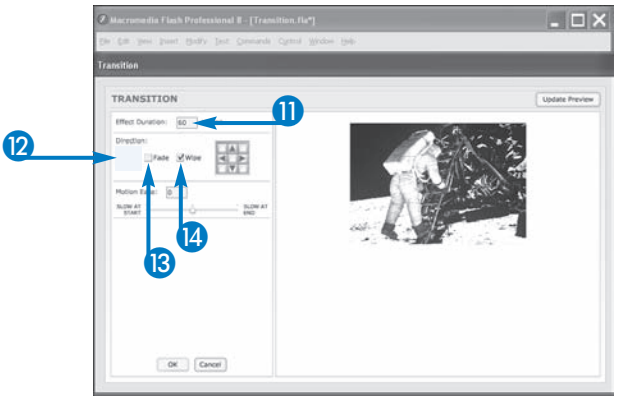
    Flash plays a preview of the Timeline effect you created.



Create a wipe

11. Type the Effect Duration.
12. Click In or Out (◯ changes to ◉).

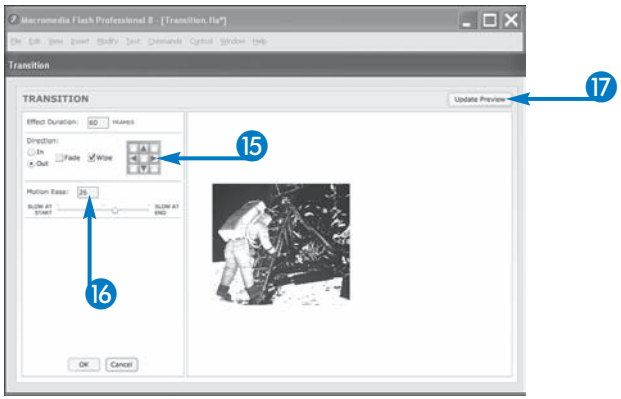
    Clicking In wipes the object in; clicking Out wipes the object out.
13. Click Fade (☑ changes to ☐).
14. Click Wipe (☐ changes to ☑).



15. Click ▦ to set the direction.
16. Type a Motion Ease value.

    Type a negative value to have the Motion Ease start slowly and end fast. Type a positive value to have the Motion Ease start fast and end slowly.
17. Click Update Preview.

    Flash plays a preview of the Timeline effect you created.



MASTER IT

Can I place multiple instances of a Timeline effect on the main Timeline?

When you create a Timeline effect, Flash places it on a layer on the main Timeline and places a copy in the Library. You can place additional objects in the unused frames on the effect's layer, but if you do, you can no longer edit the transition. You can, however, take a copy of the Timeline effect from the Library and place it on a new layer. You cannot edit the transition effect you take out of the Library, and you must enter a new keyframe marking the end of the Timeline effect.

Can I manually edit a Timeline effect?

Yes. However, after you have manually edited a Timeline effect, you can no longer use the Timeline effect's dialog box to edit it. An intact copy of the Timeline effect will, however, remain in the Library. To manually edit the Timeline effect, select the effect and choose Edit, Edit Symbol from the main menu. The Timeline for the Timeline effect appears. You can use the information you learn throughout this book to modify the effect. After you have completed your modifications, click Edit, Edit Document to return to the main Timeline.

Create a Motion Tween

You can animate objects by using a *motion tween*. You create a motion tween by inserting two keyframes that define the starting and ending points of the tween. Flash interpolates the frames in between. You can also create your animation frame-by-frame, but motion-tween animations take up much less file space and they are less labor intensive.

You can motion-tween instances, grouped objects, bitmaps, and text. You can use a motion tween to change the position, size, rotation, skew, color, and opacity of an object. However, if you want to tween the color or opacity of text, you must first turn the text into a symbol. To separately motion tween the individual characters that make up a block of text, you must first break apart the text.

Flash displays motion tweens with an arrow on the Timeline, making them easy to identify. You can place as many motion tweens in your movie as you need and you can place them anywhere in your movie that you need them. You can even have multiple motion tweens operating at the same time on different layers.

Create a Motion Tween

Note: *This example uses the file MotionTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Place the object you want to motion tween in the keyframe in which you want the motion tween to begin.

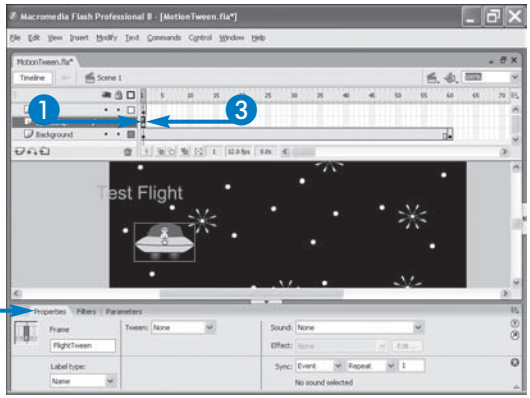
Note: *See Chapters 18 and 19 to learn how to create and group objects. See Chapter 21 to learn how to place an instance on the Stage. See Chapter 23 to learn how to create keyframes.*

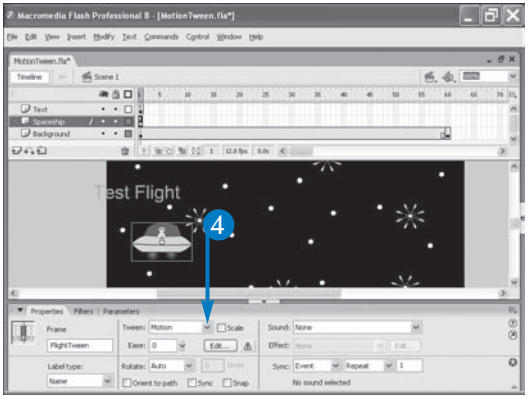
2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click the frame in which you want the motion tween to begin.

4. Click here and then select Motion.





5. Click the frame in which you want the motion tween to end.
6. Right-click (Ctrl-click) here.

   A menu appears.
7. Click Insert Keyframe.

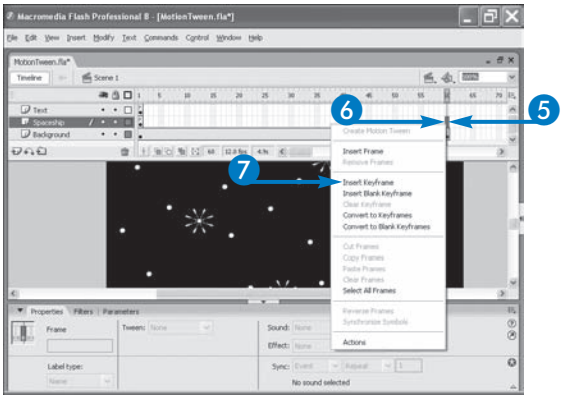
   Flash inserts a keyframe and places an arrow on the Timeline.
8. Move your object to the location where you want your tween to end.

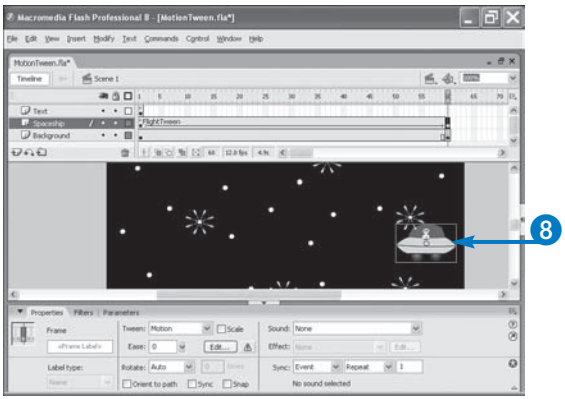
Note: *See Chapter 19 to learn how to move objects.*

9. Press Enter to view your motion tween.

   Flash moves the tweened object from the starting location to the ending location.

Note: *You can use the steps shown here to motion tween the text in the MotionTween.fla file.*





My motion tween is too long or too short. What should I do?

If your motion tween is too long, you can delete some of its frames. Select the frames you want to delete and then, on the main menu, click Edit, Timeline, Remove Frames. If your motion tween is too short, you can add frames to your motion tween. To add frames, click the last frame of the tween, press the Alt key, and then click and drag to lengthen the tween. Flash may add a keyframe. To remove the keyframe, click the keyframe and then, on the main menu, click Modify, Timeline, Clear Keyframe.

Can I use the main menu to create a motion tween?

Yes. Place the object you want to motion tween in a keyframe and click Insert, Timeline, Create Motion Tween. Click the frame in which you want your motion tween to end and then, on the main menu, click Insert, Timeline, Keyframe. Flash creates a keyframe, and an arrow appears on the Timeline to signify a motion tween. Change your object's position, size, rotation, or some other attribute. Flash creates your motion tween. Press Enter to preview the tween.

Reverse Frames

You can reverse your motion tween with the Reverse Frames feature. This feature literally reverses the order of frames in your movie. You copy a sequence of frames in a motion tween, paste them elsewhere in the Timeline, and then reverse the order. For example, if you create a motion tween that makes an object move from left to right, you can reverse the frame sequence, making the object move from right to left. You can use the Reverse Frames feature when you want to repeat the animation sequence in reverse without having to re-create the entire animation.

You can use the Reverse Frames command on all types of motion tweens, including tweens that change the color, size, skew, rotation, or opacity of an object. However, if you use the Property inspector to create special effects such as Rotate and Ease, they will no longer work, because you must assign special effects to the keyframe that starts the tween. When you apply Reverse Frames, Flash places the keyframe that previously started the tween at the end of the tween.

Reverse Frames

Note: *This example uses the file ReverseFrames.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select all the frames you want to reverse.

Note: *See Chapter 23 to learn how to select frames.*

2. Copy the frames.

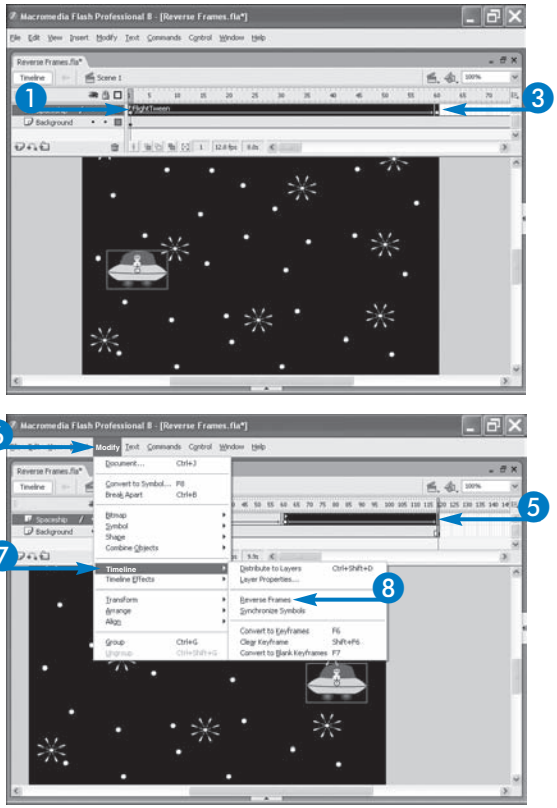
Note: *See Chapter 23 to learn how to copy frames.*

3. Click the frame into which you want to copy the frames.
4. Paste the frames.

Note: *See Chapter 23 to learn how to paste frames.*

5. Select the newly copied frames.
6. Click Modify.
7. Click Timeline.
8. Click Reverse Frames.
9. Press Enter.

   Flash plays the frames in reverse.



Create a Rotating Motion Tween

You can use the Property inspector to create a motion tween that rotates an object. You tell Flash to rotate the object, and Flash creates the rotation. You can rotate an object clockwise or counterclockwise a full 360 degrees. Whether you rotate your object clockwise or counterclockwise, Flash lets you determine the number of times you want your object to rotate. You can rotate a stationary object or you can rotate an object as it moves across the Stage.

To rotate a stationary object, create a motion tween but do not move the object to a new location in the ending keyframe. You can also rotate an object while you change other properties such as its color and size.

I have changed my mind. I do not want my object to rotate. What should I do?

- To turn off the rotation effect, click the keyframe in which you set the rotation options. Then, in the Property inspector's Rotate field, choose None.

I do not want my object to rotate 360 degrees. What should I do?

- Use the Free Transform tool or the Transform menu options to create your rotation.

Create a Rotating Motion Tween

Note: *This example uses the file RotateTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween.

Note: *See the section "Create a Motion Tween" to learn how to create a motion tween.*

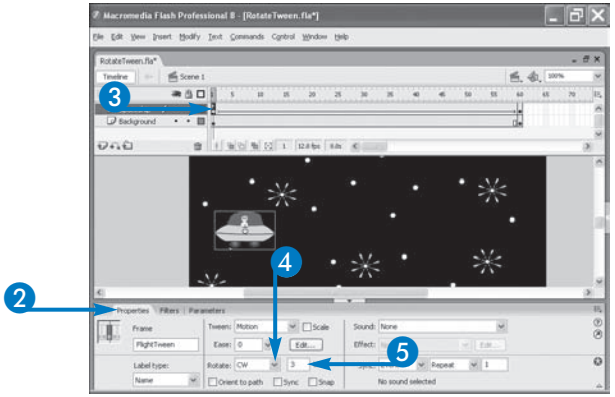
2. Open the Property inspector.

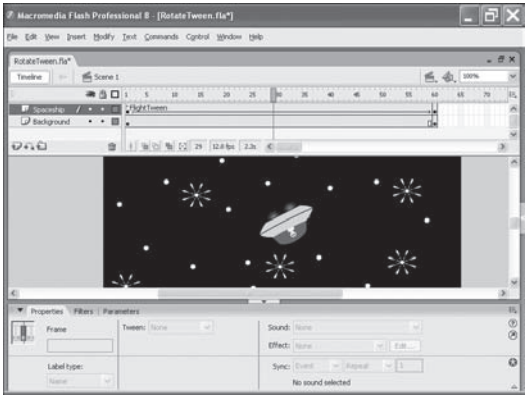
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click in the keyframe that starts the motion tween.
4. Click here and then select CW or CCW.

   Select CW to rotate the object clockwise. Select CCW to rotate the object counterclockwise.
5. Type the number of times you want the object to rotate.
6. Click the Stage.
7. Press Enter to view your tween.

   Flash rotates the tweened object as it moves the object from the starting location to the ending location.





Using Transform to Create Tweens

You can use the Transform options on the main menu to create tweened animations. You place the object as it should appear at the beginning of the animation in the first keyframe of the tween, and then you place the object as it should appear at the end of the animation in the last keyframe of the tween. Selecting Auto in the Property inspector turns the object once.

You can use the Flip Vertical and Flip Horizontal commands to create a motion tween that flips an object horizontally or vertically. These commands create the illusion of an object that is flipping over.

You can use the Transform option to rotate objects. If you click Modify, Transform on the main menu, Flash presents you with options to rotate 90 degrees clockwise, 90 degrees counterclockwise, or Scale and Rotate. If you click Scale and Rotate, you can specify the exact number of degrees you want to rotate your object.

You can also use the Rotate and Skew option to rotate and/or skew. When you select Rotate and Skew, handles surround your object. To create a tween that skews, click and drag a top, bottom, or side handle. To create a tween that rotates, click and drag a corner handle.

Using Transform to Create Tweens

Flip an object

Note: *This example uses the file FlipTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween.

Note: *See the section "Create a Motion Tween" to learn how to create a motion tween.*

2. Open the Property inspector.

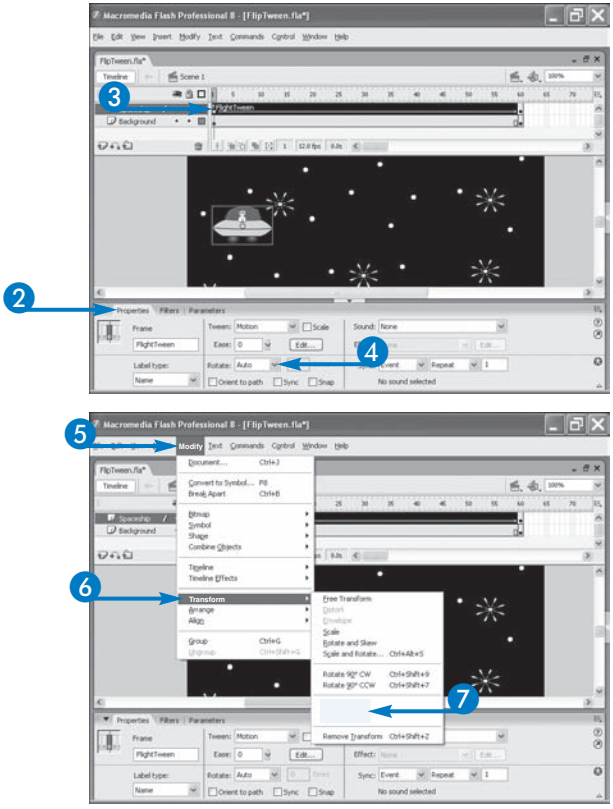
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click in the keyframe that starts the motion tween.
4. Click here and then select Auto.
5. Click Modify.
6. Click Transform.
7. Click Flip Vertical or Flip Horizontal.

   Click Flip Vertical to flip the object vertically. Click Flip Horizontal to flip the object horizontally.

8. Press Enter to view your tween.

   Flash flips the tweened object as it moves the object from the starting location to the ending location.



Rotate an object

Note: *This example uses the file Rotate90Tween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween.

Note: *See the section "Create a Motion Tween."*

2. Open the Property inspector.

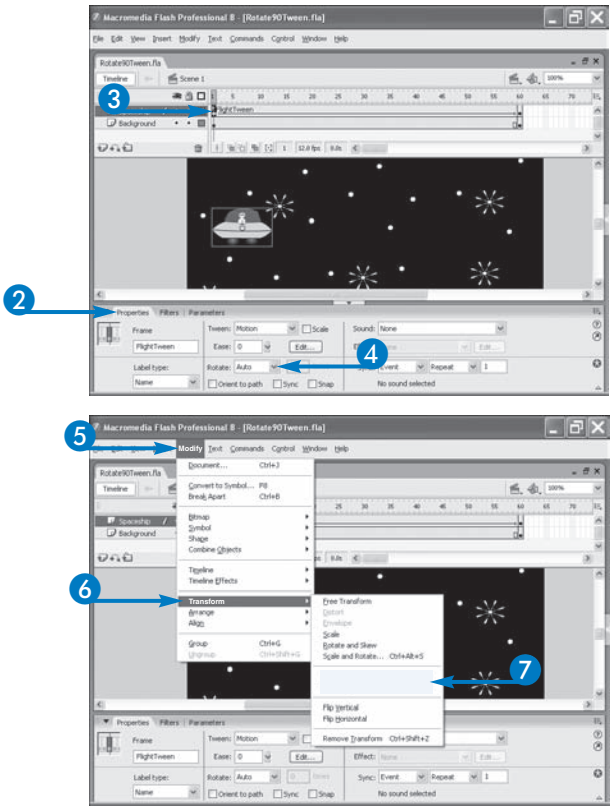
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click in the keyframe that starts the motion tween.
4. Click here and then click Auto.
5. Click Modify.
6. Click Transform.
7. Click Rotate 90° CW or Rotate 90° CCW.

   CW rotates clockwise; CCW rotates counterclockwise.

8. Press Enter to view your tween.

   Flash rotates the tweened object as it moves the object from the starting location to the ending location.



Can I use the Free Transform tool to flip objects horizotally and vertically?

Yes. To use the Free Transform tool to create an animation that flips an object horizontally, grab a side handle and pull it until the handle is in the exact location on the opposite side. To use the Free Transform tool to flip an object vertically, grab a top or bottom handle and drag it until the handle is in the exact location on the opposite side.

Can I use the Free Transform tool to rotate an object?

Yes. To rotate an object by using the Free Transform tool, create your tween, click the Free Transform tool, click the Rotate and Skew modifier, and then click a corner handle and drag it in the direction you want to rotate while in the keyframe that starts or ends the tween.

Can I make my transform tween repeat several times?

Yes. Create your tween, select the frames that contain the tween, and then click Edit, Timeline, Copy Frames to copy the frames. Then click Edit, Timeline, Paste Frames and paste the tween in sucessive frames to make the tween repeat. For example, you can use this method to make an object flip several times.

continued

Using Transform to Create Tweens *(Continued)*

Using the Transform command, you can create an animation that makes an object appear to grow or shrink in size. You define two keyframes, one of which includes the object scaled to a new size. Flash fills in frames with the incremental changes needed to create the illusion of growth or shrinkage.

You can animate size changes to create perspective in an animation. For example, to create the illusion of distance in a drawing, you might make an object seem very small in the background. Then, as the object moves into the foreground, it grows in size, making it appear to move closer.

To tween the scale of your object, you can use the Scale and Rotate command. Along with using the Scale and Rotate command, you must also activate the Scale option in the Property inspector. The Scale option tells Flash you want to tween the size of your object.

You can combine the object-sizing effect with other animation techniques in Flash to create all sorts of interesting visuals. Do not hesitate to combine techniques to create just the right animation for your movie.

Using Transform to Create Tweens *(continued)*

Skew an object

Note: *This example uses the file SkewTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween.

Note: *See the section "Create a Motion Tween."*

2. Open the Property inspector.

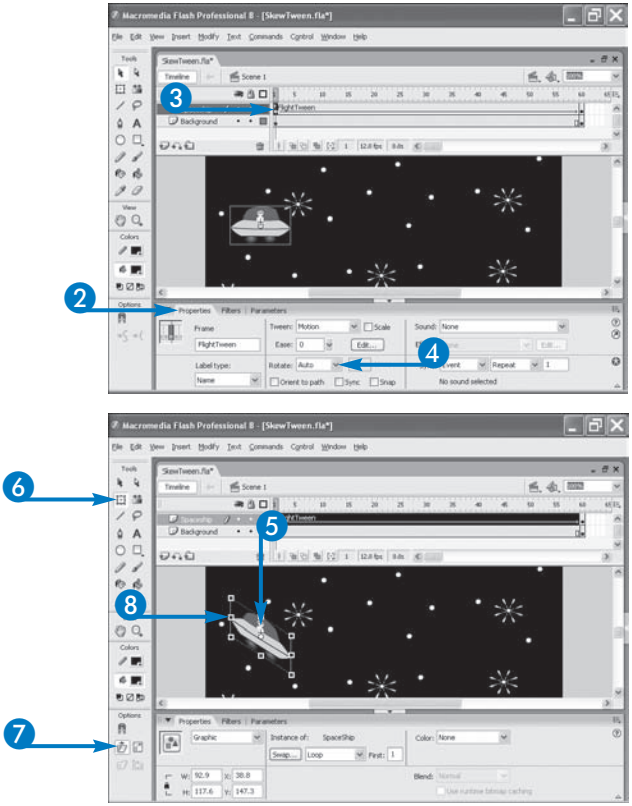
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click in the keyframe that starts the motion tween.
4. Click here and then click Auto.
5. Select the object you want to tween.

Note: *See Chapter 19 to learn how to select objects.*

6. Click the Free Transform tool ( ).
7. Click the Rotate and Skew modifier ( ).
8. Skew the object by dragging a side handle and press Enter.

   Flash skews the tweened object as it moves the object from the starting location to the ending location.



Note: *This example uses the file SizeTween.fla, which you can find on the CD-ROM that accompanies this book.*

Scale an object

1. Place the object you want to tween in the keyframe in which you want the tween to begin.

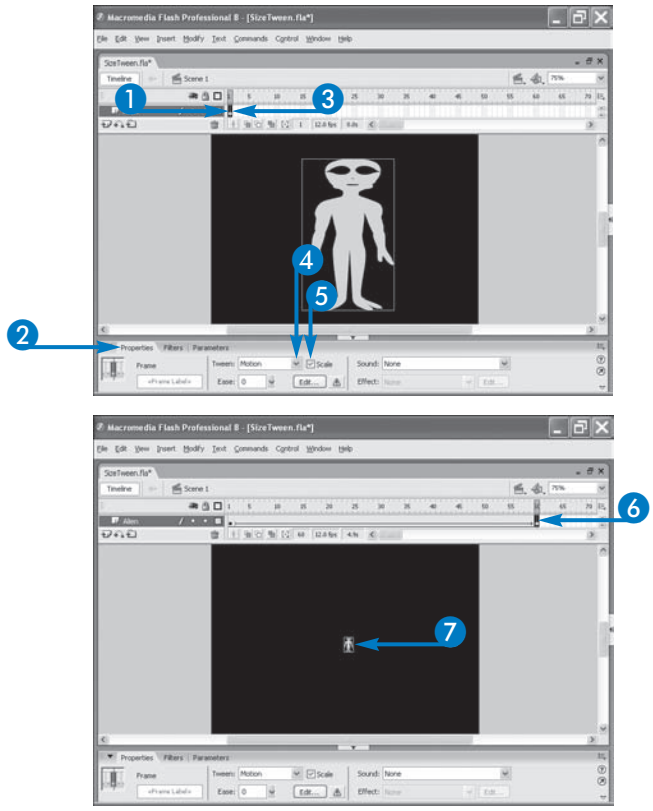
Note: *See Chapters 18 and 19 to learn how to create objects. See Chapter 21 to learn how to place an instance on the Stage. See Chapter 23 to learn how to create keyframes.*

2. Open the Property inspector.
3. Click the frame in which you want the tween to begin.
4. Click here and then select Motion.
5. Click Scale (☐ changes to ☑).
6. Click the frame in which you want the tween to end and make it a keyframe.
7. Make your object larger if you want the object to grow in size. Make your object smaller if you want your object to shrink in size.

Note: *See Chapter 19 to learn how to change the size of objects.*

8. Press Enter to view your tween.

   Flash animates the change in size.



Can I use the Free Transform tool to create a tween that changes the size of an object?

Yes. Click the Free Transform tool and then click the Scale modifier. If you want your object to shrink or grow proportionately, click and drag a corner edit point. Dragging a corner edit point outward makes the object larger, and dragging a corner edit point inward makes the object smaller. If you want to tween the width of the object, click and drag a side handle. If you want to tween the height of the object, click and drag a top or bottom handle.

My object does not grow or shrink very much. Why not?

For a maximum tween effect, you need to make the final object in the tween sequence much smaller or larger than the object shown in the first keyframe. You should also place plenty of frames between the two anchor keyframes.

Can I both rotate and scale when tweening?

Yes. To apply rotation and scaling at the same time, click Modify, Transform, Scale and Rotate to open the Scale and Rotate dialog box. Enter values for both the percentage of scaling and the degree of rotation. Click OK and Flash applies both changes when tweening the object.

Animate an Object along a Path

You can animate an object along a path and make an object move around the Stage. The object follows the path you create with the Pen, Pencil, Oval, Rectangle, PolyStar, or Brush tool.

You create the path on a special layer called a *motion guide layer* by drawing a line that defines the start and end of the sequence. The line tells Flash exactly where you want the object to move; Flash interpolates the frames between the start and end for you. The motion guide layer is not visible when you export your document.

You can make your motion tween follow any type of path: straight paths with turns, paths with curves, or paths that loop. You must connect the center point of your object to the start and end of your path. In addition, you should also make sure you select the Snap option in the Property inspector. This feature snaps the object to the path, much like a magnet. Without the Snap feature turned on, the object may not follow the path. You can also control whether the object stays in its original position while following the path or orients itself to the path.

Animate an Object along a Path

Note: *This example uses the file PathTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween. Make your motion tween start and stop at the same location.

Note: *See the section "Create a Motion Tween."*

2. Right-click (Ctrl-click) the layer on which you created the motion tween.

   A menu appears.

3. Click Add Motion Guide.

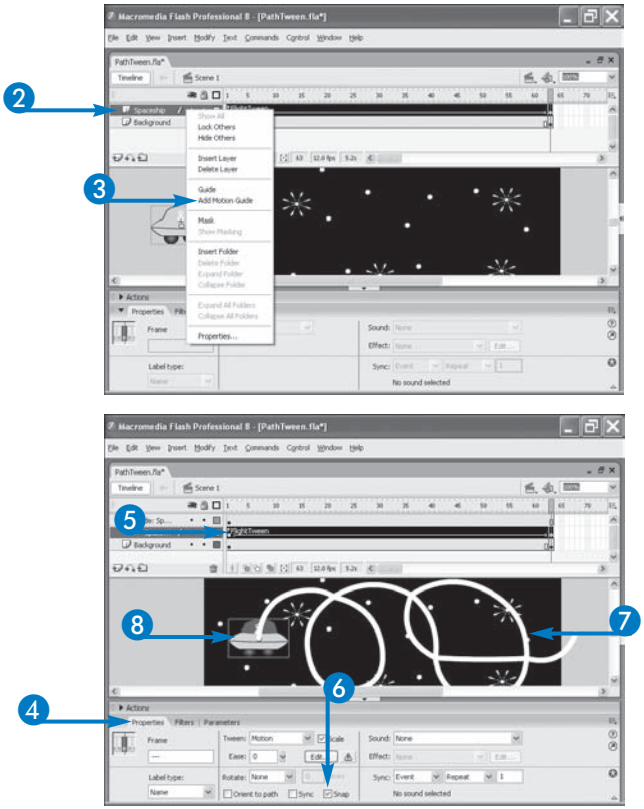
   Flash adds a Motion Guide layer above the current layer.

4. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

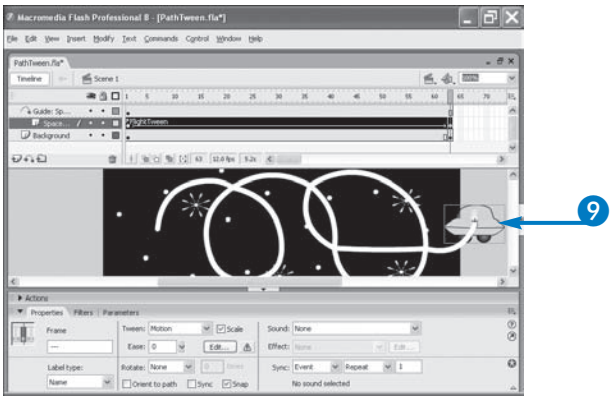
5. Click in the first frame of your tween.
6. Click Snap (changes to).
7. In the frame above where the motion tween begins, use the Pen ( ), Pencil ( ), Oval ( ), Rectangle ( ), PolyStar ( ), or Brush ( ) tool to draw the path you want the object to follow.
8. Move the object to the start of the path and click the first frame of the tween to snap it to the path.

   Flash snaps the object to the line.



9. In the last frame of the tween, snap the center point of the object to the end of the path.
10. Press Enter.

    Flash previews the motion tween.

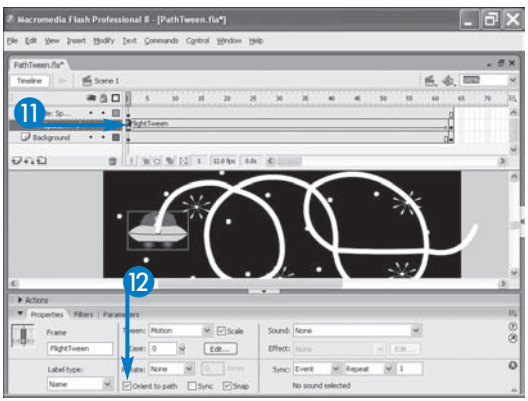


11. Click in the first frame of the tween.
12. Click Orient to path (☐ changes to ☑).

    Flash orients the object as it follows the path.

    Do not check Orient to path if you do not want to orient the object to the path.
13. Press Enter.

    Flash previews the motion tween.



Does it matter which line color or thickness I use to draw the motion path?

You can use any line color or attributes to draw the motion path. Before you start drawing the motion path, be sure to set the line attributes you want in the Property inspector. To make the line easy to see, consider using a thicker line style in a bright color. If you use the Oval, PolyStar, or Rectangle tool, do not use a fill color.

What does the Orient to path option do?

The Orient to path option aligns the top of the object with the path, regardless of the direction the object travels. To make your object orient itself to the motion path, click the Orient to path check box. Sometimes the effect makes the movement of the object seem unnatural. To remedy that situation, you can insert extra keyframes in the animation sequence and rotate the object the way you want.

I cannot get my object to travel the complete path. What should I do?

Your path must have a starting and ending point. When traveling along a path, Flash takes the shortest route possible. If you want your object to travel around a circle, for example, you must use the Eraser tool to make a very small gap in the circle. Start your object on one side of the gap and end it on the other side of the gap.

Motion Tween Opacity, Color, and Brightness

By using the Color field in the Property inspector, you can tween the opacity, color, and brightness of an instance. Opacity, called the *Alpha* setting in Flash, is the level of transparency of an object in your movie. By default, all objects are 100-percent opaque. You can change the level of transparency by using the Alpha control. For example, you might want the object to appear to fade out at the end of an animation or fade in at the beginning of the animation. Alternatively, you might want the object to become somewhat transparent so viewers can see a background layer behind the object.

You can find the Alpha setting in the Property inspector. Tweening an Alpha setting allows you to change the opacity (alpha value) of an instance in your Flash movie over time. Flash measures transparency by using a percentage, with 100 percent being completely opaque and 0 percent being completely transparent.

You can also tween the color and brightness of an object by using the Color Field. Tweening the color makes the color change over time; tweening the brightness makes the brightness change over time.

Motion Tween Opacity, Color, and Brightness

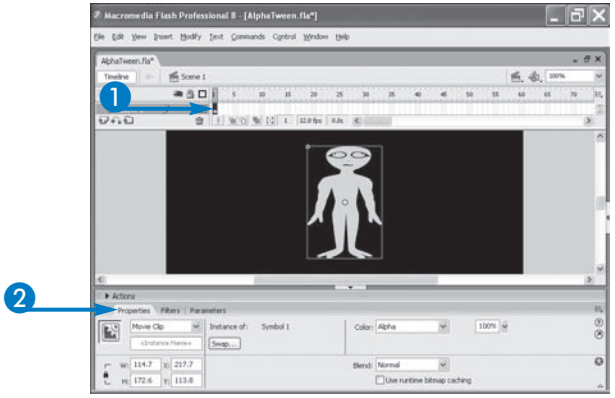
Note: *This example uses the file AlphaTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Place the instance you want to tween in the keyframe in which you want the tween to begin.

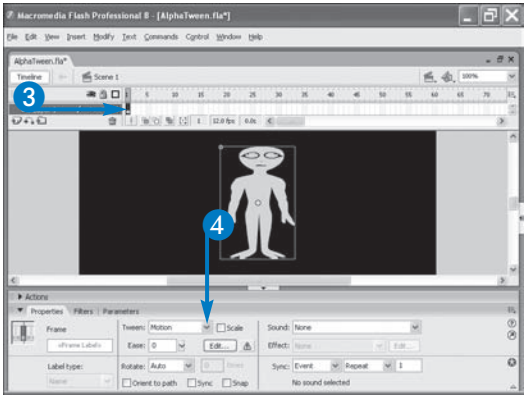
Note: *See Chapter 21 to learn how to place an instance on the Stage. See Chapter 23 to learn how to create keyframes.*

2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*



3. Click the frame in which you want the tween to begin.
4. Click here and then select Motion.



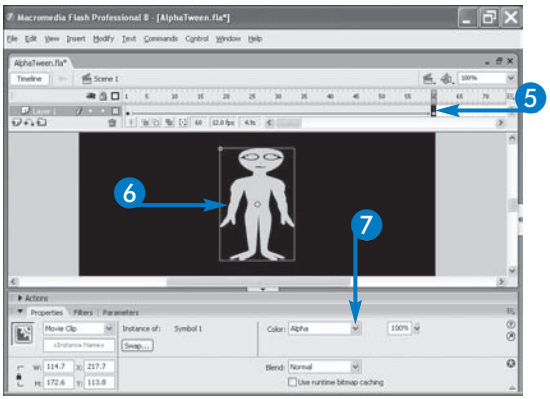
5 Click the frame in which you want the tween to end and make it a keyframe.

6 Select the instance you want to tween.

Note: *See Chapter 19 to learn how to select an object.*

7 Click here and then select Tint, Brightness, or Alpha.

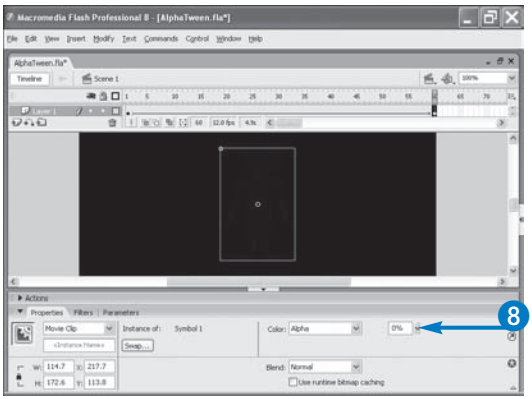
This example uses Alpha.



8 Click here and then use the slider ( ) to adjust the Alpha value.

9 Press Enter to view your tween.

Flash tweens the object.



Explain color and brightness tweens.

You create a color tween exactly the same way you create an opacity tween, except you select Tint in the Color field of the Property inspector. You can then use the Tint options to change the color, determine the amount of tint to apply, or set other options. Adjusting brightness changes the amount of black or white in a color. Lowering the level adds more black; increasing the level adds more white. To create a brightness tween, choose Brightness in the Color field and use the brightness slider to adjust the level of brightness anywhere between 100 percent to 0 percent.

Can I tween the opacity, color, or brightness of text?

Yes. You convert the text to a symbol by selecting the text and then clicking Modify, Convert to Symbol on the main menu. The Convert to Symbol dialog box opens. In the dialog box, click Button, Movie Clip, or Graphic, and then click OK. You can now tween the opacity, color, or brightness of your text by using the same steps you would use to tween any other instance.

Create a Shape Tween

You can create a shape tween that morphs one shape into another shape. For example, you can morph a circle into a square. However, you cannot shape tween instances, grouped objects, bitmap images, or text without first applying the Break Apart command.

As with motion tweens, you define two keyframes when creating a shape tween. The first keyframe shows the beginning state of the shape. The last keyframe shows the end state of the shape — the object in its morphed state. Flash interpolates all the necessary frames in between to create the morphing effect. For best results, you should tween one shape at a time. If you want to tween multiple shapes, all the shapes must be on the same layer.

You can apply one of two types of blends to your shape tween: Distributive or Angular. If you apply a Distributive blend, Flash smoothes out the straight lines and sharp corners as your shape morphs. If you apply an Angular blend, Flash keeps all the sharp angles and lines intact during the tween.

You can also use shape tweens to change the location, size, color, and opacity of a shape.

Create a Shape Tween

Note: *This example uses the file ShapeTween.fla, which you can find on the CD-ROM that accompanies this book. The final shape (the spaceman) is on the pasteboard to the right of the Stage.*

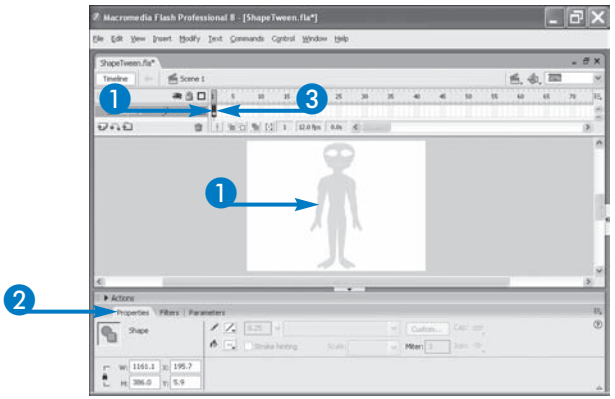
1. Place the shape you want to shape tween in the keyframe in which you want the shape tween to begin.

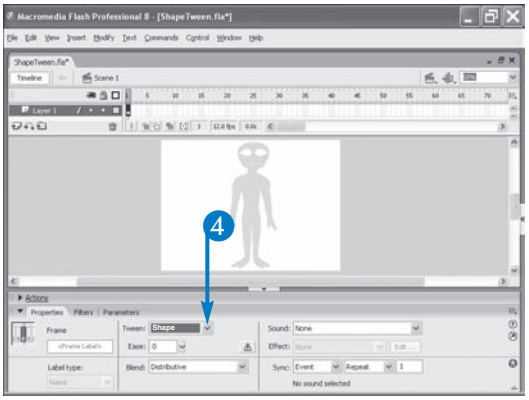
Note: *See Chapters 18 and 19 to learn how to create objects. You cannot shape tween text, grouped objects, instances, or bitmap images.*

2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click the frame in which you want the shape tween to begin.
4. Click here and then select Shape.

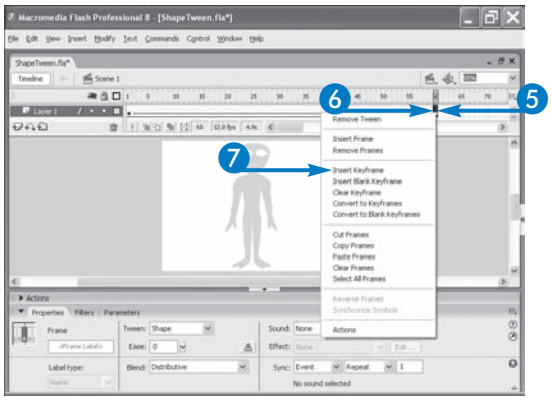




5. Click the frame in which you want the shape tween to end.
6. Right-click (Ctrl-click) here.

   A menu appears.
7. Click Insert Keyframe.

   Flash inserts a keyframe and places an arrow on the Timeline.

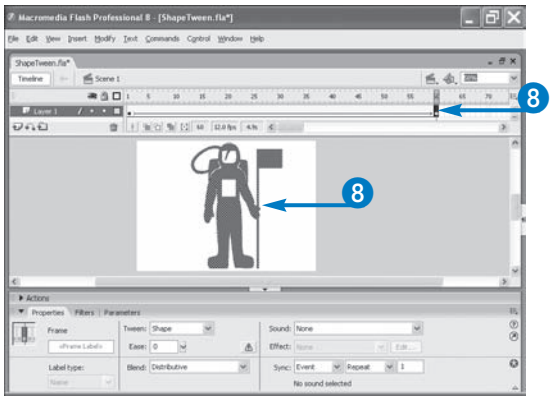


8. While in the keyframe in which you want the shape tween to end, delete the original shape and replace it with the final shape into which you want the original shape to morph.

Note: *If you are using ShapeTween.fla, you must also delete the spaceman from the pasteboard in the first keyframe.*

9. Press Enter to view your shape tween.

   Flash morphs the original shape into the final shape.



What is the difference between a shape tween and a motion tween?

There are two major differences between a shape tween and a motion tween. You use motion tweens on grouped objects, instances, bitmaps, and type. You use shape tweens on shapes and ungrouped objects. You can morph shape tweens. You cannot morph motion tweens.

If you want to shape tween a grouped object, instance, bitmap, or text, you must select the object and then click Modify, Break Apart to break apart the object. You can use a shape tween to animate the location, size, color, and opacity of the object in much the same way as you would make these changes when using a motion tween.

Can I transform a shape tween?

Yes. You can use all the Transform menu options and the Free Transform tool with shape tweens. These options enable you to rotate, scale, and flip while shape tweening. With shape tweens, you can also use the Distort and Envelope transforms. These options are not available to you when you are creating motion tweens.

How do I shape tween color and opacity?

You can use the Color boxes on the Tools panel or in the Property inspector to modify colors and opacity when creating your shape tween. The opacity slider is located in the upper right corner of the Color selector; the field is labeled *Alpha*.

Assign Shape Hints

Shape hints enable you to have more control over the morphing process. A shape hint is a marker that identifies an area on the original shape that matches up with an area on the final shape and marks a crucial point of change. Flash labels shape hints *a* through *z*, which means you can use up to 26 shape hints in a shape tween.

You can use shape hints to morph a particularly complex shape. For example, you can shape tween your company logo and turn it into a picture of your top-selling product, or you can shape tween a cartoon character into a completely different character for a Web page. When you assign shape hints to the object you are morphing, Flash uses this information to determine the points of change.

Shape hints appear as tiny numbers in a circle icon, starting out yellow in the first keyframe of the sequence and turning green in the end keyframe. You place shape hints along the edges of the shape you are morphing.

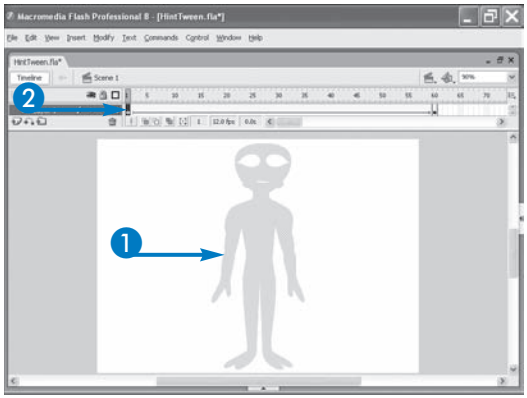
Assign Shape Hints

Note: *This example uses the file HintTween.fla, which you can find on the CD-ROM that accompanies this book.*

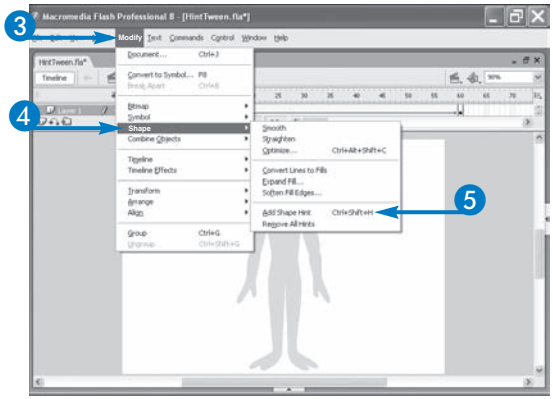
1. Create your shape tween.

Note: *See the section "Create a Shape Tween" to learn how to create shape tweens.*

2. Click the first frame of your shape tween.

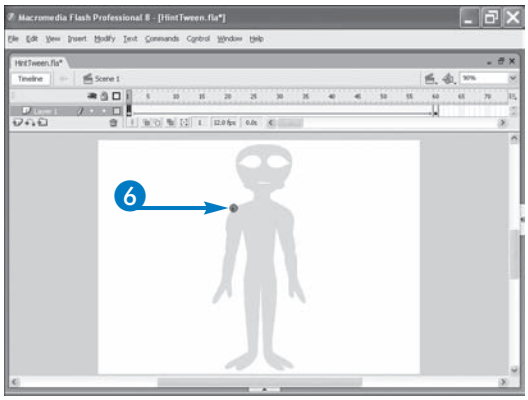


3. Click Modify.
4. Click Shape.
5. Click Add Shape Hint.



Flash adds a shape hint marker to the screen.

6. Click and drag the shape hint to the place you want to mark.



7. Click the last frame in the shape tween.

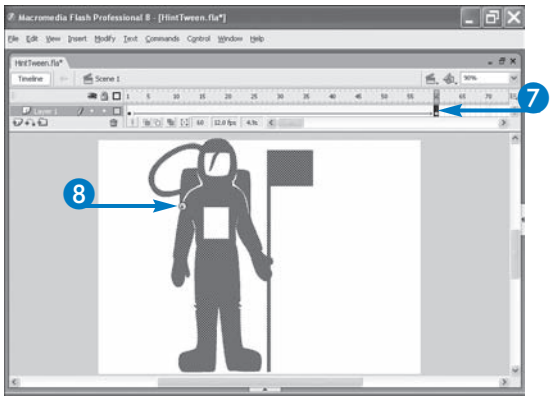
   A shape hint marker appears on the screen.

8. Click and drag the shape hint to the place you want to mark.

9. Repeat steps 2 to 8 until you have marked all the places you want to mark.

10. Press Enter.

    Flash provides you with a preview of your shape tween.



Can you provide me with any more tips on using shape hints?

You should place shape hints in alpabetical order around the object you are morphing. You must make sure the shape hints you place around the object in the second keyframe correspond with the order of shape hints you placed around the object in the first keyframe. Also, for best results, assign shape hints counterclockwise around the edges of the shape, starting at the top left corner.

Can I see all the shape hints for my shape tween effect?

Yes. Make sure you are currently on the layer containing the tween. Click View on the main menu and then click Show Shape Hints.

What if shape hints do not help create the morphing effect I am looking for?

You can solve this problem by creating a few intermediate shapes Flash can use to determine how to morph the shape. For example, if you are shape tweening a complex shape that includes many details, you can add a few keyframes that contain key changes in the shape rather than relying on just a starting keyframe and an ending keyframe to complete the tween.

How do I remove shape hints?

To remove a shape hint, right-click (ctrl-click) and then click Remove Hint from the context menu. To rid the keyframe of all the shape hints, click Modify, Shape, Remove All Hints on the main menu.

Animate a Mask

You use mask layers to hide various elements on underlying layers in your Flash movies. You can animate a mask layer by using any of the Flash animation techniques, such as a motion tween or shape tween. However, a layer can have only one animated mask.

You can create an animated mask layer that acts as a moving window exposing different parts of the underlying layers. For example, you can draw an oval filled shape that acts as a window to the layer below the mask, and animate the window to move around the movie. The window lets you see anything directly beneath, but the remainder of the mask layer hides anything that lies out of view of the window. Flash designers often use the animated mask feature to create a spotlight effect on an underlying layer.

You can assign a motion tween to a mask created from an instance, or a grouped object. You can assign a shape tween to a shape. In addition, you can animate a movie clip along a path.

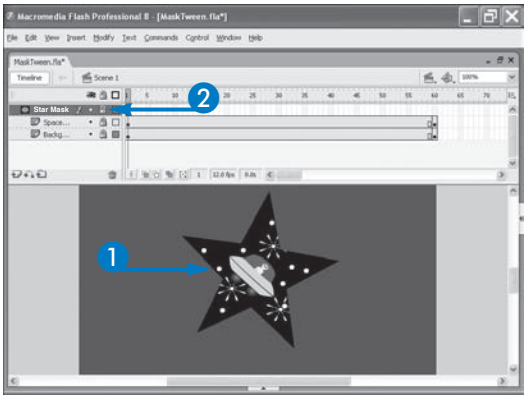
Animate a Mask

Note: *This example uses the file MaskTween.fla, which you can find on the CD that accompanies this book.*

1. Create a mask layer.

Note: *See Chapter 22 to learn how to create a mask layer.*

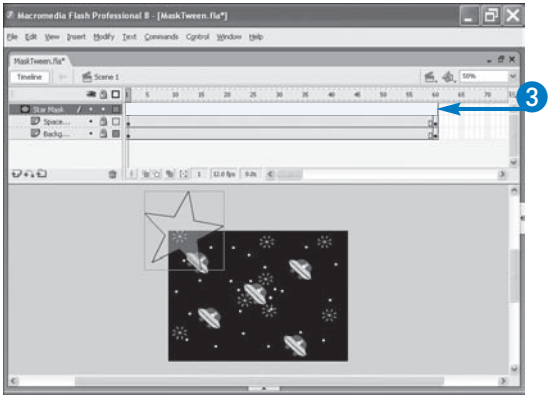
2. Click the lock icon on the mask layer to unlock the layer.



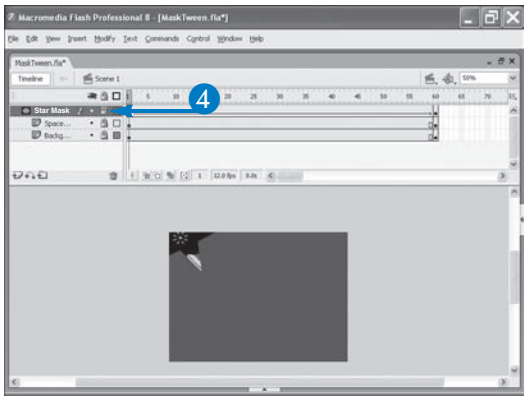
3. Apply a motion or shape tween to the mask.

Note: *See the section "Create a Motion Tween" or "Create a Shape Tween" to learn how to create a motion or shape tween.*

Note: *You can use motion and shape tweens to change the position, size, rotation, skew, color, and opacity of an object.*

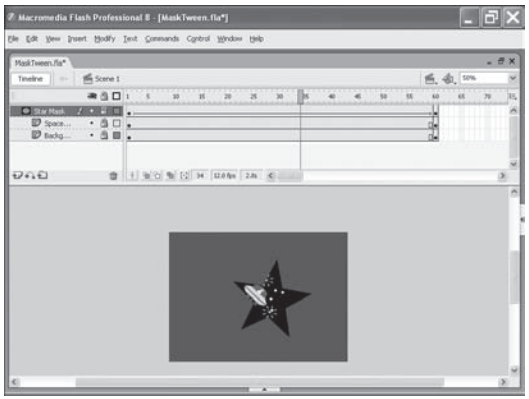


4 Click the lock icon on the mask layer to lock the layer.



5 Press Enter.

Flash plays the animation.



When creating an animated mask, how do I animate a movie clip instance along a path?

Start by unlocking the mask layer and then double-click the movie clip. Flash moves to the Edit in Place mode and you can view the movie clip's Timeline. Create a motion tween. Right-click (Ctrl-click) and click Add Motion Guide. Use one of the drawing tools and draw the path you want the movie clip to follow on the motion guide layer. Snap an object to the path. Click Edit, Edit Document to move back to the main Timeline. Click Control, Test Movie to view your movie.

Can I have multiple animated masks on a layer?

No. You cannot have multiple animated masks on a single layer. However, you can animate multiple objects, turn the animation into a movie clip, and then use the movie clip as the object on the mask layer of the motion tween. Create your tween in the usual manner. Place the animated movie clip in the starting and ending keyframes. You must click Contol Test Movie to view your animated mask. You can see an example of the technique by referring to MaskTweenMC_f.fla, which is included on the CD that accompanies this book.

Set Tween Speed

You can control the speed of a tweened animation by using the Ease control, found in the Property inspector. Flash Professional 8 provides you with two methods you can use to apply Ease control: the Ease slider and the Custom Ease In/Ease Out dialog box.

When using the Ease slider, to begin the change fast and have it slow down toward the end of the animation, drag the slider up or set the value between 1 and 100. To begin the change slow and speed up toward the end of the animation, drag the slider down or set the value between –1 and –100.

You can use the Custom Ease In/Ease Out dialog box to create complex changes in speed. The dialog box displays a graph. The graph represents frames on the horizontal axis and percent of change on the vertical axis. The curve of the line determines the rate of speed at which your object changes. A completely horizontal line causes no change; a vertical line causes instant change. Using the Custom Ease In/Ease Out dialog box, you can set the speed for changes in position, rotation, scale, color, and filters separately.

Set Tween Speed

Create an Ease

Note: *This example uses the file EaseTween.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion or shape tween.

Note: *See the section "Create a Motion Tween" or "Create a Shape Tween" to learn how to create a motion or shape tween.*

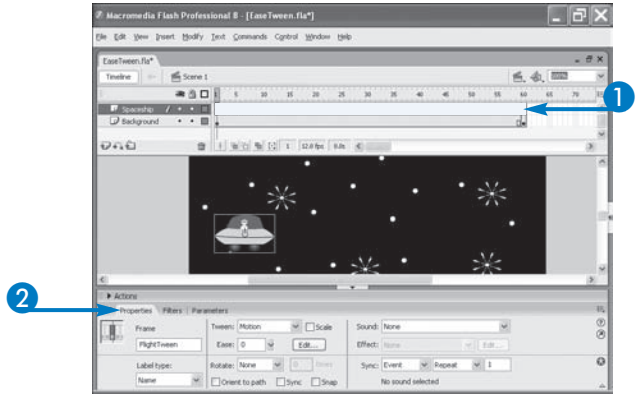
2. Open the Property inspector.

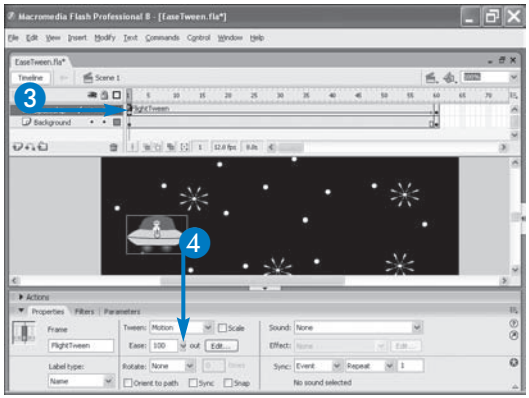
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click the frame in which the motion or shape tween begins.
4. Click here and then click and drag the Ease slider to a new setting.

   Drag the slider up to begin fast and end slow. Drag the slider down to begin slow and end fast. Use a zero value for a constant rate of speed.
5. Press Enter.

   Flash previews the tween.





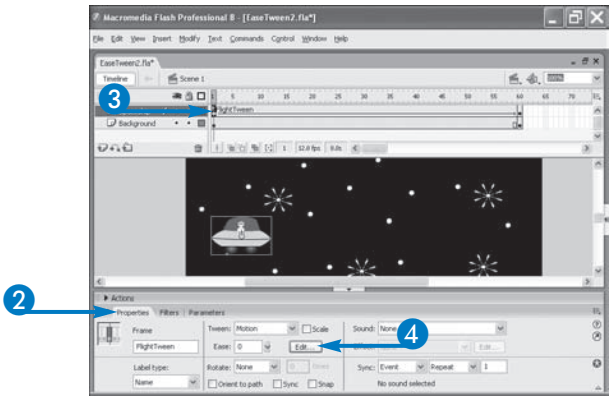
Create a Custom Ease In/Ease Out

Note: *This example uses the file EaseTween2.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create a motion tween.
2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click the frame in which the motion tween begins.
4. Click the Edit button.



The Custom Ease In/Ease Out dialog box opens.

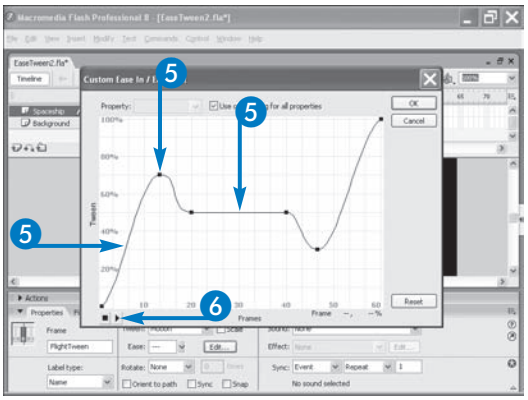
5. Click and drag to adjust the curve of the line.

   Dragging the line so that it curves upward accelerates, making the line horizontal stops, and dragging the line so that it curves downward reverses.

6. Click the Play button (▶).

   Flash shows you a preview of your changes.

Note: *You can also click OK and then press Enter to preview your movie.*



How do I tell Flash I want to set the rate of change for position, rotation, scale, color, or filters separately?

You must use the Custom Ease In/Ease Out dialog box to set the rate of change for position, rotation, scale, color, or filters separately. Click Edit on the Property inspector to open the Custom Ease In/Ease Out dialog box, deselect Use One Setting for All Properties, and then click Position, Rotation, Scale, Color, or Filters in the Properties field.

How do I know the position of a control point?

When you click the velocity curve, Flash creates a control point. The position of the control point appears in the lower right corner of the dialog box.

Can I reset the velocity curve?

By default, the Custom Ease In/Ease Out dialog box sets the velocity curve so change occurs at a constant rate. If you modify the rate of change and later want to return to the default, click the Reset button located in the lower right corner of the dialog box.

Can I preview a Custom Ease In/Ease Out?

To preview a Custom Ease In/Ease Out, click the Play button in the lower left corner on the dialog box. To stop the preview, click the Stop button.

Create Frame-by-Frame Animation

You can create the illusion of movement in a Flash movie by changing the placement or appearance of the Stage content from keyframe to keyframe on the Timeline. Flash calls this type of animation, appropriately, *frame-by-frame* animation. With frame-by-frame animation, you control exactly how your content changes from one keyframe to the next.

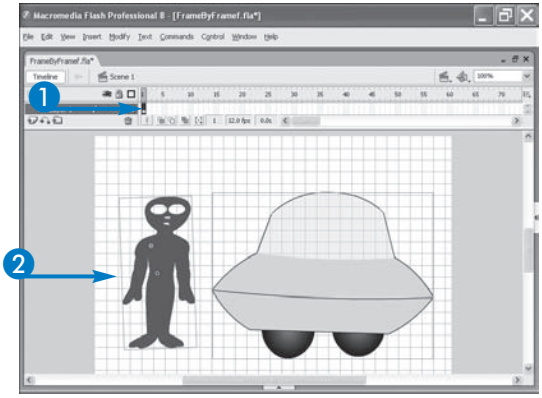
When you animate an object, you can use as many keyframes as you need. You can place one keyframe right after another, or you can space them out with frames in between. The more frames that appear between two keyframes, the slower the animation will be.

You can create all kinds of animations by using the frame-by-frame animation technique. For example, a simple circle can become a bouncing ball if moved strategically around the Stage in each frame of the movie. A text box can appear to glow if you change the text color and boldness from one keyframe to the next.

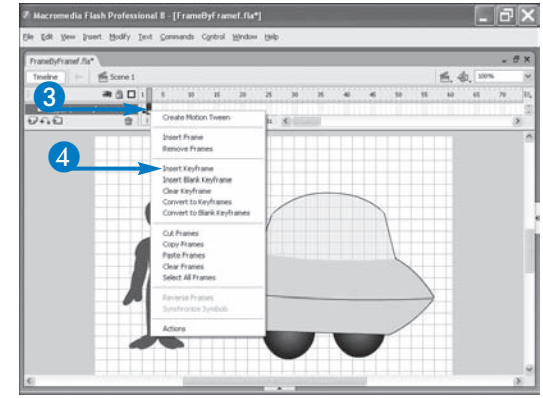
You can animate an object onto or off the Stage by starting the animation sequence on the pasteboard surrounding the Stage and moving the object onto the Stage.

Create Frame-by-Frame Animation

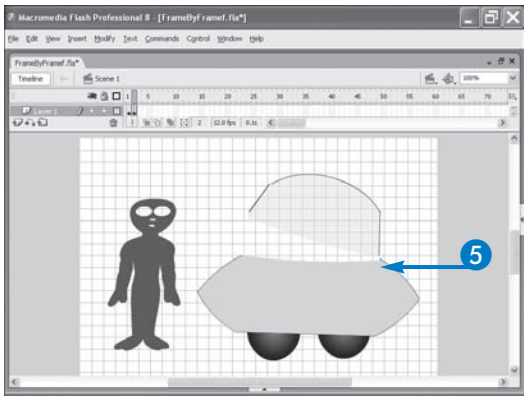
1. Create a keyframe in which you want the frame-by-frame animation to start.
2. Place objects in the keyframe.



3. Right-click (Ctrl-click) the next frame.
4. Click Insert Keyframe.



5 Change the object in the frame or place a new object in the frame.

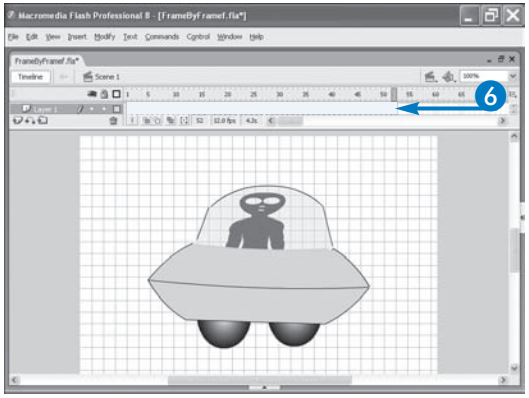


6 Continue steps 1 to 5 until you have completed your animation.

7 Press Enter.

Flash plays your frame-by-frame animation.

Note: *Refer to FramebyFrame_f.fla, which you can find on the CD-ROM that accompanies this book, for an example of a frame-by-frame animation.*



How do I edit a symbol as I create the animation?

To make changes to a symbol you use in your movie, first select a keyframe that contains the symbol. To open the symbol in symbol-editing mode, double-click the symbol. After editing, click the scene name, which is located at the top of the Timeline to return to document-editing mode. Editing a symbol changes every instance of the symbol.

How do I know where to reposition an object on the Stage?

You can use gridlines to help you control how an object moves around the Stage. To turn on the Flash gridlines, click View, Grid, Show Grid. Flash turns on the gridlines on the Stage area. With gridlines visible, you can clearly see the placement of objects on the Stage. To hide the gridlines, click View, Grid, Show Grid again.

What does the Snap to Objects feature do?

When you click View, Snapping, Snap to Object on the main menu, Flash automatically aligns objects to each other on the Stage. By default, Flash activates this feature; however, you can turn it off or on as needed as you move items around on the Stage area. If you activate this feature and you turn on gridlines, you can quickly align objects on the Stage to the nearest gridline as you move them.

Onion Skin an Animation

You can use the onion skinning feature of Flash to view the placement of objects surrounding a frame in your movie. By viewing the placement of objects in other frames, you can determine how you want to position the object in the frame in which you are working.

Onion skinning offers two modes of display: dimmed and outlined. In the dimmed mode, Flash displays the objects in the frames surrounding the current frame dimmed. In the outlined mode, Flash displays the objects in the frames surrounding the current frame as outlines. Both modes allow you to see multiple frames and see how their content relates to the current frame.

The onion skinning features make it easier for you to gauge the changes needed to create your animations. You can control how many frames appear in Onion Skin mode by using the onion skin markers that appear on the Timeline. You can manually adjust the markers as needed. You can also control the markers by using the Modify Onion Markers menu.

The Modify Onion Markers menu displays several choices for controlling markers on the Timeline: Always Show Markers, Anchor Onion, Onion 2, Onion 5, and Onion All.

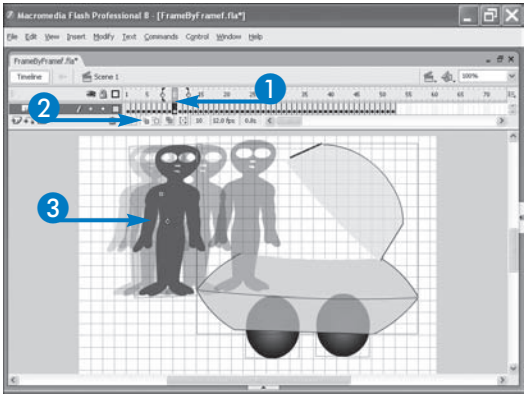
Onion Skin an Animation

Turn on dimmed images

1. Click a frame in your animation.
2. Click the Onion Skin button ( ).

   Flash displays dimmed images of the surrounding frames and places onion skin markers at the top of the Timeline.
3. Adjust your image.

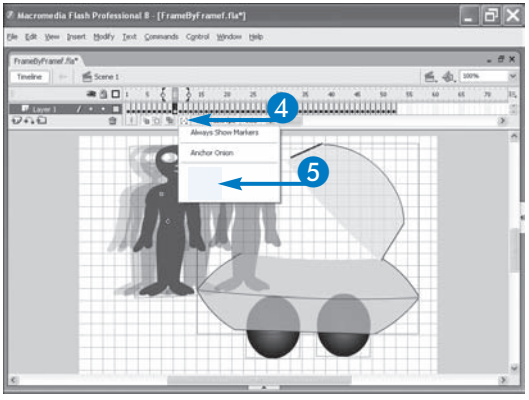
   Flash makes the changes.



Set onion skinning options

4. Click the Modify Onion Markers button ( ).

   A menu appears.
5. Click Onion 2 to onion skin two frames, click Onion 5 to onion skin five frames, or click Onion All to onion skin all frames.



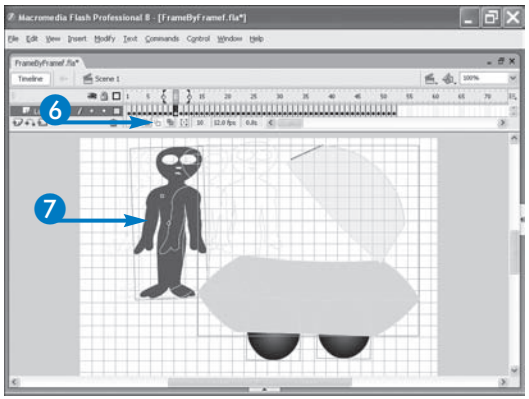
Turn on outlined images

6 Click the Onion Skin Outlines button ( ).

Flash displays outlined images of the surrounding frames and places onion skin markers at the top of the Timeline.

7 Adjust your image.

Flash makes the changes.



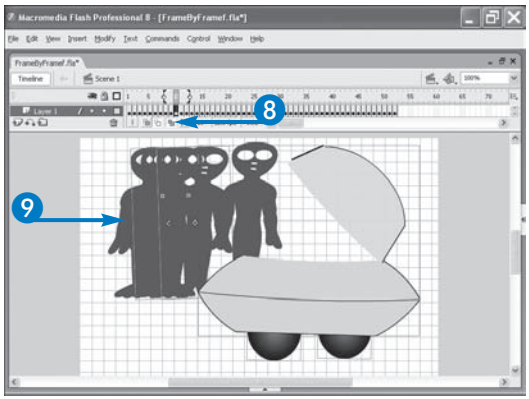
Edit multiple frames

8 Click the Edit Multiple Frames button ( ).

Flash allows you to edit multiple fames.

9 Adjust your images.

Flash makes the changes.



Will you explain the Modify Onion Markers menu options?

On the Modify Onion Markers menu, the Always Show Markers option leaves the onion skinning markers on, even when onion skinning is turned off. The Anchor Onion option enables you to lock the markers in place, even as you view frames at the other end of the Timeline.

Both the Onion 2 and Onion 5 options display the corresponding number of frames before or after the current frame. For example, if you choose Onion 5, Flash sets the markers to show five frames on either side of the current frame. To onion skin all the frames in the movie, use the Onion All option.

In what situations does onion skinning work best?

When you need to track the positioning of an object as it moves across the Stage, onion skinning assists you by showing the placement of the object in each frame of the sequence. However, if an object stays in one spot and changes in color, the onion skinning feature is not of use.

Can I play back my movie with the onion skin feature turned on?

Yes. However, onion skinning turns off while the movie plays. Click in the first frame of your movie and then press Enter. Flash plays the movie on the Stage. When it reaches the last frame, the onion skin feature becomes active again.

Create Scenes

Using scenes enables you to separate your movie into sections. For example, you can have a scene that displays the title of the movie, a scene that plays the movie, and a final scene that lists the characters. Each scene has its own Timeline and can include its own animation.

When Flash finishes playing one scene, it automatically moves to the next scene. When you create a new scene, a new Stage and Timeline appear. By default, Flash names scenes by assigning them sequential numbers; for example, Scene 1 and Scene 2. You can use the Scene panel to add, remove, duplicate, rename, and change the order of scenes.

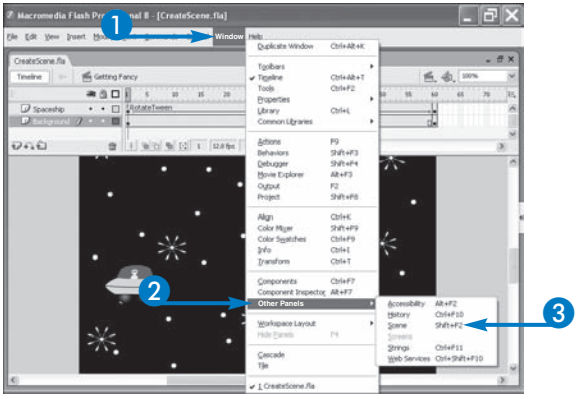
The name of the current scene appears at the top of the Timeline. During playback, Flash plays scenes in the order in which you list them in the Scene panel. You can quickly access scenes for editing by using the Edit Scene button at the top of the Stage area.

When you are working in a multi-author environment, scenes can make editing confusing. An author may have to search several scenes to find assets. In multi-author environments, you should consider storing the content in movie clips instead of using scenes.

Create Scenes

Open the Scene panel

1. Click Window.
2. Click Other Panels.
3. Click Scene.

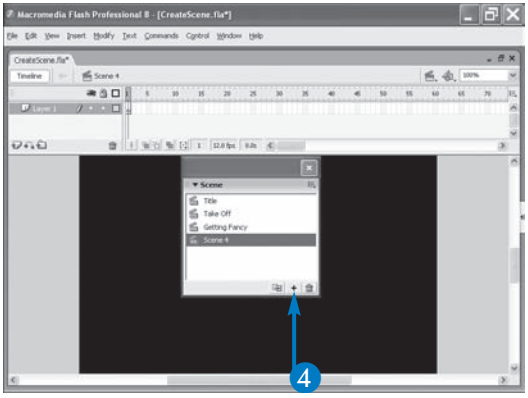


Flash opens the Scene panel.

Add a new scene

4. Click the Add Scene button (+).

Flash adds a scene to the panel, and the Timeline switches to the new scene so you can create your scene.



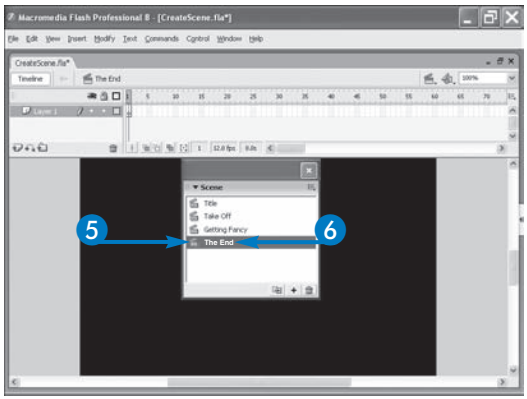
Rename a scene

5. Double-click the scene name.

   Flash changes to Edit mode.

6. Type a new scene name.

7. Press Enter.

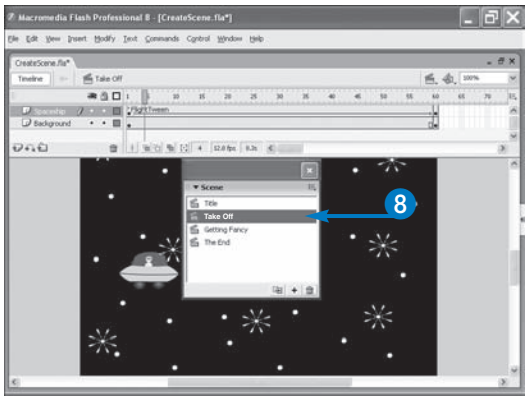


Switch between scenes

8. Click a scene name.

   Flash moves you to the scene you clicked.

Note: *You can also click the Scene button on the Timeline. A list of scenes appears. Click the scene to which you want to move.*



How do I rearrange the scene order?

You can use the Scene panel to rearrange the scene order. Click Window, Other Panels, Scene to open the Scene panel and display a list of all the available scenes. Click the scene you want to move. Drag the scene to a new location in the list. Release the mouse button; Flash reorders the scenes.

Can I tell Flash to stop the movie after a particular scene?

Yes. You can assign Flash actions to your scenes just as you would assign actions to any other frame. For example, if you add a Stop action to the last frame in a scene to stop the movie, any remaining scenes do not play. You can also create scripts that allow users to jump from scene to scene.

How do I delete a scene?

You can use the Scene panel to delete a scene. Select the scene you want to remove, and then click the Delete button at the bottom of the Scene panel.

How do I duplicate a scene?

On the Scene panel, click the scene you want to copy, and then click the Duplicate Scene button at the bottom of the panel. Flash adds a copy of the scene to the panel.

Create a Movie Clip

Movie clips enable you to reduce the size of your movie by utilizing multiple instances of the same movie clip. Movie clips are mini Flash movies with their own Timelines and their own properties. You can turn any Flash object or animation into a movie clip symbol.

You can place an instance of a movie clip symbol on the Timeline of a Flash movie. In fact, you can place multiple instances of a movie clip symbol on the Timeline of a movie. You can place movie clips on the Timeline of the main movie or on the Timeline of another movie clip. Creating a movie clip is easy. First, create your animation, and then you copy and paste your animation into a movie clip symbol. Flash stores the movie clip in the Library.

To keep your file size down, use movie clips for repetitive actions such as the spinning of a wheel. You can use ActionScript to manipulate movie clips to create complex nonlinear, interactive movies. Using a movie clip to define the appearance of a button state enables you to create animated buttons.

Create a Movie Clip

Note: *This example uses the file MovieClip.fla, which you can find on the CD-ROM that accompanies this book.*

1. Create an animation.
2. Select every frame you want to include in the movie clip.

Note: *See Chapter 23 to learn how to select frames.*

3. Copy the frames.

Note: *See Chapter 23 to learn how to copy frames.*

4. Click anywhere on the Stage.

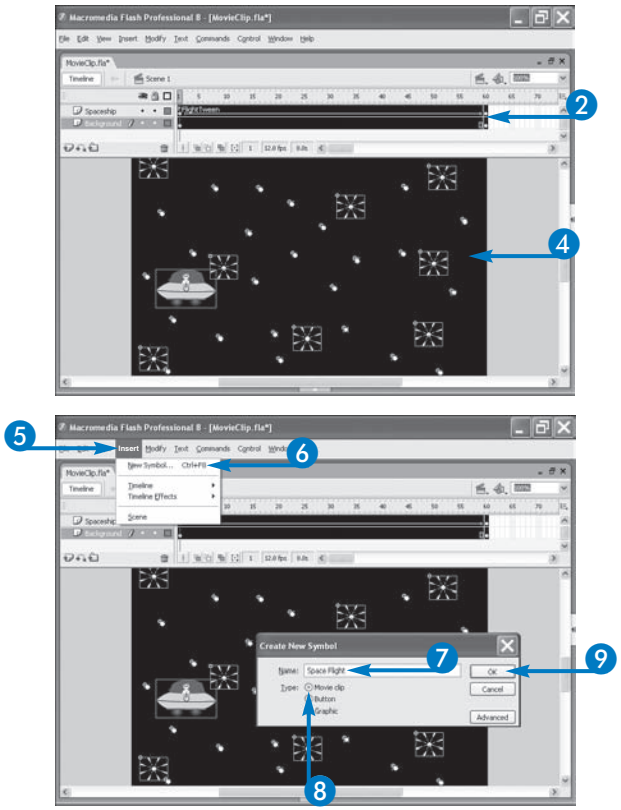
   Flash deselects your selection.

5. Click Insert.
6. Click New Symbol.

   The Symbol Properties dialog box opens.

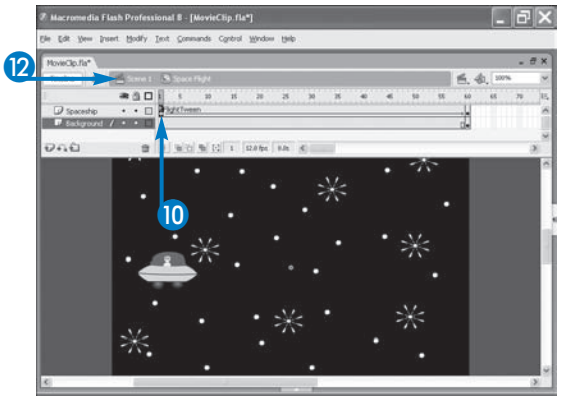
7. Type a symbol name.
8. Click to select Movie clip as the behavior (◯ changes to ◉).
9. Click OK.

   Flash changes to symbol-editing mode.

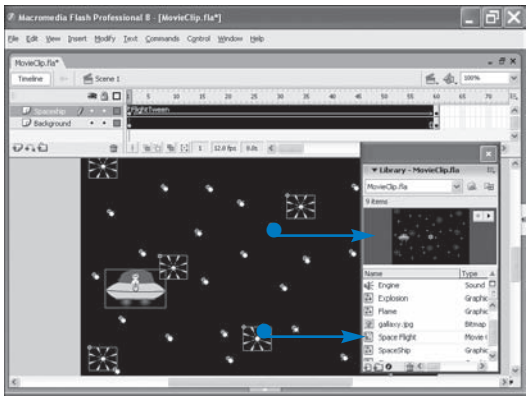


10. Click in Frame 1 of Layer 1 on the Timeline.
11. Paste the frames you copied.

    Flash pastes the frames you copied onto the Timeline of the movie clip symbol.
12. Click the Scene name to exit symbol-editing mode.



- Your movie clip appears in the Library. Click the play button in the Library window to play the movie clip.



Note: *See Chapter 21 to learn how to open the Library.*

Can I name a movie clip instance?

To distinguish between instances of a movie clip, you must give each instance a name. To reference a movie clip in ActionScript, in most cases the movie clip must have a name. To name a movie clip instance, use the Selection tool to select the instance, open the Property inspector, and type the instance name in the Instance Name field.

Will you give me some tips on how to select frames?

To select everything on every layer, click Edit, Select All on the main menu. To deselect everything on every layer, click Edit, Deselect All. To select a layer, click the layer name. To select a frame, click in the frame. To select a block of frames, click in the start frame, hold down the Shift key, and then click in the end frame.

Can I create a movie clip without copying it from another Timeline?

Yes. Start by clicking Insert, New Symbol on the main menu. The Create New Symbol dialog box opens. Type the movie clip name in the Name field, click Movie Clip, and then click OK. Flash presents you with a Timeline. Use the Timeline to create your movie clip. If your animation uses a motion guide, you must use the method discussed in this tip to create your movie clip.

Using Movie Explorer

You can use the Movie Explorer feature to help you view the contents of your movie. This feature offers you easy access to the elements of your movie, such as symbols and movie clips. You can use the Movie Explorer panel to find actions or search for a specific item in your movie.

Movie clips are mini Flash movies with their own Timelines and their own properties. You can embed a movie clip symbol within a Flash movie, and you can embed multiple instances of a movie clip symbol in other movie clips.

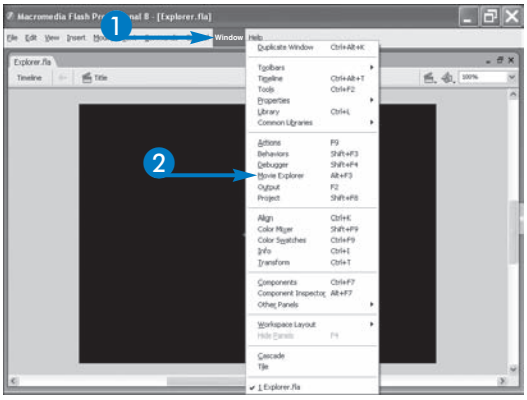
A loaded movie can have movie clips on its Timeline. In addition, those movie clips can have movie clips on their own Timelines.

Movie Explorer lists all the elements of your movie in a hierarchical fashion in a panel, much the same as Windows Explorer or the Mac OS Finder lists the files on your computer. You can search for a specific item in your movie by using the Find field at the top of the panel.

You can also choose exactly which movie elements to view in the list box of the panel by using the Show buttons at the top of the panel.

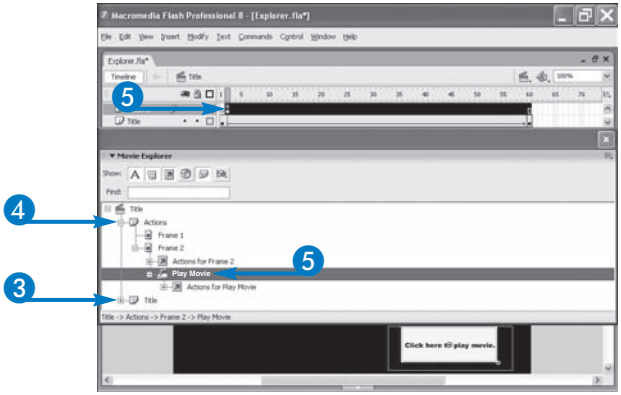
Using Movie Explorer

1. Click Window.
2. Click Movie Explorer.



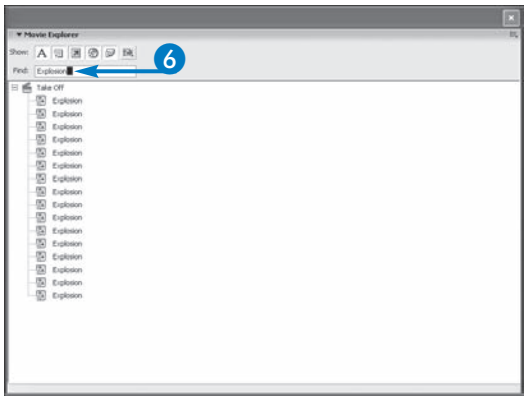
Flash opens the Movie Explorer panel.

3. Click an Expand icon (⊞) to expand a list element.
4. Click a Collapse icon (⊟) to collapse a list element.
5. Click an item in the list to see the full path location of the item in your movie. Flash also scrolls to that location in the Timeline.

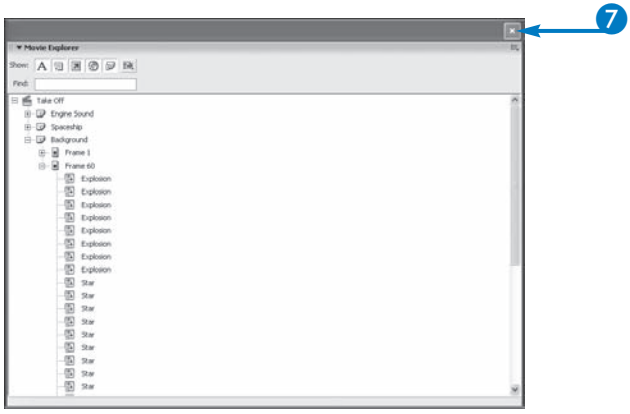


6 Type the item name or description.

You can search for all kinds of elements in your movie, such as a frame number, an action or ActionScript string, or even a font.



7 Click Close ( ) to hide the panel again.



Why should I use Movie Explorer?

The display list in Movie Explorer shows the hierarchy of the movie. You can use the display list to see a graphical representation of a movie and all the objects included in the movie. You will find Movie Explorer particularly useful when you are examining movies developed by another developer. Movie Explorer provides you with a mechanism to easily understand how a movie is put together.

Can I filter which items appear in the Movie Explorer list box?

Click any of the Show Filter buttons at the top of the panel to show text, symbols, actions, sound, video, bitmaps, frames, and layers. For example, click the Show Movie clips, Buttons, and Graphics button to display symbols used in your movie. You can expand and collapse the hierarchy as needed to help you view more items in the panel list box.

Can I customize my list view?

Yes. Click the Customize Which Items to Show button to open the Movie Explorer Settings dialog box. From there, you can select which types of movie elements you want to view in the list box of the Movie Explorer. Click OK to close the dialog box and apply the new settings.

Create a Button

Buttons enable you to add interactivity to your Flash movie. Users click buttons to cause actions to occur. For example, users can click a button to open a Web page.

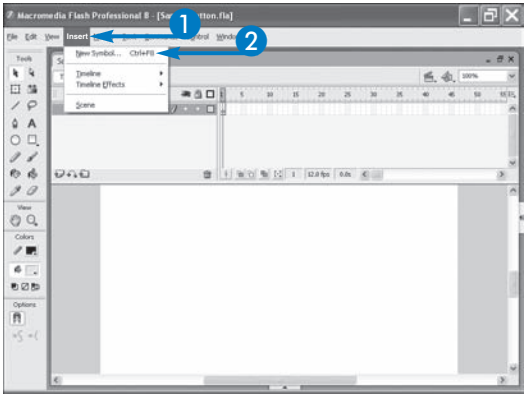
Buttons have four states: Up, Over, Down, and Hit. The Up state is how the button appears when the mouse pointer is not over the button. The Over state is how the button appears when the pointer is over the button. The Down state is how the button appears when users click the mouse while the pointer is over the button. The Hit state defines the area that responds to user actions. Make sure your Hit state is at least large enough to encompass the graphics used in the other three states. You can make the Hit state larger than the other states. The Hit state is not visible to users.

When you create a button, Flash presents you with a four-frame Timeline, with one frame representing each of the four button states. To define the appearance of a button state, you can create or import a graphic for each of the four states.

Create a Button

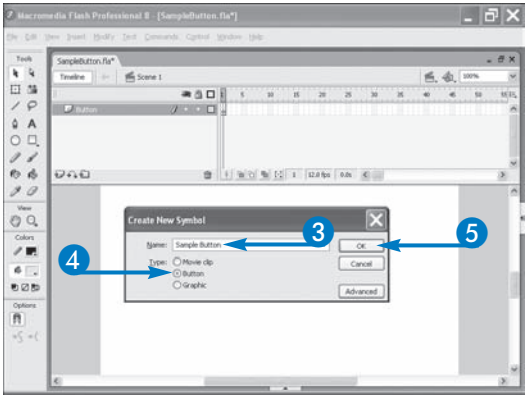
Create a new button symbol

1. Click Insert.
2. Click New Symbol.



The Create New Symbol dialog box opens.

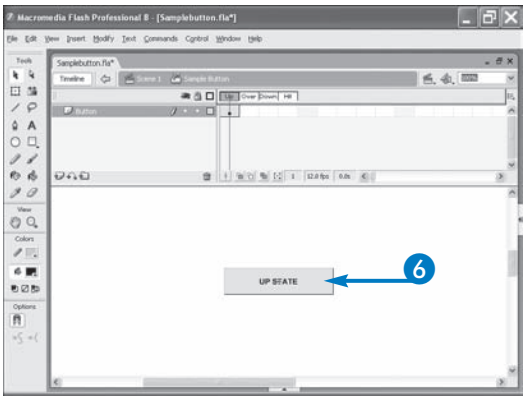
3. Type a name for the new button.
4. Click the Button type (◯ changes to ◉).
5. Click OK.



Create the Up state

Flash changes to symbol-editing mode, and four button frames display. You can now create a button state for each frame. By default, Flash selects the Up frame and inserts a blank keyframe.

6 Create or place the Up State object on the Stage.

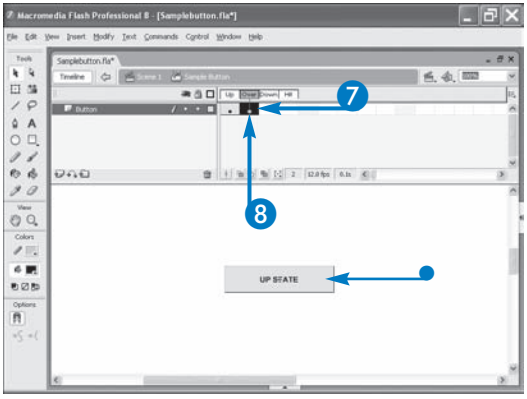


Create the Over state

7 Click the Over frame.

8 Insert a keyframe.

- Flash duplicates the object from the Up keyframe.



How do I preview a button?

While in symbol-editing mode, click the button's Up frame, and then press Enter. Watch the Stage as Flash plays through the four button frames. Any changes made to frames appear during playback. You can also drag the playhead over each of the symbol's button states to see how the symbol appears in each state.

Does Flash have premade buttons I can use?

Yes. Flash has a library of buttons. To display the Buttons Library, click Window, Common Libraries, Buttons. The Buttons Library panel appears. The Buttons Library works like the regular Library panel. Double-click a folder name to see a list of button types. You can preview a button by clicking its name. To use a button from the Library, simply drag it from the Library panel onto the Stage.

Can I use a button from another Flash file?

Yes. If you have stored a button symbol in another Flash file, you can open the other file's Library window and place an instance of the symbol on the Stage. Click File, Import, Open External Library. The Open As Library dialog box appears. Double-click the Flash file you want to use. The associated Library window opens on-screen. You can now use any button symbol you have stored in the Library.

continued

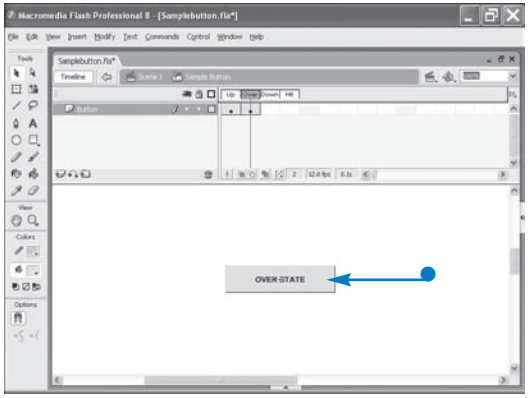
Create a Button
(Continued)

You can use any graphic or movie clip to define the appearance of a button state. You use movie clips to create animated buttons. See the section "Create Shape-Changing or Animated Buttons" to learn more about creating animated buttons. You can make even the simplest button more exciting by adding a few variations to each button state. You can duplicate the same object and use the object in each button frame with minor changes so the button appears different in each state. For example, each state can be a different color or shape. In addition, you may want to include a text block on your button to identify the purpose of the button.

You use behaviors or ActionScript to define the action that will occur when users click the button. Buttons are a popular way to add interactivity to Web pages and forms. You can create movie-control buttons that allow users to stop a movie and start playing it again. In addition, you can use buttons that analyze user input, respond to user input, load or unload a movie, or perform a myriad of other tasks.

Create a Button *(continued)*

- You can edit the object.

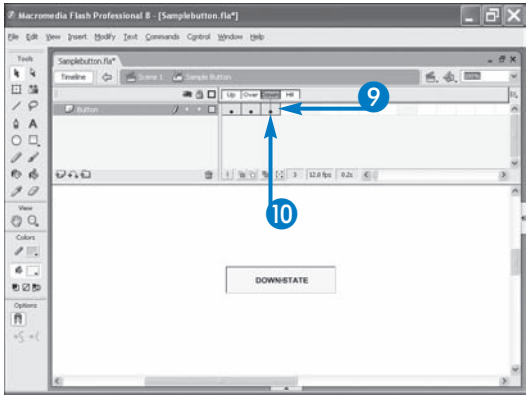


Create the Down state

9. Click the Down frame.
10. Insert a keyframe.

    Flash duplicates the object from the Over keyframe.

    You can edit the object.



Create the Hit state

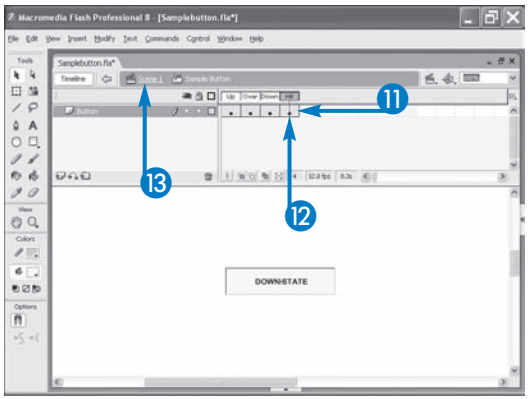
11 Click the Hit frame.

12 Insert a keyframe.

Flash duplicates the object from the Down keyframe.

Users cannot see the object contained in the Hit frame.

13 Click the scene name to return to document-editing mode.



Place the button on the Stage

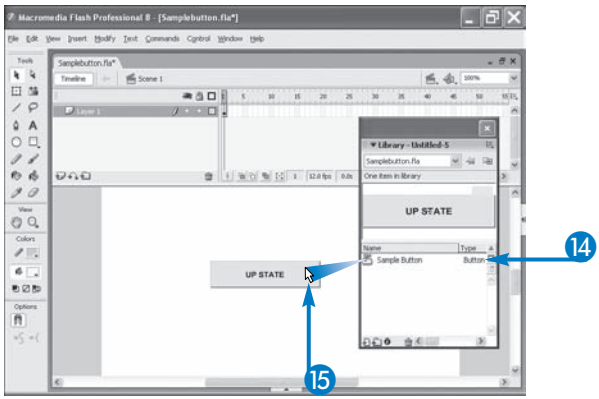
14 Open the Library.

Note: *See Chapter 21 to learn how to open the Library.*

15 Click and drag the button from the Library to the Stage.

The newly created button appears on the Stage.

Note: *To see the completed button, refer to file SampleButton_f.fla*



How do I test my button?

Flash disables buttons by default, making it easier for you to work with them as you create your movie. To enable a button for testing, click Control, Enable Simple Button. A check mark appears next to your selection on the menu. When you position your pointer over the button, the Over state appears. When you click while the pointer is over the button, the Down state appears.

How do I select an enabled button?

To select an enabled button, use the Selection tool to draw a rectangle around the button. To move an enabled button, select it and use the arrow keys to move it around the Stage. To disable a button after enabling it, click Control, Enable Simple Button again. When you are creating a movie, it is best to leave your buttons disabled and only enable your buttons for testing.

Can I use layers when creating a button?

Yes. The button's Timeline works just like the main Timeline in document-editing mode. You can add different layers to your button to organize various objects. For example, if your button includes a text block, you may want to place the text on its own layer. Or, if your button uses a sound, you can place the sound clip on a separate layer.

Create Shape-Changing or Animated Buttons

You can create shape-changing or animated buttons for added impact. Although simple geometric shapes make excellent buttons, you can jazz up your buttons by changing the shape of the object in each frame or by adding animations to frames. If the image of a button stays the same for all four frames in the Timeline, the button looks the same regardless of how users interact with the button; in other words, users cannot distinguish between button states. Changing the object used for each button state tells users the status of the button. Users can see a change when they hover the mouse pointer over a button and when they click the button.

Creating a shape-changing or animated button requires up to four different shapes and/or animations. The Up, Over, and Down frames can each have a different shape or animation, but the Hit frame needs a shape that encompasses the size of all three of the other frames. Although users do not view the Hit frame, it defines the size of the active area of the button. See the section "Create a Button" to learn more about creating buttons.

Create Shape-Changing or Animated Buttons

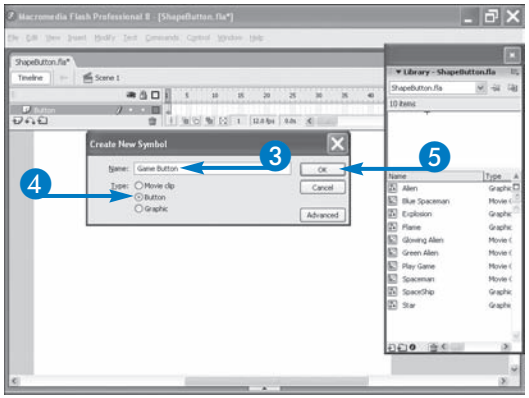
Create a new button

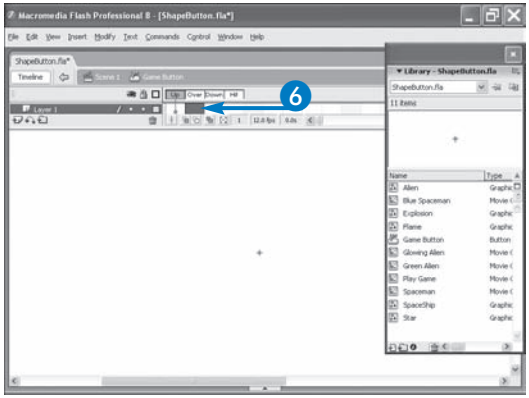
Note: *This example uses the file ShapeButton.fla, which you can find on the CD that accompanies this book.*

1. Click Insert.
2. Click New Symbol.

   The Create New Symbol dialog box opens.
3. Type a name for the new button.
4. Click Button (◯ changes to ◉).
5. Click OK.

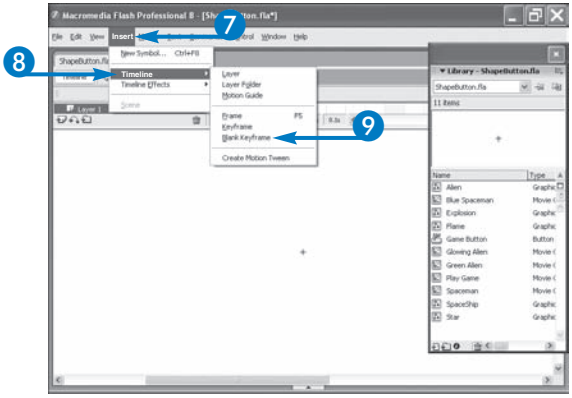
   Flash changes to symbol-editing mode and four button frames display.
6. Click the Over frame.





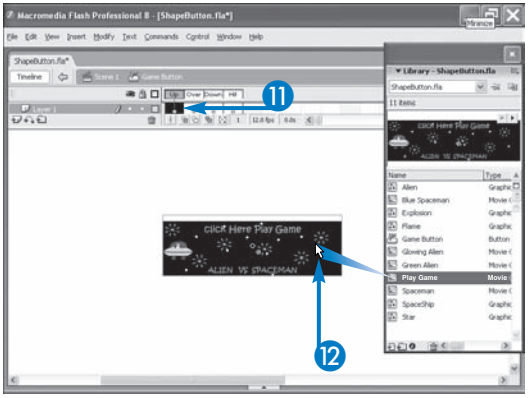
7. Click Insert.
8. Click Timeline.
9. Click Blank Keyframe.

   Flash inserts a blank keyframe.
10. Repeat steps 7 to 9 to add blank keyframes to the Down and Hit frames.



Create the Up state

11. Click the Up frame to select it.
12. Create a new object or place an existing object on the Stage.



Why do I need to draw a shape in the Hit frame?

Although the Hit frame is invisible to users, it defines the active area of the button and is essential to the button's operation. You must make the object you draw big enough to encompass the largest object in the other button frames. If you do not, users may click an area of the button that does not activate it. If you have trouble guessing how large an area to define, click Onion Skin to see outlines of the shapes in all the other frames. Click Onion Skin again to turn the feature off.

Should I add my movie clip to another layer in my button Timeline?

You can use as many layers and layer folders as you need with a button to keep the various elements organized, including movie clips you add to the button. To learn more about Timeline layers, see Chapter 22.

Can I use an animation clip from another Flash file?

Yes. Click the File menu, click Import and then click Open External Library. Locate the Flash file containing the clip you want to use, and then double-click the filename. This opens the other file's Library on-screen, and you can drag the clip you want to use onto the Stage.

continued

Create Shape-Changing or Animated Buttons *(Continued)*

To insert a new shape or animation for each different button state, you must insert blank keyframes in each button state. Adding a keyframe inserts the content of the previous keyframe. Adding a blank keyframe allows you to insert new content.

When you create an animation in Flash, you can save it as a movie clip. Short movie clips work best for button animations. You can learn more about creating animations and saving them as movie clips in Chapter 25.

Flash makes it easy to place movie clips into your button frames. You must first create a movie clip or import one and then assign it to a button state. Movie clips use their own Timelines, which means they play at their own pace. The button remains animated as long as the clip plays.

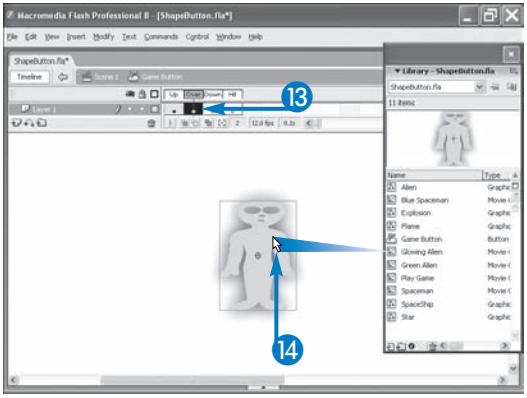
You can add a movie clip to the Up, Over, and Down button states. The only frame you do not want to animate is the Hit frame because its contents are not visible to users. Avoid using animations that play too long; users may not have the patience to wait for a long animation to play.

Create Shape-Changing or Animated Buttons *(continued)*

Create the Over state

13. Click the Over frame to select it.
14. Create a new object or place an existing object on the Stage.

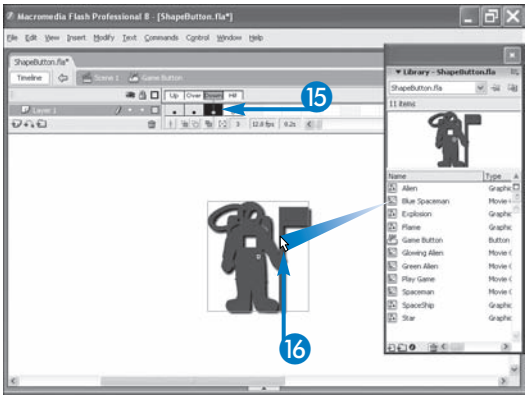
    The object must differ from the object you placed in the Up frame.



Create the Down state

15. Click the Down frame to select it.
16. Create another new object or place an existing object on the Stage.

    Make this object different from the objects you used in the previous two frames.



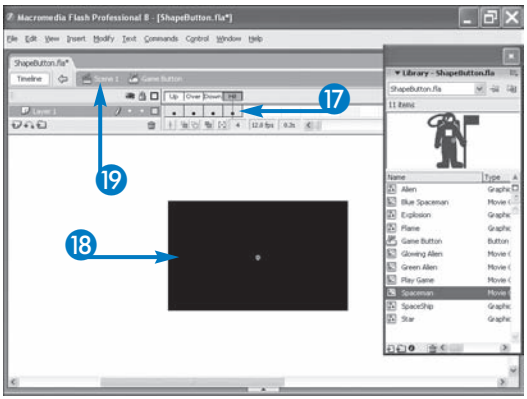
Create the Hit state

17 Click the Hit frame.

18 Draw a shape large enough to encompass the largest object size you used in your button frames.

Note: *If you do not define the Hit frame area properly, users cannot interact with the button.*

19 Click the scene name to return to document-editing mode.



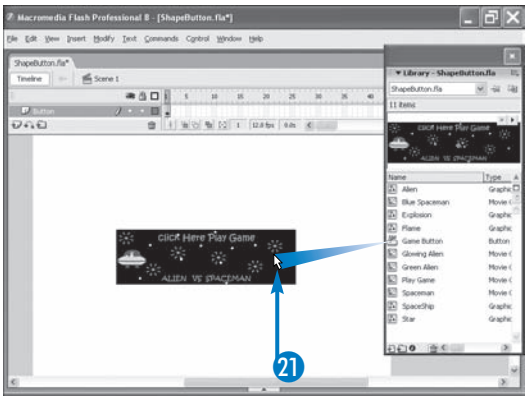
Place the button on the Stage

20 Open the Library if it is not already open.

Note: *See Chapter 21 to learn how to open the Library.*

21 Click and drag the button from the Library to the Stage.

The newly created button appears on the Stage.



How do I make changes to a button?

To make changes to a button, you can double-click the button instance to return to symbol-editing mode and make changes to the objects in each button Timeline frame. For example, you may decide to use a different shape in your shape-changing button.

After modifying your button, remember to check the Hit frame to make sure the defining shape and size encompass any new shapes in the other frames. You can edit a button in place by clicking Edit, Edit in Place on the main menu. After making your modifications, you can return to your document by clicking Edit, Edit Document on the main menu.

How do I preview an animated button?

When you try to preview a button's rollover capabilities in the authoring environment, any movie clips you have added to button frames do not play. Instead, you see only the first frame of the movie clip. To see the fully animated button, you must move to the test environment. To move to the test environment, click Control and then click Test Movie. This opens up Flash Player inside the Flash program window. You can now test your button; Flash Player plays your animation. When you have completed testing your button, click the Close button to return to the authoring environment.

Understanding Behaviors

ActionScript is the scripting language programmers use to add interactivity to Flash documents. If you do not know ActionScript, you can use behaviors to make your document interactive. In fact, by using behaviors, you can use buttons, movie clips, and frames to perform a myriad of tasks, such as opening a Web page, starting a movie or movie clip, or stopping a movie or movie clip.

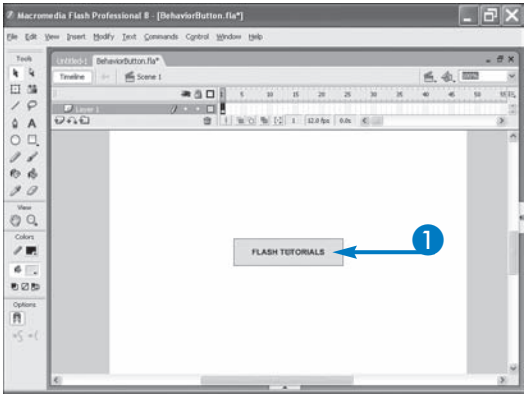
Behaviors, however, may not be the best solution for your Flash project. Behaviors are attached to frames and instances on the Stage. If you are working in a multi-author environment or on a complex project, this can make the code hard to find and difficult to debug. You may want to write your own ActionScript instead. When using ActionScript, you can put all of your code on the main Timeline or in an external document.

When you assign behaviors to buttons or movie clips, you must choose an event that triggers the behavior. You can choose from the following events: On Drag Out, On Drag Over, On Key Press, On Press, On Release, On Release Outside, On Roll Out, and On Roll Over. Flash assigns the On Release event by default.

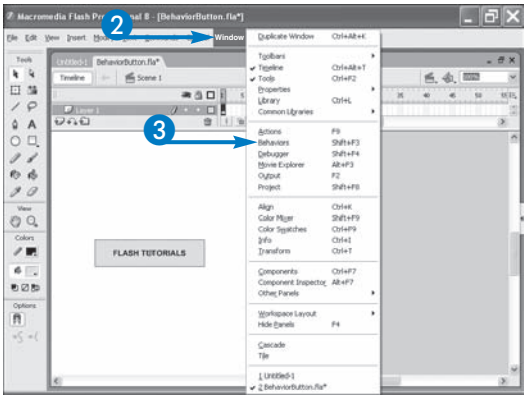
Understanding Behaviors

Note: *This example uses the file BehaviorButton.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the button to which you want to add a behavior.

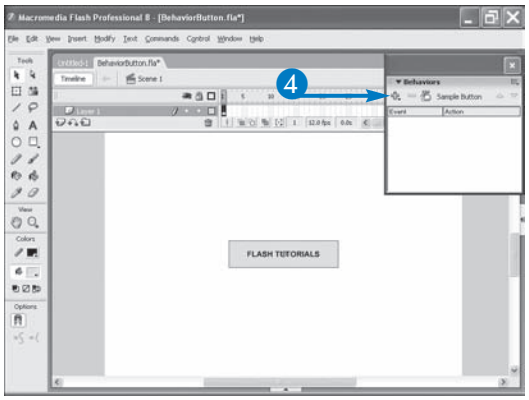


2. Click Window.
3. Click Behaviors.

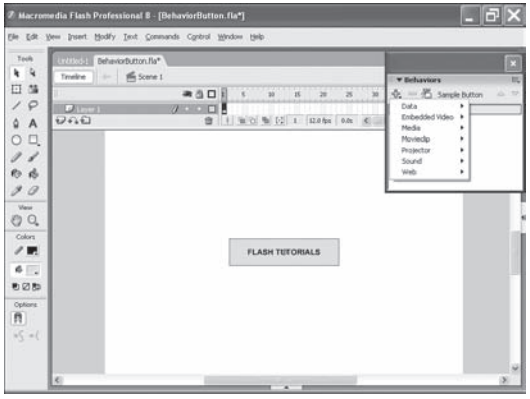


The Behaviors panel opens.

4 Click the Add Behaviors icon ( ).



The Behaviors menu appears.



What behaviors can I add to a button?

You can assign most behaviors to a button. You can assign Movieclip behaviors to a button to control your movies or movie clips. For example, you can assign the Go to and Stop at Frame or Label behavior to a button, and then use the button to stop a movie or movie clip. You can assign an Embedded Video behavior to a button and then use the button to play, pause, fast forward, or rewind a video. You can assign a Sound behavior to a button and use the button to play a sound, stop a sound, or load a sound, among other things.

What is the Go to Web Page Behavior?

You can use the Go to Web Page behavior to create a button that goes to a Web page when users click the button. Choosing the Go to Web Page behavior opens the Go to URL dialog box. You enter the URL you want users to go to in the URL field. The Open In field provides you with four choices: `_self`, `_parent`, `_blank`, and `_top`. `_self` opens the page in the current frame or window, `_blank` opens the page in a new window, `_parent` opens the page in the parent of the current frame, and `_top` opens the page in the top-level frame of the current window. This section's example uses the Go to Web Page behavior.

continued

Understanding Behaviors *(Continued)*

The *On Drag Out* event performs the behavior when the pointer is over the button, and the user presses the mouse and then drags the pointer outside the button area.

The *On Drag Over* event performs the behavior when the user clicks the button, drags the pointer away from the button, and then drags the pointer back over the button.

The *On Press* event performs the behavior when the pointer is over the button and the user presses the mouse button.

The *On Key Press* event performs the behavior when the user presses a specified key.

The *On Release* event performs the behavior when the mouse pointer is over the button and the user releases the mouse button.

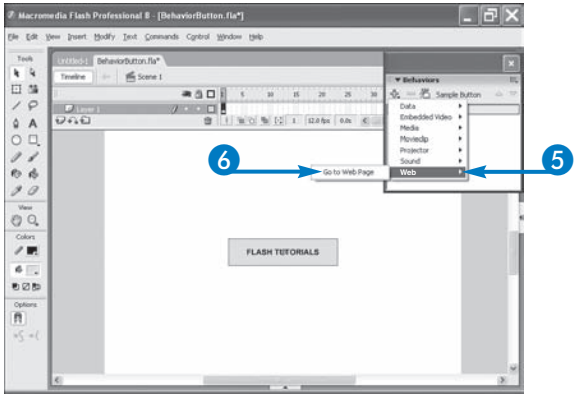
The *On Release Outside* event performs the behavior when the user drags the pointer outside the button area and then releases the mouse button.

The *On Roll Out* event performs the behavior when the user rolls the pointer over and then outside of the button area.

The *On Roll Over* event performs the behavior when the user rolls the pointer over the button.

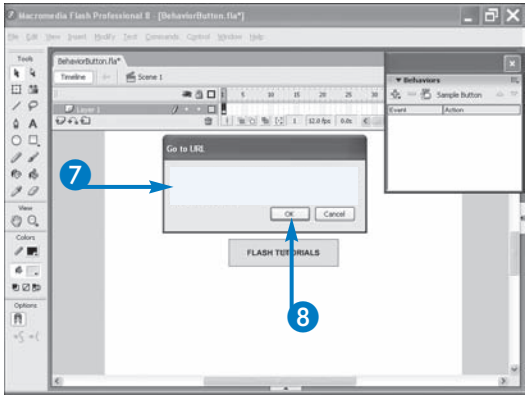
Understanding Behaviors *(continued)*

5. Click a category.
6. Click a behavior.



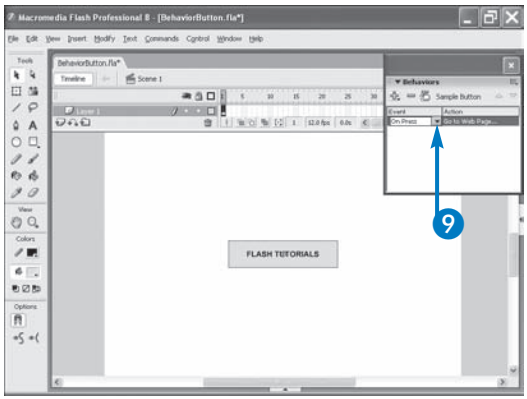
A dialog box opens.

7. Enter the parameter into the fields.
8. Click OK.



9 Click here and then select the event you want to use to trigger the behavior.

Flash adds the behavior to the button.



10 Click Control.

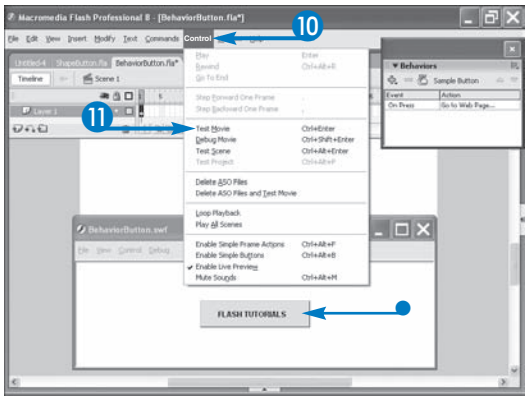
11 Click Test Movie.

Flash moves to the test environment.

12 Test your movie.

Flash performs the behavior you specified.

- In this example, if you click the button Flash opens the Web page you specified.



How do I test a behavior?

Generally, you can test a button by clicking Control and then clicking Enable Simple Buttons. You can test a movie by pressing the Enter key. However, you cannot test a behavior using these methods. To test a behavior, you must click Control and then Test Movie. Flash moves you to the test environment, where you can test your behavior.

How do I decide if I should use ActionScript instead of a behavior?

If you will be modifying your code frequently, you are probably better off using ActionScript. If your project contains a large number of objects, you are probably better off using ActionScript. If other people will be modifying your code, you are probably better off using ActionScript. If you will need to modify the behaviors, you are probably better off using ActionScript.

Can I assign behaviors to an instance and then convert the instance to a new symbol?

Yes. For example, you might want to create an object that is draggable. If you need multiple instances of the draggable object, you can assign the appropriate behaviors to the instance and then convert the instance to a movie clip. Flash stores the movie clip in the Library. You can take instances of the movie clip from the Library. Each instance is draggable.

Using the Behaviors Panel

Behaviors are prewritten ActionScripts you can use to add interactivity to your Flash documents. You use the Behaviors panel to assign behaviors to buttons, movie clips, and frames. When assigning a behavior to a button or movie clip, you select the button or movie clip and then you use the Behaviors panel to assign the behavior. When assigning a behavior to a frame, you click in the frame and then use the Behaviors panel to assign the behavior.

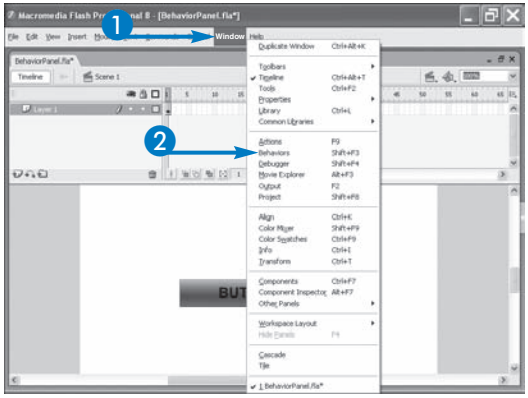
Behaviors are divided into six categories: Data, Embedded Video, Media, Movieclip, Sound, and Web. You click the Add Behaviors icon on the Behaviors panel to access these categories. Each category has one or more behaviors assigned to it. You click a behavior to open that behavior's dialog box. See Chapters 27, 28, and 29 for detailed explanations of how to use the Movieclip, Sound, and Embedded Video behaviors.

Using the Behaviors panel, you can add, remove, modify, and change the order of behaviors. When you assign a behavior to a movie clip or button, you must also choose the event that triggers the behavior. For a detailed explanation of events, see the section "Understanding Behaviors" in this chapter.

Using the Behaviors Panel

Open the Behaviors panel

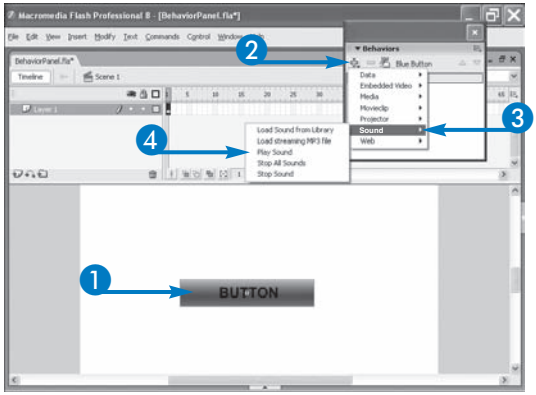
1. Click Window.
2. Click Behaviors.



The Behaviors panel opens.

Add a behavior

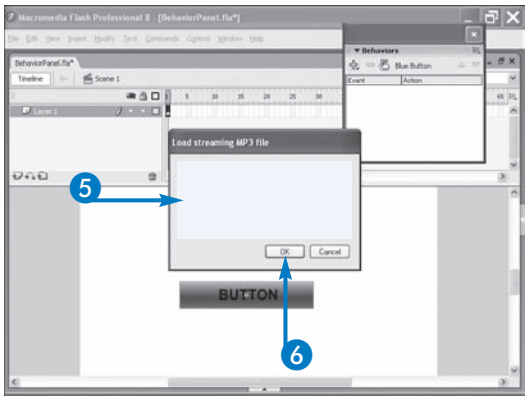
1. Select the instance or frame to which you want to assign the behavior.
2. Click .
3. Click a category.
4. Click a behavior.



The behavior's dialog box opens.

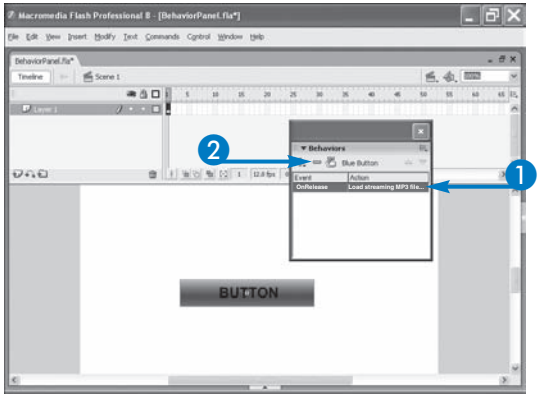
5. Enter the parameters.
6. Click OK.

Flash assigns the behavior to the instance or frame.



Delete a behavior

1. Click the Action name.
2. Click the Delete Behaviors icon ( ).



Can I modify a behavior?

Yes. To modify a behavior, double-click the behavior name under the Action column in the Behaviors panel. The dialog box for the behavior opens. You can change the parameters in the dialog box. To change the order in which behaviors execute, click the Action name and then click the Move Down icon ( ) to move the Action down or click the Move Up icon ( ) to move the action up.

Can I add more than one behavior to a button, movie clip, or frame?

Yes. For example, if you are creating an object that is draggable, you may want the dragging to start On Press and stop On Release. Each time you click the Add Behaviors button, Flash displays the Behaviors menu and you can add another behavior. See Chapter 27 to learn how to create draggable objects.

Can I assign behaviors to text?

Yes. When you attempt to assign a behavior to text, Flash converts the text to a symbol and places it in the Library. Flash then allows you to assign behaviors to the text. Alternatively, you can convert that text to a symbol yourself and then assign a behavior to it.

Understanding Paths

You can use behaviors or ActionScript to send messages from one Timeline to another. For example, a button can tell a movie clip to stop playing. To send messages, you must specify the target path.

When you create a movie clip, the movie clip has its own Timeline. You can place a movie clip on the main Timeline or on the Timeline of another movie clip. When you place a movie clip on another Timeline, a hierarchy is formed. A movie clip that you place on another Timeline is called a *child*. The Timeline on which you place a movie clip is called the *parent*. The hierarchy that forms when you place a movie clip on another Timeline creates a path. Each Timeline in Flash can be addressed in two ways: by using an absolute path or by using a relative path.

Absolute Paths

The main Timeline of the current document is referred to as the *root*. Absolute paths start at the root and move downward through the Timelines. For example, you create a document named carShow.swf, you place a movie clip instance named car_mc on its main Timeline, and then you place a movie clip instance named tire_mc on the Timeline of car_mc. The absolute path to tire_mc would be `_root.car_mc.tire_mc`. When you create a path, you can use `_root` to refer to the main Timeline and dots to separate the instance names of the individual movie clips in the hierarchy. No matter where you call an absolute path from, the path is always the same.

Levels

You can load multiple documents into Flash Player. Each document you load into Flash Player is loaded into a level. The first document Flash Player opens loads into level 0. You refer to level 0 as `_level0`. You specify the level into which subsequent documents load, such as `_level5` or `_level10`. When referring to the main Timeline of a document, other than the current document, you must refer to the root by using the document level number. For example, you create a document called airShow.swf, you place a movie clip instance named airplane_mc on the main Timeline, and then you place and instance named propeller_mc on the Timeline of airplane_mc. When you load airShow.swf into carShow.swf, you place airShow.swf on level 5. If you are on the Timeline of carShow.swf, you target propeller_mc by using the following absolute path: `_level5.airplane_mc.propeller_mc`.

Relative Paths

You can also target by using a relative path, but you can use relative paths only to refer to targets on the same level. When using a relative path, you can use the keyword `_parent` to refer to the parent of the current Timeline. If you are on the Timeline of tire_mc in carShow.swf, you can refer to car_mc by using the following path: `_parent`. You can use the keyword `this` to refer to the current Timeline.

Work with Behaviors

When a behavior needs to target an object, the Flash dialog provides you with a graphic that shows the hierarchy of the instances in your documents. You can click to choose the instance you want to target; Flash creates the path. You can also click to choose from absolute path or relative path.

Name an Instance

To control an instance with a behavior or with ActionScript, you must give the instance a unique name. Naming instances enables you to distinguish one instance from another. After you have named instances, you can use behaviors or ActionScript to manipulate each instance independent of the other instances. For example, you can move one instance while other instances remain motionless.

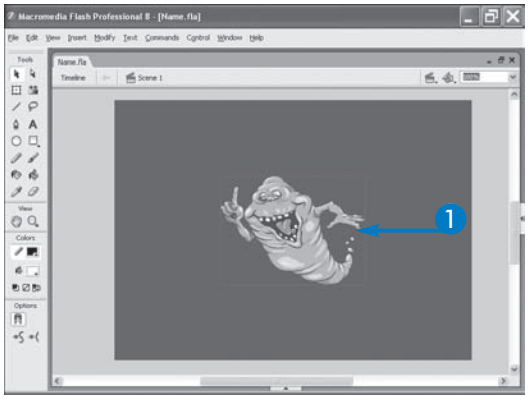
When you select an instance, the Property inspector includes a field that enables you to name the instance. You can name an instance almost anything you want.

You can use underscores, letters, and numbers to name an instance; however, you should start the instance name with a letter. Do not include spaces, periods, or other characters that have special meaning to Flash. Try to use meaningful names. Names that describe the instance are a good choice. It is a good idea to develop a naming convention and to use it consistently. If you want to enable code hinting in ActionScript, when naming an button append `_btn`, when naming a movie clip append `_mc`, when naming a sound append `_sound`, and when naming a video append `_video`. See Chapter 31 to learn more about code hinting.

Name an Instance

1. Select the instance you want to name.

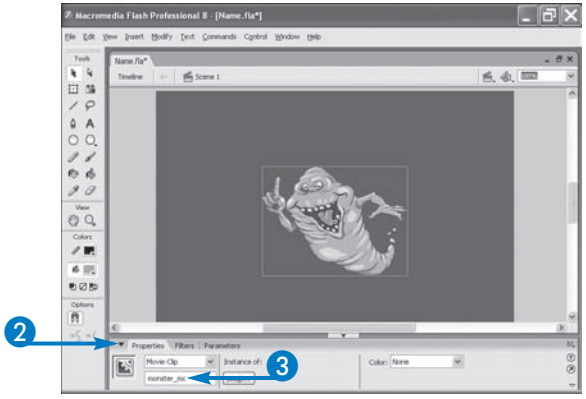
Note: *See Chapter 19 to learn how to select objects.*



2. Open the Property inspector.

Note: *See Chapter 17 to learn how to work with the Property inspector.*

3. Type the instance name.



Using Goto Behaviors

You can use the Goto behaviors to create loops or to enable users to move to a desired location at will. There are two Goto behaviors: Goto and Play at Frame or Label, and Goto and Stop at Frame or Label. Goto and Play at Frame or Label tells Flash to go to a specified frame and play the movie. Goto and Stop at Frame or Label tells Flash to go to a specified frame and stop the movie.

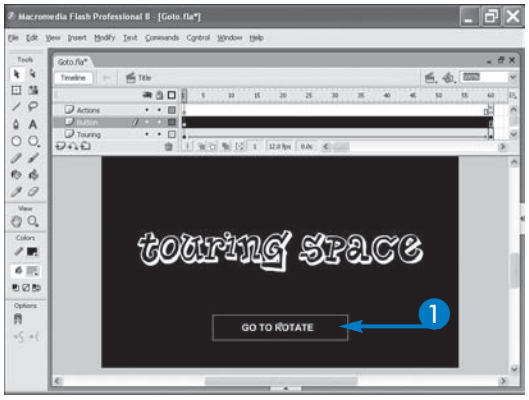
The Goto dialog boxes have a field you can use to tell Flash the frame to which you want to send the playhead. When specifying the frame, it is best to use a label instead of a frame number to identify the frame. Labels move with frames, but frame numbers change if you add frames, remove frames, or change the location of a frame. If you use a frame number to identify a frame, a change in the frame number can cause an error. You use the Property inspector to create a frame label. For more information about frame labels, see Chapter 23.

Using Goto Behaviors

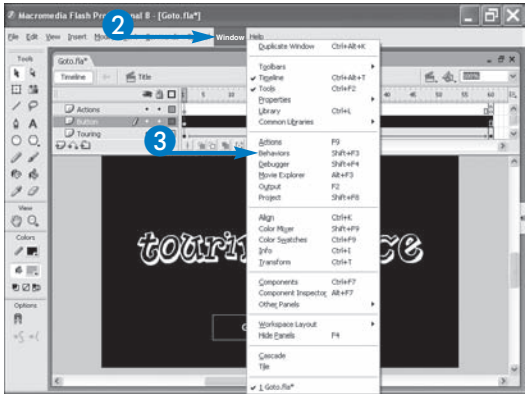
Note: *This example uses the file Goto.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the button to which you want to assign the behavior.

Note: *You can also assign the Goto behaviors to movie clips and frames.*



2. Click Window.
3. Click Behaviors.



The Behaviors panel opens.

4. Click the Add Behaviors icon ( ).

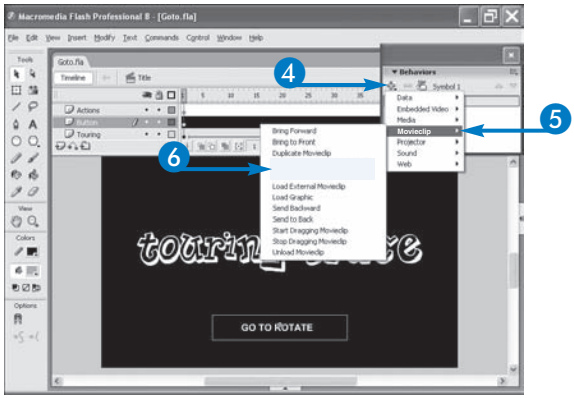
   The Behaviors menu appears.

5. Click Movieclip.

6. Click Goto and Play at frame or label or Goto and Stop at frame or label.

   The related dialog box opens.

   The example uses Goto and Play at frame or label.

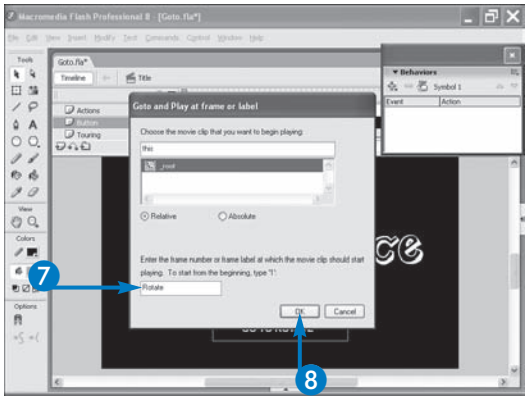


7. Type a frame number or frame label.

8. Click OK.

   Flash applies the behavior to the button.

Note: *Flash selects the On Release event by default. See Chapter 26 to learn more about events.*



How do I create a loop?

To create a loop, you create a Goto and Play at frame or label behavior that returns the playhead to a prior frame. Start by selecting the frame in which you want your loop to end and making it a keyframe. Then click in the frame, open the Behaviors panel, and choose the Goto and Play at frame or label option. In the Goto and Play at frame or label dialog box, enter **this** in the Choose the movie clip you want to begin playing field. In the Enter a frame number or frame label at which the movie clip should start playing field, enter a frame that is prior to the frame in which you placed the behavior.

How do I stop a movie?

Use the Goto and Stop at frame or label behavior to stop a movie in a particular frame. Click in the frame in which you want the movie to stop. Make that frame a blank keyframe. Give a frame label to the frame. Click Window and then click Behaviors; the Behaviors panel opens. Click the Add Behavior icon. The behaviors menu appears. Click Movieclip and then click Goto and Stop at frame or label. Enter the frame label at which the movie should stop and then click OK. For a demonstration, refer to the sample file GotoStop_f.fla, which you can find on the CD that accompanies this book.

Create Objects Users Can Drag

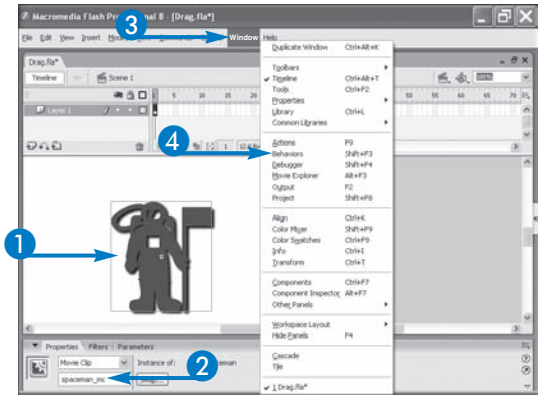
You can use ActionScript or behaviors to create objects that users can drag. You can use the Start Dragging Movieclip and Stop Dragging Movieclip behaviors or the associated ActionScript commands to create sliders, scrollbars, panels, and many other draggable objects. Any movie clip can be draggable. In the Start Dragging Movieclip dialog box, you enter the instance name of the object you want to make draggable. Only one object can be draggable at a time. An object remains draggable until you execute a Stop Dragging Movieclip behavior or issue another Start Dragging Movieclip behavior.

You might want to create an object that is draggable when the user clicks on it and remains draggable until the user releases the mouse. You can use the Start Dragging Movieclip behavior with the On Press event to make the object draggable when the user clicks on it. You can use the Stop Dragging Movieclip behavior with the On Release event to stop the action when the user releases the mouse. See Chapter 26 to learn more about the On Press and On Release events.

Create Objects Users Can Drag

Note: *This example uses the file Drag.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the movie clip you want to drag.
2. Give your movie clip an instance name.
3. Click Window.
4. Click Behaviors.

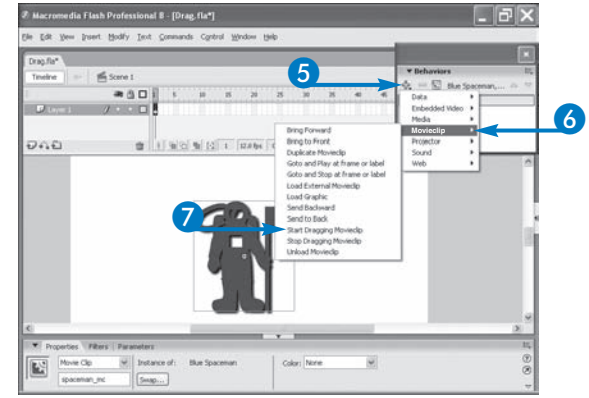


The Behaviors panel opens.

5. Click .

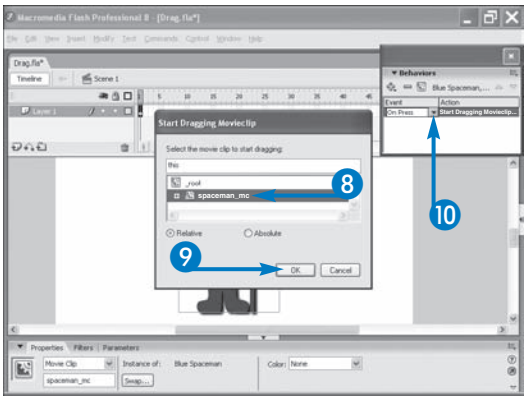
The Behaviors menu appears.

6. Click Movieclip.
7. Click Start Dragging Movieclip.



The Start Dragging Movieclip dialog box opens.

8. Click to select the object you want to make draggable.
9. Click OK.
10. Click here and then select the On Press event.



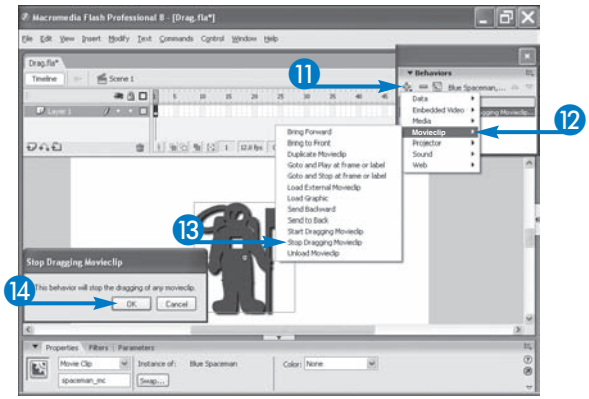
11. Click ⊕.
12. Click Movieclip.
13. Click Stop Dragging Movieclip.

    The Stop Dragging Movieclip box opens.

14. Click OK.

    Flash makes your object draggable On Press and stops the dragging On Release.

Note: *On Release is the default event.*



When I drag, I am dragging my entire document. Why?

If the entire document drags when you attempt to drag an object, you have either targeted the main Timeline or you have associated the Start Dragging Movieclip behavior with a button.

If you select `_root` as the object to target, you are targeting the main Timeline; when the drag action starts, everything in the document moves. To make an instance draggable, the instance must have a name and you must click the instance name in the Start Dragging Movieclip dialog box to make the instance draggble. However, you cannot use a behavior to make a button draggable.

What are the ActionScript commands I can use to make objects draggable?

Behaviors are based on ActionScript. When you use a behavior, Flash creates the ActionScript for you. You can use Movie Explorer to view the ActionScript created by the behavior, or you can open the Actions panel to view actions. To create complex draggable objects, you have to use the `startDrag` action. The `startDrag` action has parameters that are not available to you when you use the Start Dragging Movieclip behavior. The `startDrag` action enables you to lock the mouse to the center of the object you are dragging and to constrain the area over which you can drag the object.

Using the Duplicate Movieclip Behavior

If you want to make a copy of a movie clip that is currently on the Stage, use the Duplicate Movieclip behavior. The Duplicate Movieclip behavior enables you to create a new instance of a movie clip while your movie is playing. In fact, you can use the Duplicate Movieclip behavior to create multiple instances of a movie clip.

Duplicated movie clips always begin playing in frame 1. You use the X-offset and Y-offset fields to specify how far from the original movie clip you want to place the duplicate.

The X-offset specifies the horizontal distance in pixels; the Y-offset specifies the vertical distance in pixels. To place the duplicate movie clip to the right of the original movie clip, use a positive number as the X-offset value. To place the duplicate to the left of the original, use a negative number as the X-offset. To place the duplicate movie clip below the original movie clip, use a positive number as the Y-offset value. To place the duplicate above the original, use a negative number as the Y-offset.

Using the Duplicate Movie Clip Behavior

Note: *This example uses the file Duplicate.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the movie clip you want to duplicate.
2. Give the movie clip an instance name.
3. Select the button to which you want to associate the behavior.

Note: *You can attach the Duplicate Movieclip behavior to a button or movie clip.*

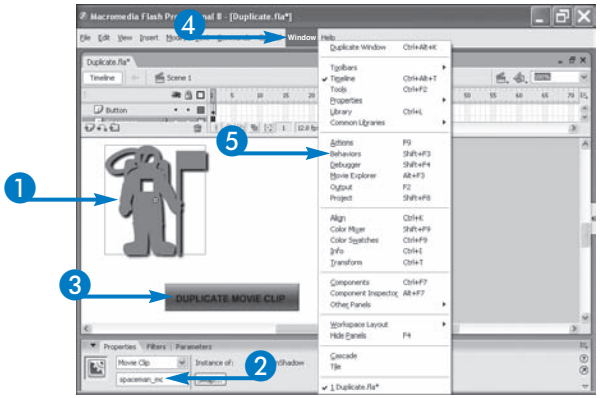
4. Click Window.
5. Click Behaviors.

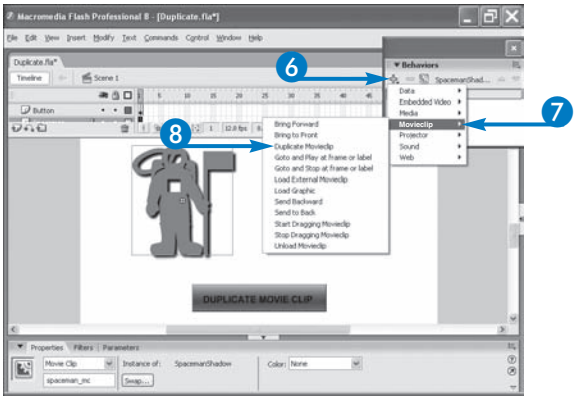
   The Behaviors panel opens.

6. Click .

   The Behaviors menu appears.

7. Click Movieclip.
8. Click Duplicate Movieclip.





The Duplicate Movieclip dialog box opens.

9. Click the instance name of the movie clip you want to duplicate.

Note: *Use the* `this` *keyword to refer to the current Timeline.*

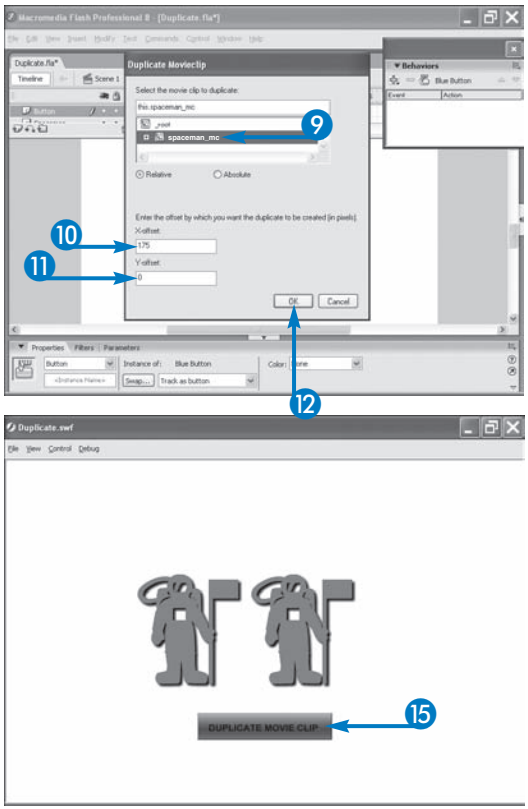
10. Type the X-offset.
11. Type the Y-offset.
12. Click OK.

    Flash adds the behavior to the object you selected.

    Flash selects the On Release event by default. You can change the event. See Chapter 26 to learn more about events.

13. Click Control.
14. Click Test Movie.
15. Click the Duplicate Movie Clip button.

    Flash duplicates your movie clip.



Are there any differences between the duplicate movieclip behavior and the duplicate movieclip function?

When using ActionScript, you can use the `duplicateMovieClip` function to create a new instance of a movie clip. When using the `duplicateMovieClip` function, you must specify three paramenters: `target`, `newname`, and `depth`. You use the `target` parameter to specify the name of the instance you want to duplicate, the `newName` parameter to specify the name you want to give to the instance, and the `depth` parameter to specify the stacking order. Objects with a higher depth number appear to be in front of objects with a lower depth number.

Can I combine behaviors? For example, can I duplicate an object that is draggable?

Yes. To duplicate an object that is draggable, start by creating a movie clip, use the Start Dragging Movieclip behavior to start the drag On Press, and use the Stop Dragging Movieclip behavior to stop the dragging On Release. You can then duplicate the movie clip when the user presses a letter, such as *d*. Each duplicated movie clip is draggable. The file DuplicateDrag_f.fla demonstates the example explained here. You can find DuplicateDrag_f.fla on the CD that accompanies this book.

Load External Movie Clips

The Load External Movieclip behavior enables you to play several movies without closing Flash Player. You can use the Load External Movieclip behavior to allow users to select the movie they want to view. For example, you can assign the Load External Movieclip behavior to buttons and have users click a button to select the movie to view.

The final step in creating a Flash movie is publishing the movie. When you publish a Flash movie, Flash saves the movie in SWF format. The Load External Movieclip behavior takes a SWF file that is located on the Web — or in a directory on your hard drive if you are not developing a Web page — and loads it into the movie that is currently playing.

When using Load External Movieclip, if you target a movie clip, Flash replaces the targeted movie clip with the movie you load. The targeted movie clip must have a unique instance name. The movie you load inherits the position, scale, and rotation properties of the movie clip you target.

Load External Movie Clips

Note: *This example uses the file Load.fla, which you can find on the CD-ROM that accompanies this book.*

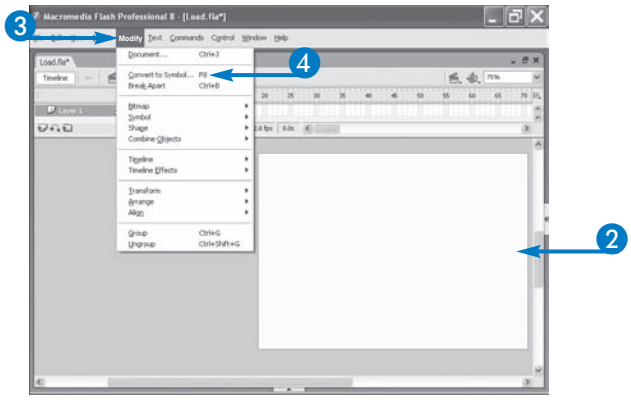
Create a movie clip that acts as a screen

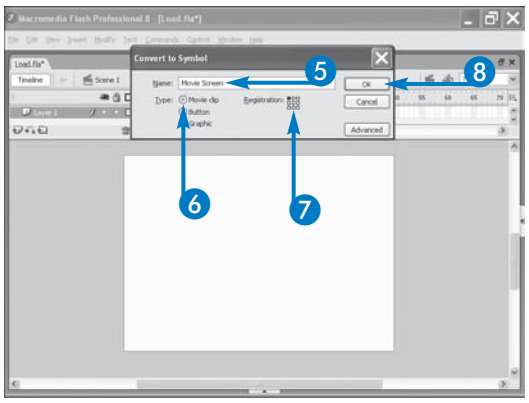
1. Create a graphic the size and shape of the Stage.
2. Select the graphic.
3. Click Modify.
4. Click Convert to Symbol.

   The Convert to Symbol dialog box opens.
5. Type a name.
6. Click Movie clip (◯ changes to ◉).
7. Click to choose the registration point.

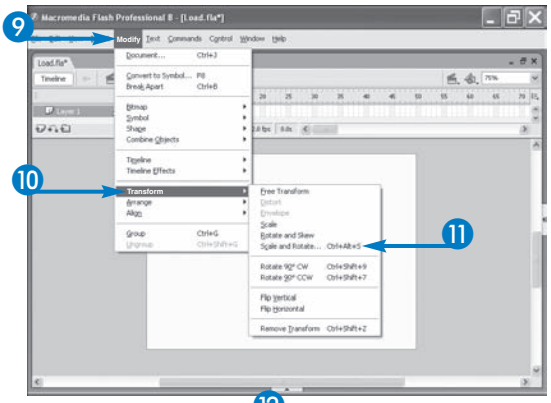
   Click a box to select the location of the registration point. When loading movies, the upper left corner is the best choice.
8. Click OK.

   Flash converts your graphic into a movie clip symbol.





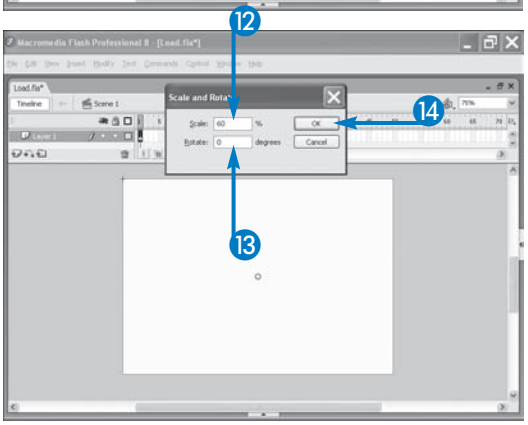
9. Click Modify.
10. Click Transform.
11. Click Scale and Rotate.



The Scale and Rotate dialog box opens.

12. Type the scale amount.
13. Type **0** in the Rotate field.
14. Click OK.

Flash reduces the size of the symbol.



What is the registration point?

The registration point is the point Flash uses to align symbols. Flash uses a cross hair to designate the registration point. You set the registration point when you create symbols. If you create a symbol by clicking Insert, New Symbol on the main menu, the registration point appears in the center of the Stage. As you create your symbol, you should be cognizant of the registration point. If you create a graphic and then convert the graphic into a symbol by clicking Modify, Convert to Symbol on the main menu, you can click one of nine boxes to select the position of the registration point.

Can I change the registration point?

Yes. To change a symbol's registration point, click Edit, Edit Symbol on the main menu to move to symbol-editing mode. After you are in symbol-editing mode, reposition the symbol in relationship to the registration point. Click Edit, Edit Document to exit symbol-editing mode.

Can I load an external movie directly into the Flash Player screen?

You can use the Load External Movieclip behavior to load an external SWF file directly into the Flash Player screen. If when loading an external SWF file, you target the root — the main Timeline — Flash loads the external movie and places it in the upper left corner of the screen.

continued

Load External Movie Clips *(Continued)*

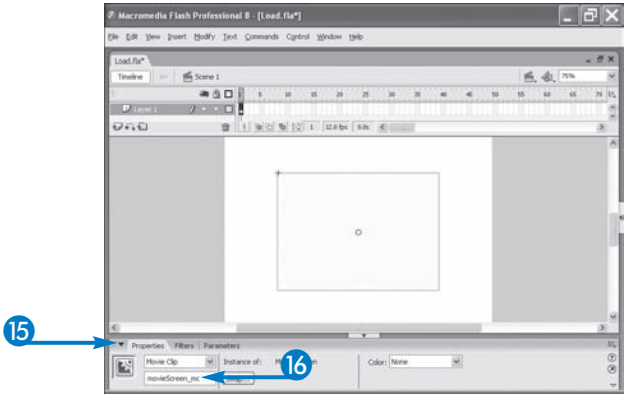
Flash places the movie at the registration point of the targeted movie clip. You may find it useful to create a movie clip that acts as a screen into which you can load other movies. You can make your screen movie clip the same size as the document you load and then scale it to a smaller size. Scaling it gives you space around the movie clip that you can use to place buttons or other graphics. If the movie you load is the same size as the movie into which it is being loaded, when loaded, it will be the size of the movie clip. You may also want to place the registration point of the screen movie clip in the upper left corner. That way, when you load the SWF file, it will align itself with the upper left corner of the screen movie clip.

You can assign the Load External Movieclip behavior to a button, movie clip, or frame. If you assign the Load External Movieclip behavior to a frame, the SWF file loads when the playhead reaches the frame.

Load External Movie Clips *(continued)*

15. Open the Property inspector.
16. Name the instance.

Note: *See the section "Name an Instance" to learn how to name an instance.*

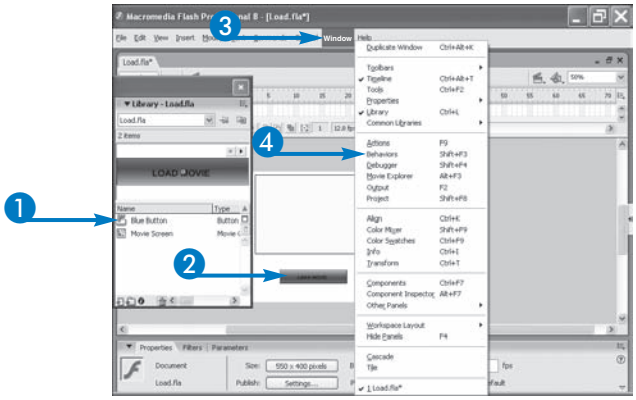


Add the Load External Movieclip behavior

1. Create or take from the Library the button with which you are going to associate the behavior.

Note: *You can also associate the Load External Movieclip behavior with a movie clip or frame.*

2. Select the button.
3. Click Window.
4. Click Behaviors.



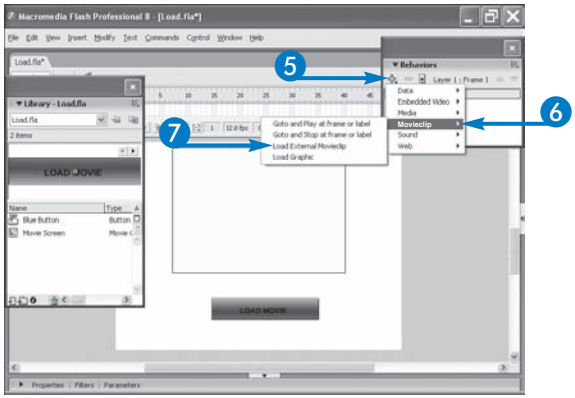
The Behaviors panel opens.

5. Click .

The Behaviors menu opens.

6. Click Movieclip.

7. Click Load External Movieclip.



The Load External Movieclip dialog box opens.

8. Type the location of the file you want to load.

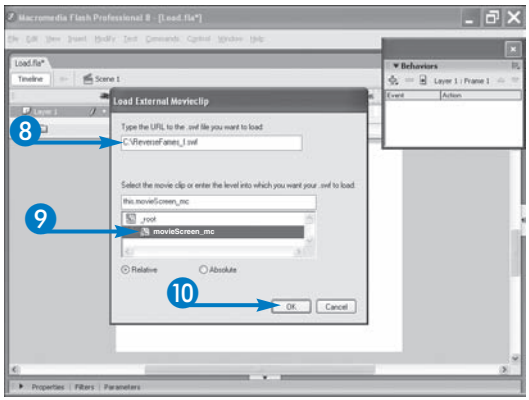
Note: *If you are creating a Web page, type in a URL.*

9. Click the Movie clip you are targeting.

10. Click OK.

Flash adds the behavior to the button.

Flash selects the On Release event by default. See Chapter 26 to learn more about events.



Can I unload a movie clip?

Yes. Open the Behaviors panel and then click the Add Behaviors icon. The Behaviors menu appears. Click Movieclip and then click Unload Movieclip. The Unload Movieclip dialog box opens. Click the movie clip you want to unload and then click OK. You can attach the Unload Movieclip behavior to a button or a movie clip.

Can I load a JPEG file?

Yes. You can use the Load Graphic behavior to load a JPG. Open the Behaviors panel and click the Add Behaviors icon. The Behaviors menu appears. Click Movieclip and then click Load Graphic. The Load Graphic dialog box opens. Enter the URL or menu path to the object you want to load and select a target. You can associate the Load Graphic behavior with a button or a movie clip.

If I am using ActionScript, how do I load an external SWF file?

When using ActionScript, you use the `loadMovie( )`, `loadMovieNum( )` global functions, or the `loadMovie( )` method to load an external SWF file. You specify the location of the SWF file you want to load, the movie clip you want to target (if you want to target a movie clip), or the level where you want to load the movie if you do not target a movie clip.

Change the Stacking Order

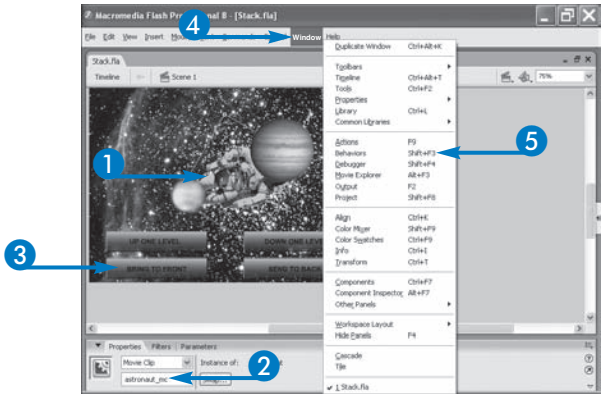
You can use the Bring to Front, Send to Back, Bring Forward, or Send Backward behaviors to set the depth levels of objects. When you place objects on the Stage, Flash gives them a depth level and stacks them. Movie clips with a higher depth level appear to be in front of movie clips with a lower depth level. If you create a number of draggable objects, Flash places each object on its own level. You may want the object the user is dragging to be on top. Using the Bring to Front behavior, you can bring the object to the top of the stack. Alternatively, by using the Send to Back behavior, you can send the object to the bottom of the stack.

Flash also has options that enable you to change in increments the level of an object. The Bring Forward behavior brings the object forward one level at a time. The Send Backward behavior sends the object back one level at a time. The dialog boxes for all four of these behaviors are exactly the same and are relatively simple to use: you specify the object you want to target and Flash applies the behavior.

Change the Stacking Order

Note: *This example uses the file Stack.fla, which you can find on the CD-ROM that accompanies this book.*

1. Select the instance you want to target.
2. Name the instance.
3. Select the object with which you want to associate the behavior.
4. Click Window.
5. Click Behaviors.

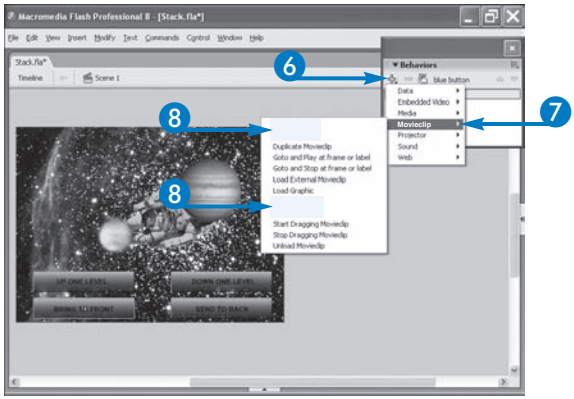


The Behaviors panel opens.

6. Click .

The Behaviors menu appears.

7. Click Movieclip.
8. Click Bring Forward, Bring to Front, Send Backward, or Send to Back.



Note: *The example uses Bring to Front.*

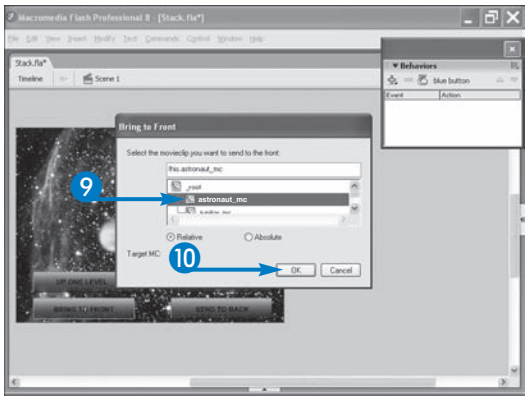
The related dialog box opens.

9. Click the object you want to target.
10. Click OK.

    Flash associates the behavior with the object you selected.

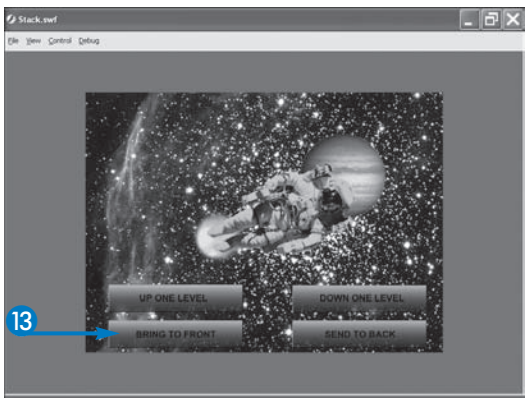
    Flash selects the On Release event by default.

Note: *See Chapter 26 to learn more about events.*



11. Click Control.
12. Click Test Movie.
13. Click the button with which you associated the behavior.

    Flash moves the object to the appropriate level.



I want to create draggable objects. I want the object being dragged to always be on top. How do I do that?

Select the instance you want to make draggable and give it an instance name. Open the Behaviors panel. Click the Add Behaviors icon, click Movieclip, and then click Bring to Front. In the Select the movieclip you want to send to the front box, click the instance name you gave to your instance and then click OK. On the Behaviors panel, choose the On Press event. The Bring to Front behavior puts the object on top. Continue creating your draggable object by following the steps in the "Create Objects Users Can Drag" section of this chapter.

Can I modify the behaviors I create with ActionScript?

Yes. However, after you modify a behavior by using the ActionScript panel, it is possible that you will no longer be able to edit the behavior by using the Behaviors panel. If you will be modifying your code, use ActionScript.

Can I create my own behaviors?

Yes. To create your behavior, create an XML file. Place the ActionScript necessary to perform the desired behavior in the XML file and then place the XML file in the behaviors folder in the Flash directory of your computer. To get an understanding of what is required, examine the XML files for the behaviors that come standard with Flash. They are located in the Flash directory of your computer.

Import a Sound File

Although you cannot record sounds in Flash, you can import sounds from other sources for use in your Flash movie. For example, you can import an MP3 file and add it to a movie, or you can import a recording that plays when users press a button. Flash supports popular sound file formats such as MP3, WAV, and AIFF.

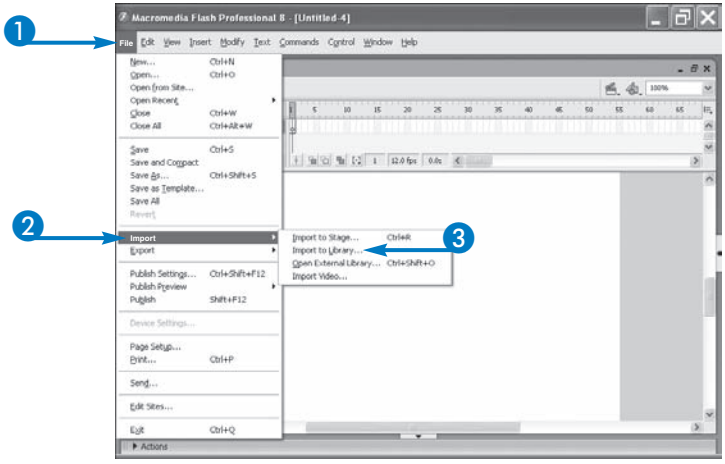
When assigning sounds in Flash, you place them in keyframes the same way you place graphics and buttons; but, before you can add a sound to a frame, you must import it. When you import a sound, Flash treats the sound as a symbol and stores it in the Library. You can use copies, called *instances*, of the sound as many times as necessary throughout your movie. You can also use sounds that are in other Flash files.

When you add a sound to a keyframe, the sound does not appear on the Stage. Rather, a waveform representation of the sound appears on the Timeline on the layer in which you added the sound. You may need to increase the size and number of frames on your Timeline layers to see the waveform.

Import a Sound File

Note: *You can import the file JaminD.wav, which you can find on the CD-ROM that accompanies this book.*

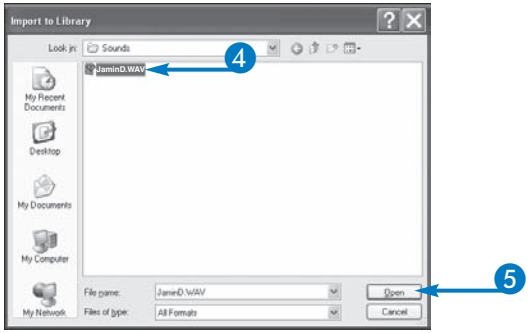
1. Click File.
2. Click Import.
3. Click Import to Library.



The Import to Library dialog box opens.

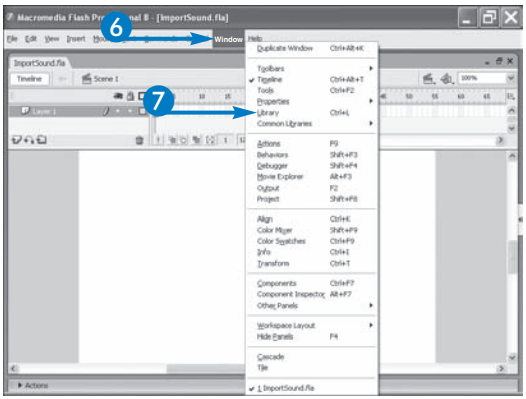
4. Click the sound file you want to import.
5. Click Open.

Flash imports the sound file and places it in the Library.



6 Click Window.

7 Click Library.

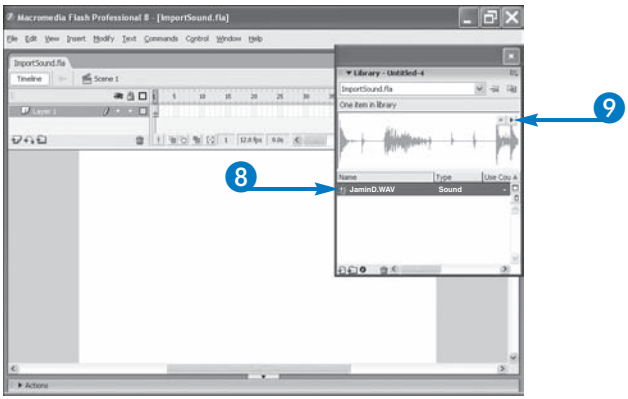


The Library opens.

8 Click the sound.

9 Click the Play button (▶).

The sound plays.



Do I need to worry about the size of my sound file?

Large sound files, such as background music, can cause your Flash movie to take longer to download when users try to access your Flash files from a Web site. Make sure your sound files are as short as you can possibly make them. Trim off excess parts of the file or use a sound that loops.

Can I have multiple sounds in my movie?

Yes. For example, you can have special-effect sounds, such as a doorbell ringing, a narration, and background music. Like graphics, you assign sounds to frames on the Timeline. When you run your Flash movie, overlapping sound layers play together. The user hears two or more separate sounds playing at the same time.

Should I create separate layers for my sounds?

Yes. By keeping your sounds on separate layers, you can easily locate the sounds and you can see how they relate to items on other layers. Placing sounds on separate layers allows you to treat these layers as audio channels in your Flash movie. You should give each sound layer a distinct name so you immediately recognize its contents.

Assign a Sound to a Frame

You can enliven any animation by adding a single sound effect or an entire soundtrack. You can take instances of sounds from the Library, insert them into frames on the Timeline, and use them throughout your movie. Flash displays sounds as waveforms in Flash frames.

Sound files become symbols when you import them into the Flash Library. You can click a keyframe and drag a sound from the Library onto the Stage to assign it to a frame in your movie. Flash gives you no visual representation of the sound on the Stage. Instead, a *waveform* — an image of vertical lines representing the digital sampling of the sound — appears in the Timeline frame. Depending on the length of the sound, the sound may play through several frames of your movie.

There are two methods you can use to assign a sound to a frame. You can drag an instance of the sound from the Library onto the Stage, or you can choose the sound from the Sound drop-down field in the Property inspector. The method you choose depends on which feature is more readily available.

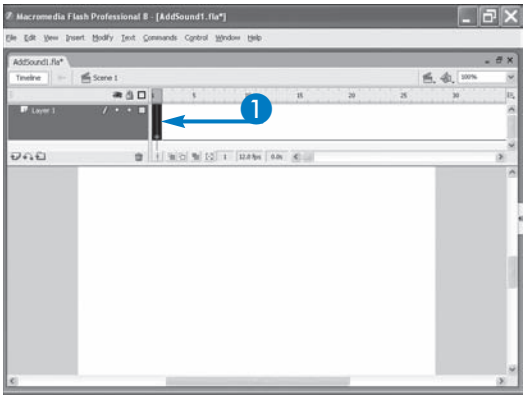
Assign a Sound to a Frame

Note: *This example uses the file AddSound1.fla, which you can find on the CD-ROM that accompanies this book.*

Add a sound by using the Library window

1. Click the frame to which you want to add a sound.

Note: *You can add sounds only to keyframes.*

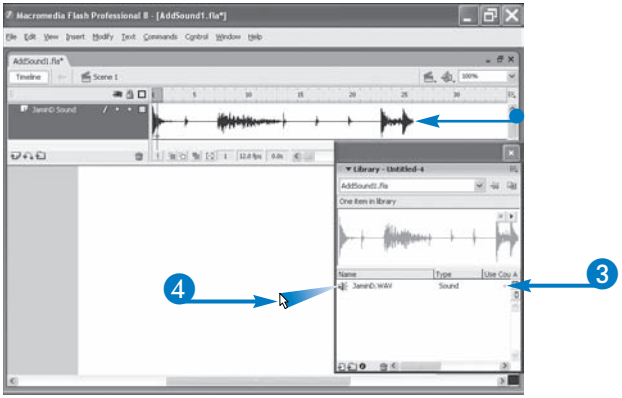


2. Open the Library window.

Note: *See Chapter 21 to learn how to open the Library window.*

3. Click to select the sound you want to use.
4. Click and drag the sound from the Library and drop it onto the Stage.

   Flash adds the sound to the frame, and the waveform for the sound appears in the frame.



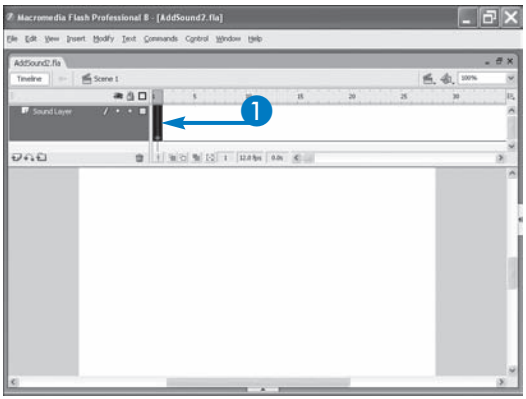
5. Press Enter.
   - The sound plays.

Add a sound by using the property Inspector

Note: *This example uses the file AddSound2.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame to which you want to add a sound.

Note: *You can add sounds only to keyframes.*



2. Open the Property inspector.

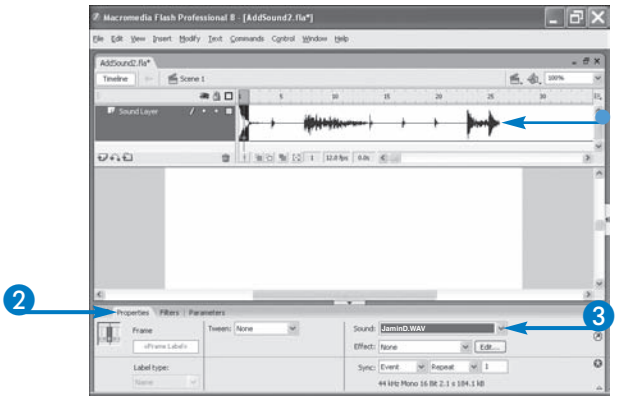
Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click here and then select the sound you want.

   Flash adds the sound to the frame, and the waveform for the sound appears in the frame.

4. Press Enter.

   - The sound plays.



Why does the waveform of my sound appear compressed into one frame?

If you assign a sound to a keyframe that appears at the end of your movie, or if you have yet to add additional frames or keyframes to your movie, the waveform of the sound appears only in the frame to which you assigned it. This makes the waveform appear compressed in the frame.

How do I know which sound is which?

Because sounds appear as waveforms on the Timeline, it is not easy to determine exactly which sound is which. One way you can quickly tell which sound is which is to add frame labels to sound frames. Another way is to click in any frame the sound occupies and view the sound name in the Property inspector.

Can I use sounds from the Library of another movie?

Yes. Click File, Import, and then click Open External Library. The Open as Library dialog box opens. Click the filename and then click Open. The external file's Library window opens, listing the symbols in the Library. Drag the sound you want to use from the Library window of the external file onto the Stage or into the Library of the current file.

Assign a Sound to a Button

You can use sound to call attention to the buttons in your movie or on your Web page. When you add sounds to buttons, you make the buttons more exciting and your Web page or standalone movie livelier.

For example, you can add a clicking sound that users hear when they click a button. If your buttons are part of a graphic or page background, adding a sound to the Over state of the button helps users find the button on the page.

If you add multiple sounds to your buttons, you make them even more interesting. You can add a different sound to each button state, such as a chime effect that plays when users roll over the button with the mouse pointer and a click effect when users actually click on the button. It is not necessary to add a sound to the Hit state because users never see or interact with the Hit state.

When assigning a sound to a button, you should create a separate layer for the sound. You add layers to the button Timeline the same way you add layers to the main Timeline.

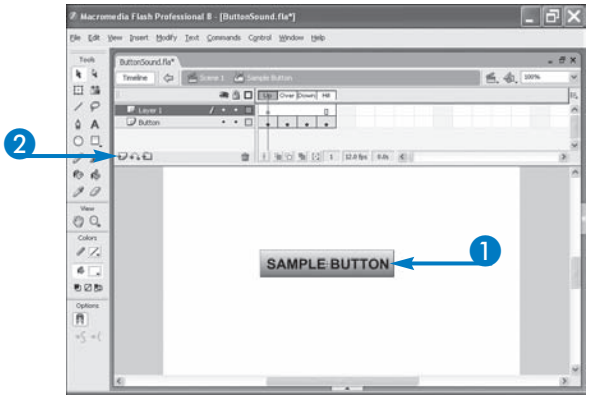
Assign a Sound to a Button

Note: *This example uses the file ButtonSound.fla, which you can find on the CD-ROM that accompanies this book.*

1. Double-click the button to which you want to add a sound.

   Flash changes to symbol-editing mode.

2. Click the New Layer button ( ) to add a new layer to the button Timeline.

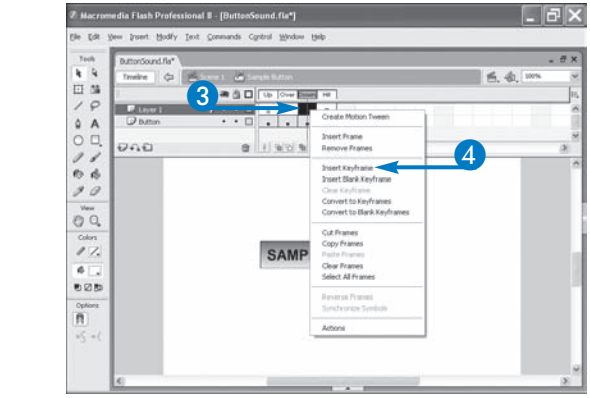


3. Right-click (Ctrl-click) in the frame in which you want to add a sound.

   A context menu appears.

4. Click Insert Keyframe.

   Flash inserts a keyframe.



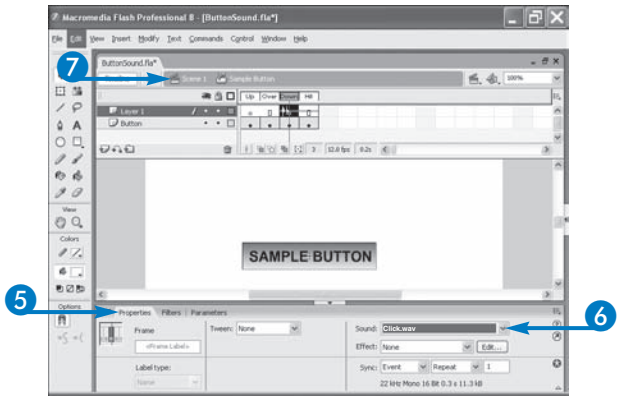
5. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

6. Click here and then select the sound you want.

   Flash adds the waveform to the frame.

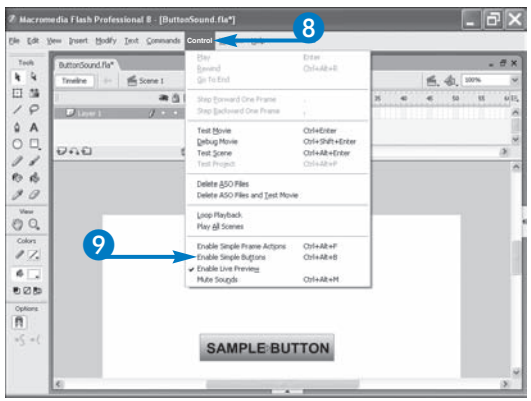
7. Click the scene name to return to document-editing mode.



8. Click Control.

9. Click Enable Simple Buttons.

   When you click the button, the sound plays.



To which button frame should I assign a sound?

The most practical frames to use when assigning sounds are the Over and Down frames; however, you can assign a sound to the Up frame. You might want the button to beep when users roll over the button with the mouse pointer. This alerts users to the button. If this is the case, assign the sound to the Over frame. Alternatively, if you want the button to make a sound when users actually click it, assign the sound to the Down frame. Do not assign a sound to the Hit frame. The Hit frame defines the button's active area.

I want to share my imported sounds with other Flash files. Is there an easy way to do this?

Yes. You can create a library of sounds that you can use in other Flash projects. Create a Flash file that contains all the sounds you want to share in the Library. When you save the file, save it to the Libraries folder located among the Flash program files and folders. When you restart Flash, the new sample file is added to the list of common libraries under the Window menu. See Chapter 21 to learn more about working with the Library window, symbols, and instances.

Create Event Sounds

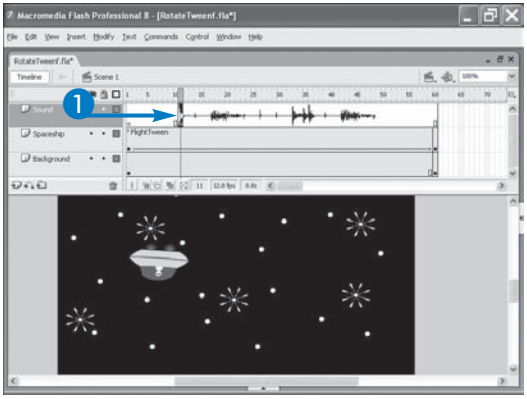
You can create Event sounds that are triggered by an event, action, or behavior. Event sounds can be triggered when the playhead reaches the frame containing the Event sound, or by Flash actions or behaviors you assign to symbols.

Event sounds play until they are explicitly stopped. The sound must completely download before it begins playing. By default, Flash treats all sounds you add to the Timeline as Event sounds. You can use Event sounds to include background music in your movie. However, keep in mind that if the sound file is longer than your movie, the sound keeps playing until it ends or encounters a stop command. If your movie happens to loop and the Event sound does not stop by the time the movie reaches its starting point again, Flash plays two instances of the sound at the same time. This overlapping of sounds is usually undesirable. You should accurately check the length and timing of your Event sounds before including them in loops. Alternatively, you could use a Start sound. To learn more about Start sounds, see the section "Assign Start Sounds" in this chapter.

Create Event Sounds

Turn a sound into an event sound

1. Click a frame containing the sound you want to change.

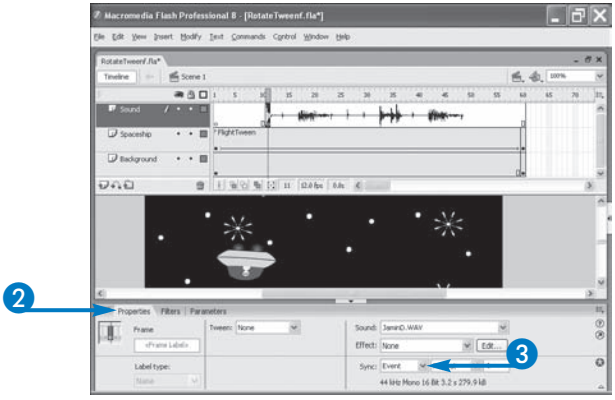


2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

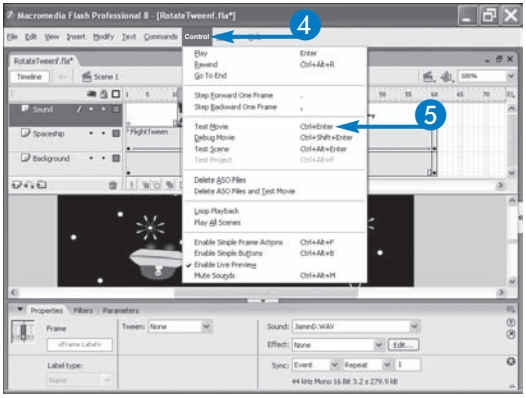
3. Make sure the Sync type is Event.

Note: *Event is the default Sync type.*

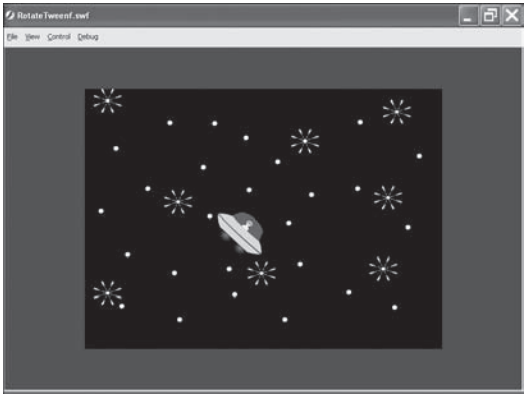


4 Click Control.

5 Click Test Movie.



When the movie reaches the sound's frame, the sound plays.



What types of sounds work best as Event sounds?

You can assign an Event sound to start playing in a specific keyframe and then continue to play independent of the Timeline for your movie. If the Event sound is longer than your movie, it continues to play even when your movie stops. For best results, designate short sounds as Event sounds. Sound effects, such as a handclap or a bell ringing, work well as Event sounds. Long sounds, such as an entire song, work best as Streamed sounds. You can use Event sounds when you do not want to synchronize a sound with frames in your movie.

How do I unassign a sound?

To remove a sound, you can use the Property inspector. Click in any frame the sound occupies. Open the Property inspector. Go to the Sound field and click None. Flash removes the sound from the Timeline. You can also remove a sound by selecting all the frames the sound occupies and clicking Edit, Timeline, and then Clear Frames.

Can I rename a sound?

Yes. To rename a sound, open the Library window and double-click the sound you want to rename. Flash changes to editing mode. Type a new name and then press Enter. Flash assigns the new name to the sound.

Assign Start Sounds

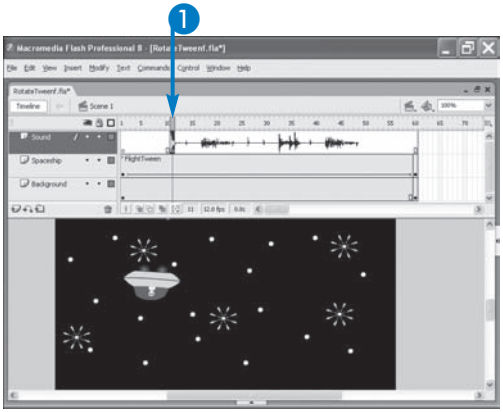
You can use the Flash Start sound control to play an instance of a sound in your movie. Start sounds are particularly useful when your movie or your sound loops. Start sounds act like Event sounds, with one important difference: if an instance of the sound happens to be playing, which can happen if your movie loops or you have set your sound to loop, the Start sound does not restart itself. By using a Start sound, you can avoid a problem that sometimes occurs with Event sounds — overlapping sounds. Flash plays a Start sound only once. Flash does not play the same Start sound multiple times simultaneously.

You can use the Sync field in the Property inspector to turn an Event sound into a Start sound. Remember, all sounds you add to movie frames are classified as Event sounds by default. Flash offers four Sync options: Event, Stream, Start, and Stop. You choose an option based on what you want the sound to do. In addition to options for changing the sound status, the Property inspector also offers options for looping and editing the sound.

Assign Start Sounds

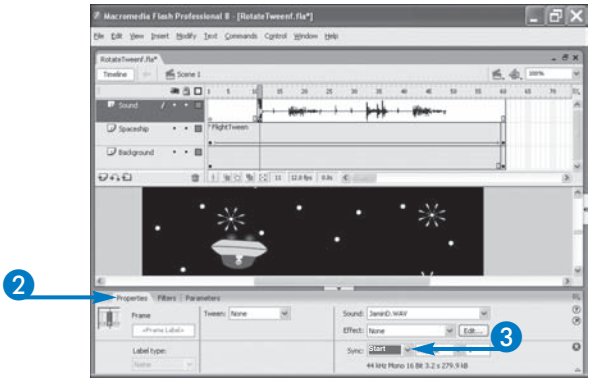
Set a start sound

1. Click a frame containing the sound you want to change.



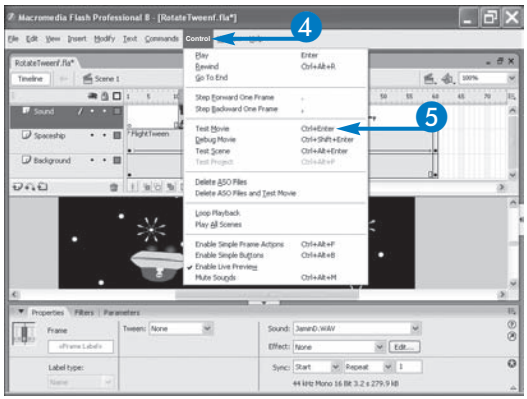
2. Open the Property inspector.
3. Click here and then select Start.

   Flash assigns Start status to the sound.



4 Click Control.

5 Click Test Movie.



When the playhead reaches the frame with the Start sound, the sound plays.

Can I change a sound's Sync type?

Yes. You can easily change a Sync type for any sound in your movie. Simply click in any frame that contains the sound for which you want to change the Sync type, open the Property inspector, and choose another Sync type. Flash has four Sync types: Event, Stream, Start, and Stop. This chapter explains each Sync type.

What does the Loop option do?

The Loop option is located in the Property inspector. Selecting Loop causes the sound to loop continuously. The sound continues to play even after your movie ends.

You can set your sound to loop a specified number of times by selecting Repeat and typing the number of times you want the sound to loop in the Text box.

Can I increase the height of my sound layer?

Yes. Enlarging a layer that contains a sound enables you to view the waveform image of the sound on the Timeline. To increase the layer height, right-click (Ctrl-click) the layer name and click Properties. This opens the Layer Properties dialog box. Click the Layer Height drop-down arrow and choose a percentage. Click OK to close the dialog box and apply the new height.

Assign Stop Sounds

You can stop a sound before it reaches the end by inserting a Stop sound. A Stop sound is simply an instruction that tells Flash to stop playing a specific sound. For example, if your animation ends in a particular frame but your sound goes on much longer, you can place a Stop sound in the frame in which you want the sound to stop playing.

You use the Property inspector to assign a Stop status to a sound. The Sync field includes the synchronization types Event, Start, Stop, and Stream. You can assign these synchronization types to sounds in your movies. You use Stop sounds in conjunction with other Sync types. You set the frame in which you want the sound to start in to Event, Start, or Stream, and then you set the frame in which you want the sound to end to Stop.

You can use the Stop All Sounds behavior to stop all sounds in your movie. See the section "Using the Stop All Sounds Behavior" in this chapter to learn how to use the Stop All Sounds behavior.

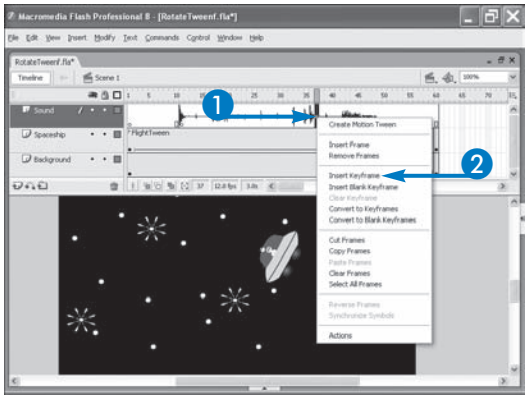
Assign Stop Sounds

1. Right-click (Ctrl-click) in the frame in which you want the sound to stop.

   A context menu appears.

2. Click Insert Keyframe.

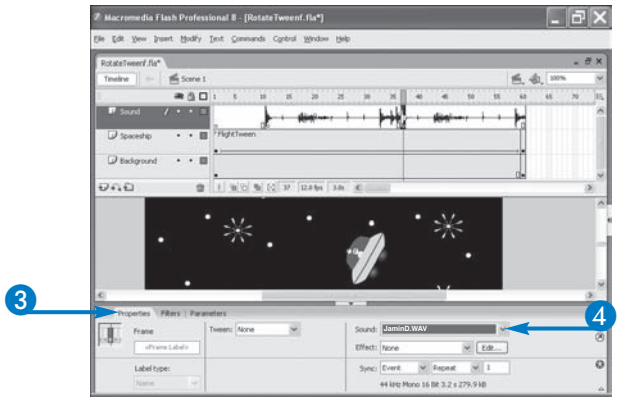
   Flash inserts a keyframe.



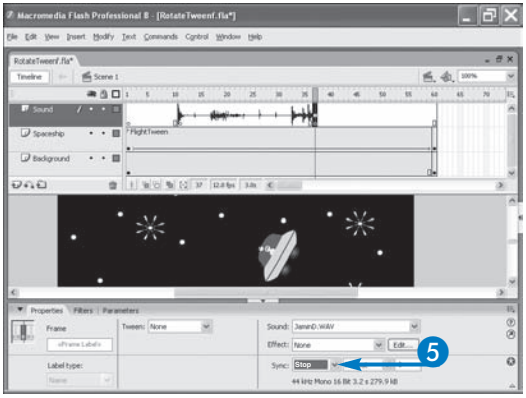
3. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

4. Click here and then select the sound you want to stop.



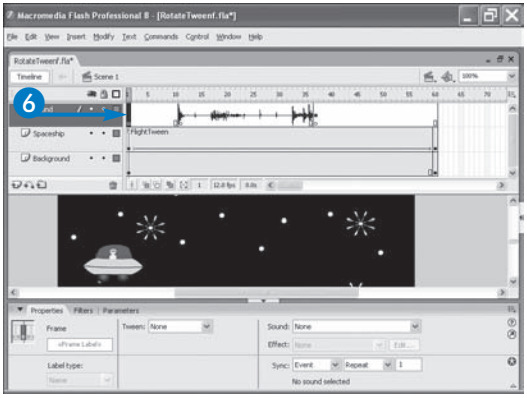
5 Click here and then select Stop.



6 Click a frame at the beginning of the movie or before the Stop sound keyframe.

7 Press Enter.

When the playhead reaches the frame with the Stop sound, the sound stops playing.



Can I coordinate the start and end of a sound with an animation?

Yes. Sounds start in the keyframe in which you place them. Creating a keyframe, selecting the sound, and then selecting Stop in the Sync field immediately stops the playback of the sound. By coordinating the animation with the frames in which the sound starts and stops, you can synchronize the sound with the animation. Remember, dragging the playhead across the Timeline lets you see precisely what is happening in each frame of the animation. You can determine when you want the sound to start and when you want the sound to stop.

Can I stop all the sounds playing in my movie?

Yes. You can stop all the sounds that are playing in your movie by using the `stopAll Sounds` action or the Stop All Sounds behavior. The Stop All Sounds behavior is explained in detail in the section "Using the Stop All Sounds Behavior" of this chapter. You can assign the Stop All Sounds behavior to a button, frame, or movie clip, which means you can have users press a button to stop all sounds or you can stop sounds when the playhead reaches a specific frame.

Assign Streaming Sounds

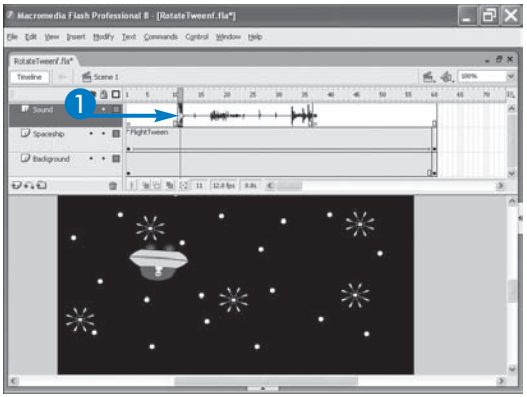
You can use *streaming* sounds to synchronize the sound with an animation. This enables users to hear the sound as soon as the movie starts because Flash breaks the sound into smaller units for easier downloading. Streaming sounds are good for long sound files, such as musical soundtracks. The sound starts streaming as the page downloads, so users do not have to wait for the entire file to finish downloading.

With streaming sounds, Flash synchronizes the frames in your movie with the sound. If your sound is a bit slow in downloading, the frames slow down as well. The synchronization forces Flash to keep your animation at the same pace as your sound. Because streaming sounds are synchronized with the animation, they are an excellent choice when you are creating talking characters. Occasionally the sound may play much faster than Flash can display the individual frames, resulting in skipped frames. When your movie ends, the streaming sound also stops.

You can use the Property inspector to turn a sound into a streaming sound. The Sync drop-down list includes the four synchronization types you can assign to sounds in your movies, including the Stream sound type.

Assign Streaming Sounds

1. Click a frame containing the sound you want to change.

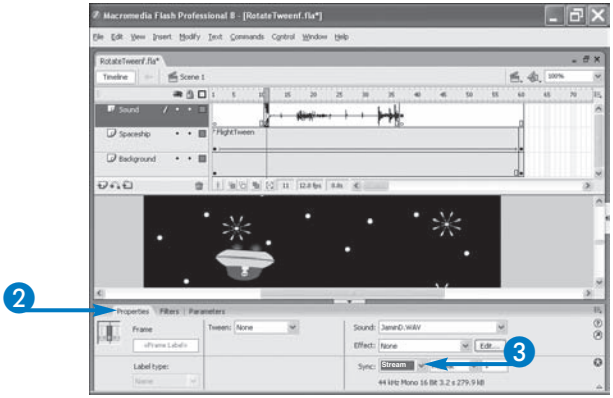


2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

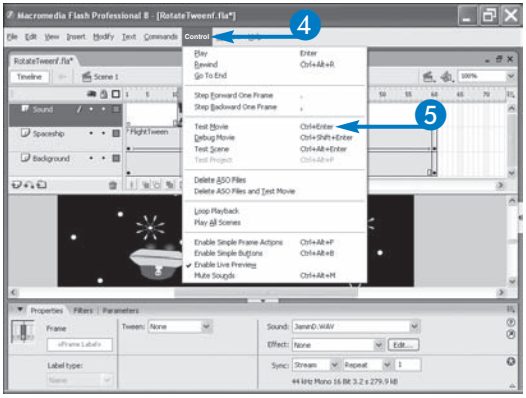
3. Click here and then select Stream.

   Flash assigns streaming status to the sound.

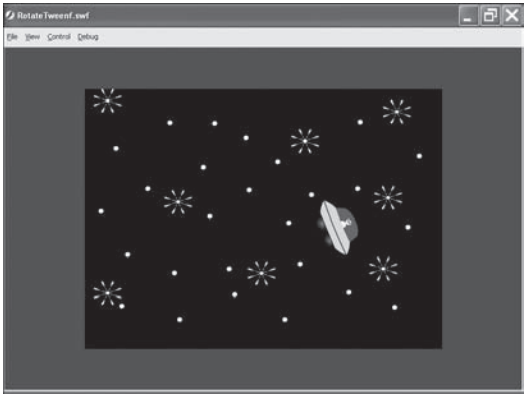


4 Click Control.

5 Click Test Movie.



When the playhead reaches the frame with the Start sound, the sound plays.



What should I do if my streaming sound cuts off too soon?

If your streaming sound cuts off too soon, you can try switching the units from seconds to frames. To change the units from seconds to frames, open the Property inspector, click in any frame that contains the sound that cuts off too soon, and then click Edit in the Property inspector. The Edit Envelope dialog box opens to reveal the sound file. Click the Frames icon in the lower left corner to set the unit scale to Frames, and then close the dialog box. Play your movie again to test it.

Does the frame rate of my movie affect my sounds?

Yes, particularly for longer-playing sounds. For example, if your movie uses the default frame rate of 12 frames per second (fps), a 30-second sound consumes 360 frames in your movie. If you change the frame rate to 18 fps, the sound uses 540 frames. The frame rate and the length of your sound both factor into how your sound plays. To change the frame rate of your movie, click the Modify menu and then click Document. This opens the Document Properties dialog box where you can change the frame rate for your movie.

Loop Sounds

You can make a sound play over and over again with the Loop command. You can choose to loop Event sounds, Start sounds, and Streaming sounds. When you loop a sound, you are using only one instance of the sound.

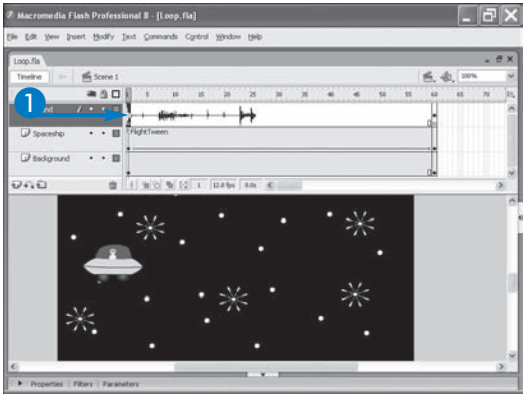
You can also repeat a sound. To set the number of times you want a sound to repeat, choose Repeat in the Property inspector. The number you type dictates how many times the sound repeats. If you type **0**, the sound plays through one time. If you type **5**, Flash loops the sound five times from start to finish. If you specify a loop setting that exceeds the length of your movie, the sound continues to play even after your movie stops. For that reason, it is important to test your loop setting to make sure it is compatible with the running time of your movie. Alternatively, you can place a Stop sound at the end of your movie.

Use caution when looping streaming sounds, because when you loop streaming sounds, Flash adds frames to a movie, thus creating a larger file size.

Loop Sounds

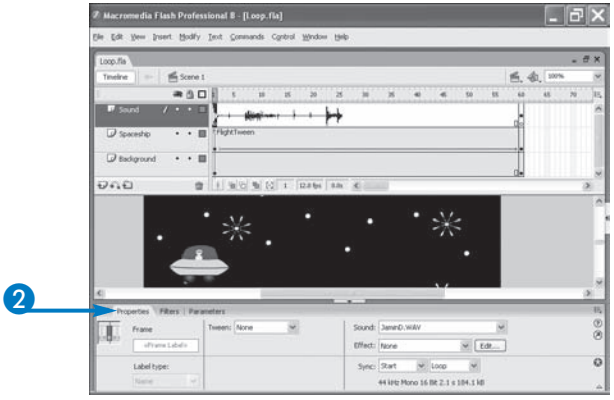
Note: *This example uses the file Loop.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click a frame containing the sound you want to loop.



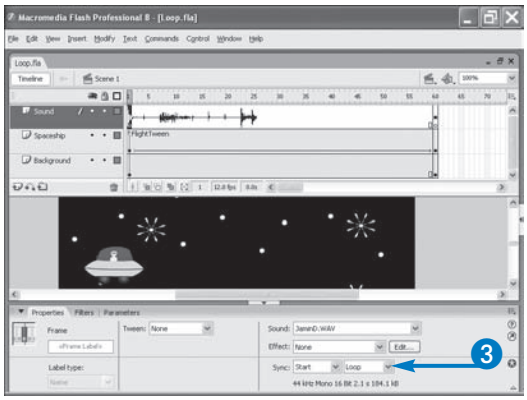
2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*



3 Click here and then select Loop.

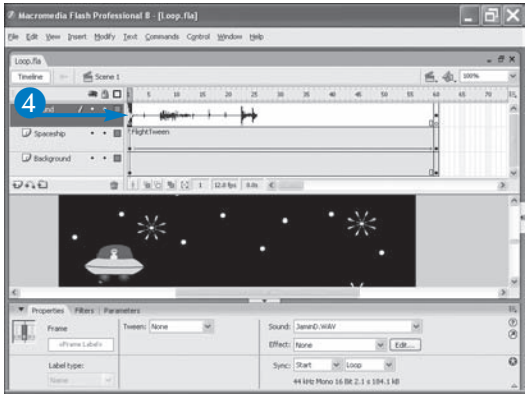
Note: *You can also select Repeat and then enter the number of times the sound should repeat.*



4 Click a frame at the beginning of the movie or the keyframe at the start of the looping sound.

5 Press Enter.

The movie plays. Flash loops the sound.



What should I do if I want the sound to loop until the movie ends?

You can use Start as the Sync method and select the Loop option. If you do not want the sound to play after the movie stops, place a Stop sound in the last frame of the sound's layer. You can also set Repeat to a high number, such as 30 or 40. Again, if you put a Stop sound in the last frame of the sound layer, Flash does not loop the sound that many times, but the sound does keep looping until the end of the movie.

How do I delete a Stop sound?

To delete a Stop sound, click in the frame that contains the Stop sound. Then, on the main menu, click Modify, Timeline, and then Clear Keyframe. Flash deletes the Stop sound. The sound then plays in its entirety or until it is stopped.

Flash does not let me add a sound to a frame. Why not?

You can add sounds only to keyframes. You cannot add sounds to regular frames. If you try to add a sound to a regular frame, Flash places the sound in the previous keyframe. Be sure you insert a keyframe before attempting to add a sound.

Add Sound Effects

You can use sound effects to improve the way sound integrates into your movie. Sound effects enable you to fade sounds in or out, make sounds move from one speaker to another, change where sounds start and end, or adjust the volume at different points in the sound. You can make your sound files smaller by defining the exact point at which a sound starts to play and ends.

You can apply pre-made sound effects to your movie. You choose the effect in the Effect field of the Property inspector. You can also customize sound effects by using the Edit Envelope dialog box. When you import a sound into Flash, the file includes information about the length, volume, and speaker settings for the sound. You can fine-tune these settings by using the Edit Envelope dialog box. The Edit Envelope dialog box displays your sound as a waveform with both left and right audio channels. You can click the waveform in either channel and drag edit points, called *envelope handles*, to adjust the volume of the sound. You can also use the Edit Envelope dialog box to adjust the length of a sound.

Add Sound Effects

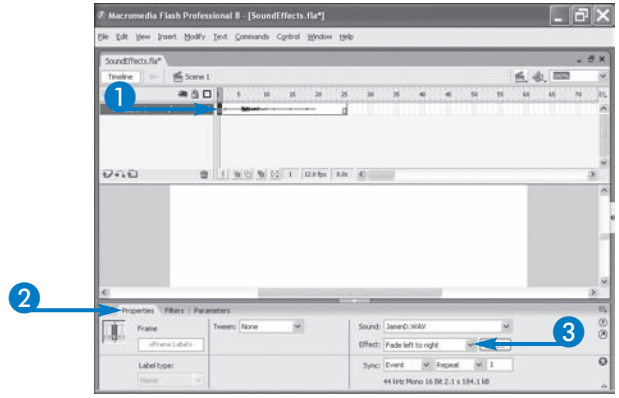
Apply pre-made sound effects

1. Click a frame containing the sound to which you want to apply a sound effect.
2. Open the Property inspector.

Note: *See Chapter 17 to learn how to open the Property inspector.*

3. Click here and then select the effect you want to apply.
4. Press Enter.

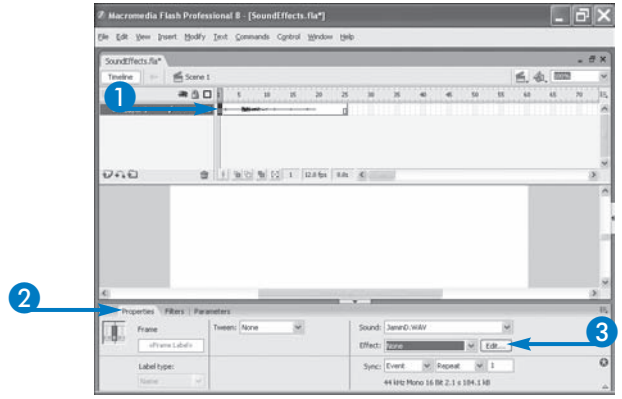
   Flash plays the sound.



Create custom sound effects

1. Click a frame containing the sound you want to edit.
2. Open the Property inspector.
3. Click Edit.

   The Edit Envelope dialog box opens.



4. Click inside an audio channel to add an envelope handle.

   Drag the envelope handle down to decrease or up to increase the volume.

   You can add up to eight handles.

5. Click ▶ to play the sound.

6. Click Stop Play (■) to stop the sound.

7. Click Time Units (🕒) to set the time units to seconds.

8. Click Frame Units (🎞) to set the time units to frames.

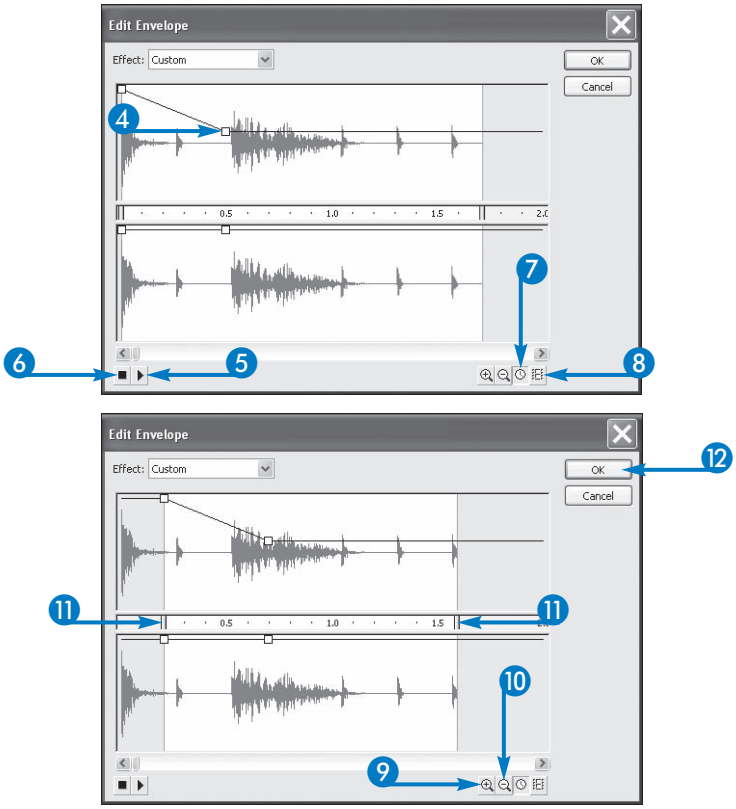
9. Click Zoom In (🔍) to zoom in.

10. Click Zoom Out (🔍) to zoom out.

11. Drag the Time In and Time Out controls to adjust the start and end points of the sound.

12. Click OK.

    Flash applies the changes you have made to the sound you selected.



What are audio channels?

Flash audio channels simulate stereo audio channels and determine the volume of a sound or which speaker a sound should play in. You can also use channels to make the sound move from one speaker to the other. The top waveform box in the Edit Envelope dialog box represents the one channel; the bottom box represents the other channel. You can use Flash audio channels to control the sounds in your movie.

Can I change the panning for a sound channel?

Yes. Panning enables you to shift sound from one speaker to another speaker. To create a custom panning effect, open the Edit Envelope dialog box and adjust the volume by dragging envelope handles in each channel in opposite directions. As you decrease the volume in the left channel, increase the volume in the right channel, or vice versa.

Can I access other sound editors while in Flash?

While testing your movie, you may want to edit a sound using another sound editor. In the Library window, click the sound you want to edit and then click the Options menu. Choose Edit With and locate the executable for the sound editor you want to open. You can edit the sound with the sound-editing program you chose. When you save the sound file, Flash updates every instance of the sound.

Set Audio Output for Export

You can control how you export sounds in your Flash files. In the Publish Settings dialog box, Flash provides you with options for optimizing your sound files for export. The options include settings for compressing your sounds in ADPCM, MP3, or RAW format.

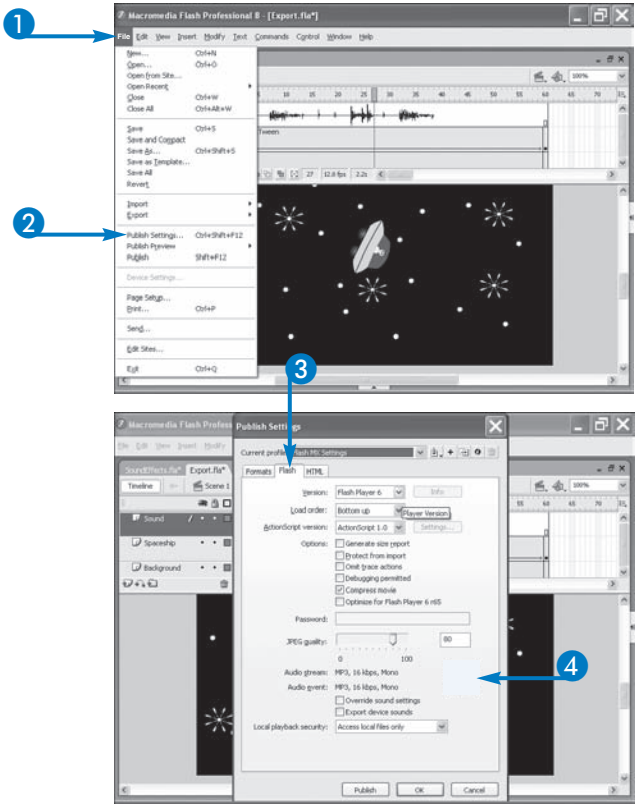
By default, Flash exports sounds in MP3 format, using a bit rate of 16 Kbps. The MP3 format efficiently compresses audio files, resulting in high bit rates, better quality, and small file sizes.

The ADPCM compression format enables you to convert stereo to mono, which cuts down on the movie file size. By using the RAW format, you can export your movie sounds without using any sound compression, which is fine if you export your movie to a CD.

The Publish Settings dialog box has options for controlling both Event and Streaming sounds. You can specify exactly how you want to compress the sounds in your movie for export. You can also change the settings for bit rate and quality. If you do not reset any sound options in the Publish Settings dialog box, Flash exports the file using the default settings.

Set Audio Output for Export

1. Click File.
2. Click Publish Settings.



The Publish Settings dialog box opens.

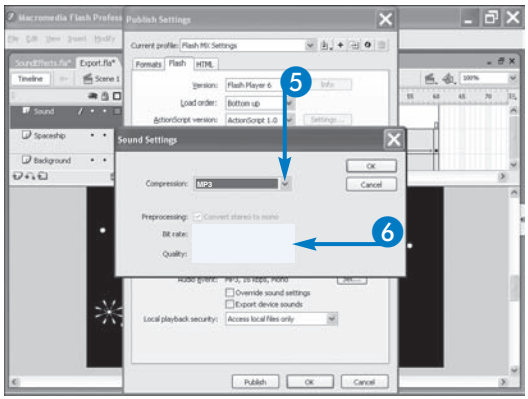
3. Click the Flash tab.
4. Click the Set button corresponding to the audio type you want to control.

Note: *You can control the export quality of both Streaming and Event sounds.*

The Sound Settings dialog box opens.

5 Click here and then select a compression format.

6 Click ▼ and select the parameters for the option you selected.

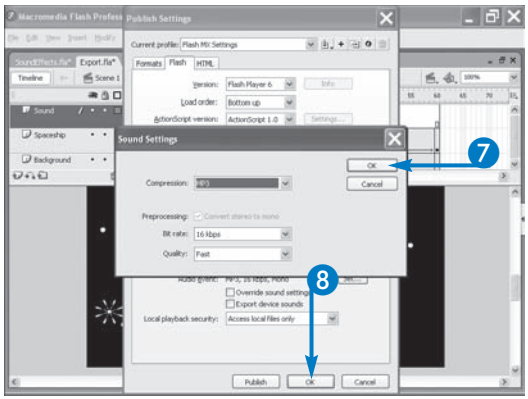


The options in the Sound Settings dialog box reflect settings associated with your selection.

7 Click OK to close the Sound Settings dialog box.

8 Click OK.

The Publish Settings dialog box closes and Flash saves your settings.



What can I do to minimize the file size of my movie?

You can do several things, particularly with the sound portions of your file. If you loop Event sounds, use short sounds. Avoid making streaming sounds loop. You can also get more out of the same sounds in a movie if you apply some editing techniques, such as fading sound in or out at different keyframes.

Why should I change the compression of my sound files?

Sounds can significantly increase the size of your Flash movie. Compression options allow you to reduce the size of your sound files. However, reducing the sampling rate and compressing files also reduces the quality of sound. The smaller the sound file, the lower the quality of the sound. You have to find the optimal balance between sound quality and file size.

Can I set the compression rate for individual sounds?

You can set a compression rate for Event sounds and Flash will export those sounds with the rate you set. You can also set compression rates for streaming sounds, but all streaming files are exported as a single file that uses the highest rate applied. Use the Sound Properties dialog box to set individual compression rates. To open the Sound Properties dialog box, double-click the sound's icon in the Library.

Understanding Sound Behaviors

You can use ActionScript to add interactivity to Flash documents. Behaviors are prewritten ActionScripts you can use to make your document interactive even if you do not know ActionScript. Flash has the following sound behaviors: Load Sound from Library, Play Sound, Stop Sound, Stop All Sounds, and Load streaming MP3 File. This chapter explains each of these behaviors in detail.

Before you can use the Load Sound from Library behavior or the Stop Sound behavior, you must set the sound to Export for ActionScript, Export in First Frame, and assign a linkage identifier string. You use the Linkage Properties dialog box to set the sound to Export for ActionScript, Export in First Frame, and assign a linkage identifier string.

If I am using ActionScript, do I have to set the linkage properties?

You can use the Sound Object to manipulate sounds when using ActionScript. You can use ActionScript to start sounds, stop sounds, and control the volume and panning. However, before you can work with individual sounds when using ActionScript, you must set the sound to Export for ActionScript, Export in First Frame, and then assign an identifier string by using the Linkage Properties dialog box.

Understanding Sound Behaviors

Note: *This example uses the file SoundBehavior.fla, which you can find on the CD-ROM that accompanies this book.*

Set linkage properties

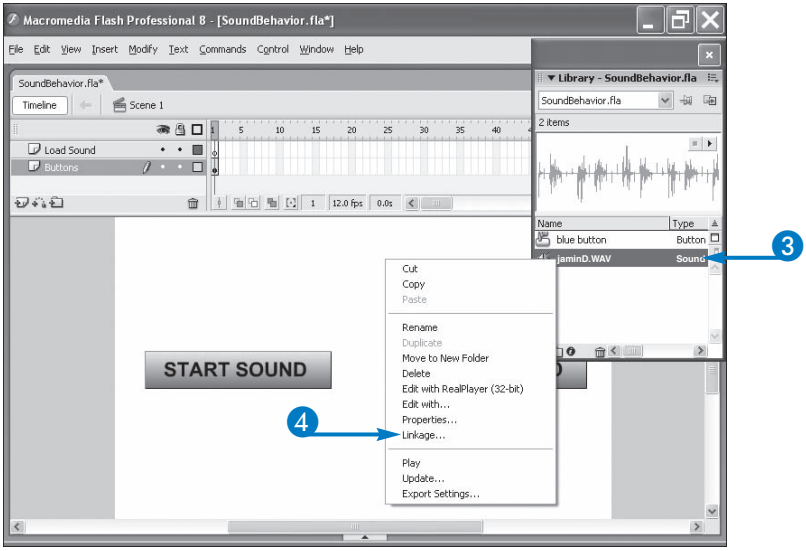
1. Click Window.
2. Click Library.

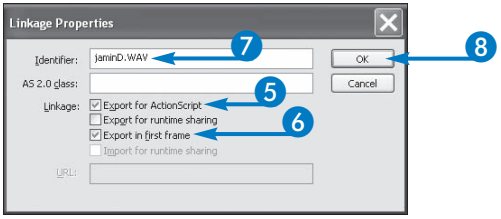
   The Library panel opens.
3. Right-click (Ctrl-click) the sound for which you want to set the linkage properties.

   A context menu appears.
4. Click Linkage.

   The Linkage Properties dialog box opens.
5. Click Export for ActionScript (☐ changes to ☑).
6. Click Export in first frame (☐ changes to ☑).
7. Type an identifier.
8. Click OK.

   Flash sets the linkage properties for the sound.





Using the Load Sound from Library Behavior

You must load a sound before you can start it with the Play Sound behavior. Flash has two behaviors you can use to load sounds: Load Sound from Library and Load streaming MP3 File. See the section "Using the Load Streaming MP3 File Behavior" to learn more about loading streaming MP3 files. Before you can load a sound with the Load Sound from Library behavior, you must set the file to Export for ActionScript, Export in First Frame, and then assign a linkage identifier string. You use the Linkage Properties dialog box to set these properties. To learn how to use the Linkage Properties dialog box, see the section "Understanding Sound Behaviors" in this chapter.

You open the Behaviours Panel and use the Load Sound from Library dialog box to set the parameters for the Load Sound from Library behavior. In the Load Sound from Library dialog box, you enter a linkage identifier and an instance name. You will use the instance name to refer to the sound when you use the Play Sound and Stop Sound behaviors. The Load Sound from Library behavior also has an option that lets you determine whether the sound should begin playing when loaded. This example uses the file LoadLibrary.fla, which you can find on the CD-ROM that accompanies this book.

Using the Load Sound from Library Behavior

1. Set the linkage properties for the sound you want to load.

Note: *See the section "Understanding Sound Behaviors" to set the linkage properties.*

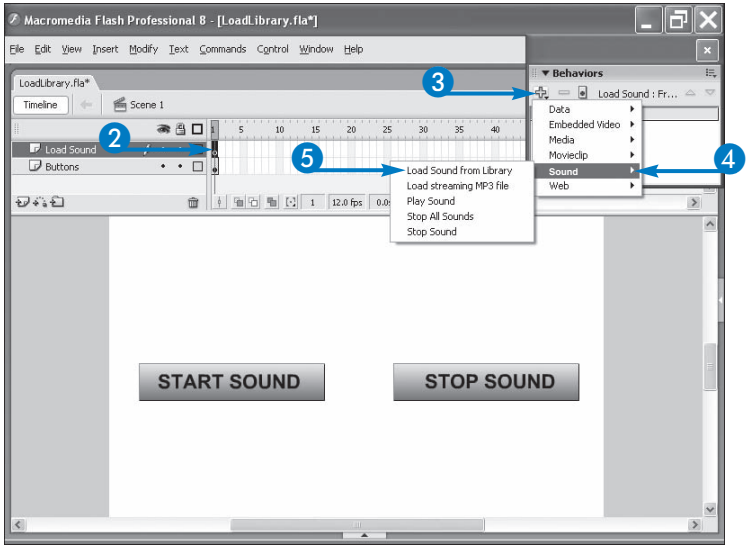
2. Click the frame with which you want to associate the behavior.

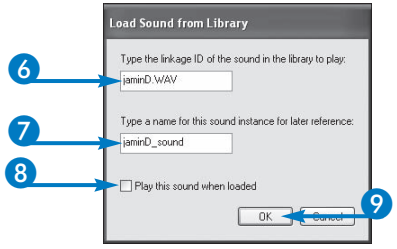
Note: *You can also associate the behavior with a movie clip or button.*

3. Click the Add Behaviors icon ( ).
4. Click Sound.
5. Click Load Sound from Library.

   The Load Sound from Library dialog box opens.
6. Type the linkage ID.
7. Type the instance name.
8. Deselect Play this sound when loaded if you do not want the sound to play when loaded (changes to).
9. Click OK.

   Flash associates the Load Sound from Library behavior with the object you selected.





Using the Play Sound Behavior

You can use the Play Sound behavior to play sounds you load with the Load Sound from Library or Load streaming MP3 File behavior. To play a sound, you open the Behaviors panel, enter the instance name of the sound you want to play in the Play Sound dialog box, and then select an event that will trigger the sound, such as pressing the mouse while the mouse pointer is over a button.

You can associate the Play Sound behavior with a frame, movie clip, or button. When associated with a frame, the sound begins to play when the playhead enters the frame.

When associated with a button or movie clip, you determine the event that triggers the sound, such as pressing or releasing the mouse while over the button or movie clip.

You cannot use the Play Sound behavior to play a sound you have placed in your movie by dragging it from the Library or by using the Property inspector.

This example uses the file PlaySound.fla, which you can find on the CD-ROM that accompanies this book.

Using the Play Sound Behavior

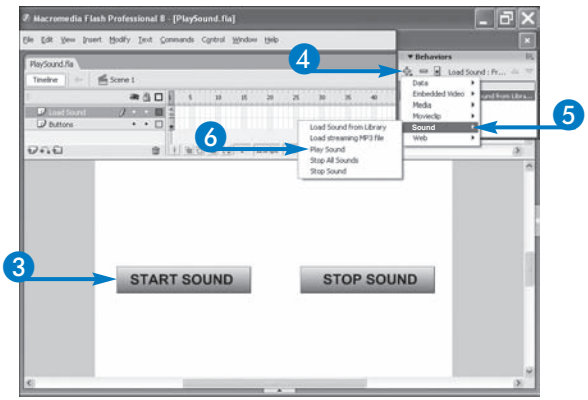
1. Set the linkage properties for the sound you want to play.

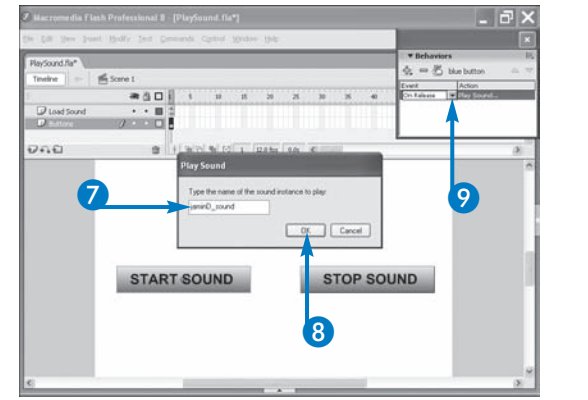
Note: *See the section "Understanding Sound Behaviors" to set the linkage properties.*

2. Load the sound by using the Load Sound from Library behavior or the Load streaming MP3 File behavior.
3. Select the button to which you want to associate the behavior.
4. Click .
5. Click Sound.
6. Click Play Sound.

   The Play Sound dialog box opens.
7. Type the instance name.
8. Click OK.
9. Click here and then select the event that will trigger the Play Sound behavior.

   Flash associates the Play Sound behavior with the object you selected.





Using the Stop Sound Behavior

You can use the Stop Sound behavior to stop sounds you load by using the Load Sound from Library behavior. Before you can stop a sound, three things have to occur: the linkage properties for the sound have to be set, the sound must be loaded, and the sound must be playing. See the section "Understanding Sound Behaviors" in this chapter to learn how to set the linkage properties; see the section "Using the Load Sound from Library Behavior" in this chapter to learn how to load a sound; and see the section "Using the Play Sound Behavior" to learn how to play a sound.

By associating the Stop Sound behavior with a frame, button, or movie clip, you can stop a sound that is playing. If you associate the Stop Sound behavior with a frame, the sound stops playing when the playhead reaches that frame. If you associate the Stop Sound behavior with a button or movie clip, the sound stops playing on the event you specify, such as releasing the mouse. You cannot use the Stop Sound behavior to stop a sound loaded using the Load streaming MP3 File behavior.

This example uses the file StopSound.fla, which you can find on the CD-ROM that accompanies this book.

Using the Stop Sound Behavior

1. Set the linkage properties for the sound you want to stop.

Note: *See the section "Understanding Sound Behaviors" to learn how to set the linkage properties.*

2. Load the sound by using the Load Sound from Library behavior.

Note: *See the section "Using the Load Sound from Library Behavior."*

3. Play the sound by using the Play Sound behavior.
4. Select the button with which you want to associate the Stop Sound behavior.

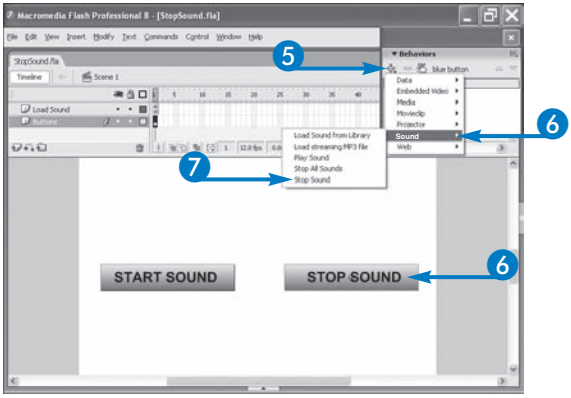
Note: *You can also associate the behavior with a movie clip or frame.*

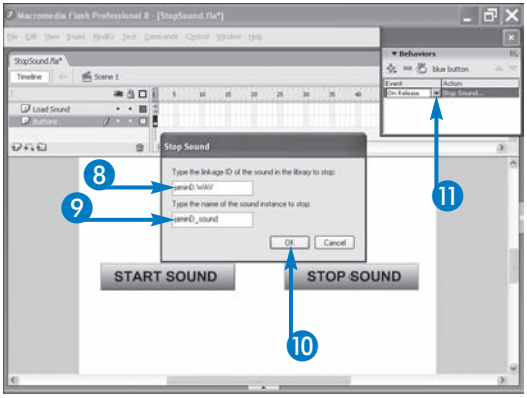
5. Click .
6. Click Sound.
7. Click Stop Sound.

   The Stop Sound dialog box opens.

8. Type the linkage ID.
9. Type the instance name.
10. Click OK.
11. Click here and then select the event that will trigger the stopping of the sound.

    Flash associates the Stop Sound behavior with the object you selected.





Using the Stop All Sounds Behavior

The Stop All Sounds behavior stops all sounds that are currently playing in the movie. It stops sounds you start by using the Property inspector, by dragging from the Library, by using a behavior, or by using ActionScript. Although the Stop All Sounds behavior stops all the sounds that are playing in the movie, it does not stop the playhead, so your movie continues to play. After all sounds stop, if the playhead moves over a frame with a sound or the user presses a button that starts a sound, the sound resumes.

You can associate the Stop All Sounds behavior with a frame, movie clip, or button. When Stop All Sounds is associated with a frame, all sounds stop when the playhead reaches that frame. When associated with a button or movie clip, all sounds stop when the event you specify occurs, such as when the user releases the mouse while the mouse pointer is over a button.

You do not have to enter any parameters into the Stop All Sounds dialog box. You just click OK and Flash applies the Stop All Sounds behavior.

Using the Stop All Sounds Behavior

1. Click Window.
2. Click Behaviors.

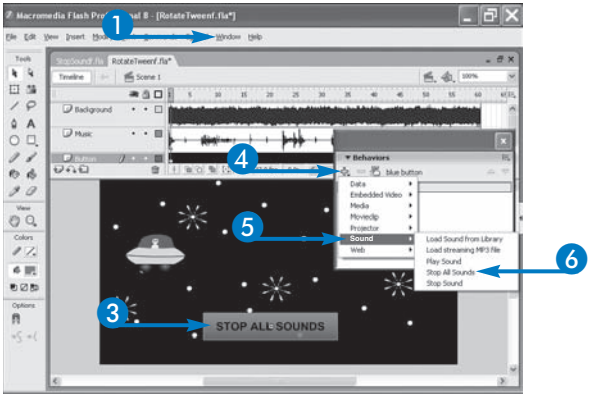
   The Behaviors panel opens.
3. Select the button with which you want to associate the behavior.

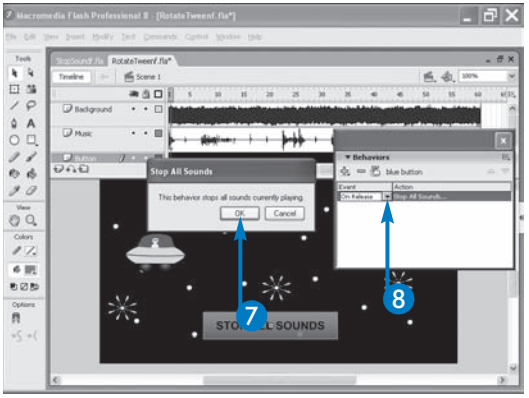
Note: *You can also associate the behavior with a movie clip or frame.*

4. Click .
5. Click Sound.
6. Click Stop All Sounds.

   The Stop All Sounds dialog box opens.
7. Click OK.
8. Click here and then select the event that will trigger the Stop All Sounds behavior.

   Flash associates the Stop All Sounds behavior with the object you selected. If you associate the behavior with a frame, you do not select an event.





Using the Load Streaming MP3 File Behavior

The Load streaming MP3 File behavior enables you to load an external MP3 file. Because the MP3 file you load is not in the Library, you do not have to set linkage properties. To learn how to load a sound from the Library, see the section "Using the Load Sound from Library Behavior" in this chapter.

Using an external MP3 keeps the size of your SWF file down, which means the SWF file downloads faster. You can load the MP3 file when you need it. However, unlike the Load Sound from Library behavior, the Load streaming MP3 File behavior does not have an option that allows you to specify whether the sound should play when loaded. When you load a sound by using the Load streaming MP3 File behavior into a frame, the file begins playing when the playhead enters the frame.

You set two parameters in the Load streaming MP3 File dialog box: the location of the file and the name you want to give the instance the behavior creates. You use the instance name to refer to the sound. You can also set the event that triggers the action.

Using the Load Streaming MP3 File Behavior

1. Click Window.
2. Click Behaviors.

   The Behaviors panel opens.
3. Select the button with which you want to associate the behavior.

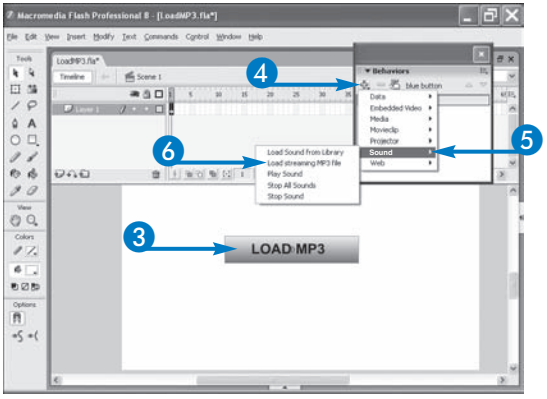
Note: *You can also associate the behavior with a movie clip or frame.*

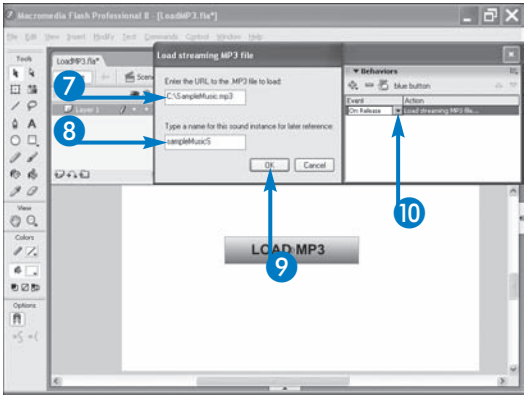
4. Click .
5. Click Sound.
6. Click Load streaming MP3 file.

   The Load streaming MP3 file dialog box opens.
7. Type the file location.

   If you are creating a Web page, type the URL.
8. Type the instance name.
9. Click OK.
10. Click here and then select the event that will trigger the Load Streaming MP3 file behavior.

    Flash associates the Load Streaming MP3 file behavior with the object you selected. If you associate the behavior with a frame, you do not select an event.





Using Progressive Download to Play a Video

You can use Flash's progressive download feature to play video clips that are external to Flash. When you publish your Flash document, you publish it as a SWF file. The progressive download feature enables you to play relatively large videos without increasing the size of your SWF file.

You use the Import Video wizard to prepare a progressive downloading video. Unlike embedded videos, progressive downloading videos begin playing as soon as the first segment downloads, you do not have to worry about synchronizing the audio with the video, and the frame rate of the video does not have to be the same as the frame rate of the document.

When you use the Import Video wizard to prepare a file for progressive download, Flash converts the video to a Flash Video file and gives it an .flv extension. You must manually upload the Flash Video file to your Web server.

The Flash wizard also enables you to select a skin for your video. You use the skin to move the video forward and backward, adjust the volume of the video, and play, pause, and stop the video. You test your video by clicking Control, Test Movie on the main menu.

Using Progressive Download to Play a Video

Note: *You can import Explore.mov, which is on the CD-ROM that accompanies this book.*

1. Click File.
2. Click Import.
3. Click Import Video.

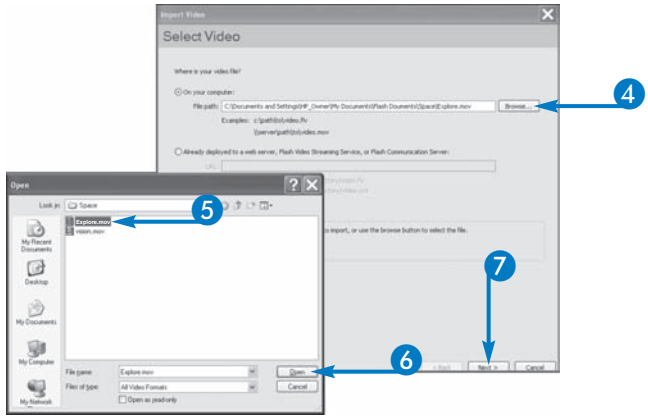
   The Import Video wizard opens to the Select Video screen.
4. Click Browse.

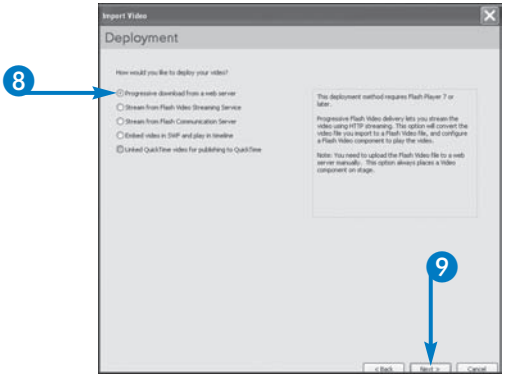
   The Open dialog box appears.
5. Click the file you want to import.
6. Click Open.
7. Click Next.

Note: *If your video is on a Web server, choose the Already Deployed to a Web Server, Flash Video Streaming Service, or Flash Communication Server option and enter the URL.*

The Deployment screen appears.

8. Click the Progressive download from a web server option (○ changes to ◉).
9. Click Next.





The Encoding screen appears.

10. Click here and then select a quality level.
11. Click Next.

The Skinning screen appears.

12. Click here and then select a skin.
13. Click Next.

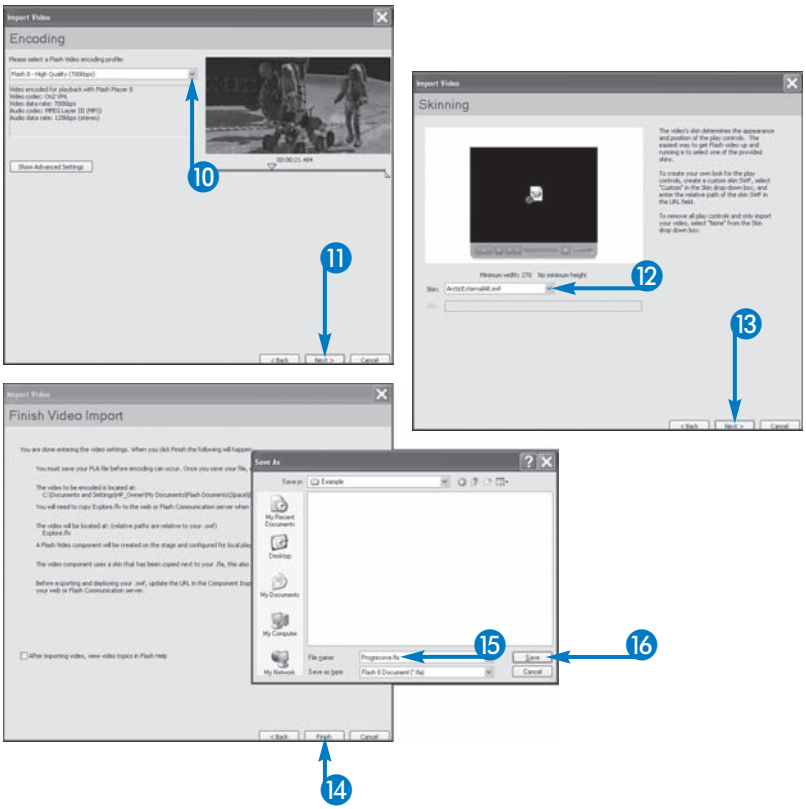
The Finish Video Import screen appears.

14. Click Finish.

The Save As dialog box appears.

15. Type a filename.
16. Click Save.

Flash encodes your video.



Are there other methods I can use to create a video that is external to my Flash file?

Yes. You can use a Flash Communication Server to host your video files. Videos delivered via a Flash Communication Server are external to your SWF file. When using a Flash Communication Server, you can use bandwidth detection to determine the user's available bandwidth and deliver content based on the available bandwidth.

Can I play a QuickTime video as an external file?

Yes. You can play a QuickTime video as an external file by setting your publish settings to Flash Player 5 or earlier, importing your QuickTime video by clicking File, Import, Import to Stage or Import to Library; and then publishing your movie. Flash creates a pointer to your movie. See Chapter 30 to learn more about publishing your movie and setting the Flash Player version.

What does the Encoding screen enable me to do?

When you import a video by using the Progressive Download from Web Server option of the Import Video wizard, the Encoding screen provides you with several options. You can set the quality of the video — the higher the quality, the larger the video file. You can drag the playhead to view the video. And if you click the Show Advanced Settings option, you can set the encoding options for the audio and the video.

Embed Video in Your Flash File

You can embed a video in your Flash movie. This gives you the ability to make the individual frames in your video an integrated part of your Flash movie. Embedded videos have Timelines, and Flash stores the videos in the Library. Embedded videos work best with files that last ten seconds or less and do not contain sound.

Embedded video files can increase the size of your Flash movie dramatically, making the download of the SWF file over the Web very slow. You may experience problems synchronizing the audio with the video if your video file is longer than ten seconds.

When you import your video using the embedded video option, you can choose to import it as an embedded video, a movie clip, or a graphic. You can also choose to place an instance on the Stage, increase the number of frames if necessary, separate the sound from the video, and set the video quality. The frame rate for the video and the frame rate for the Flash document must be the same. If the frame rates differ, the playback of the video may not be smooth. Before the embedded video can play, the entire video must download.

Embed Video in Your Flash File

Note: *You can import SpaceStation.avi, which is on the CD-ROM that accompanies this book.*

1. Click File.
2. Click Import.
3. Click Import Video.

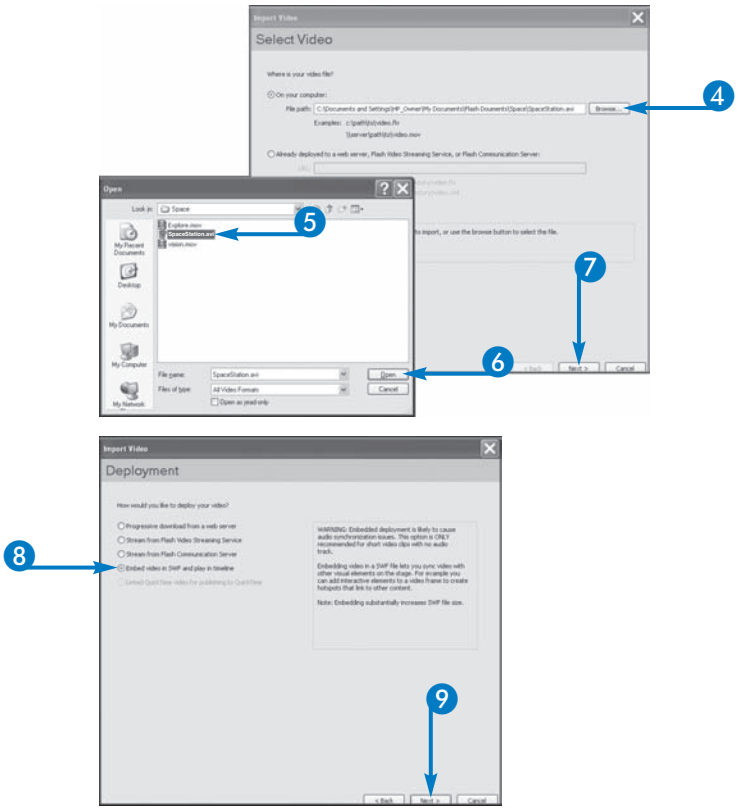
   The Import Video wizard appears.
4. Click Browse.

   The Open dialog box appears.
5. Click the file you want to import.
6. Click Open.
7. Click Next.

Note: *If your video is on a Web server, choose the Already Deployed to a Web Server, Flash Video Streaming Service, or Flash Communication Server option and enter the URL.*

   The Deployment screen appears.

8. Click Embed video in SWF and play in timeline (◯ changes to ◉).
9. Click Next.



The Embedding screen appears.

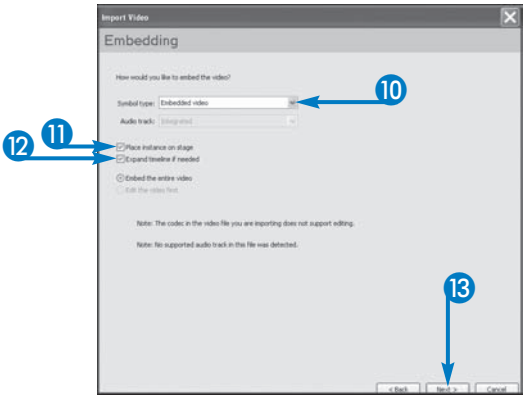
10 Click here and then select Embedded video.

Note: *Select Movie Clip if you want to import the video as a movie clip; select Graphic if you want to import the video as a graphic.*

11 Click here to place an instance on the Stage (☐ changes to ☑).

12 Click here to expand the Timeline (☐ changes to ☑).

13 Click Next.



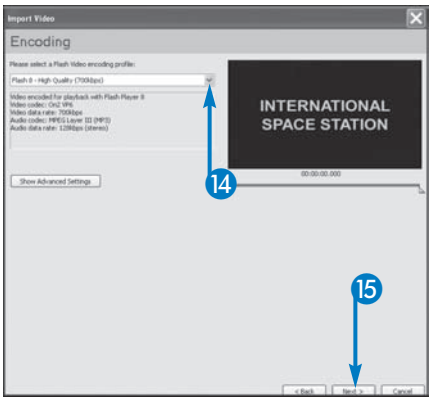
The Encoding screen appears.

14 Click here and then select a quality level.

15 Click Next.

16 Click Finish.

Flash imports the video and embeds it in your document.



What is the difference between importing an embedded video as an embedded video, as a movie clip, or as a graphic?

If you import your video as an embedded video, each frame of the embedded video occupies a frame on the main Timeline. If you import your video as a movie clip, the video has its own Timeline that is independent of the main Timeline. If you import your video as a graphic, the video is a static image and you cannot use ActionScript or behaviors to interact with the video. When you import an embedded video, choose Increase Number of Frames to ensure that Flash has enough frames to place the entire video in the movie.

What types of video files can I import into my Flash movie?

If you have QuickTime 7 for Apple Macintosh or QuickTime 6.5 for Windows, you can import QuickTime videos (MOV), Audio Video Interleaved (AVI) videos, and Picture Expert Group (MPG, MPEG) videos. If you have DirectX 9 for Windows, you can import Windows Media (WMV, ASF), AVI, and MPEG files.

How do I make sure my video frame rate is the same as my document frame rate?

Flash sets the document frame rate to the video frame rate by default. To check the frame rate setting, on the Encoding screen, click the Show Advanced Setting buttons. The frame rate should be set to Same As Source.

Using the Embedded Video Stop Behavior

When the playhead reaches a document frame that contains an embedded video, the video begins to play and continues to play until it ends or until you explicitly issue a command for it to stop. You can use the Embedded Video Stop behavior to issue a stop command. You can stop the video in the first frame and have the user press a button to begin the video, or you can have the user stop the video at any point while it is playing.

Before you can stop an embedded video with the Stop behavior, you must give the video instance an instance name. You use the Property inspector to assign an instance name to an embedded video. Then, using the Behavior panel, you can target the video.

If you want to stop the video in the first frame, you assign the Stop behavior to the actions layer in the frame in which the video begins. If you want the user to be able to stop the video while it is playing, you assign the Stop behavior to a button or movie clip. To test your behavior, click Control, Test Movie on the main menu.

Using the Embedded Video Stop Behavior

Note: *This example uses the file Stop.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Click the frame in which you want to insert the behavior.

Note: *You can also assign the Stop behavior to a button or movie clip.*

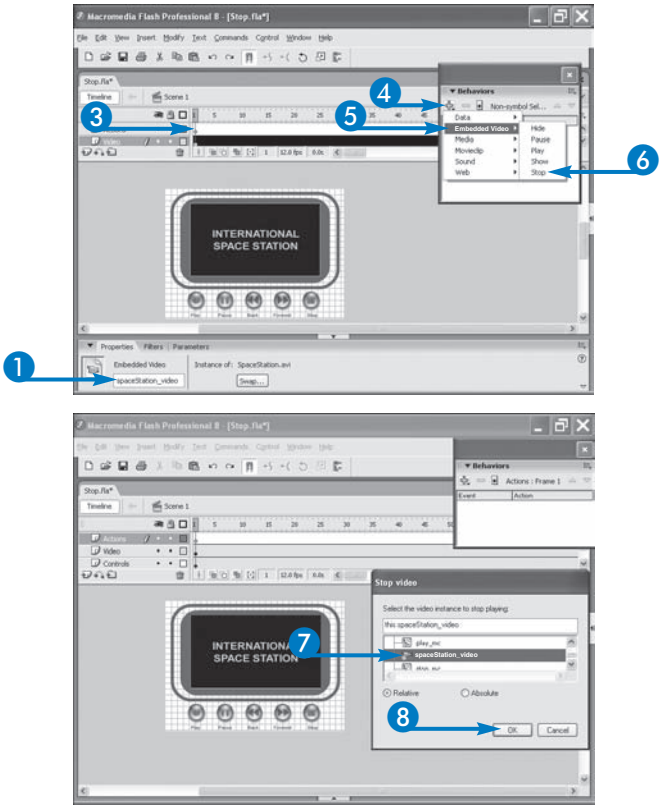
4. Click the Add Behavior icon ( ).
5. Click Embedded Video.
6. Click Stop.

   The Stop video dialog box appears.

7. Click the name of the video you want to target.
8. Click OK.

   Flash adds the behavior to the frame, button, or movie clip you selected.

Note: *If you assigned the behavior to a button or movie clip, Flash assigned the On Release event by default. You can change the event.*



Using the Embedded Video Hide Behavior

After you place a video in a document, you might want to hide the video from the users until they press a button to view the video, or until some other event occurs. For example, you may want to place text on the screen to explain or introduce the video. Then, after users have read the text, they can press a button to view the video.

You can use the Embedded Video Hide behavior to hide an embedded video. However, before you can hide a video by using the Hide behavior, you must give the video an instance name. You use the Property inspector to name an instance. You use the Behavior panel to assign the Hide behavior. Assigning the Hide behavior to a frame hides the video when the playhead enters the frame. Assigning the Hide behavior to a button or a movie clip hides the video until the user interacts with the button or movie clip.

Using the Embedded Video Hide Behavior

Note: *This example uses the file Hide.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Click the frame in which you want to insert the behavior.

Note: *You can also assign the Hide behavior to a button or movie clip.*

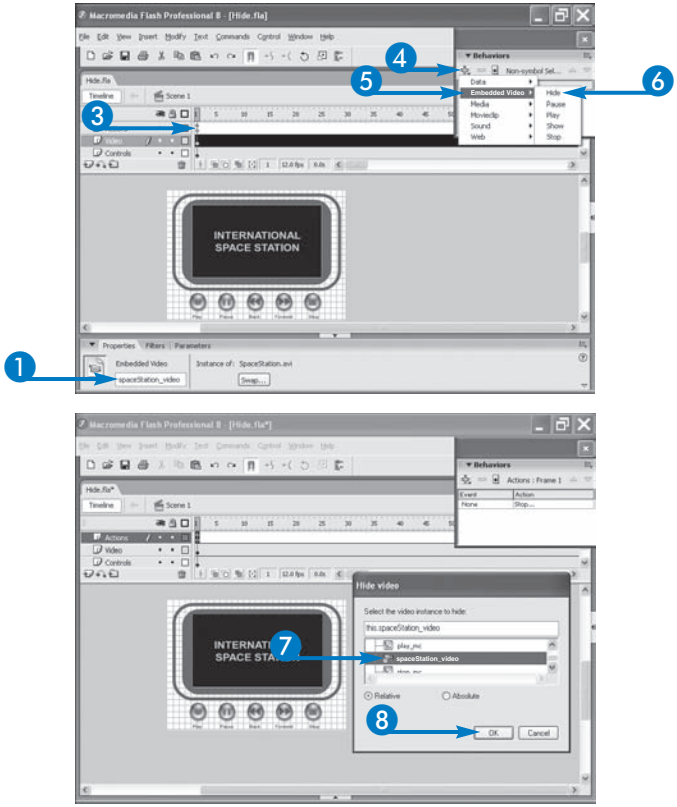
4. Click .
5. Click Embedded Video.
6. Click Hide.

   The Hide video dialog box appears.

7. Click the name of the video you want to target.
8. Click OK.

   Flash adds the behavior to the frame, button, or movie clip you selected.

Note: *If you assigned the behavior to a button or movie clip, Flash assigned the On Release event by default. You can change the event.*



Using the Embedded Video Show Behavior

If you hide a video, the video remains hidden until you issue a command to show the video. You can use the Embedded Video Show behavior to show a video you have hidden. You can assign the Embedded Video Show behavior to a button, frame, or movie clip.

As with other behaviors, if you assign the Embedded Video Show behavior to a frame, the video displays when the playhead enters the frame. If you assign the Embedded Video Show behavior to a button or movie clip, the targeted video displays when users interact with the button or movie clip. Before you can show a video by using the Embedded Video Show behavior, you must give the video an instance name. You use the Property inspector to name an instance.

Showing a video does not cause the video to play. Showing a video displays the frame in which the playhead is located. If you want the video to play, you must use the Embedded Video Play behavior. To learn more about the Embedded Video Play behavior, see the section "Using the Embedded Video Play Behavior."

Using the Embedded Video Show Behavior

Note: *This example uses the file Show.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Select the movie clip to which you want to assign the Show behavior.

Note: *You can also assign the Show behavior to a frame or button.*

4. Click .
5. Click Embedded Video.
6. Click Show.

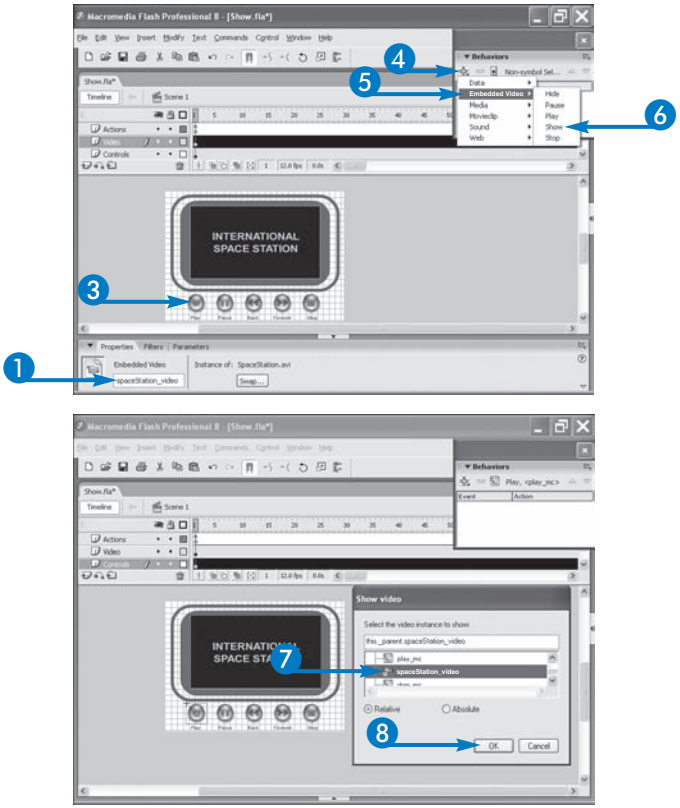
   The Show video dialog box appears.

7. Click the name of the video you want to target.
8. Click OK.

   Flash adds the behavior to the movie clip you selected and assigns the On Release event. You can change the event.

   When users click the movie clip, the video displays.

Note: *If you assigned the Show behavior to a frame, the video displays when the playhead enters the frame. If you assigned the Show behavior to a movie clip or button, the video displays when the user interacts with the movie clip or button.*



Using the Embedded Video Play Behavior

If you stop or pause an embedded video, it remains stopped or paused unless you issue a play command. You can use the Embedded Video Play behavior to issue a play command.

If you stop a video by using the Embedded Video Stop behavior, the Embedded Video Play behavior begins playing the video in the first frame of the video. If you pause the embedded video using the Embedded Video Pause behavior, the Embedded Video Play behavior begins playing the video in the frame in which the video was paused. To learn more about using the Embedded Video Stop behavior, see the section "Using the Embedded Video Stop Behavior" earlier in this chapter. To learn more about using the Embedded Video Pause behavior, see the section "Using the Embedded Video Pause Behavior" later in this chapter. Before you can use the Embedded Video Play behavior to play a video, you must give the video an instance name. You use the Property inspector to name an instance. The Embedded Video Play behavior can be associated with a button, movie clip, or frame.

Using the Embedded Video Play Behavior

Note: *This example uses the file Play.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Select the movie clip to which you want to assign the Play behavior.

Note: *You can also assign the Play behavior to a frame or button.*

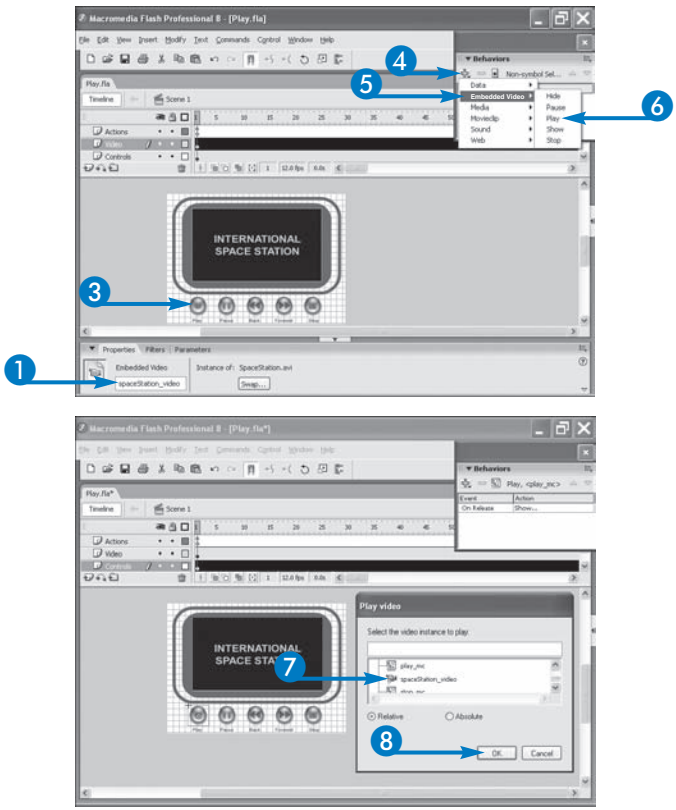
4. Click .
5. Click Embedded Video.
6. Click Play.

   The Play video dialog box appears.

7. Click the name of the video you want to target.
8. Click OK.

   Flash adds the behavior to the movie clip you selected and assigns the On Release event. You can change the event.

   When users click the movie clip, the video plays.



Using the Embedded Video Pause Behavior

When a video begins to play, it continues to play until you stop or pause it. You can use the Embedded Video Pause behavior to cause a video to pause. The person viewing your video may want to pause the video to focus in on a frame, or may want to pause the video and resume viewing it later at the same point.

The Pause behavior stops the video in the current frame and the video does not continue until you issue a command for it to resume playing. You can use the Embedded Video Play behavior to command the video to play. If you pause a video and then issue a command for it to resume playing, it resumes playing at the point at which it was paused. However, if you stop a video and then issue a command for it to resume playing, the video returns to the first frame of the video and resumes playing from there.

Before you can use the Embedded Video Pause behavior, you must give the video an instance name. You use the Property inspector to name an instance.

Using the Embedded Video Pause Behavior

Note: *This example uses the file Pause.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Select the movie clip to which you want to assign the Pause behavior.

Note: *You can also assign the Pause behavior to a frame or button.*

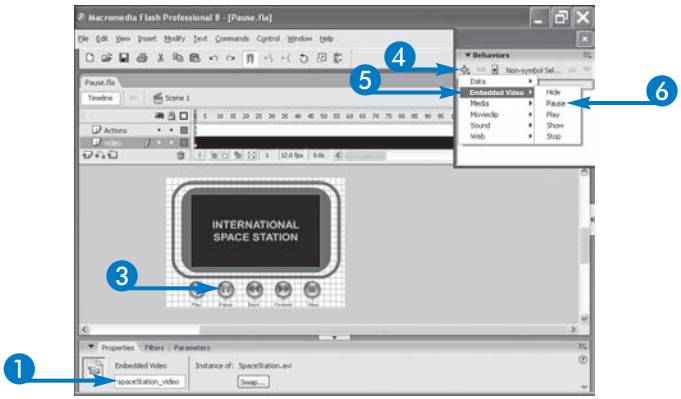
4. Click .
5. Click Embedded Video.
6. Click Pause.

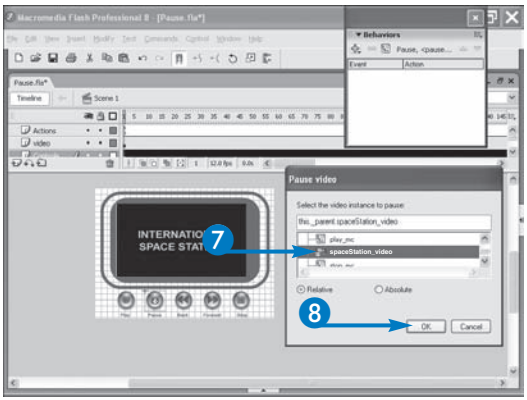
   The Pause video dialog box appears.

7. Click the name of the video you want to target.
8. Click OK.

   Flash adds the behavior to the movie clip you selected and assigns the On Release event. You can change the event.

   When users click the button, the movie clip pauses.





Using the Embedded Video Fast Forward and Rewind Behaviors

You can use the Embedded Video Fast Forward behavior to give users the ability to move a video forward a specified number of frames. You can use the Embedded Video Rewind behavior to give users the ability to move a video back a specified number of frames. The Embedded Video Fast Forward and Rewind behaviors can only be associated with movie clips. You cannot assign the Embedded Video Fast Forward or Rewind behaviors to a button or frame.

The dialog boxes used to create these two behaviors are exactly the same. You select the video you want to target, you choose either a Relative or an Absolute path, and then you enter the number of frames the video should advance forward or step back. When users interact with the movie clip to which you assigned the Embedded Video Rewind or Fast Forward behavior, the movie moves forward or backward the number of frames you specified.

Before you can target an Embedded Video with the Embedded Video Fast Forward or Rewind behaviors, you must give the video instance a name. You use the Property inspector to name a video instance.

Using the Embedded Video Fast Forward and Rewind Behaviors

Note: *This example uses the file FastRewind.fla, which you can find on the CD-ROM that accompanies this book.*

1. Give your video an instance name.

Note: *See Chapter 27 to learn how to name an instance.*

2. Open the Behavior panel.

Note: *See Chapter 26 to learn how to open the Behavior panel.*

3. Select the movie clip to which you want to assign the Rewind or Fast Forward behavior.
4. Click .
5. Click Embedded Video.
6. Click Fast Forward or Rewind.

   The Fast Forward or Rewind dialog box appears.

Note: *This example uses Rewind.*

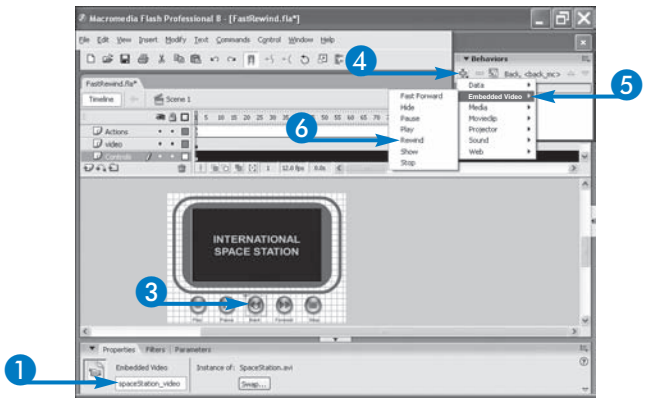
7. Click the name of the video you want to target.
8. Type the number of frames you want the video to step back.

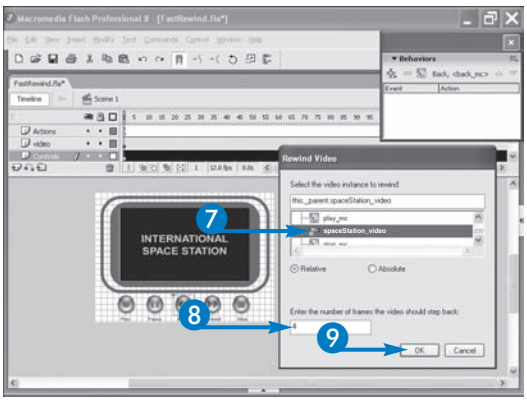
Note. *If you are assigning the Fast Forward behavior, type the number of frames the video should advance.*

9. Click OK.

   Flash adds the behavior to the movie clip and assigns the On Release event. You can change the event.

   The video moves backward if you choose Rewind and forward if you choose Fast Forward.





Publish a Movie

You create a Flash document in an authoring file. The *authoring file* is where you draw and animate your movie's content. The file contains all the elements that make up your movie, such as images, sounds, symbols, buttons, text, and so on. Flash assigns the authoring file an .fla extension. When you have completed a Flash document, you can publish the document to a Web page or other file format.

You use the Publish Settings dialog box to publish your document. By default, Flash is set up to publish your document in Flash format with a .swf extension and an accompanying HTML file, but you can choose to publish in other formats. For example, you can publish your document as a GIF, JPEG, or PNG image, as a self-playing Windows or Mac file, or as a QuickTime movie.

Depending on the format you select, the Publish Settings dialog box may provide a tab with publishing options you can set. The Publish Settings dialog box also assigns default names, but you can override the settings and enter your own unique filenames. In addition, you can choose the directory in which you want to save your published document.

Publish a Movie

Prepare Files for Publishing

1. Click File.
2. Click Publish Settings.

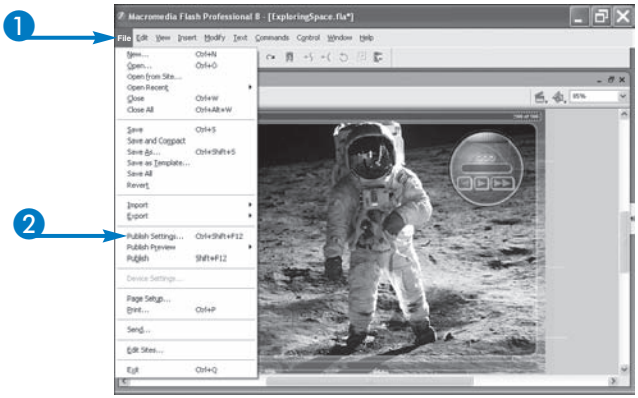


Photo courtesy of NASA

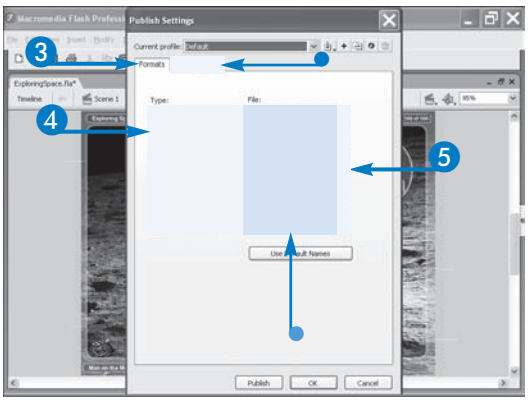
The Publish Settings dialog box appears.

3. Click the Formats tab.
4. Click the type of file you want to publish (☐ changes to ☑).

   Flash and HTML are selected by default.

   - You can use the default names or you can type a new name in the File field.
   - Depending on which format you select, additional tabs appear with options related to that format.

5. Click the Directory icon (🗎) for the file type you want to publish.



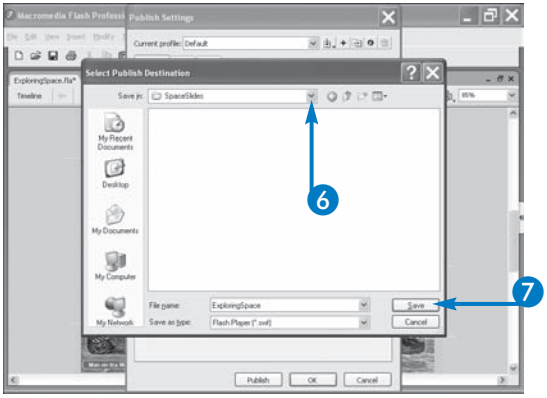
The Select Publish Destination dialog box appears.

6. Select the directory in which you want to save your file.

   By default, Flash saves your file in the directory in which you saved the FLA file.

7. Click Save.

   Flash publishes the movie and closes the Select Publish Destination dialog box.

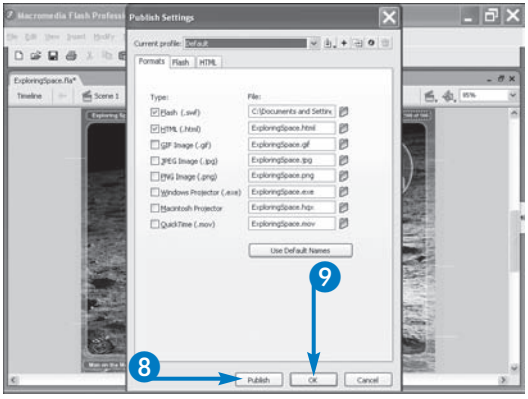


8. Click Publish.

   Flash publishes your files.

9. Click OK.

   The Publish Settings dialog box closes.



Can I preview a movie before I publish it?

Yes. Testing your movie to see how it plays in a browser is a good idea. Flash has a feature that lets you preview your movie in a browser window before you publish the movie. Click File, click Publish Preview, and then click Default. Flash opens the movie in your default Web browser.

How does the Publish feature differ from the Export Movie feature?

You use the Publish feature when you want to publish your document on the Web or as a standalone application. Flash saves the publish settings with the document. The Export Movie feature is similar to the Publish feature, except the publish settings are not saved with the document. You can use the Export Movie feature when you want to edit your document in another application.

Do I always have to publish a movie through the Publish Settings dialog box?

No. If you want to publish your movie using the last settings you set in the Publish Settings dialog box, you can click File on the main menu and then click Publish. Flash bypasses the Publish Settings dialog box and does not give you a chance to name the file.

Publish a Movie in Flash Format

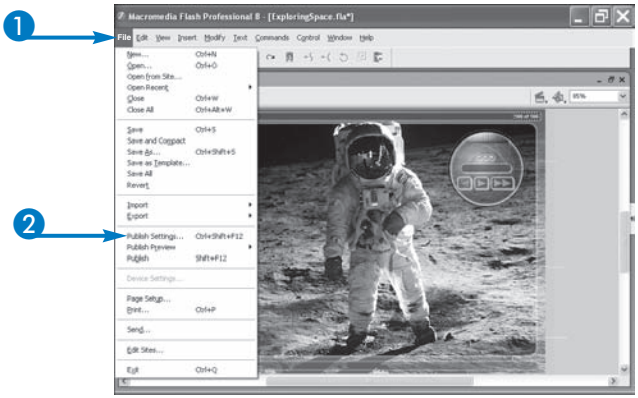
If you want to display your document on the Web, you must select Flash as the format in the Publish Settings dialog box. Flash will publish your document with an .swf extension.

When publishing your document in the Flash format, you can set several options, including the Version and Load Order. Flash documents play in an application called Flash Player. Some Flash 8 features do not work in earlier versions of Flash Player. If you are targeting an earlier version of Flash Player, you can select the version you are targeting in the Version field. The Load Order controls which layer Flash Player draws first when users play the movie over a slow modem or network connection. You can also select options such as Generate Size Report, Omit Trace Actions, Protect from Import, Debugging Permitted, and Compress Movie. You can use the JPEG Quality slider to adjust the quality of JPEG graphics — the higher the quality, the larger the file size.

The Flash format gives you the option to set the Sound Setting for stream and event sounds. To learn more about these settings, see Chapter 28. You can also set the Playback Security and the ActionScript version.

Publish a Movie in Flash Format

1. Click File.
2. Click Publish Settings.



The Publish Settings dialog box appears.

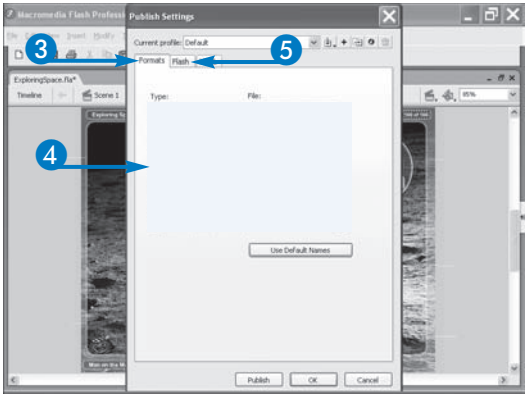
3. Click the Formats tab.

Note: *Flash selects the Flash and HTML formats by default. Deselect HTML (☑ changes to ☐) if you do not want to create an HTML file.*

4. Set the Format options.

Note: *See the section "Publish a Movie" to learn how to set the Format options.*

5. Click the Flash tab.



Flash displays options associated with generating an SWF file.

6. Click here and then select the Flash Player version.
7. Click here and then select the load order.
8. Click here and then select the version of ActionScript you are using.
9. Click to select an option (☐ changes to ☑).
   - The Compress movie option is selected by default.

Note: *If you check Protect from import or Debugging permitted, you can enter a password in the Password field.*

10. Type in a value for the JPEG quality.
11. Set the sound settings.

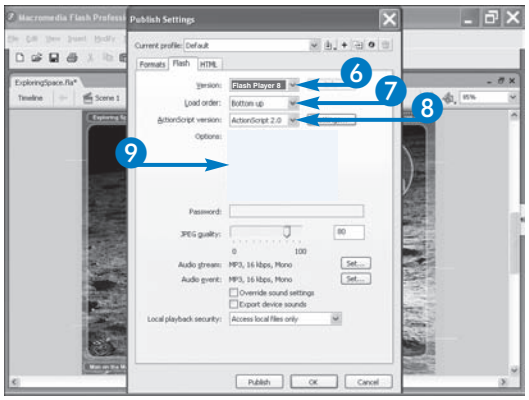
Note: *See Chapter 28 to learn more about the sound settings.*

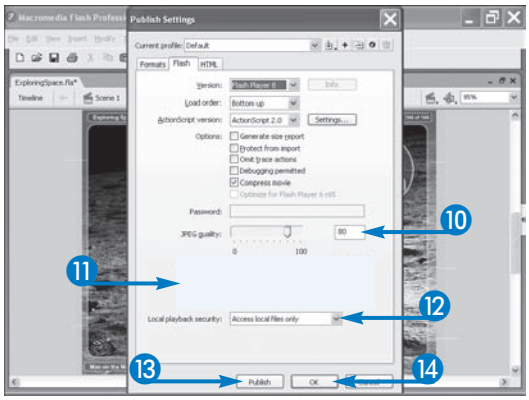
12. Click here and then select a Local playback security method.
13. Click Publish.

    Flash publishes your movie.

14. Click OK.

    The Publish Settings dialog box closes.





What do the Flash Options enable me to do?

Generate size report creates a text file containing detailed information about the size of each frame, scene, and object in your movie. Omit trace actions causes Flash to ignore any `trace` actions included in your movie. You use `trace` actions to evaluate an expression. This is useful when you are debugging your movie and you want to know the value an expression returns. Protect from import prevents others from importing your SWF file and converting it to an FLA file. Debugging permitted enables the activation of Debugger. If you choose Protect from import or Debugging permitted, you can require a password. Compress movie compresses your movie, thereby reducing the file size.

What can I use the Override sound settings, Export device sounds, and Local playback security for?

If you want the sound setting you set in the Publish Settings dialog box to override the settings you have set for individual sounds, select the Override sound settings box. Select Export device sounds to export sounds that are suitable for mobile and other devices.

Select Access local files only in the Local playback security field to enable the SWF file to access files on the local system but not on the network. Select Access network only to enable the SWF file to access files on the network but not local files.

Publish a Movie in HTML Format

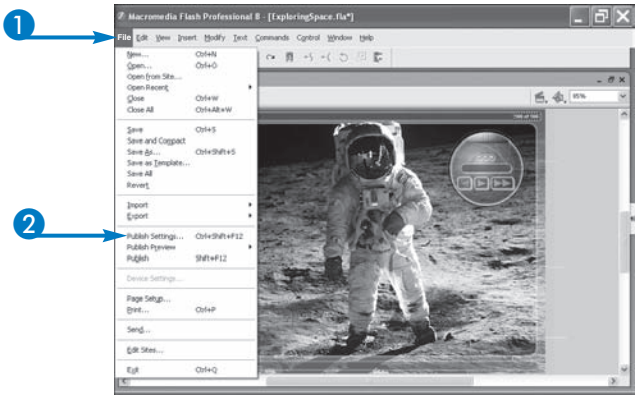
If you select HTML as the publishing format, Flash creates your SWF file and an HTML file that you can use to display your SWF file. When publishing to HTML format, Flash generates all the necessary HTML code for you, including the tags you need to view your document in most browsers. Flash bases the HTML document it creates on a template that contains basic HTML coding. By default, Flash assigns the Flash Only template. You can choose another template. Or if you know HTML code, you can customize a template or create your own template.

The HTML tab in the Publish Settings dialog box has a variety of options for controlling how your movie plays in the browser window. You can detect the Flash version, set the movie dimensions, set playback options, and specify the quality, window mode, HTML alignment, scale, and Flash alignment for your document.

When setting Dimensions, you can choose from Match Movie, Pixels, or Percent. Match Movie makes your movie the size you specified in the Document Properties dialog box; Pixels enables you to specify the size of your movie in pixels; and Percent enables you to specify the percentage of the browser window your movie should occupy.

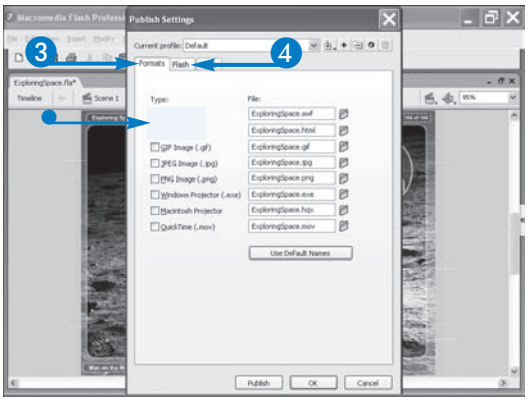
Publish a Movie in HTML Format

1. Click File.
2. Click Publish Settings.



The Publish Settings dialog box appears.

3. Click the Formats tab.
   - Flash selects the Flash and HTML formats by default.
4. Click the Flash tab.

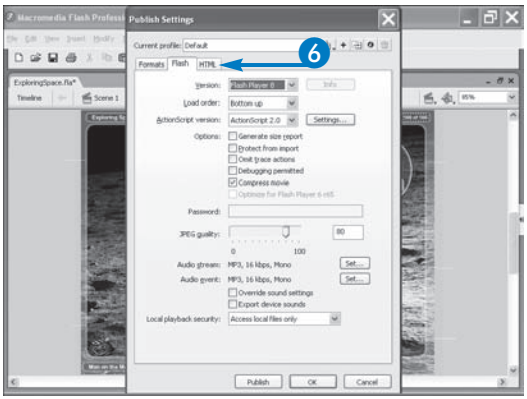


Flash displays options associated with generating a SWF file.

5 Set the Flash format options on the Flash tab.

Note: *See the section "Publish a Movie in Flash Format" to learn how to set the Flash format options.*

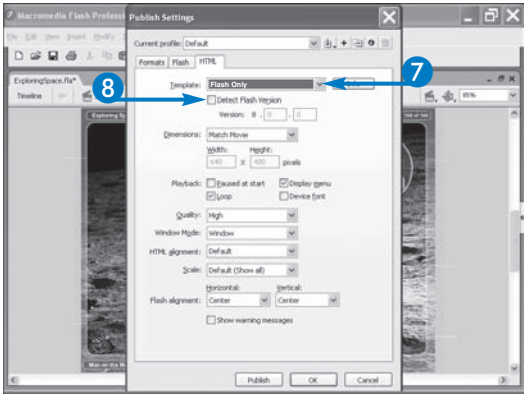
6 Click the HTML tab.



Flash displays options associated with generating an HTML file.

7 Click here and then select a template.

8 Click to detect the Flash version (☐ changes to ☑).



What is an HTML template?

An HTML template is an HTML file that contains tags that enable you to play your Flash SWF file on the Web. Flash Professional 8 has ten templates from which you can choose. To obtain information about a template, choose the template and then click the Info button.

You can set up your own HTML templates or customize existing templates. Flash looks for all HTML templates in the HTML folder, so be sure to save your HTML templates in the HTML subfolder within the Flash application folder on your computer system. Your template must include a line that starts with the title code $TT, such as $TTMy Template.

What does the Detect Flash Version option do?

Flash Player comes preinstalled with most Web browsers. There are several versions of Flash Player. Flash Profesional 8 uses Flash Player 8. If you choose Detect Flash Version, the HTML file you generate can detect the version of Flash Player that is installed on the user's computer. If the version of Flash Player installed is not compatible with the SWF you have created, the user will be directed to a Web page with a link to the most recent version of Flash Player. Not all templates enable you to detect the Flash version.

continued

Publish a Movie in HTML Format *(Continued)*

You can use the Playback options to control how a movie plays. You can specify whether the movie is paused at Start, loops continuously, displays the Flash Player menu, or uses device fonts. If the movie is paused at Start, users have to press a button to start the movie. If you choose Display Menu, when users right-click (Ctrl-click) while the movie is playing, a shortcut menu appears.

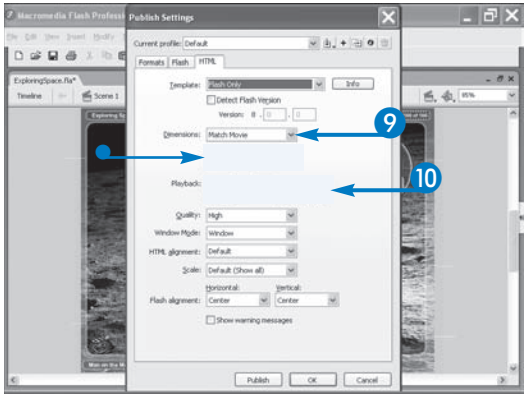
In Windows, you can choose Device fonts if you want to substitute anti-aliased fonts for fonts that are not on the user's system. This option applies only to static text. *Anti-aliasing* smoothes the edges of objects in your Flash movie and gives objects a crisp, clean appearance. However, anti-aliasing also slows down the processing time of your Flash movie. You use the Quality option to determine the trade-off between anti-aliasing and playback speed. The order of the quality values from lowest to highest is Low, Auto Low, Auto High, Medium, High, and Best. In general, the higher you set the quality value, the higher the quality of the images in your movie and the slower the processing time.

The Show Warning Messages box warns you of errors in your template.

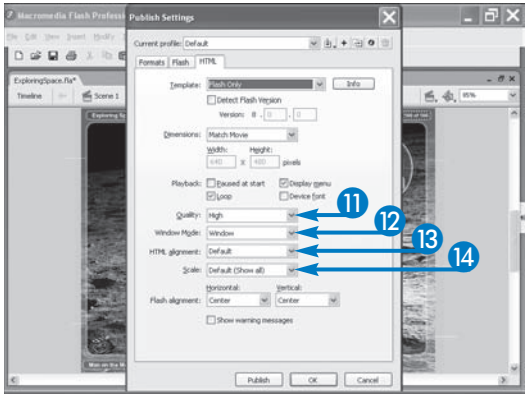
Publish a Movie in HTML Format *(continued)*

9. Click here and then select a movie dimension option.
   - If you select Pixels or Percent, enter a value in the Width and Height fields.
10. Click to select Playback options (☐ changes to ☑).

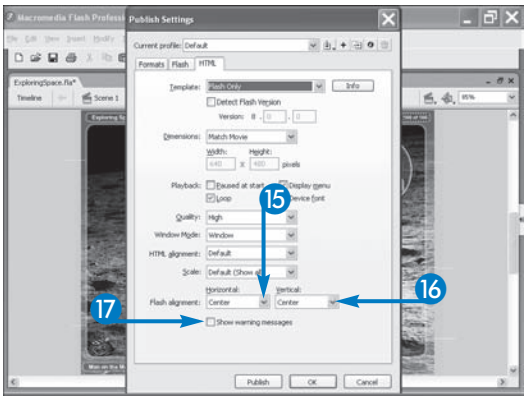
    Loop and Display menu are selected by default.



11. Click here and then select the quality.
12. Click here and then select the window mode.
13. Click here and then select the HTML alignment.
14. Click here and then select the scale.



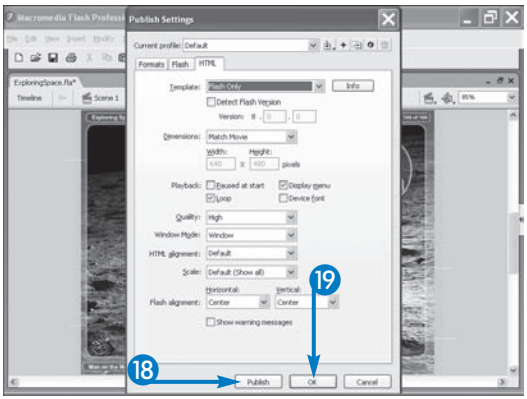
15. Click here and then select the Horizontal Flash alignment.
16. Click here and then select the Vertical Flash alignment.
17. Click here to Show warning messages (☐ changes to ☑).



18. Click the Publish button.

    Flash creates a SWF and an HTML document.
19. Click OK.

    The Publish Settings dialog box closes.



Can you explain the Scale option?

You can set the Scale option if you have changed the document's width or height. Choosing Default displays the entire document and retains the original aspect ratio. Choosing No border scales the document to fit within the boundaries you have specified, without changing the aspect ratio and without distorting the movie. Flash crops the movie, if necessary. Exact fit displays the document using the width and height you have specified. Exact fit does not preserve the original aspect ratio, so the images in your movie may be distorted. If you choose No scale, the document will not scale when users resize the Flash Player window.

Please explain the HTML Alignment option.

The HTML Alignment option enables you to tell Flash how you want to align your SWF file within the browser window. Choosing Default centers the SWF file. Choosing Left, Right, Top, or Bottom aligns the file with the left, right, top, or bottom of the browser window.

What does the Flash Alignment option do?

You use the Flash Alignment option to set the alignment of a Flash document within the application window. You can set the Horizontal alignment to Left, Center, or Right. You can set the Vertical alignment to Top, Center, or Bottom. Flash crops the document, if necessary.

Create a Flash Projector

You can create a Flash movie that plays in its own Flash Player window without a browser or another application. Viewers of the file do not need to install Flash Player. When you publish a movie in Windows Projector or Macintosh Projector format, Flash publishes the movie as an executable file with an EXE or HQX extension.

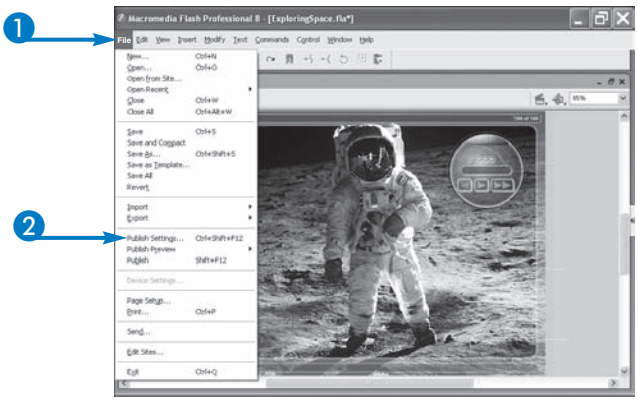
Flash projectors are designed to play movies in real time. You can easily place the files on compact disks and distribute them, or you can send them as e-mail file attachments. You must publish the projector file to a format appropriate to the computer platform the end user needs. For example, if you want to create a Flash movie projector file for a Mac user, make sure you publish the file to a Mac projector format (HQX) and not a Windows projector format (EXE).

Depending on the size of your movie, the Flash projector file may be quite large, so you might need to compress the file by using a program such as WinZip before sending it as an e-mail attachment.

Create a Flash Projector

Publish the Movie as a Projector

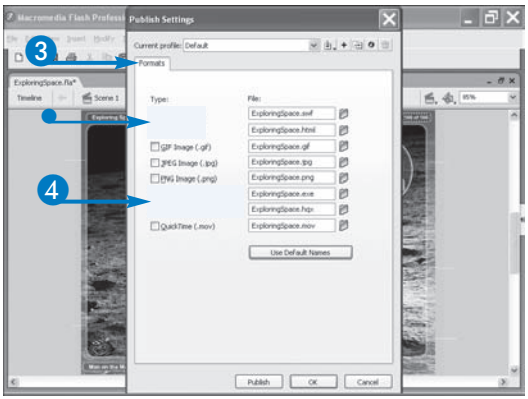
1. Click File.
2. Click Publish Settings.



Flash opens the Publish Settings dialog box.

Note: *If you have previously published your file, the selections from your last publication appear in the dialog box.*

3. Click the Formats tab.
4. Select Windows Projector and/or Macintosh Projector as the format type (☐ changes to ☑).
   - If you do not want to publish your movie on the Web, deselect Flash and HTML (☑ changes to ☐).

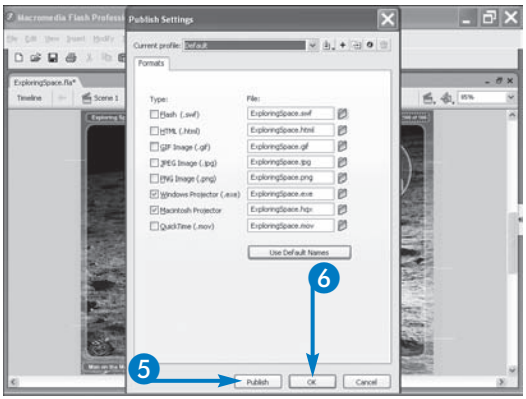


5. Click Publish.

   Flash publishes your movie as a projector.

6. Click OK.

   The Publish Settings dialog box closes.



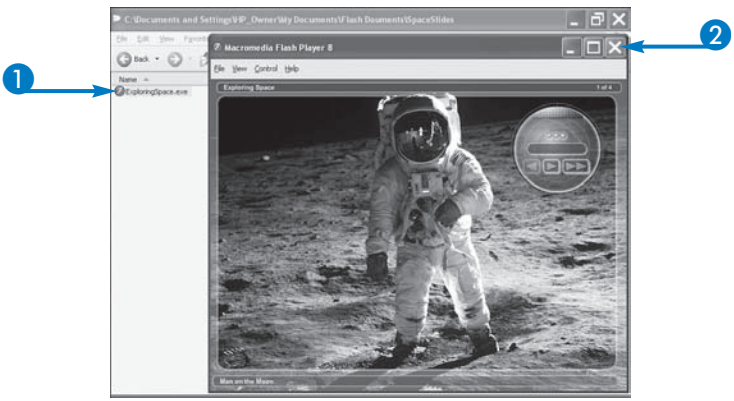
Play the Movie

1. Test the movie by double-clicking its name.

   The Flash Player window appears and plays the movie.

2. Click the Close button (×) to close the window when the movie stops.

   The movie closes.



Can I create a Macintosh projector file in Windows?

Yes. Select the Macintosh Projector option in the Publish Settings dialog box. Flash will create a file with an HQX extension. After creating the HQX file, you must apply a file translator such as BinHex to the file before a user can view it on a Macintosh computer.

What is the difference between an SWF file and a projector file?

When you save a file as a projector file, you are making an executable copy of your Flash movie. This file does not require a player or plug-in. It comes with everything necessary to run the movie. A regular SWF file packs only the movie data, not the player. Regular SWF files require Flash Player to view the movie.

Do I need to worry about licensing my projector file?

Macromedia allows free distribution of its Flash Player and Projector products. If you are distributing your movie for commercial purposes, however, you need to check the Macromedia Web site for information about crediting Macromedia. Visit `www.macromedia.com/support/programs/mwm`. You need to include the "Made with Macromedia" logo on your packaging and give proper credits on your credit screen.

Export to Another Format

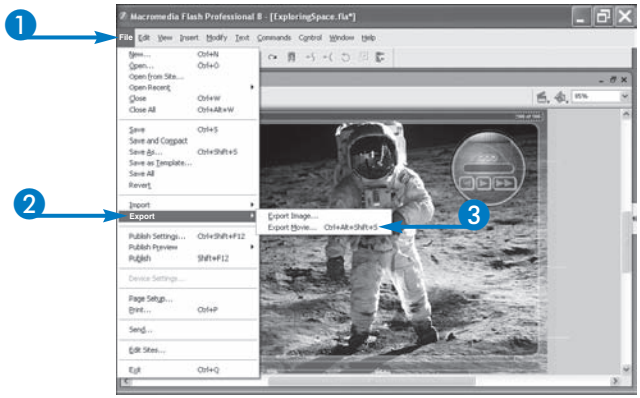
You can easily export a Flash movie into another file format for use with other applications. For example, you might want to save your movie as a Windows AVI file or as a QuickTime file, or perhaps you want to save the frames as a bitmap sequence. Flash has more than a dozen different file formats you can use to export to both Windows and Mac platforms.

You can also export your Flash file in SWF format. The exported file supports international character sets, enabling you to create multilingual text. Using Macromedia Dreamweaver 8, you can add your Flash document to your Web site. Dreamweaver 8 will generate all the code necessary to display your document. You can use Dreamweaver 8 to modify some of the properties of your Flash document.

When exporting to other file formats, you can choose to export the entire Flash movie as an animated sequence or as numbered still images. If you choose to export your document as numbered still images, Flash will create a numbered image for every frame in the document. Unless you export to a vector-based file format such as Adobe Illustrator, exporting may cause the loss of the vector information.

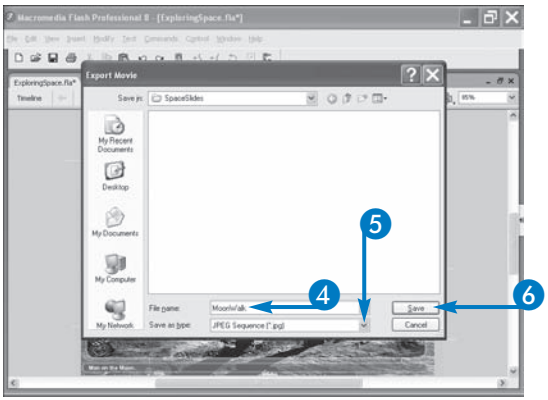
Export to Another Format

1. Click File.
2. Click Export.
3. Click Export Movie.



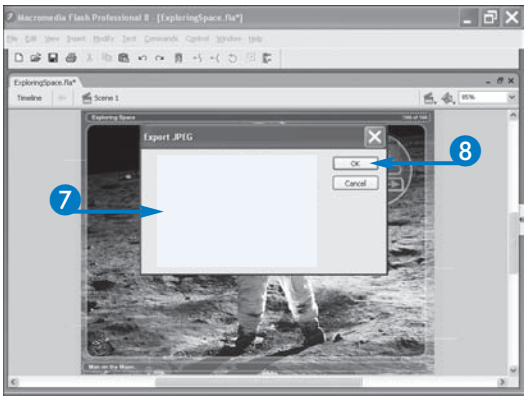
The Export Movie dialog box appears.

4. Type a name for the file.
5. Click here and then select the Save as type.
6. Click Save.



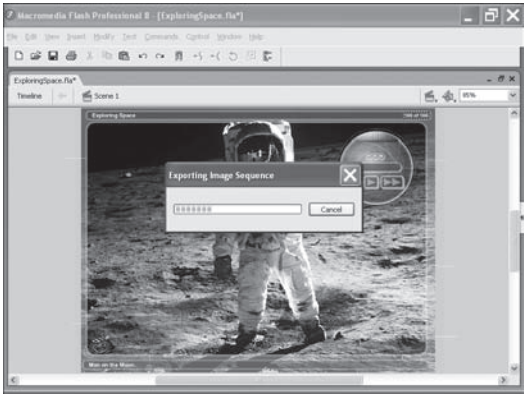
Depending on the file type you selected, an additional Export dialog box may open.

7. Set the options.
8. Click OK.



Flash exports the movie to the designated file type.

Note: *Interactive elements you include in your Flash movies might not export to other file formats.*



Can I export a single frame rather than an entire movie?

Yes. First select the frame you want to save as an export file. Click File on the Main menu and then click Export, Export Image. This opens the Export Image dialog box. Give the file a unique name and a format type; then click Save. Depending on the format you selected, additional parameters may appear.

How do I add a Flash file to my Dreamweaver 8 document?

To add a Flash SWF file to your Deamweaver 8 document, open Dreamweaver 8. Place the mouse pointer at the point at which you want to add the Flash file. On the main menu, click Insert, Media, and then Flash. The Select File Dialog box opens. Click the file you want to insert and then click OK. Dreamweaver inserts a marker for the Flash file.

How do I modify the properties of my Flash document in Dreamweaver?

After you import your Flash movie, click the movie marker to select the movie. Open the Property inspector. Click the Play button to play the movie. If you want your movie to loop, select loop. If you want your movie to begin playing automatically, select Autoplay. You can also set the movie's width, height, quality, scale, and alignment.

Print Movie Frames

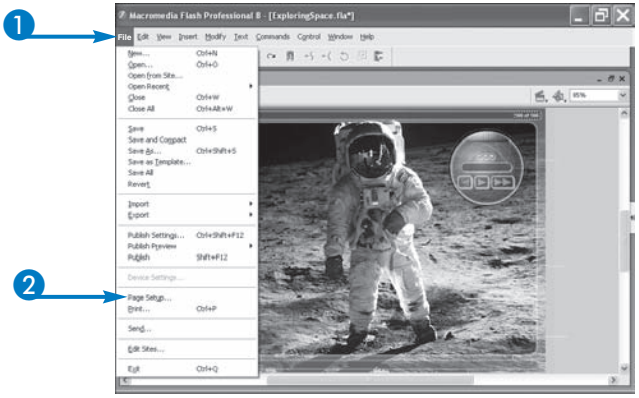
Some Flash projects may require you to print out a frame or a series of frames. For example, if you need to print a storyboard, you can use the Page Setup dialog box (Windows) or Print Margins dialog box (Mac) to set the options for your storyboard. After you set the options, you can use the Print dialog box to print the pages.

In addition to printing storyboards, you can print the first frame of each scene in your document and designate whether it should print in its actual size, shrink, or enlarge to fit on one page. If you need to create a storyboard, you can set options for the number of frames that print across a page, the margin between frames, and whether the frames print without boxes (blank), in boxes, or in a grid.

The options in the Page Setup dialog box (Windows) and Print Margins dialog box (Mac) enable you to set up your frames for printing. To print the pages, you must activate the Print command by opening the Print dialog box and clicking OK or by clicking the Print button on the Main toolbar.

Print Movie Frames

1. Click File.
2. Click Page Setup.



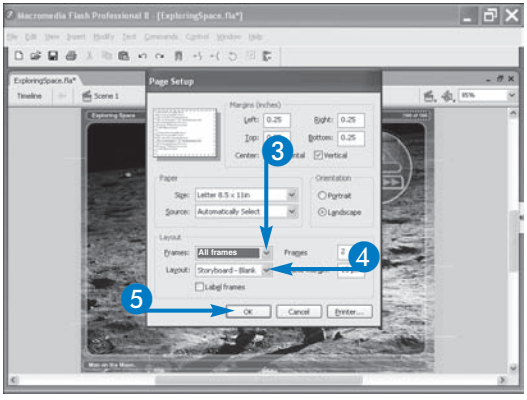
The Page Setup dialog box appears.

3. Click here and then select All frames.

   You can choose the First Frame Only option if you want to print the first frame of each scene of your movie.

4. Click here and then select a layout.

Note: *If you choose one of the Storyboard options, you can choose to label your frames, set the number of frames that will appear across the page, and designate the frame margin. If you choose Actual Size, you can choose to scale the image.*

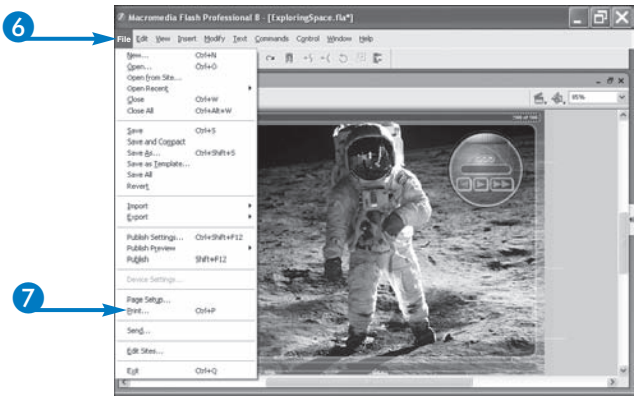


5. Click OK.

   The Page Setup dialog box closes.

6 Click File.

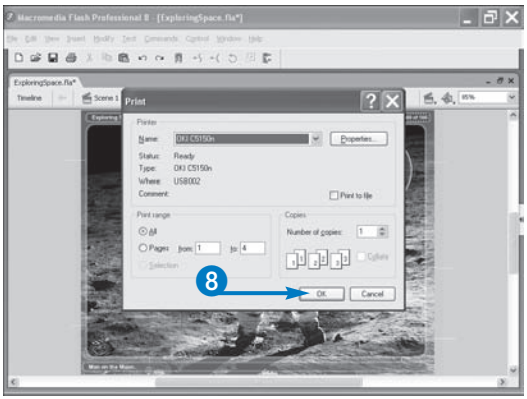
7 Click Print.



The Print dialog box appears.

8 Click OK.

Flash prints the specified pages and layout.



MASTER IT

I want to print by pressing the Print icon. Where is the Main toolbar?

By default, the Main toolbar does not display in Flash. You can activate the Main toolbar by clicking Window, then Toolbars, and then Main on the main menu. After the Main toolbar appears, if you want to print, you can click the Print icon. You will notice that the Main toolbar has several options that are standard in most applications, such as Save, Cut, Copy, and Paste.

Can I add a label to each printed frame?

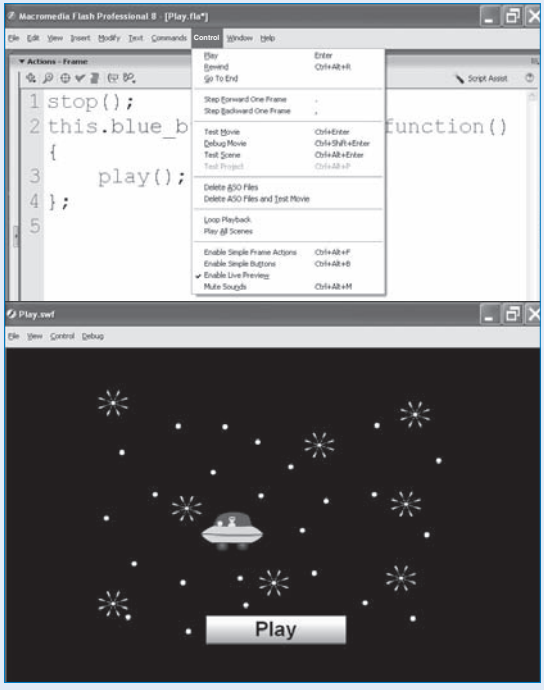
Yes. If you select Storyboard - Boxes, Storyboard - Grid, or Storyboard - Blank as the layout option in the Print dialog box, a Label Frames check box appears. Click this check box (☐ changes to ☑) to print the scene and frame number for each frame that prints out in your storyboard.

Will Flash print any objects I have placed in the pasteboard that surrounds the Stage?

No. Flash prints only the symbols and objects found on the Stage of any given frame. If you move an instance off the Stage so you can place it on the Stage as the movie plays, the instance will not appear in your printout.

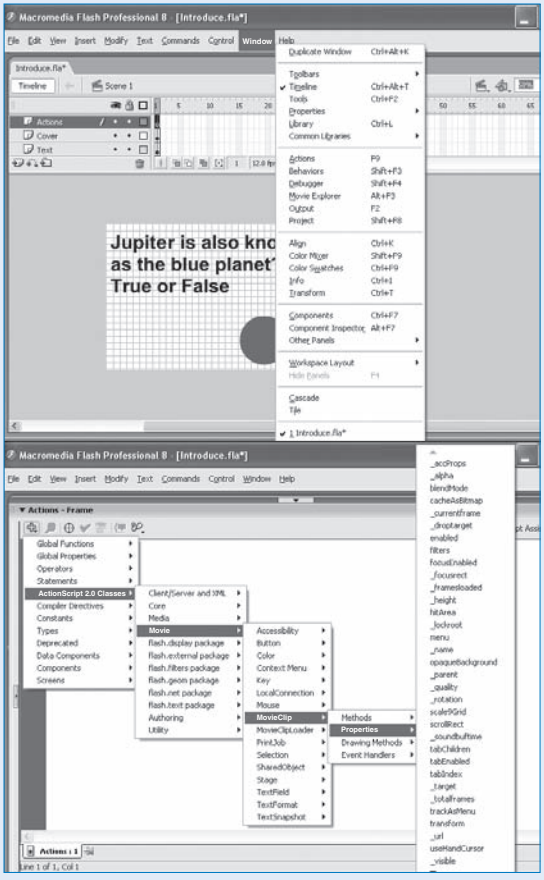
31 Adding ActionScript

Introducing Flash ActionScript 576
Create Input Text Boxes 578
Create Dynamic Text Boxes 580
Using the Actions Panel 582
Using Button Event Handlers 586
Using Movie Clip Event Handlers.....587
Assign ActionScript to a Frame 588
Stop a Movie.....590
Play a Movie 592
Using the Go To Actions 594
Using the Start Drag and Stop Drag Actions 596
Using the Duplicate Movie Clip Action.....598



32 Changing Movie Clip Properties

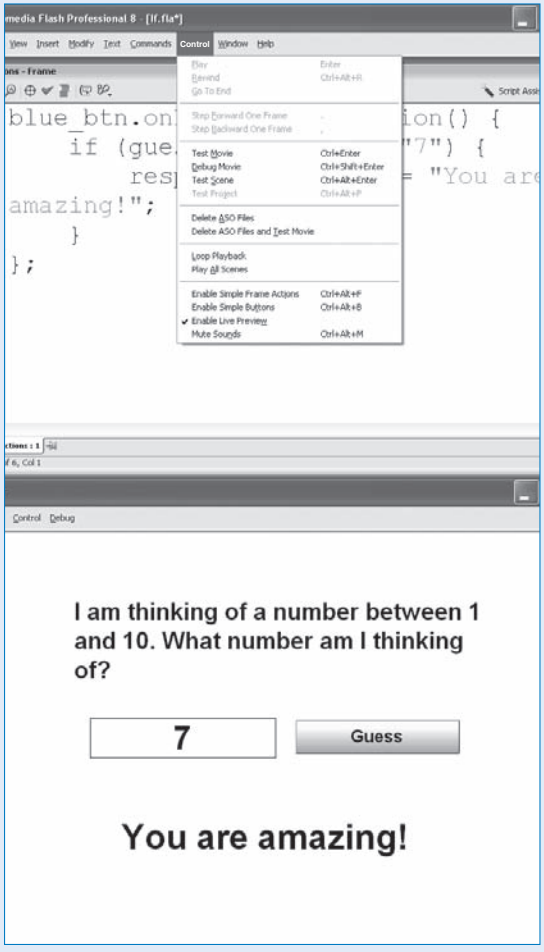
Introducing Movie Clip Properties 600
Adjust Transparency 602
Make Movie Clips Invisible 604
Rotate Movie Clips 606
Change the Width of Movie Clips.....608
Change the Height of Movie Clips 610
Move Movie Clips Across the Stage 612
Move Movie Clips Up and Down 614

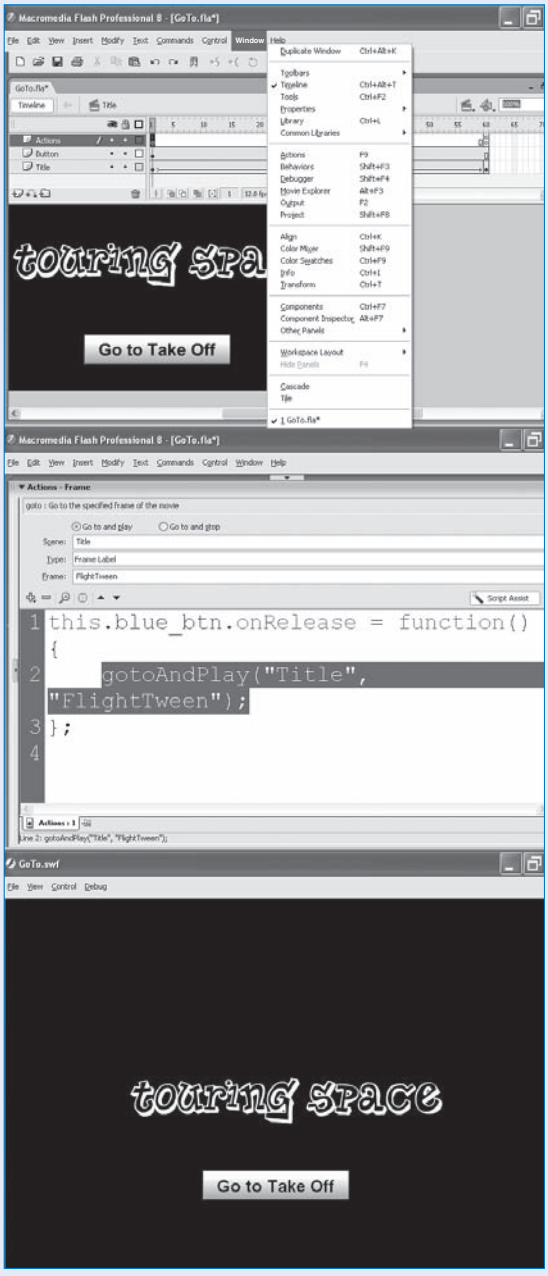


PART VIII
BUILDING INTERACTIVE ELEMENTS WITH ACTIONSCRIPT

33 Programming Basics

Introduction to Variables and Data Types 616
Assign Values to Variables 618
Using If 620
Using if with else 622
Using else if 624





Introducing Flash ActionScript

Flash ActionScript enables you to create dynamic interactive content. With Flash ActionScript, you can have your Flash movie respond to mouse clicks and key presses, or you can request information from the user and have your Flash movie respond to the information the user provides. You can also use ActionScript to animate objects in your movie.

ActionScript 1.0 and ActionScript 2.0

There are two versions of ActionScript: ActionScript 1.0 and ActionScript 2.0. Although there are many similarities between the two versions, there are also some differences. If you are familiar with ActionScript 1.0, you can use it when writing scripts using Flash Basic 8 and Flash Professional 8. However, ActionScript 2.0 is worth learning because you can use it to write more efficient and better-organized code. In addition, ActionScript 2.0 is three to seven times faster than ActionScript 1.0.

Differences Between ActionScript 1.0 and ActionScript 2.0

There are several differences between ActionScript 1.0 and Action Script 2.0. This section covers the major ones.

ActionScript 2.0 is case-sensitive, while ActionScript 1.0, for the most part, is not. All elements in ActionScript 2.0 are case-sensitive, including variable names, keywords, and method names.

ActionScript 2.0 uses strict data typing, while ActionScript 1.0 does not. In ActionScript, you can use variables to hold data. When you use ActionScript 1.0, you do not have to assign a data type such as number, string, or Boolean when you declare a variable. In ActionScript 2.0, you should. For example, in ActionScript 1.0, you can declare a variable by using the following syntax:

```
sampleVariable = 100;
```

ActionScript automatically recognizes that 100 is a number. In ActionScript 2.0, you can use the following syntax to declare a variable:

```
var sampleVariable:Number = 100;
```

You use the keyword `var` and you can explicitly declare the data type — in this example by using the syntax `:Number`. You can also use strict data typing when you create object instances. This book only introduces ActionScript; it does not cover creating objects.

ActionScript 2.0 changes the way you define custom classes. This book does not cover custom classes; however, you should know that a script that defines a custom class must be in its own external file and you should append the filename with .as.

ActionScript Syntax

Like spoken languages, ActionScript has rules of punctuation and grammar. These rules comprise the syntax of the language. You must follow these rules for your script to execute properly.

Semicolons and Curly Braces

Each ActionScript statement ends in a semicolon. However, if you omit the semicolon, the script still compiles successfully. You group ActionScript into blocks of code, and enclose each block of code in curly braces. Additionally, in ActionScript, keywords are case-sensitive.

Statements

A *statement* is an instruction you give to perform a particular action. ActionScript can consist of a single statement or a series of statements. Statements execute from top to bottom unless you issue a statement telling Flash to execute in another order. You can use the `if` action and loops to change the normal top-to-bottom order of execution.

Dot Syntax

In ActionScript, you use dots. You use dots when you create a target path to separate each item in the path, and you use them to separate object names from properties and methods. For example, in the path `_root.car_mc.tire_mc`, `_root` refers to the main Timeline; `car_mc` refers to a movie clip instance named `car_mc`, which is on the main Timeline; and `tire_mc` refers to a movie clip instance named `tire_mc`, which is on the `car_mc` Timeline.

ActionScript also uses dot syntax to separate an object name from a property, function, or method. *Properties* are attributes of an object. Both *functions* and *methods* are blocks of ActionScript code you can use anywhere in your script. For example, a movie clip can have a `_rotation` property. You can use the following syntax to set the rotation property for `tire_mc`:

```
tire_mc._rotation = 360;
```

If you want to use the `play()` method to play car_mc, you use the following syntax:

```
car_mc.play();
```

Expressions

An *expression* represents a value. For example, with Flash you can store information in variables. If you write the following code: `var x:Number = 2`, x is the variable and 2 is the value. Every time Flash sees the variable x, it evaluates the x and returns 2. The variable x is an expression. Mathematical equations are also expressions. The equation 2 + 3 is an expression. You can use variables and properties to form an expression. For example, x + 2 is an expression consisting of the variable x and the value 2. The property `_rotation` returns the rotation value for the targeted object. Both `instanceName._rotation` and `instanceName._rotation + 1` are valid expressions. You can use expressions when Flash asks for an argument. When using Script Assist in the Action panel, if you are entering an expression, select the expression check box. If you are entering a literal value, do not select the expression check box.

Arguments

An *argument* — also referred to as a *parameter* — is a value associated with an action or function. These values clarify or provide additional instructions to Flash. For example, you use the `gotoAndPlay` action to tell Flash to start playing a movie. The `gotoAndPlay` action takes two arguments: `scene` and `frame`. You use the `scene` argument to tell Flash the scene you want to play. You use the `frame` argument to tell Flash the frame in which you want the movie or movie clip to begin playing the scene. You separate the arguments associated with an action or function with commas and enclose them in parentheses. The value you assign to an argument can be either a literal value or an expression. Enclose literal values in quotes. Do not enclose expressions in quotes. For example, `gotoAndPlay ("Scene 2", 5);` tells Flash to go to `Scene 2` and start playing the movie in frame 5.

Comments

Adding comments to your ActionScript is essential when you are collaborating with others or when your script is complex and you want to document the purpose of each step. Flash ignores comments when you execute your script. You use `//` to create a single-line comment. You use `/*...*/` to create a multiline comment. For example, you can create single-line comments using the syntax:

```
// You type your comment here.
```

You can add a multiple-line comment using the syntax:

```
/* This is an
example of a
multiline comment */
```

Create Input Text Boxes

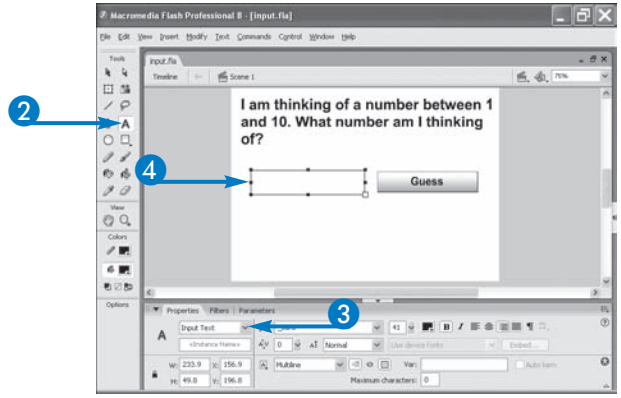
You use input text boxes to request information from the user. You frequently use them when creating forms. The user types the information you request into the input text box, and you use ActionScript to read the user input and respond to the user.

You use the Text tool to create an input text box. Using the Property inspector, you can set several options for your input text box. You use the Instance Name field to name your input text box. When naming an input text box, append the instance name with _txt. This enables code hinting in the Actions panel. When writing your ActionScript, you refer to your text box using the following syntax: `textBoxName.text`.

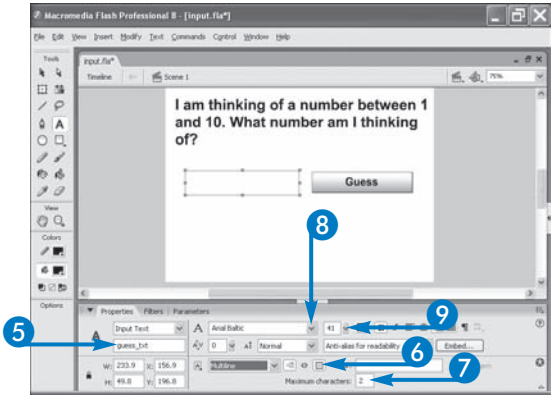
In the Property inspector, you choose Show Border Around Text to display a background behind and a border around your input text box. You can also choose the maximum number of characters the user can enter, the font and its size and color, a line type, a rendering method, whether you want to render the text as HTML, and whether you want to embed the font.

Create Input Text Boxes

1. Open the Property inspector.
2. Click the Text tool (A).
3. Click here and then select Input Text.
4. Click and drag to create an input text box.



5. Type an instance name.
6. Click Show border around text ( ) to show a border around the text box.
7. Type the maximum number of characters.
8. Click here and then select a font.
9. Click here and then select a font size.



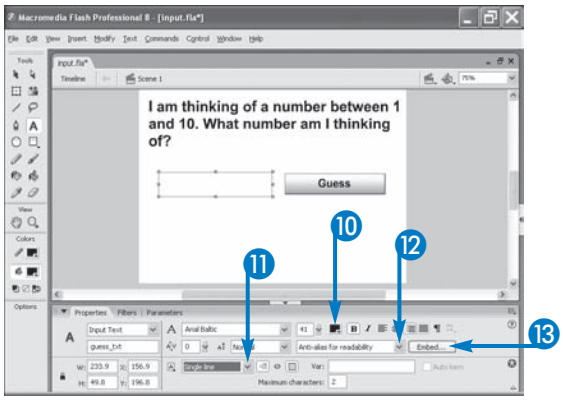
10 Click here and then select a font color.

11 Click here and then select a line type.

12 Click here and then select a font-rendering method.

Note: *See the section "Create Dynamic Text Boxes" for an explanation of font rendering.*

13 Click the Embed button to embed a font.



The Character Embedding dialog box appears.

14 Click to select a range of fonts.

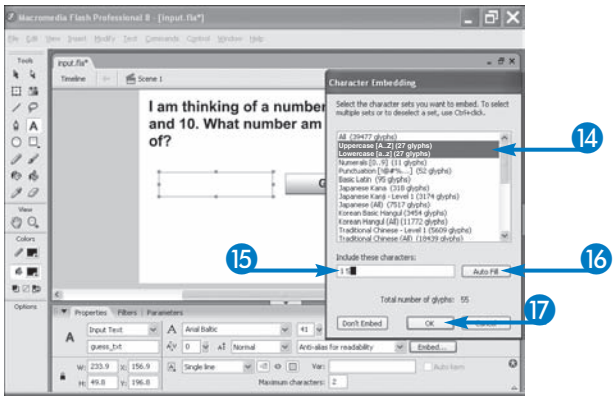
Note: *Ctrl-click to make multiple selections.*

15 Type individual characters you want to include.

16 Click Auto Fill to embed characters that are currently located in the text field.

17 Click OK.

Flash applies the options you choose to the text box.



What does the Line Type field enable me to do?

In the Line Type field, you can select from Single Line, Multiline, Multiline No Wrap, or Password. Select Single Line to display user input on a single line. If the text is too long to fit in the text box, the text box scrolls. Select Multiline to display the user input on multiple lines and have the input wrap at the end of the box. Select Multiline No Wrap to display the user input on multiple lines and have the input wrap when the user presses Enter. Select Password to have asterisks display as the user types. This option enables you to create a form with password protection.

How do I use character embedding?

If you use a font that is not on the user's computer, Flash substitutes another font. If you want the font you selected to display, you can embed the font in your Flash document. You use the Character Embedding dialog box to embed a font. If you only want to embed certain characters, type the characters in the Include These Characters field. To choose a range of characters, click an option on the list or Ctrl-click to select several options. To embed all the characters that are currently in the field, click Auto Fill. Click Don't Embed if you do not want to embed fonts. Click OK to conclude your selections.

Create Dynamic Text Boxes

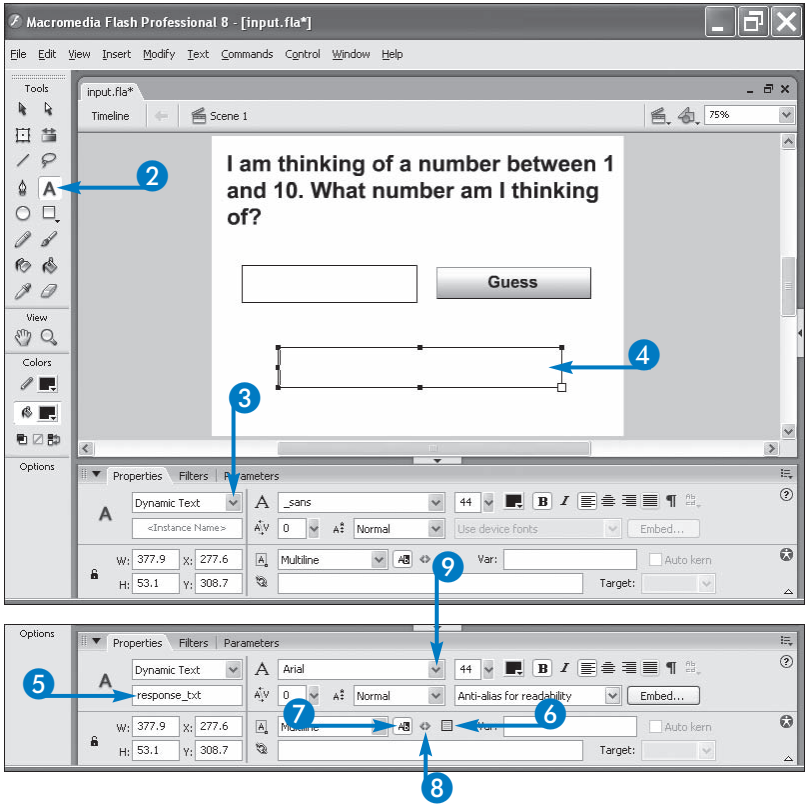
You can use dynamic text boxes to display text that changes or to display text in response to user input. You use the Text tool to create dynamic text boxes. When creating dynamic text boxes, you can set several options by using the Property inspector.

In the Property inspector, you use the Instance Name field to name your dynamic text box. When naming a dynamic text box, append the instance name with _txt. This enables code hinting when you use the Actions panel. To learn more about code hinting, see the section "Using the Actions Panel." When writing your ActionScript, you refer to your text box using the following syntax: `textBoxName.text`.

In the Property inspector, you click Show Border Around Text to display a background behind and a border around your dynamic text box. You click Selectable to give users the ability to click and drag to select the text. You can also choose the font you want to use, the font size, the font color, a line type, a rendering method, whether you want to render the text as HTML, and whether you want to embed the font.

Create Dynamic Text Boxes

1. Open the Property inspector.
2. Click A.
3. Click here and then select Dynamic Text.
4. Click and drag to create a dynamic text box.
5. Type the instance name.
6. Click to show a border around the text box.
7. Click the Selectable button ( ) to make the text selectable.
8. Click Render text as HTML ( ) to render text as HTML.
9. Click here and then select a font.

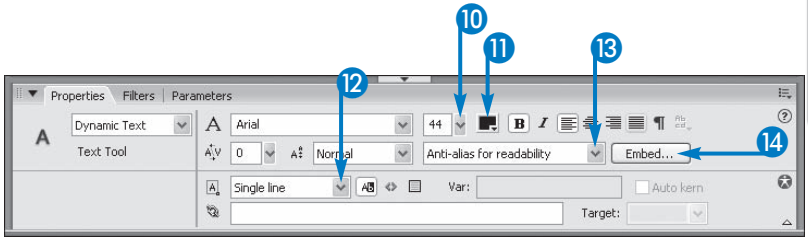


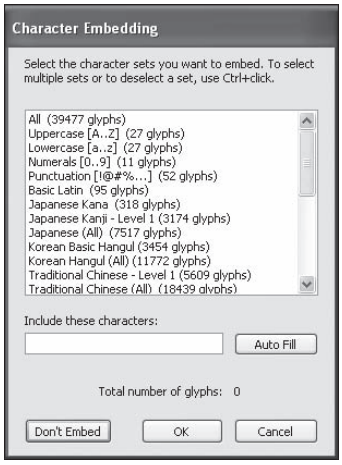
10. Click here and then select a font size.
11. Click here and then select a font color.
12. Click here and then select a line type.
13. Click here and then select a font-rendering method.
14. Click the Embed button to embed a font.

    The Character Embedding dialog box appears.

Note: *See the section "Create Input Text Boxes" to learn how to use the Character Embedding dialog box.*

Flash applies the options you choose to the text box.





What does font rendering do?

The Font rendering method field has several options. The Use device fonts option uses the fonts installed on the user's computer. Bitmap text (no anti-alias) displays text that is not anti-aliased. Anti-alias for animation causes Flash to ignore alignment and kerning information and makes the animation smoother. Anti-alias for readability makes small fonts easier to read. Custom anti-alias is available only in Flash Professional 8. Selecting this option opens the Custom Anti-aliasing dialog box where you can set the Thickness and Sharpness. Increasing the Thickness is similar to bolding. The Sharpness option smoothes the transition between text edges and the background. Anti-alias for readability and Custom anti-aliasing are available only if you publish for Flash Player 8.

What happens if I select Render Text as HTML?

If you choose Render Text as HTML when you choose Dynamic Text or Input Text in the Property inspector, Flash creates or saves HTML formatting tags. This enables you to save the font name, style, color, size, and hyperlinks associated with the text. To render text as HTML, you must assign the text an instance name, select Render Text as HTML in the Property inspector, and use the Actions panel to set the `htmlText` property to a value that includes HTML. For example, you can use the following code to set the text in a Dynamic text box to bold:

```
sampleText_txt.htmlText =
"<b>spaceship</b>";
```

Using the Actions Panel

You can use the Actions panel to write, format, and edit the ActionScript you include in your FLA file. There are three parts to the Actions panel: the Actions toolbox, the Script Navigator, and the Script pane.

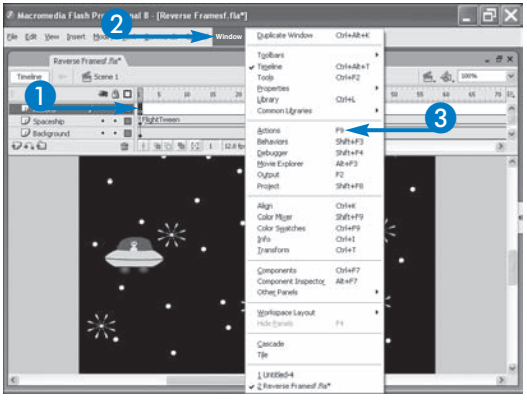
The Actions toolbox contains a list of ActionScript statements organized by category. You can use the Actions toolbox to add elements to the Script pane. You can click and drag the element to the Script pane, or you can double-click an element to have it appear in the Script pane.

The Script Navigator provides a hierarchical listing of all the movie clips, buttons, and frames in your document that have scripts associated with them. You can click an element to view the associated ActionScript in the Script pane.

You use the Script pane to type and edit your scripts. The Script pane is a full-featured editor that helps you format your code. It has a toolbar that provides buttons that enable you to add script, find and replace text, insert a target path, check syntax, show code hints, debug your code, and turn on Script Assist.

Using the Actions Panel

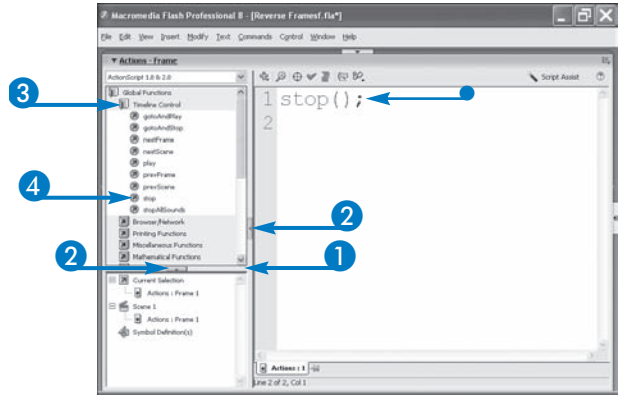
Open the Actions Panel



1. Click the frame in which you want to add actions.
2. Click Window.
3. Click Actions.

   The Actions panel appears.

Using the Actions Toolbox



1. Drag the splitter bar to change the size of the Actions toolbox.
2. Click Collapse to collapse the boxes (changes to Expand).

Note: *You can click to expand the boxes.*

3. In the Actions toolbox, click a category to display a list of ActionScript statements.
4. Double-click a statement to choose it.
   - The statement appears in the Script pane.

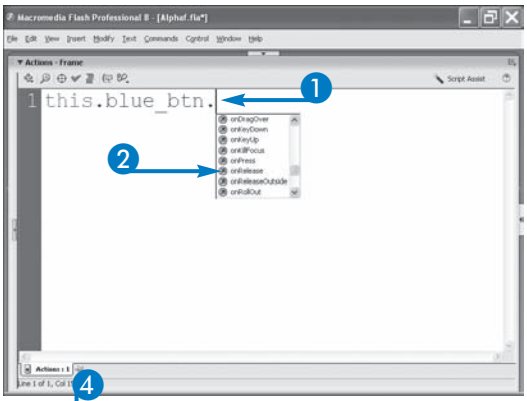
Note: *You can also click and drag statements to the Script pane.*

Using code hints

1. Begin typing your ActionScript.

   Because you have added a _btn extension to your button name, a list of options related to buttons appears as soon as you type the period.

2. Double-click to choose an option.



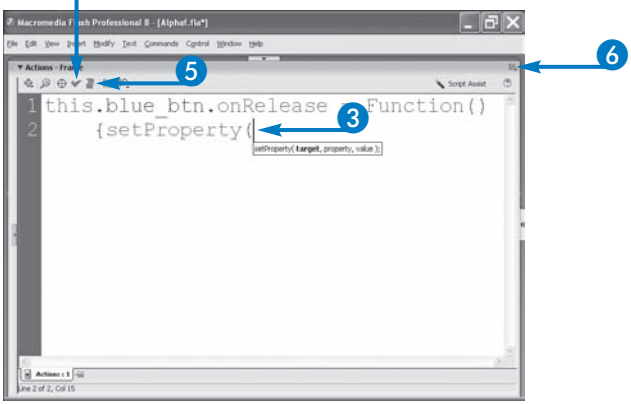
3. Continue typing your code.

   - When you type an open parenthesis, a Tooltip appears to help you finish your code.

4. Click the Check Syntax icon ( ) to check your syntax.

5. Click the AutoFormat icon ( ) to format your code.

6. Click the Options icon ( ) to open the Options menu.



Can I view the ActionScript created when I assigned a behavior to a button, movie clip, or frame?

Yes. The Script Navigator lists all the buttons, movie clips, and frames that have script associated with them. To view the script created when you assigned a behavior to a button, movie clip, or frame, you click the object name. The script appears in the Script pane.

What are the Go To Line, Find and Replace, Find Again, Replacement, and Check Syntax options on the Options menu for?

You use Go To Line to move to a specified line in your script; you use Find and Replace to find a string of characters; you use Find Again to continue your search; you use Replace to find and replace a string of characters; and you use Print to print your script. Click Check Syntax to have Flash check your script for syntax errors.

What does the Auto Format icon do?

By clicking the Auto Format icon, you can format your code for increased readability. You can set Auto Format options in the Preferences dialog box. You open the Preferences dialog box by clicking the Options icon and then selecting Preferences. You can then choose to use automatic indentation and/or choose a tab size.

continued

Using the Actions Panel *(Continued)*

You can use code hints to help you write your code. Code hints provide Tooltips that display the correct syntax or menus you can use to select methods and property names. You can also use Script Assist to help you write your code. You click the Script Assist icon to turn on Script Assist, and it provides you with fields you can use to enter the parameters related to the command you select. You can use the up and down arrows on the Script pane toolbar to change the order of your ActionScript code.

The Actions panel also has an options menu. You can use the menu to add line numbers to your code and to turn on word wrap. Word wrap wraps long lines of code so you can view the code without using the scrollbar.

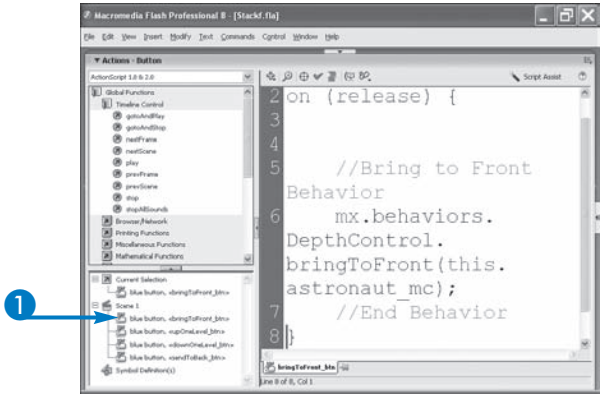
You can change the size of the Toolbox list by dragging the vertical splitter bar that appears between the Toolbox list and the Actions list. You can expand or collapse the Toolbox list by clicking the left or right arrow button on the splitter bar.

Using the Actions Panel *(continued)*

Using Script Navigator

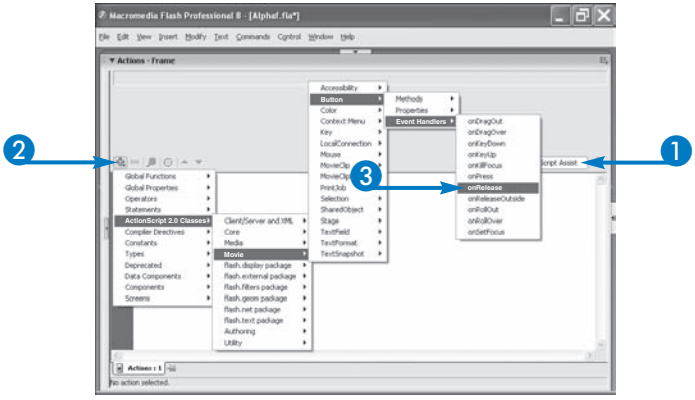
1. Click the name of the object for which you want to see the associated ActionScript.

   The ActionScript appears in the Script pane.



Using Script Assist

1. Click the Script Assist button to activate Script Assist.
2. Click the Add icon ( ).
3. Click to follow the menu path and then click the statement you want to add.



Target an object

Parameters appear on the Script Assist panel.

4. Click in the field that requires a targeted object.

   The Insert Target Path icon becomes active.

5. Click the Insert Target Path icon ( ).

   The Insert Target Path dialog box appears.

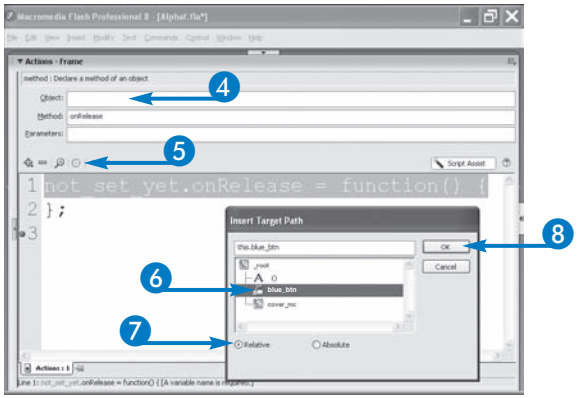
6. Click the name of the object you want to target.

7. Click Relative or Absolute (changes to).

8. Click OK.

   Flash adds the targeted object to the code.

Note: *The example creates an event handler. To learn more about event handlers, see the sections "Using Button Event Handlers" and "Using Movie Clip Event Handlers."*



Using Find and Replace

1. Click the Find and Replace icon.

   The Find and Replace dialog box appears.

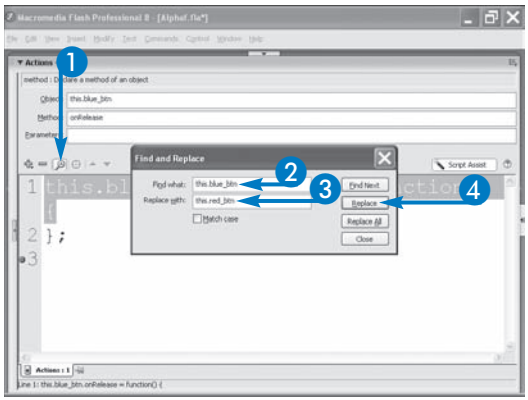
2. Type the words you want to find.

3. Type the replacement words.

4. Click Replace.

   Flash replaces the original words with the new words.

Note: *Click Replace All to replace all instances of the words in the code. Click Find Next to find the next instance of the words.*



MASTER IT

What are code hints?

Code hints provide you with a menu or with Tooltips to help you write semantically correct code. The hints can appear when you type an open parenthesis or a dot. By default, code hints are enabled. You can disable code hints or specify the delay time before a code hint appears in the Preferences dialog box. To open the Preferences dialog box, click the Options icon in the Actions panel to display the Options menu and then choose Preferences. The Preferences dialog box opens. You can deselect code hints or increase the amount of time before a code hint appears. If code hints are disabled, you can still use a code hint by clicking the Show Code Hint icon.

What are syntax colors?

To help you detect errors in your code, you can have Flash color-code your script as you write it. Color-coding, or syntax colors, can bring typing errors to your attention immediately. Using the Preferences dialog box, you can set the color codes for Keywords, Identifiers, Comments, and Strings. You can also set the foreground and background colors.

Using Button Event Handlers

Flash executes ActionScript code when an event occurs. For example, Flash can execute code when the playhead enters a frame or when the user clicks a button or presses a key. You use event handlers to tell Flash when to execute your code.

ActionScript has a number of event handlers that execute when the user interacts with a button. Executing actions in response to a user's interaction with a button enables you to create objects that perform a myriad of tasks in response to mouse clicks, pointer movements, and other actions. When executing actions from buttons, you must use a handler to determine the mouse event that triggers the action. The following is the syntax for creating a button handler:

```
buttonName_btn.eventHandler = function ()
{
statements here
};
```

In this example, Flash sets the rotation property for `rocket_mc` to `45` when the user releases `blue_btn`:

```
this.blue_btn.onRelease = function ()
{
this._parent.rocket_mc._rotation = 45;
};
```

The following is a list of button event handlers. You can access these handlers by following the menu path ActionScript 2.0 Classes, Movie, Button, Event Handlers.

Button Event Handlers

Handler	*Purpose*
onDragOut	Executes when the pointer is over the button and the user presses the mouse and then drags the pointer outside the button area.
onDragOver	Executes when the user clicks the button, drags the pointer away from the button, and then drags the pointer back over the button.
onKeyDown	Executes when a button has keyboard focus and a key is pressed.
onKeyUp	Executes when a button has keyboard focus and a key is released.
onKillFocus	Executes when a button loses keyboard focus.
onPress	Executes when the mouse pointer is over the button and the user presses the mouse.
OnRelease	Executes when the mouse pointer is over the button and the user releases the mouse.
onReleaseOutside	Executes when the user drags the pointer outside the button area and then releases the mouse.
onRollOut	Executes when the user rolls the pointer over and then outside of the button area.
onRollOver	Executes when the user rolls the pointer over the button.
onSetFocus	Executes when a button receives keyboard focus.

Using Movie Clip Event Handlers

Flash has a number of movie clip handlers you can use. They enable you to program your movie to perform a variety of actions when the user clicks, rolls the mouse pointer over, or performs some other action in relation to a movie clip. You use a movie clip event handler to determine the event that triggers actions. The syntax for creating a movie clip handler is similar to the syntax for creating a button handler. The following is an example of a movie clip handler:

```
this.alien_mc.onRollOver = function ()
{
this._parent.alien_mc._visible = false;
}
```

When the user rolls the mouse over `alien_mc`, `alien_mc` becomes invisible.

You can access movie clip event handlers by following the menu path ActionScript 2.0 classes, Movie, MovieClip, and then Event Handlers.

Movie Clip Event Handlers

Handler	*Purpose*
onData	Executes when a movie clip receives data from a `MovieClip.loadVariables( )` call or a `MovieClip.loadMovie` call.
onDragOut	Executes when the user presses the mouse and the mouse pointer rolls outside the object.
onDragOver	Executes when the mouse pointer is dragged over the movie clip.
onEnterFrame	Executes continuously at the frame you set for the document.
onKeyDown	Executes when the movie clip has focus and the user presses any key.
onKeyUp	Executes when the movie clip has focus and the user releases any key.
onKillFocus	Executes when a movie clip loses keyboard focus.
onLoad	Executes the first time the movie clip appears on the Timeline.
onMouseDown	Executes when the user presses the mouse.
onMouseMove	Executes every time the user moves the mouse.
onMouseUp	Executes when the user releases the mouse button.
onPress	Executes when the mouse pointer is over the movie clip and the user presses the mouse.
OnRelease	Executes when the mouse pointer is over the movie clip and the user releases the mouse.
onReleaseOutside	Executes when the user drags the pointer outside the movie clip area and then releases the mouse.
onRollOut	Executes when the user rolls the pointer over and then outside of the movie clip area.
onRollOver	Executes when the user rolls the pointer over the movie clip.
onSetFocus	Executes when a movie clip receives keyboard focus.
onUnload	Executes in the first frame after you remove the movie clip from the Timeline.

Assign ActionScript to a Frame

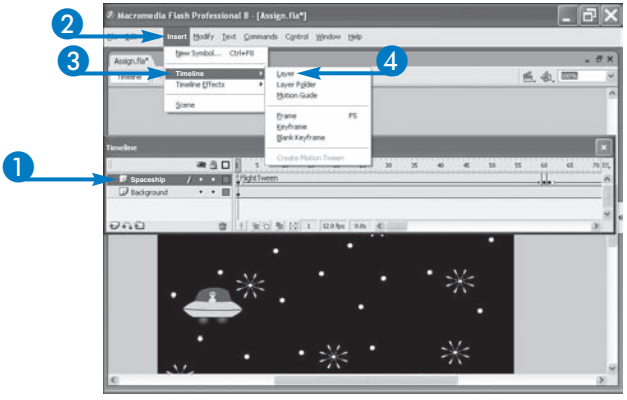
Macromedia's best practices for writing ActionScript suggest that you assign all your code to the first or second frame in your movie on a layer by itself. You should name the layer Actions and place it at or near the top of the stack. It is possible for you to assign your code to individual buttons, movies, and other frames; however, doing so makes your code difficult to find. In addition, placing your code in a single place makes it easier to debug and enables you to write better-organized code.

Remember, you can add ActionScript only to a keyframe. If you try to assign ActionScript to a frame that is not a keyframe, Flash automatically assigns the actions to the previous keyframe in the Timeline. By default, the first frame in the Timeline is a keyframe.

Frames with actions in them display with a small "a" in the frame. You assign actions to a frame by clicking in the frame to select it and then opening the Actions panel. You use the Actions panel to enter your ActionScript. If you select multiple keyframes, Flash does not allow you to enter your ActionScript.

Assign ActionScript to a Frame

1. Click the top layer in your stack of layers.
2. Click Insert.
3. Click Timeline.
4. Click Layer.



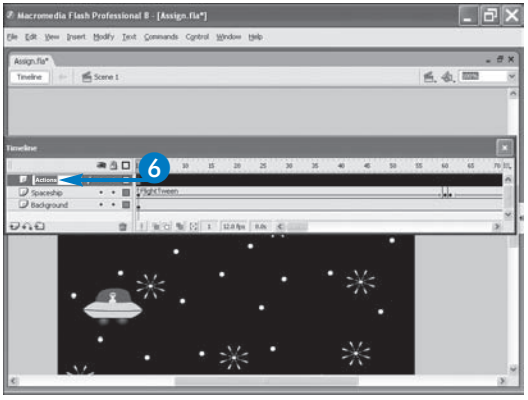
Flash creates a new layer at the top of the stack.

5. Double-click the layer name.

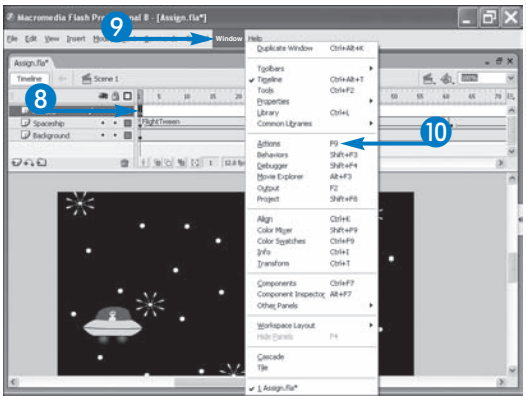
Flash changes to edit mode.

6. Type **Actions**.
7. Press Enter.

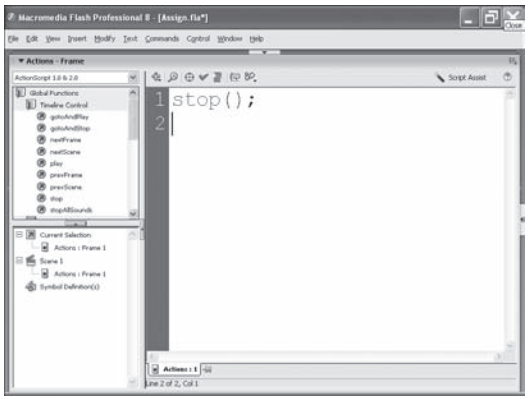
Flash renames the layer Actions.



8. Click the frame in which you want to add ActionScript.
9. Click Window.
10. Click Actions.



The Actions panel appears. You can enter your ActionScript.



Can I attach my ActionScript to buttons and movie clips?

Although it is not recommended, you can attach ActionScript directly to buttons and movie clips. To attach ActionScript to a button, select the button and then open the Actions panel. Activate Script Assist and then follow the menu path Global Functions, Movie Clip Control, On. The event handlers for buttons appear in the Script Assist pane. Select the one you want to use. To attach ActionScript to a movie clip, select the movie clip and then, in the Actions panel with Script Assist activated, follow the menu path Global Function, MovieClip Control, OnClipEvent. Select the event handler you want to use from the Script Assist pane.

Can I share my ActionScript code with other Flash applications?

One of the reasons you want to keep your code in a central location is so you can share your code with other Flash applications. You can create your code in an external file by using your favorite editor or by selecting ActionScript file in the New Document dialog box. The filename for your file must be appended with .as. You use the `#include` statement to include ActionScript from an external file in your current document. If you choose to create your file by using the ActionScript file option in the New Document dialog box, code hinting and other editing tools are available to help you create your file.

Stop a Movie

Generally, as soon as you load a Flash movie, it begins to play and continues to play unless you stop it. You can use the stop action to stop a movie. The following is the syntax for the stop action:

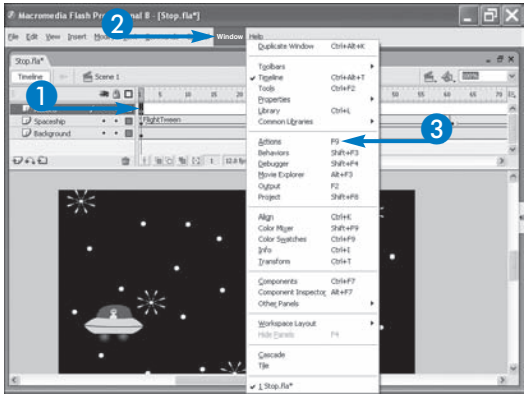
```
stop();
```

The stop action does not take any arguments, so it has no parameters. You can use the stop action to stop the main Timeline or to stop a movie clip. If you want to stop a movie in the first frame of the main Timeline, simply issue a stop action. If you want to stop a movie clip, the movie clip must be on the Stage, it must have an instance name, and you must target the movie clip. You use the Property inspector to name an instance. Targeting a movie clip means you designate the movie clip on which you want ActionScript to perform an action. To learn more about targeting, see Chapter 27.

Stop a Movie

Note: *This example uses the file StopAction.fla, which you can find on the CD-ROM that accompanies this book.*

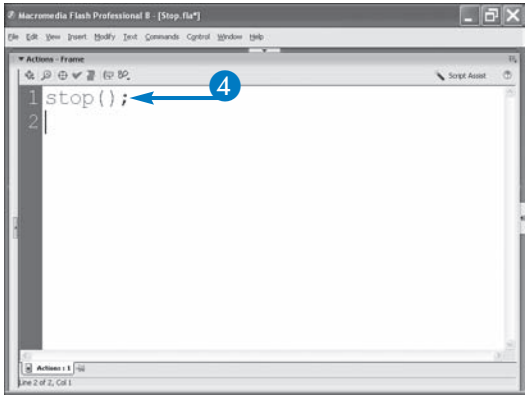
1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



The Actions panel appears.

Note: *See the section "Using the Actions Panel" to learn how to work with the Actions panel.*

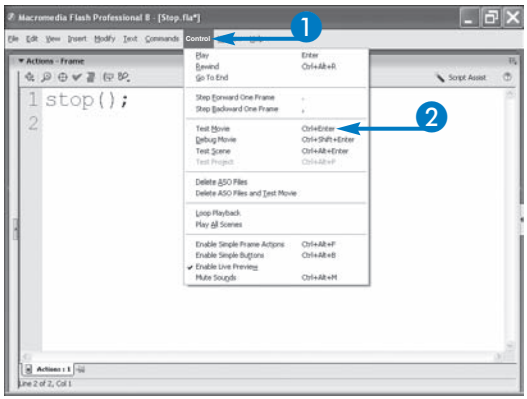
4. Type the code.



The code stops the movie in the first frame.

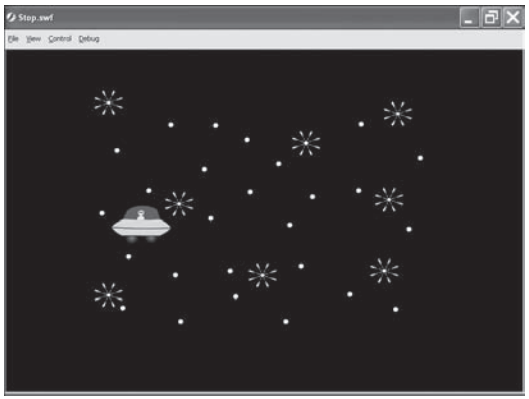
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

The movie does not play.



When can I stop a movie or a movie clip?

You can stop a movie or movie clip at any point. Movies begin playing as soon as they load. You can stop a movie in the first frame and have users press a button when they are ready to start it. Or you can stop a movie at the end of a scene and create buttons to determine the next scene to play. You can use the stop action with any frame, button, or movie clip; however, you most frequently use the stop action when you want to use buttons to control the action in your movie.

How do I stop a movie clip?

You use the following syntax to stop a movie clip with the stop action:

```
instanceName.stop();
```

You use the `instanceName` argument to specify the movie clip you want to stop. The following example stops `sample_mc`:

```
sample_mc.stop();
```

Play a Movie

When you stop a movie or movie clip, it remains stopped until you explicitly issue a statement to start it. You can use the play action to start a movie or movie clip. The following is the syntax for the play action:

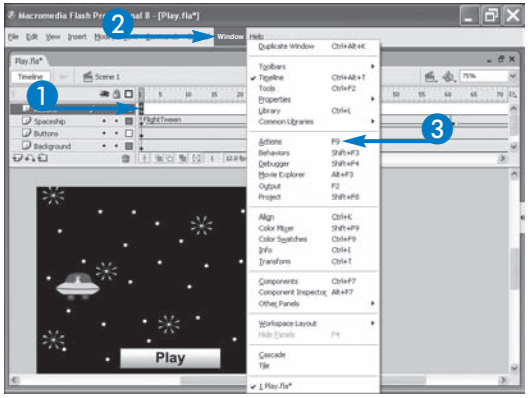
```
play();
```

The play action does not take any arguments, so it has no parameters. You can use the play action to start the main Timeline or to start a movie clip. If you want to start the main Timeline, simply issue a play action. If you want to start a movie clip, the movie clip must be on the Stage, it must have an instance name, and you must target the movie clip. You use the Property inspector to name an instance. Targeting a movie clip means you designate the movie clip on which you want ActionScript to perform an action. To learn more about targeting, see Chapter 27.

Play a Movie

Note: *This example uses the file PlayAction.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



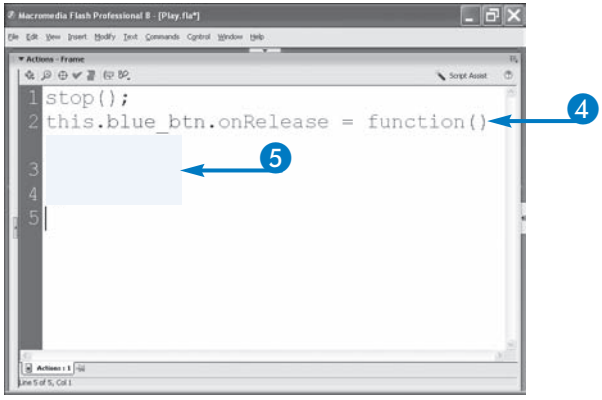
The Actions panel appears.

Note: *See the section "Using the Actions Panel" to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you release the* `blue_btn`*. See the section "Using Button Event Handlers" to learn how to add an event handler.*

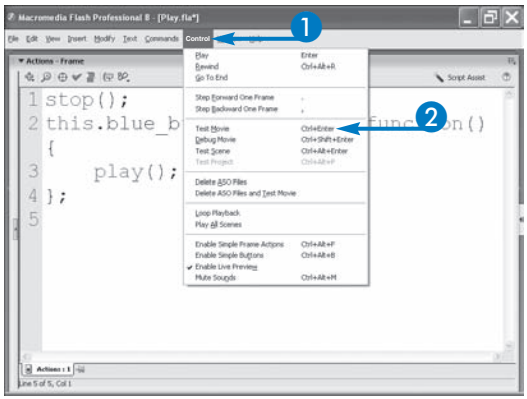
5. Type the code.



When executed, the code causes the movie to play.

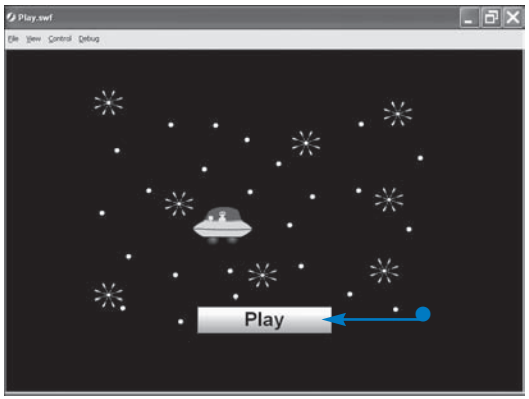
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- Press Play to play the movie.



How can I play a movie clip that has been stopped?

You can use the play action to start a movie clip. You can start a movie or movie clip at any point. The following is the syntax for the play action when used with a movie clip:

```
instanceName.play();
```

You use the `instanceName` argument to specify the movie clip you want to play. The following example starts `sample_mc`:

```
sample_mc.play();
```

Where do I find the `stop()` and `play()` actions?

You can use either the `stop()` and `play()` global functions or the `stop()` and `play()` movie clip methods to stop or play a movie or movie clip. The `stop()` and `play()` global functions and movie clip methods work exactly the same way. To access the global functions, you use this menu path: Global Functions, Timeline Control, Stop or Play. To access the movie clip methods you use this menu path: ActionScript 2.0 Classes, Movie, Movie Clip, Methods, Stop or Play.

Using the Go To Actions

You can use the Go To action to give users the ability to move to a desired location at will. The Go To action has two options: Go To and Play and Go To and Stop. The Go To and Play option goes to the specified scene and frame and plays the movie. The Go To and Stop option goes to the specified scene and frame and stops the movie. You use the following syntax with the Go To actions:

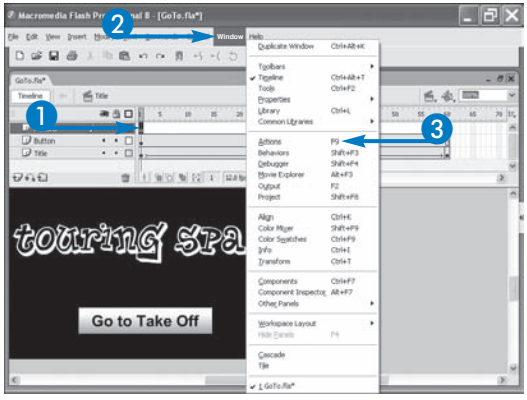
```
gotoAndPlay(scene,frame);
gotoAndStop(scene,frame);
```

The `scene` argument tells ActionScript the name of the scene to which you want to send the playhead. The scene argument is optional. If you do not enter a scene name, the playhead goes to the specified frame in the current scene. The frame argument tells ActionScript the frame to which you want to send the playhead. You can enter a number or a frame label.

Using the Go To Actions

Note: *This example uses the file GoToAction.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



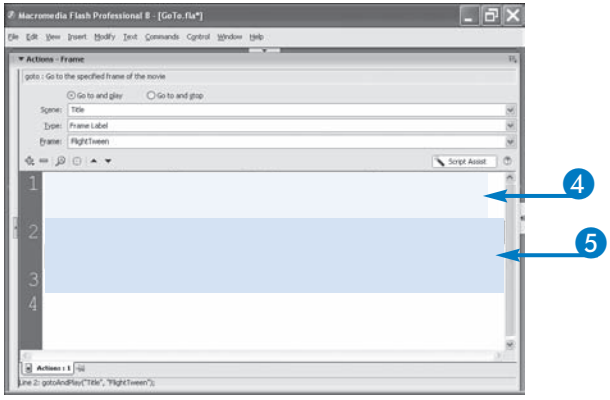
The Actions panel appears.

Note: *See the section "Using the Actions Panel" to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you release the `blue_btn`. See the section "Using Button Event Handlers" to learn how to add an event handler.*

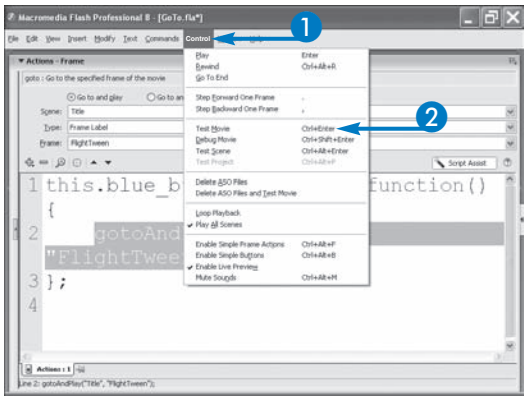
5. Type the code or select options using Script Assist.



The code tells Flash to move to a new scene.

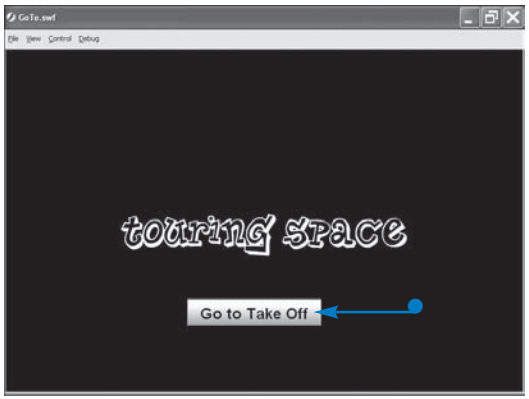
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- Click Go to Take Off to move to a new scene.



Can I use an expression to identify the frame to which I want to go?

Yes. For example, you can use the expression `gotoAndStop (_currentframe + 10)`. The `_currentframe` property retrieves the number of the current frame. The example takes the current frame and adds 10. It tells ActionScript to move 10 frames ahead and stop the movie.

Is there a way I can go to the next scene or previous scene?

Yes. If you select a Go To action in Script Assist, you can select `<next scene>` or `<previous scene>` in the Scene field to retrieve the `nextScene()` or `prevScene()` actions, respectively. The `nextScene()` action sends the playhead to the first frame of the next scene and stops the playhead. The `prevScene()` action sends the playhead to the first frame of the previous scene and stops the playhead.

Is there a way I can go to the next frame or previous frame?

Yes. If you select the Go To action in Script Assist, you can select Next Frame or Previous Frame in the Type field to retrieve the `nextFrame()` and `prevFrame()` actions, respectively. The `nextFrame()` action sends the playhead to the next frame and stops the playhead. The `prevFrame()` action sends the playhead to the previous frame and stops the playhead.

Using the Start Drag and Stop Drag Actions

You can use the `startDrag` action to create objects users can drag. You use the following syntax when using `startDrag`:

```
startDrag(target,lock,left,top,right,bottom);
```

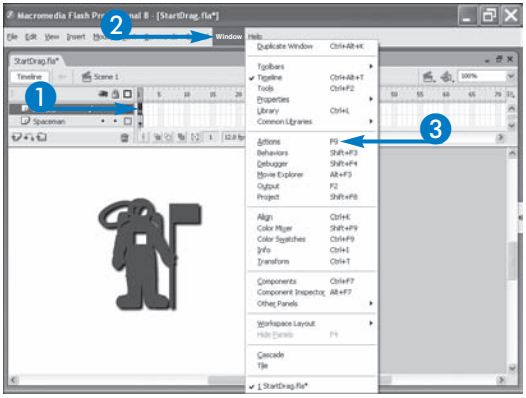
You use the `target` argument to specify the path to the movie clip you want to make draggable. You use the `lock` argument to specify the Boolean value `true` if you want Flash to lock the pointer to the center point of the object as the user drags. You use the Boolean value `false` if you want Flash to lock the pointer to the point at which the user pressed the mouse button. The `lock` argument is optional. You use the `left`, `right`, `top`, and `bottom` arguments to specify the area within which the user can drag the object.

Only one object can be draggable at a time. An object remains draggable until you execute a `stopDrag` action or another `startDrag` action.

You use the `stopDrag` action to stop the current drag operation. The syntax for the `stopDrag` action is: `stopDrag();`. The `stopDrag` action does not take any arguments, so it has no parameters.

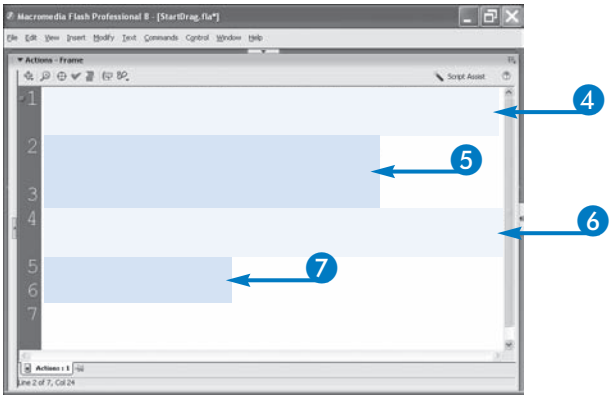
Using the Start Drag and Stop Drag Actions

Note: *This example uses the file StartDragAction.fla, which you can find on the CD-ROM that accompanies this book.*



1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.

   The Actions panel appears.



4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you press the mouse button while over* `spaceman_mc`.

5. Type the code.

   The code starts the drag action.

6. Add an event handler.

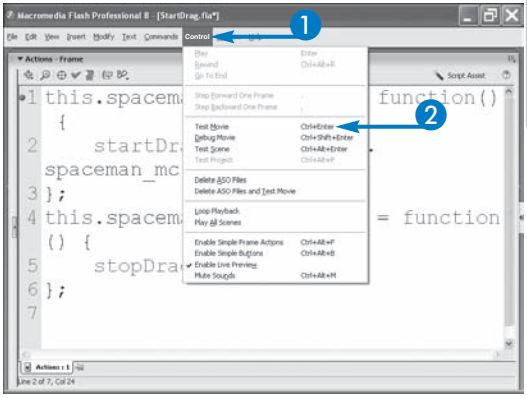
Note: *In this example, the event occurs when you release the mouse.*

7. Type the code.

   The code stops the drag action.

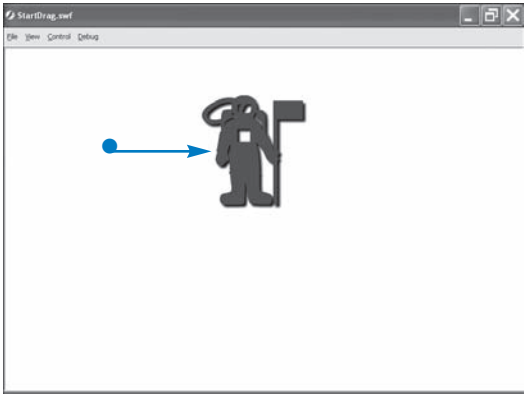
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- Drag the movie clip.



How do I specify the area in which the user can drag?

You specify the area by using the number of pixels from the top and left borders of the Stage. The upper-left corner of the Stage has a top value of 0 and a left value of 0. The top value increases by 1, each pixel you move down the Stage. The left value increases by 1, each pixel you move across the Stage. These arguments are optional.

Can you provide an example of a draggable object that is constrained to an area?

Refer to the file DragAction_f.fla. The ActionScript in this file constrains a small rectangle so that you can only drag it up and down. It uses the left and right parameters to constrain the `_x` property of the rectangle. By the way, you can obtain the `_x` property of an object from the X field in the Property inspector.

What are some uses for a draggable object?

You can create a draggable object to use as a scrollbar. The user can use the scrollbar to scroll through a block of text. You can also use a draggable object to change the panning of sound. For example, as the user drags a bar to the right, your sound can pan to the right speaker. As the user drags the bar to the left, the sound can pan to the left speaker.

Using the Duplicate Movie Clip Action

If you want to make a copy of a movie clip that is currently on the Stage, use the `duplicateMovieClip` action. The `duplicateMovieClip` action enables you to create a new instance of a movie clip while the movie is playing. The following is the syntax for the `duplicateMovieClip` action:

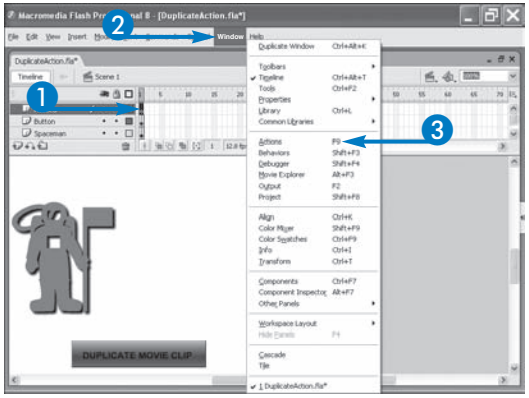
```
duplicateMovieClip(target, newName, depth);
```

You use the `target` argument to specify the name of the instance you want to duplicate. You use the `newName` argument to specify the name you want to give to the new instance. The `depth` argument refers to stacking order. Stacking order determines how objects appear on the Stage when they overlap. Objects with a higher depth number appear to be in front of objects with a lower number. Assign a depth number to each object you duplicate. If you place a new instance on the same depth level as an existing instance, the new instance replaces the existing instance.

Using the Duplicate Movie Clip Action

Note: *This example uses the file DuplicateAction.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



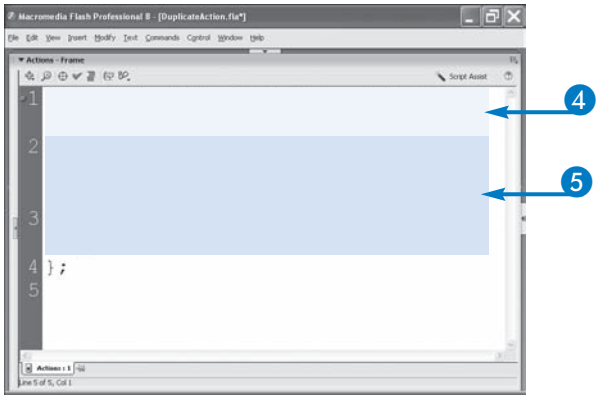
The Actions panel appears.

Note: *See the section "Using the Actions Panel" to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the code executes when you press and release `blue_btn`. See the section "Using Button Event Handlers" to learn how to add an event handler.*

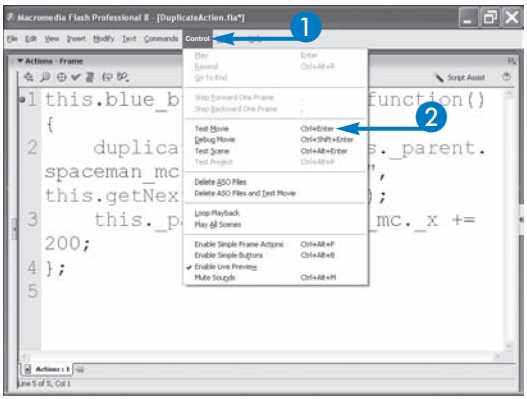
5. Type the code.



The code duplicates the movie clip and sets the location of the duplicated movie clip.

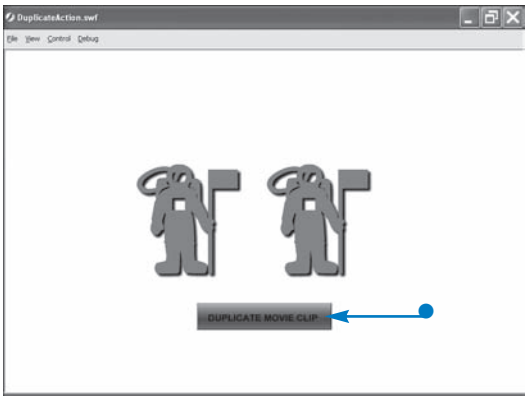
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- If you click the Duplicate Movie Clip button, Flash duplicates the movie clip.



Are there other things I should know about a duplicated movie clip?

Yes. If there are variables in the original movie clip, they are not copied to the duplicated movie clip. Duplicated movie clips always begin playing in frame 1. Each instance of the duplicated movie clip must have a unique name. If you delete the parent movie clip, ActionScript automatically deletes the child.

In the sample, why did you change the _x property of the duplicated movie clip?

By default, ActionScript places the child movie clip directly on top of the parent. You cannot discern that there is a new movie clip on the Stage. You can use the `_x` and/or `_y` properties to change the location of the duplicated movie clip. See Chapter 32 for a detailed explanation of the `_x` and `_y` properties.

What does `getNextHighestDepth` do?

You must assign a depth number to each movie clip you create. The `getNextHighestDepth` function returns the value of the next highest available depth. If you use the `getNextHighestDepth` function when you duplicate a movie clip, the duplicated movie clip is placed on the top of the stack. You do not have to use `getNextHighestDepth`. You can manually enter a depth number or you can enter a variable or an expression.

Introducing Movie Clip Properties

In Flash, attributes of an object are properties. Movie clips have a large number of attributes — or properties — such as height, width, location, and visibility. Using ActionScript, you can obtain the current value of movie clip properties and can change the value of many properties. Some properties, however, are read-only, which means you can retrieve the value but you cannot change it.

You retrieve and change property values for a variety of reasons. Retrieving the height and width properties tells you the size of a movie clip. By changing these properties, you can adjust the size of a movie clip.

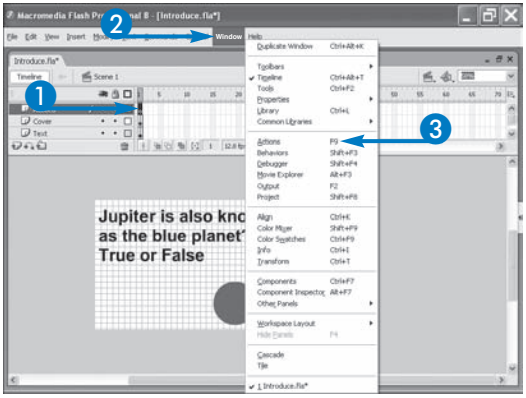
To retrieve or set the property value of a movie clip, you must give the movie clip instance a name. You use the Property inspector to name movie clip instances. The basic syntax for retrieving a property is to type the instance name followed by a dot and the property, as in `instanceName.property`. The basic syntax for setting the value of a property is to type the instance name followed by a dot, the property, an assignment operator, and the value to which you want to set the property — `instanceName.property = value`.

Introducing Movie Clip Properties

1. Click the frame in which you want to add actions.
2. Click Window.
3. Click Actions.

   The Actions panel appears.

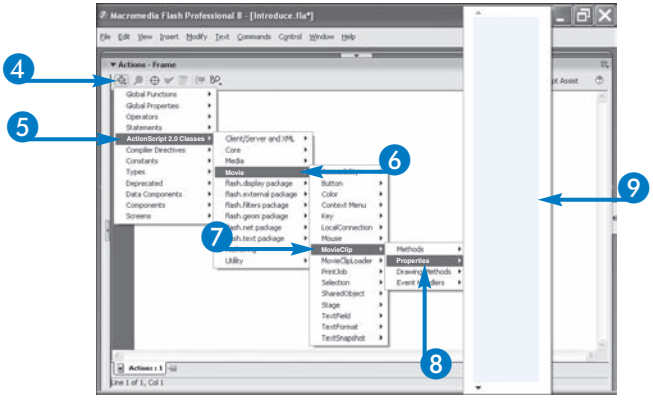
Note: *See Chapter 31 to learn how to work with the Actions panel.*



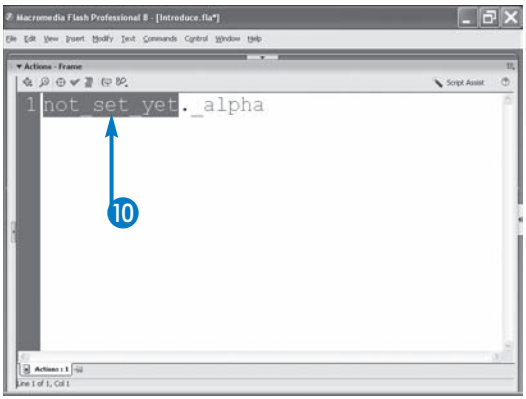
4. Click the Add Script button ( ).
5. Click ActionScript 2.0 Classes.
6. Click Movie.
7. Click MovieClip.
8. Click Properties.

   Flash lists the movie clip properties.
9. Click the property you want to add to your script.

   Flash adds the property.



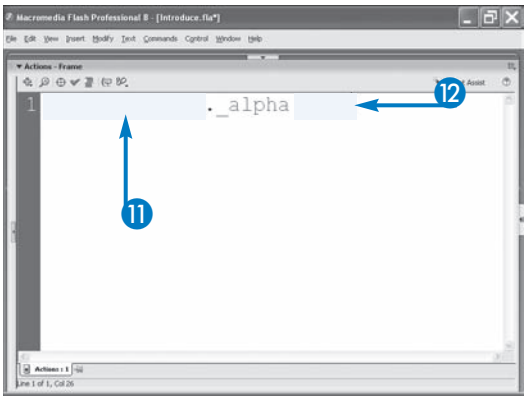
10 Highlight `not_set_yet`.



11 Type the target path.

12 Type the assignment operator and the value you want to assign to the property.

Flash adds your script to the Actions panel.



Should I use a relative or an absolute path when I target objects?

You should avoid using absolute paths beginning with `_root` when using ActionScript 2.0. If you use `_root`, you may have problems when you load your SWF file into another file. You should use a relative path instead. The suggested syntax is `this._parent` or `_parent` depending on the location of your code.

Is there another way I can set the property of a movie clip?

You can use the `setProperty` action to set movie clip properties. The syntax for the `setProperty` action is `setProperty(target, property, value)`. Use the `target` argument to specify the instance name of the movie clip you want to target, use the `property` argument to specify the property you want to set, and use the `value` argument to specify the value to which you want to set the property.

Is there another method I can use to retrieve the property of a movie clip?

You can use the `getProperties` function to retrieve the value of movie clip properties. The syntax for the `getProperty` function is `getProperty(instanceName, property);`. Use the `instanceName` argument to name the instance for which you want to retrieve the property. Use the `property` argument to specify the property you want to retrieve.

Adjust Transparency

You can use the `_alpha` property to set the transparency of a movie clip instance. You can set the `_alpha` property so movie clips are anything from opaque to invisible. Setting the property to 100 makes the movie clip opaque. Setting the property to 0 makes the movie clip completely transparent, or invisible. You can set the alpha property to any value between 0 and 100 to create movie clips the user can see through.

Before you can change the `_alpha` property of a movie clip, you must give the movie clip instance a name. Use the Property inspector to name your movie clip instance. The following is the syntax for the `_alpha` property:

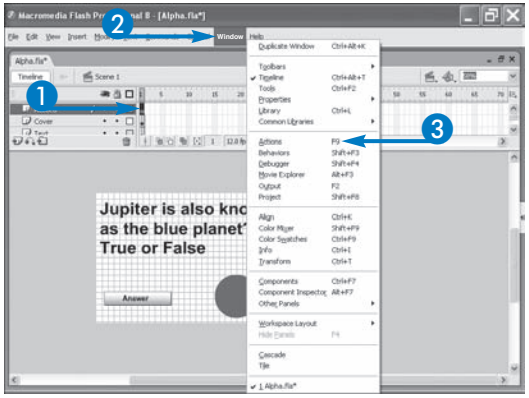
```
instanceName._alpha = value;
```

You use the `instanceName` argument to specify the name of the instance you want to target. You use the `value` argument to set the `_alpha` property to any value from 0 to 100.

Adjust Transparency

Note: *This example uses the file Alpha.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



The Actions panel appears.

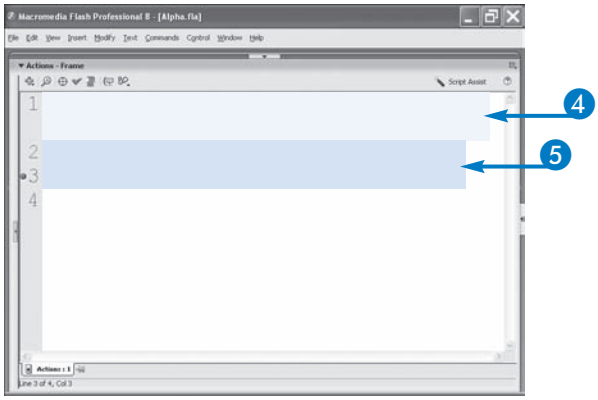
Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you press and release the `blue_btn`. See Chapter 31 to learn how to add event handlers.*

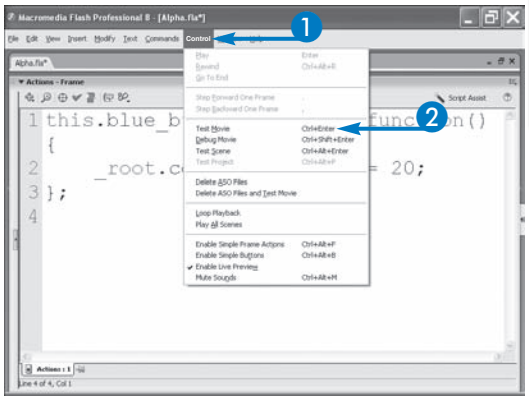
5. Type the code.

The code sets the alpha property of the targeted movie clip to the value you specify.



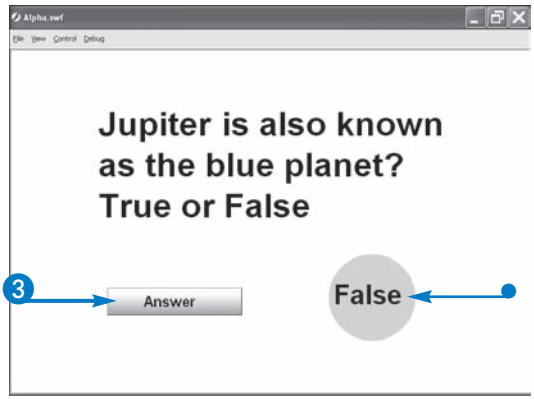
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Click the instance that executes the code.
   - The alpha property of the movie clip changes.



Can I retrieve the alpha property of a movie clip instance?

Yes. You can retrieve the `_alpha` property to determine the current value. The syntax for retrieving the current value of the alpha property is `instanceName._alpha;`. Use the `instanceName` argument to specify the instance for which you want to retrieve the `_alpha` value. You may want to retrieve the `_alpha` value to assign it to a variable, or you may want to retrieve the `_alpha` value so you can use it in an `if` statement. For more information about `if` statements and variables, see Chapter 33.

Can I manually change the alpha property?

Yes. You can change the alpha property of instances of symbols by using the Property inspector. In the Color field, select Alpha from the drop-down menu. You can adjust the alpha property to any value from 0 to 100. Changing the alpha property of an instance does not change other instances or the symbol.

Is a transparent movie clip still active?

Yes. If you set the transparency of a movie clip instance associated with a button's Up, Down, and Over states to 0, the user cannot see the button, but the user can interact with the button.

Make Movie Clips Invisible

You can use the `_visible` property to make movie clips that are on the Stage visible or invisible to users. This property is useful when you have a movie clip you do not want users to see until the movie reaches a particular frame or a particular action has occurred.

Before you can change the `_visible` property of a movie clip instance, you must give the instance a name. You use the Property inspector to name a movie clip instance. The following is the syntax for the `_visible` property:

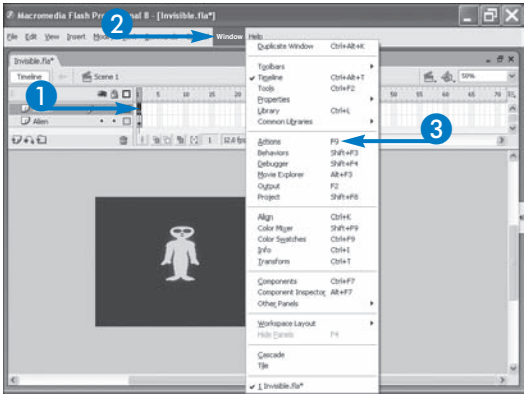
```
instanceName._visible = BooleanValue;
```

You use the `instanceName` argument to specify the name of the instance you want to target. You use the `BooleanValue` argument to set the `_visible` property to `true` or `false`. If you set the `BooleanValue` to `true`, the movie clip is visible. If you set the `BooleanValue` to `false`, the movie clip is not visible.

Make Movie Clips Invisible

Note: *This example uses the file Invisible.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



The Actions panel appears.

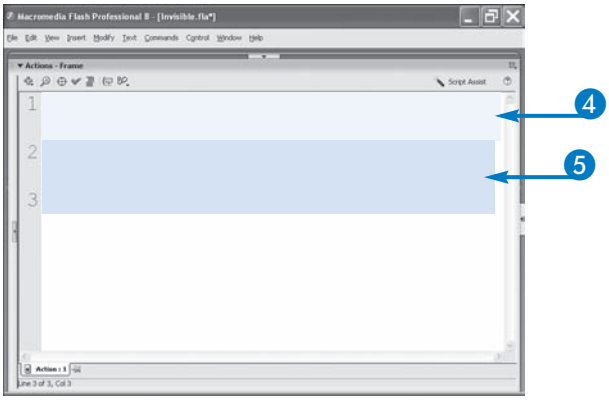
Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you roll the mouse over* `alien_mc`*. See Chapter 31 to learn how to add event handlers.*

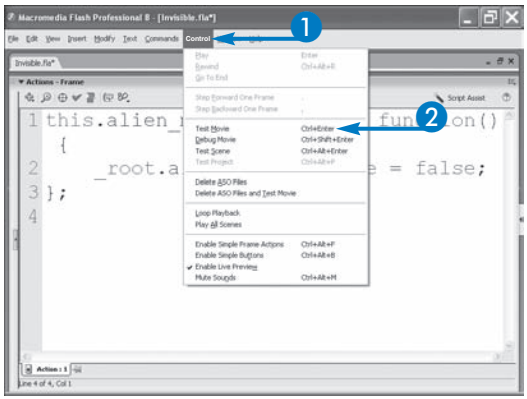
5. Type the code.

   The code sets the visible property of the targeted movie clip to `false`, making the targeted movie clip invisible.



Test your movie

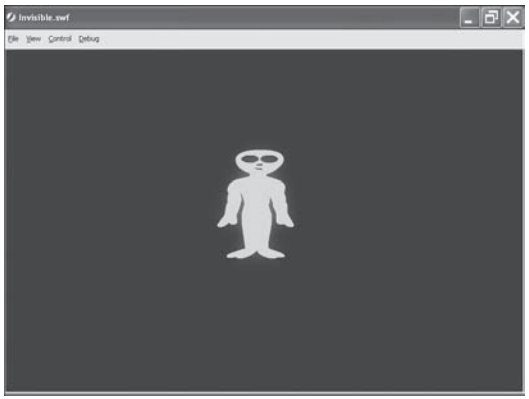
1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Roll the mouse pointer over the movie clip.

The movie clip becomes invisible.



Can I retrieve the visible property value?

Yes. When writing script, you may want to retrieve the `_visible` property value of a movie clip to determine what action ActionScript should perform. For example, you could create a button that toggles the visibility of a movie clip on and off. If the `_visibility` value is `true`, the script sets the visibility to `false`. If the `_visibility` is false, the script sets the `_visibility` to true. The syntax for retrieving the `_visible` value is `instanceName._visible;`. You use the `instanceName` argument to specify the name of the instance for which you want to change the `_visible` property.

Can you provide me with an example in which you retrieve the `_visible` property?

Yes. See the file Toggle_f.fla on the CD that accompanies this book. When the user presses a button, the script retrieves the visible property value for the targeted object to determine if it is true. For a detailed explanation of the script, see Chapter 33.

Is an invisible movie clip active?

No. The user cannot interact with a movie clip that is not active. If you set the visibility of a movie clip associated with a button's Up, Down, and Over states to `false`, users are not able to see or interact with the button.

Rotate Movie Clips

You can use the `_rotation` property to rotate a movie clip instance. To rotate a movie clip instance, set a *rotation value*. The rotation value is the number of degrees you want the movie clip to rotate from the original position at which it was placed on the Stage.

Before you can set the `_rotation` value of a movie clip, you must give the movie clip instance a name. Use the Property inspector to name your movie clip instance. The following is the syntax for setting the `_rotation` value:

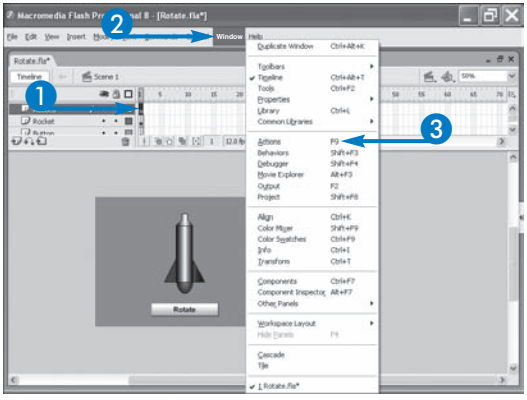
```
instanceName._rotation = value;
```

You use the `instanceName` argument to specify the instance name of the movie clip you want to target. You use the `value` argument to set the number of degrees you want to rotate the movie clip. If you want to rotate the movie clip counterclockwise, use a negative number.

Rotate Movie Clips

Note: *This example uses the file Rotate.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



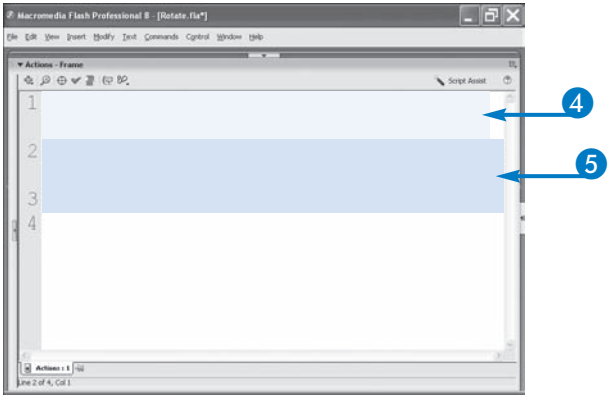
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you click and then release* `blue_btn`. *See Chapter 31 to learn how to add event handlers.*

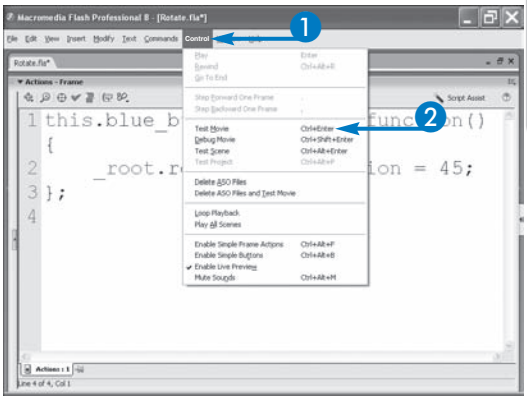
5. Type the code.



The code sets the rotation value of the targeted movie clip to the number you specify.

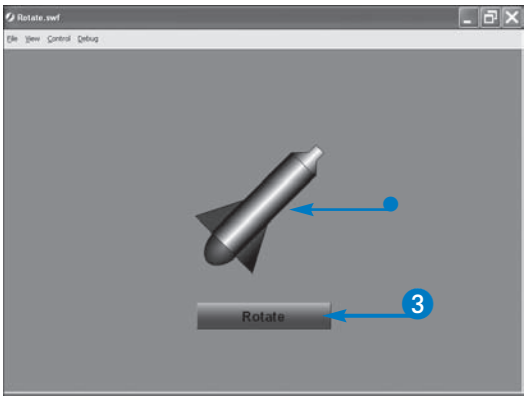
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Click the Rotate button.
   - The movie clip rotates.



My object is not rotating. Why?

Note that setting the rotation value to 90 rotates the movie clip instance 90 degrees from its original location, not its current location. If the current rotation value is 90 and you set the rotation value to 90, the movie clip does not rotate. To rotate the movie clip an additional 90 degrees, you must set the rotation value to 180.

Can I retrieve the current rotation value?

Yes. You may want to retrieve the value so you can continue to rotate your object. The syntax for retrieving the rotation value is `instanceName._rotation;`. You use the `instanceName` argument to specify the instance name of the movie clip for which you want to retrieve the rotation value.

How can I make my movie clip rotate continuously?

If you want to rotate a movie clip continuously, use the `onEnterFrame` handler along with the `_rotation` property. The `onEnterFrame` handler causes a frame to excecute continuously. The statement `sample_mc._rotation += 3;` rotates a movie clip. The higher the value, the faster the movie clip rotates. You should be aware that the `onEnterFrame` handler is resource intensive. To see an example, refer to the file RotateContinue_f.fla on the CD that accompanies this book.

Change the Width of Movie Clips

You use the `_width` property to set the distance from the left side of a movie clip to the right side in pixels. Because ActionScript enables you to request information from the user, you can place an input field on the Stage that enables the user to specify the size of a movie clip. When the user types a number in the input field, Flash reads the number and uses it to change the size of the movie clip.

However, before you can change the `_width` property of a movie clip, you must give the movie clip instance a name. You use the Property inspector to name a movie clip. The following is the syntax for the `_width` property:

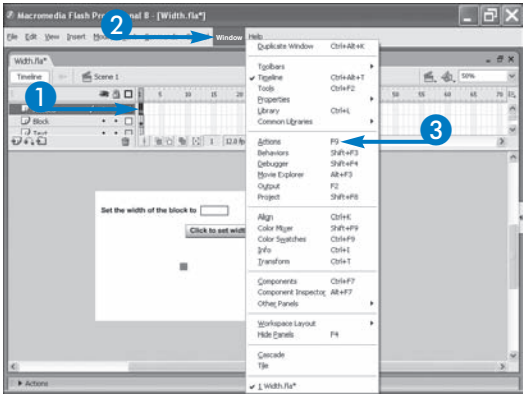
```
instanceName._width = value;
```

You use the `instanceName` argument to specify the name of the movie clip you want to target. You use the `value` argument to set the `_width` property in pixels.

Change the Width of Movie Clips

Note: *This example uses the file Width.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



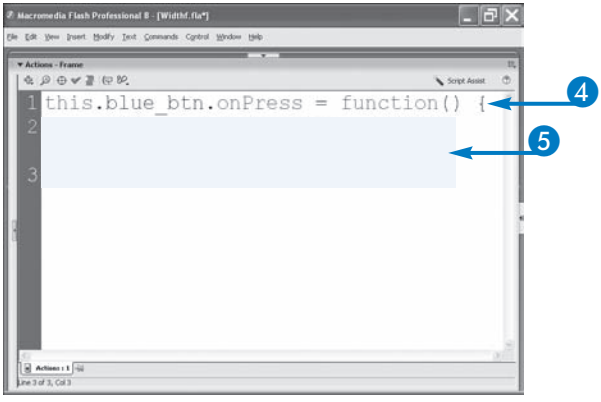
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you click the `blue_btn`. See Chapter 31 to learn how to add event handlers.*

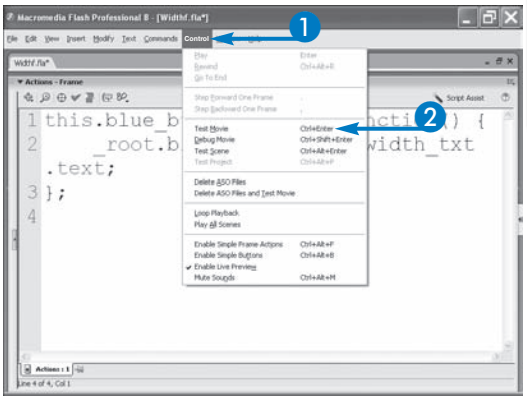
5. Type the code.



The code sets the width of the targeted movie clip to the number of pixels the user enters into the width_txt input field.

Test your movie

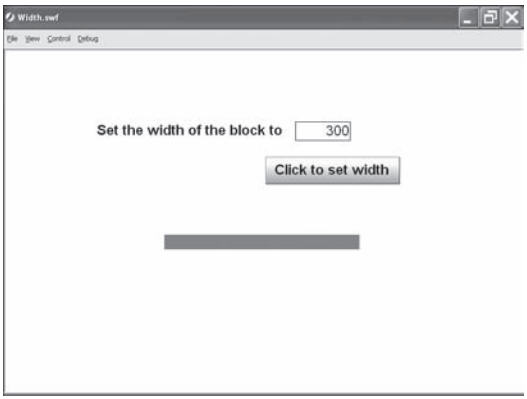
1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Type the number of pixels you want the width of the targeted movie clip to be.
4. Click the Click to set width button.

   The width of the movie clip changes.



Can I retrieve the `_width` property value for a movie clip?

You can retrieve the `_width` property to obtain its current value. The syntax for retrieving the `_width` property is `instanceName._width`. You use the `instanceName` argument to specify the movie clip instance for which you want to retrieve the `_width` property.

If you are working in the authoring environment, the width and height of a movie clip display in the W and H fields in the Property inspector and in the Info panel. To open the Info panel, click Window, and then Info. In the authoring environment, you can change the Width and Height by entering values in the W and H fields.

Can I use a percentage to change the width of a movie clip?

Yes. You can use the `_xscale` property to change the width of a movie clip by a percentage. This property is similar to the `_width` property. The `_width` property changes the distance from the left to the right side of a movie clip by using pixels, while `_xscale` uses a percentage. Before you can change the `_xscale` property, you must give the movie clip instance a name. The syntax for the `_xscale` property is `instanceName._xscale = value;`. You use the `instanceName` argument to specify the name of the movie clip instance. You use the `value` argument to specify the percentage by which you want to change the width.

Change the Height of Movie Clips

You can use the `_height` property to set the distance from the bottom of a movie clip to the top in pixels. This property is useful if you need to resize a movie clip as the movie plays. You can increase or decrease the height of the movie clip. A possible use of the `_height` property is to increase or decrease the size of a bar as the user increases or decreases the sound volume. Alternatively, you may want to use the `_height` property to give the user the ability to set the size of objects on the Stage.

Before you can change the `_height` property of a movie clip, you must give the movie clip instance a name. You use the Property inspector to name a movie clip instance. The following is the syntax for the `_height` property:

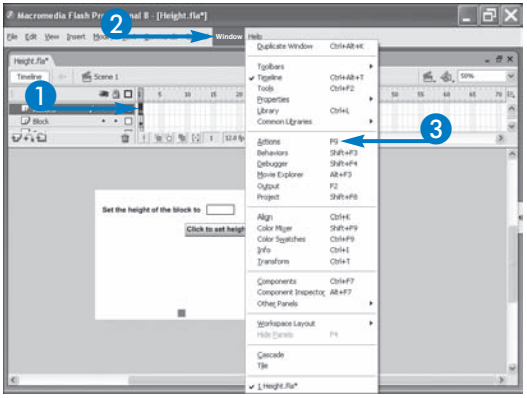
```
instanceName._height = value;
```

You use the `instanceName` argument to specify the name of the movie clip instance you want to target. You use the `value` argument to set the `_height` property in pixels.

Change the Height of Movie Clips

Note: *This example uses the file Height.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



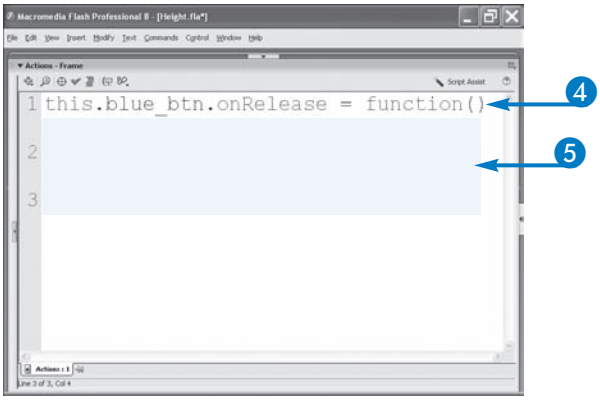
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you click and then release `blue_btn`. See Chapter 31 to learn how to add event handlers.*

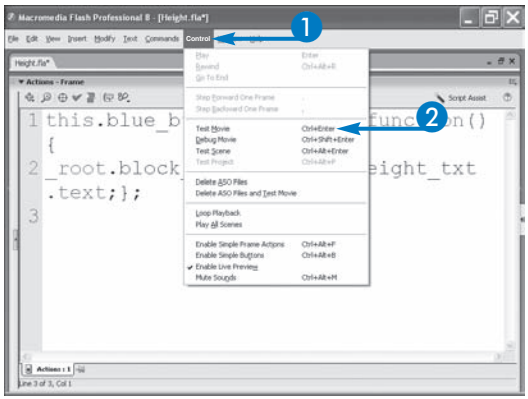
5. Type the code.



The code sets the height of the targeted movie clip to the number of pixels the user enters into the text field.

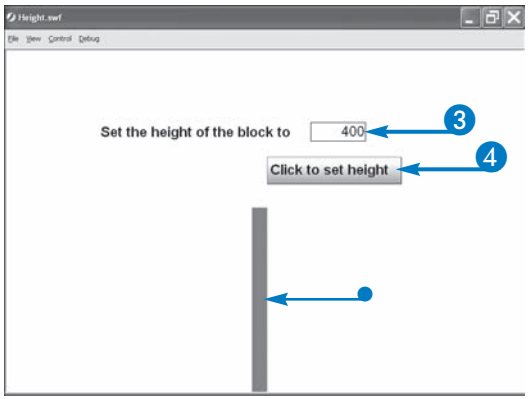
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Type the number of pixels you want the height of the targeted movie clip to be.
4. Click the Click to set height button.
   - The height of the movie clip changes.



Can I retrieve the height property?

Yes. ActionScript also gives you the ability to retrieve the current value of the `_height` property. As with other properties, you can retrieve the `_height` property and use the value to determine what action to perform next. The syntax for retrieving the `_height` property is `instanceName._height;`. You use the `instanceName` argument to specify the name of the movie clip for which you want to retrieve the `_height` property.

Can I change the height of a movie clip by a percentage?

Yes. You use the `_yscale` property to change the height of a movie clip by a percentage. The syntax for the `_yscale` property is `instanceName._yscale = value;`. You use the `instanceName` argument to specify the name of the movie clip instance for which you want to set the `_yscale` property. You use the `value` argument to specify the percentage by which you want to change the height.

How do I set the values when using `_xscale` and `_yscale`?

If you want to reduce the width or height of a movie clip by 50 percent, assign a value of 50. If you want to increase the width or height of a movie clip by 100 percent, assign a value of 200. To return a movie clip to its original size, assign a value of 100. Assigning a value of zero causes your movie clip to disappear.

Move Movie Clips Across the Stage

You can use the `_x` property to change the location of a movie clip relative to the left side of the Stage. In fact, you can use the `_x` property to move a movie clip back and forth across the Stage. The following is the syntax for the `_x` property:

```
instanceName._x = value;
```

You use the `instanceName` argument to specify the name of the instance you want to target. You use the `value` argument to specify the distance in pixels from the left border of the Stage you want to locate the center point of the movie clip. The left border of the Stage has a value of 0. Before you can change the `_x` property for a movie clip, you must give the movie clip instance a name. You use the Property inspector to name a movie clip instance.

Using the syntax `instanceName._x;`, you can retrieve the current value of the `_x` property and then add or subtract from that value to move your movie clip instance.

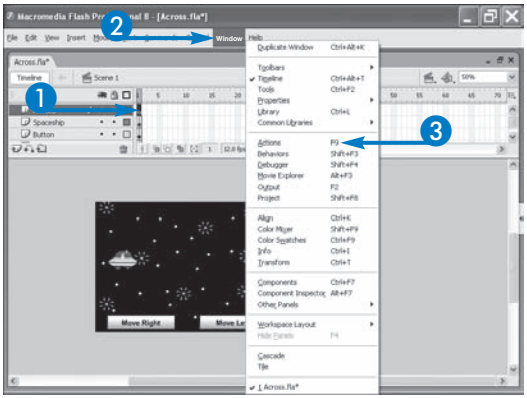
Move Movie Clips Across the Stage

Note: *This example uses the file Across.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.

   The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*



4. Add an event handler.
5. Type the code.

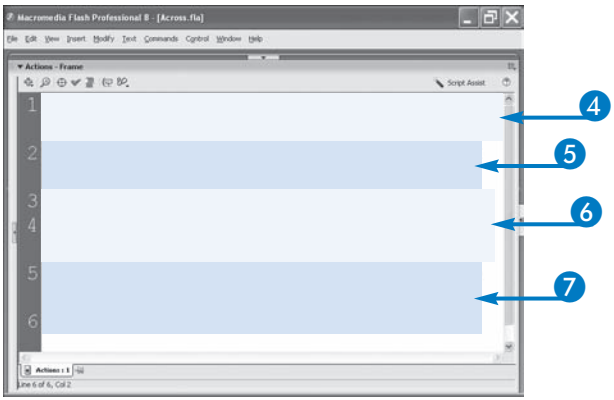
   The code moves the targeted movie clip to the right the number of pixels you specify.

6. Add an event handler.

Note: *The event handlers cause the code you type to execute when the event you choose occurs. In these examples, the event occurs when you click* `moveRight_btn` *and* `moveLeft_btn`*. See Chapter 31 to learn how to add event handlers.*

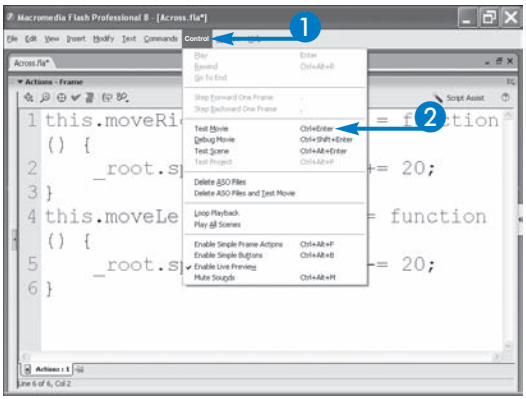
7. Type the code.

   The code moves the targeted movie clip to the left the number of pixels you specify.

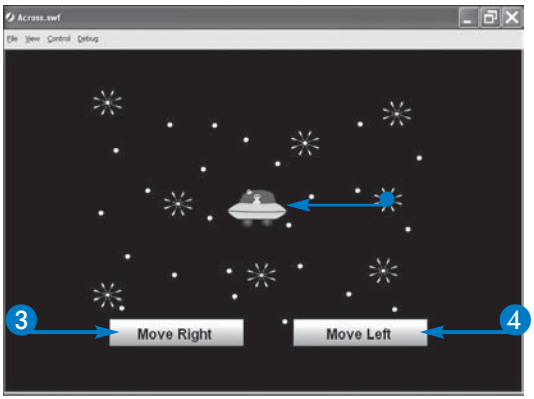


Test your movie

1. Click Control.
2. Click Test Movie.



3. Click the Move Right button.
   - The targeted object moves right.
4. Click the Move Left button.
   - The targeted object moves left.



Can I retrieve the current value of the _x property?

Yes. Retrieving the value is useful when you want to reset the value of the `_x` property relative to its current location. In other words, you can retrieve the `_x` property, so you can move a movie clip from its current location to a new location. The syntax for changing the `_x` property is `instanceName.property;`. You use the `instanceName` argument to specify the name of the instance you want to target. In the example, `this._parent.spaceShip_mc._x` returns the current value of the `_x` property for `spaceShip_mc`.

What do += and -= do?

The expression `this._parent.spaceShip_mc._x += 20`, uses the compound operator `+=`. Compound operators use the value on the left side of an expression in a calculation. The expression `this._parent.spaceShip_mc._x` returns the current value of the `_x` property for the `spaceShip_mc`. The `+=` compound operator takes the value that is returned and adds it to the value on the right side of the expression. For example, if `this._parent.spaceShip_mc._x` returns `30`, the expression `this._parent.spaceShip_mc._x += 20` adds `30` to `20` to yield the result. The `-=` compound operator takes the value that is returned and subtracts the value on the right side of the expression from it.

Move Movie Clips Up and Down

You can use the `_y` property to change the location of a movie clip relative to the top of the Stage. In fact, you can use the `_y` property to move a movie clip up and down the Stage. You can also use the `_y` property in conjunction with the `_x` property to specify the exact location at which you want to place a movie clip on the Stage.

Before you can change the `_y` property of a movie clip, you must give the movie clip instance a name. You use the Property inspector to name a movie clip instance. The following is the syntax for the `_y` property:

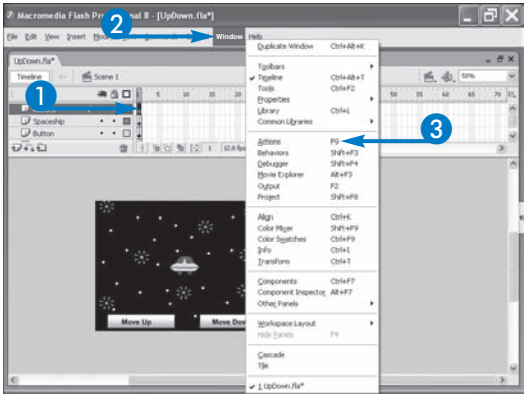
```
instanceName._y = value;
```

You use the `instanceName` argument to specify the name of the movie clip instance you want to target. You use the value argument to specify the number of pixels from the top of the Stage you want to place the center point of the movie clip. The top border of the Stage has a value of 0.

Move Movie Clips Up and Down

Note: *This example uses the file UpDown.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

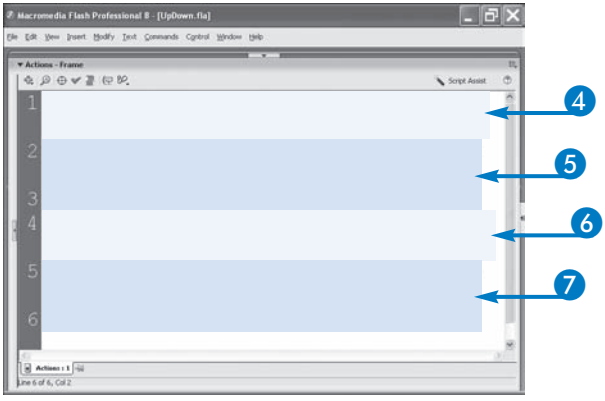
4. Add an event handler.
5. Type the code.

   The code moves the targeted movie clip up the number of pixels you specify.
6. Add an event handler.

Note: *The event handlers cause the code you type to execute when the event you choose occurs. In these examples, the event occurs when you click `moveUp_btn` and `moveDown_btn`. See Chapter 31 to learn how to add event handlers.*

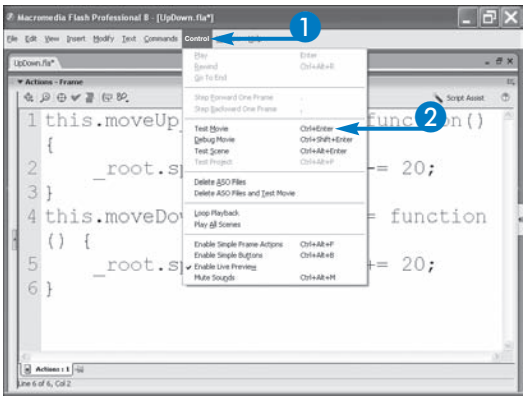
7. Type the code.

   The code moves the targeted movie clip down the number of pixels you specify.

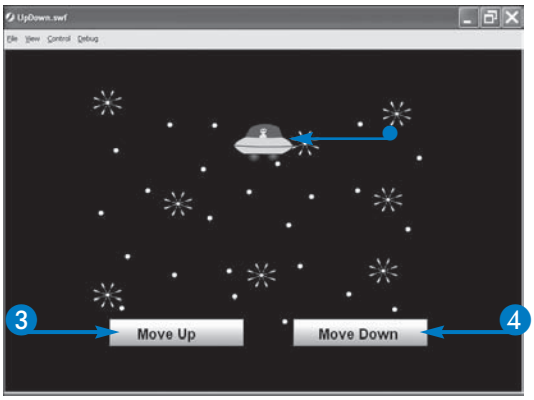


Test your movie

1. Click Control.
2. Click Test Movie.



3. Click the Move Up button.
   - The targeted object moves up.
4. Click the Move Down button.
   - The targeted object moves down.



Can I retrieve the _y property of a movie clip?

Yes. The syntax for retrieving the current value of the `_y` property is `instanceName._y;`. Retrieving the value is useful when you want to reset the value of the `_y` property relative to its current location. You use the `instanceName` argument to specify the name of the instance for which you want to retrieve the `_y` property.

Can I use the _x and _y properties to move a movie clip to a specific location?

Yes. You can move a movie clip anywhere you want by specifying the coordinates. To view an example of a movie clip being moved to a specific location, refer to the file Move_f.fla, which you can find on the CD-ROM that accompanies this book.

Can I use the Property inspector and Info panel to obtain information on the x and y properties?

The x and y properties of a movie clip display in the X and Y fields in the Property inspector and in the Info panel. To open the Info panel, click Window, Info. You can change the x and y properties by entering values in the X and Y fields.

Introduction to Variables and Data Types

You use variables to store information for later use. You use the following syntax to create a variable:

```
var variableName:dataType = value;
```

The `var` keyword tells ActionScript you are declaring a variable. The `variableName` argument represents the name you give to the variable. The `dataType` argument tells ActionScript the type of data you are going to store in the variable. The equal sign (=) is the assignment operator. The assignment operator tells ActionScript you want to assign something to a variable. `Value` represents what you want to assign to the variable. When a value has been assigned, the assigned value is retrieved whenever you use the variable name. For example, if you make the following assignment:

```
var x:Number = 2;
```

every time ActionScript sees the variable `x`, it interprets it to mean `2`. You can change the value assigned to a variable many times and at any point in your script.

Data Types

In ActionScript, the most commonly used data types are string, number, Boolean, movie clip, and object. A *string* is any sequence of characters consisting of any combination of letters, numbers, and punctuation marks. A *number* is a value on which you can perform mathematical operations such as addition (+), subtraction (–), multiplication (*), division (/), modulo (%), increment (++), or decrement (--). A *Boolean* is a value that is either `true` or `false`. A *movie clip* is a symbol that can play Flash animation. An *object* is used to manipulate data, sounds, and movie clips. When using ActionScript 2.0, you define the data type when you declare the variable.

Data Type	*How Defined*
String	`:String`
Number	`:Number`
Boolean	`:Boolean`
Movie Clip	`:MovieClip`
Object	`:Object`

Assign a Value

The syntax for assigning a value to a variable depends on the data type. Strings must be enclosed in either single or double straight quotes.

Example:

```
var customerName:String = "John Smith";
```

Numbers are not enclosed in quotes.

Example:

```
var amountDue:Number = 100;
```

Booleans are not enclosed in quotes.

Example:

```
var married:Boolean = true;
```

The following example creates an object:

```
var sampleObj:Object = new Object();
```

Scope of Variables

ActionScript variables are either global, Timeline, or local. A global variable can be referenced by any Timeline in your movie. Global variables are said to have an unlimited scope. Each global variable must be unique within the movie. A Timeline variable can be referenced by any script on its Timeline. A local variable can be referenced only within the curly braces that enclose its block of script. Timeline and local variables have a limited scope. Each variable must have a unique name within its scope.

Declare a Variable

Declaring a variable lets ActionScript know that a variable exists even if no value has been assigned to it. You use the `var` statement to declare Timeline and local variables. In the example shown here, the variable `x` is declared.

Example:

```
var x:Number;
```

You use the assignment operator (=) to assign a value to a Timeline or local variable. In the example shown here, the value `25` is assigned to the variable `x`.

Example:

```
var x:Number = 25;
```

You use the `_global` identifier to create a global variable. You cannot assign a data type to a global variable. ActionScript examines the expression and determines whether the variable is a number, a string, a Boolean, an object, or a movie clip.

Example:

```
_global.country = "France";
```

You can change the value assigned to a variable. With global variables, ActionScript automatically changes the variable type. For example, when you assign `_global.x = 2;`, ActionScript evaluates the expression and determines that `x` is a number. If you later change the assignment to `_global.x = "George";`, ActionScript reevaluates the expression and determines that `x` is a string. Global variables are often initialized in the first frame of a movie. Initializing a variable consists of assigning an initial value to the variable.

Name a Variable

You are free to name your variables anything you like; however, when naming your variables, you must follow these rules:

- The first character of your variable name must be a letter, underscore (_), or dollar sign ($).
- Each subsequent character can be a number, letter, underscore (_), or dollar sign ($).
- Your variable name cannot be a keyword or any element of the ActionScript language.
- Your variable name cannot be a Boolean literal.
- Your variable name cannot contain spaces.
- Your variable name must be unique within its scope. For example, global variables must be unique within the movie; Timeline variables must be unique to the Timeline; and local variables must be unique within the curly braces that enclose them.
- Your variable name does not have to be in the format of a first word beginning with a lowercase letter and subsequent words beginning with capital letters; however, that convention is used in this book. If you develop a convention and use it consistently, it is easier to debug your code.

Assign Values to Variables

You can assign words, numbers, and other characters to a variable and define the variable as a string. A *string* is any sequence of characters consisting of any combination of letters, numbers, and punctuation marks. You use a string variable to store values such as text or a URL. You cannot perform mathematical operations on a string even if the string is a number. When assigning a string to a variable, you enclose the string in straight double quotation marks. The example, `var userName:String = "John Smith";`, stores the string `John Smith` to the variable `userName`.

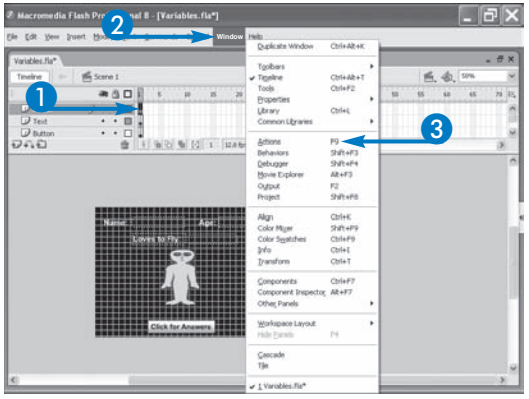
You can assign a number to a variable and use the number as a counter in a mathematical calculation, or to set a property. The number you assign can be the result of a mathematical calculation.

You use a Boolean when you want to set a condition to `true` or `false`, evaluate whether a condition is `true` or `false`, or compare values. When you assign a Boolean, the value is always either the word `true` or the word `false` or an expression that evaluates to `true` or `false`. This example, `var isMale:Boolean = false;` assigns the Boolean value `false` to the variable `isMale`.

Assign Values to Variables

Note: *This example uses the file Variables.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



The Actions panel appears.

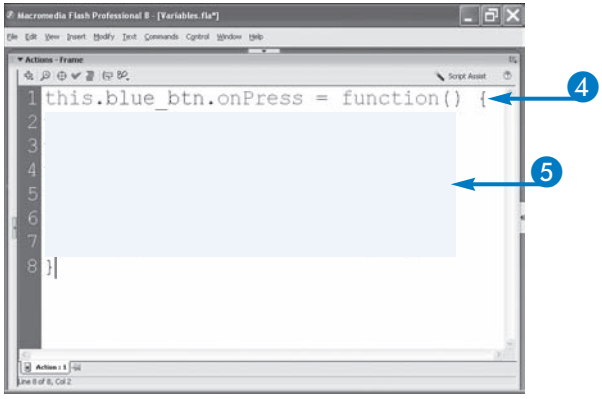
Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you press the `blue_btn`. See Chapter 31 to learn how to add event handlers.*

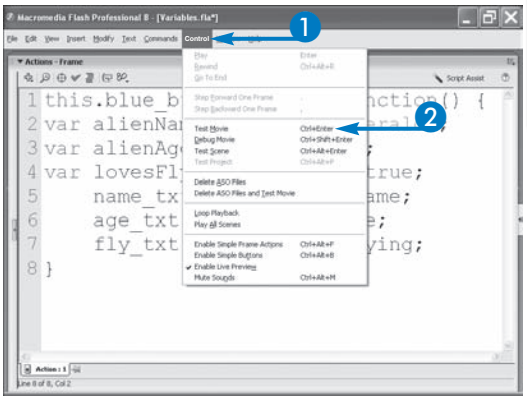
5. Type the code.

The code assigns a string, a number, and a Boolean to separate variables and then displays the contents of the variables in dynamic text fields.



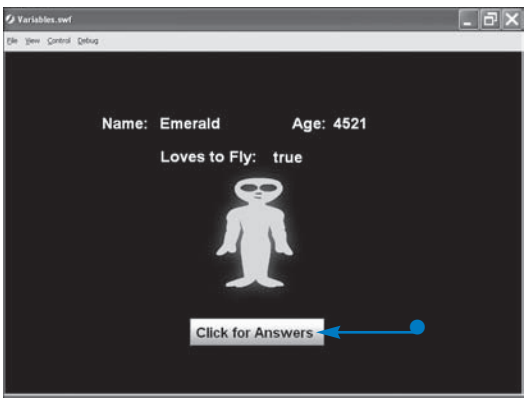
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- Click the button. The contents of the variables display onscreen.



Can you provide some examples of assigning a number to a variable?

Yes. These examples all assign numbers to a variable:

```
var x:Number = 5;
var y:Number = x + 25;
var z:Number = 5 + 7;
```

Any expression that returns a number and is assigned to a variable assigns a number to the variable. ActionScript stores numbers as integers. Include a decimal point if you want your number stored as a floating-point number. A *floating-point number* is a number with no fixed number of digits before or after the decimal point.

What is a primitive data type?

ActionScript divides data types into two categories: *primitive* and *reference*. Strings, numbers, and Booleans are primitive data types. A variable that contains a primitive data type stores the value that has been assigned to it and does not update when changes are made. For example:

```
var x:Number = 10;
var y:Number = x;
var x =30;
```

In this example, `y` is equal to `10`. The value of `y` remains `10` even though the value of `x` subsequently changes to `30`.

Using If

When driving, you must make a decision each time you reach a stoplight. If the light is green, go. If the light is yellow, proceed with caution. If the light is red, stop. You can use the ActionScript `if`, `else if`, and `else` actions to have your script make similar decisions.

For example, if you need an ActionScript that sends a message to the user or performs some other action if a condition is `true`, you can use the `if` action to create your script. The `if` action uses the following syntax:

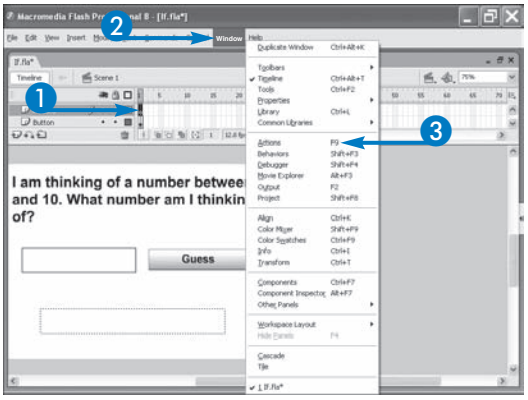
```
if (condition){
statement;
}
```

A *condition* is an expression that evaluates to either `true` or `false`. A *statement* is an instruction you want to execute if the condition is `true`. The `if` action evaluates the `condition`; if the `condition` is `true`, ActionScript executes the statement. If the `condition` is `false`, ActionScript executes the next statement outside the block of code.

Using if

Note: *This example uses the file If.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



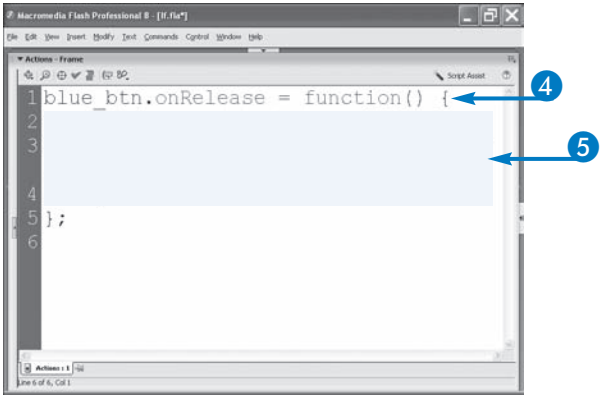
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you release the* `blue_btn`*. See Chapter 31 to learn how to add event handlers.*

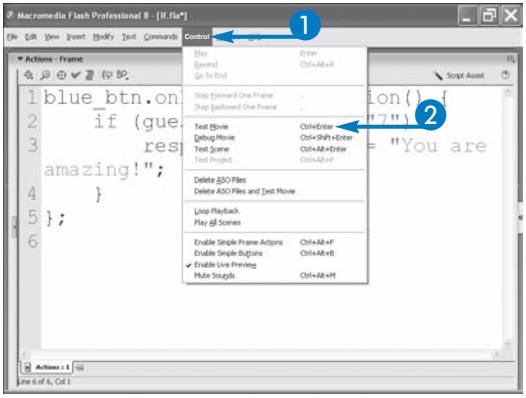
5. Type the code.



The code evaluates the `if` expression and displays a message if it is true.

Test your movie

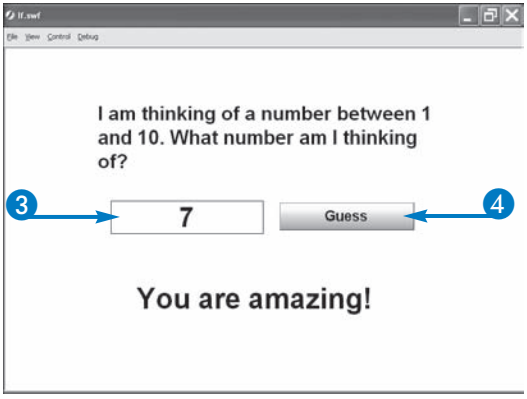
1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Type a number.
4. Click the Guess button.

If the number you type is 7, Flash displays a message.



What does == mean?

When you are writing ActionScript, there are times when you want to know if two expressions are equal. The equality operator (==) compares two expressions to determine if they are equal. You can use the equality operator to compare numbers, strings, Booleans, objects, or movie clips. If the items being compared are equal, the equality operater returns `true`; if they are not equal, the equality operator returns `false`.

You can also use the inequality operator to compare values (`!=`). The inequality operator has the same characteristics as the equality operator except it returns `true` if the expressions are not equal and `false` if the expresions are equal.

Can you explain the example?

Yes. In the example, the user makes an entry in the input text box named `guess_txt`. ActionScript compares the value of `guess_txt` with `7`. If `guess_txt` is equal to `7`, ActionScript displays the message "You are amazing!" in the dynamic text box `response_txt`. If `guess_txt` is not equal to `7`, ActionScript does nothing.

You use the `if` statement any time you want a statement executed only if a specific condition is `true`. In the example, the script executes when the guess is equal to `7`. It could be set to execute when the guess is greater than `7` or less than `7` or some other condition.

Using if with else

If you have a situation with two possible outcomes and you want a different action to execute depending on the outcome, you should use the `if` action with the `else` action. For example, you ask the user a question. There are two possible outcomes: either the user responds with the correct answer or the user responds with an incorrect answer. Using `if` with `else`, you can write a script that enables users to move to the next question if they give the correct answer but tells them to try again if they give an incorrect answer. Here is the syntax for `if` with `else`:

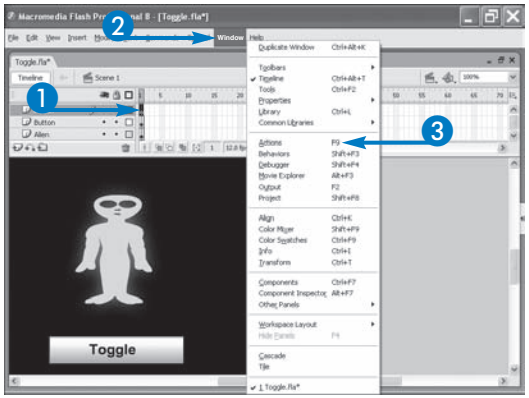
```
if (condition) {
     statement(s);
} else{
      Statement(s);
}
```

ActionScript evaluates the `if` condition; if the condition evaluates to `true`, ActionScript executes the statements after the `if`. If the condition evaluates to `false`, ActionScript executes the statements after the `else`.

Using if with else

Note: *This example uses the file Toggle.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



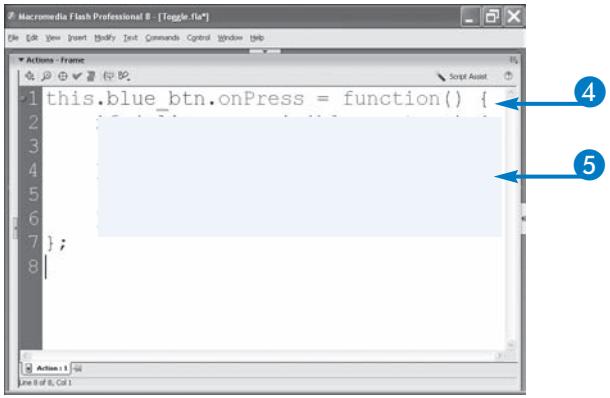
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you click and release the mouse while the mouse pointer is over `blue_btn`. See Chapter 31 to learn how to add event handlers.*

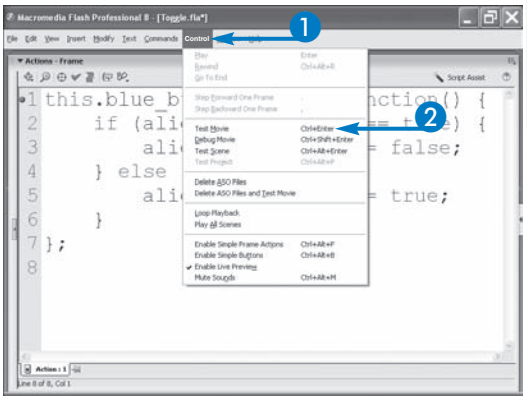
5. Type the code.



The code evaluates the `if` expression and sets the `_visible` property to `false` if the `_visible` property is true; otherwise, it sets the `_visible` property to `true`.

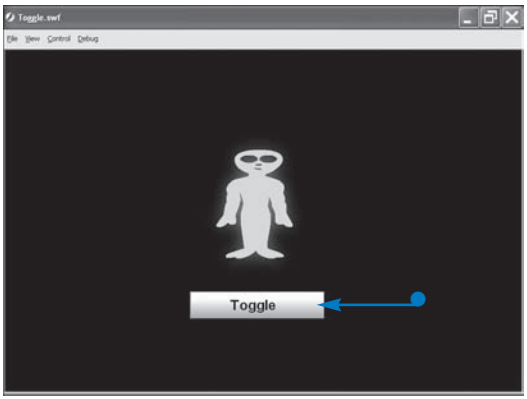
Test your movie

1. Click Control.
2. Click Test Movie.



Flash Player appears.

- Clicking the button toggles the movie clip on and off.



Can I create a toggle button by using `if` with `else`?

Yes. Creating a toggle button is an excellent use for `if` with `else`. Here is how a toggle button works. You click a button to turn something on and then you click the button again to turn it off. The object is always either on or off so every time you click the button, it either turns on or turns off. For example, you can create a sound toggle button. You can click a button to start the music. When the music starts, you can click the button again to stop the music. This can go on and on.

Can you explain how the example works?

Yes. The example is a toggle button. The movie clip `_visible` property is discussed in detail in Chapter 32. When you retrieve the visible property, it always evalutes to either `true` or `false`. The statement `alien_mc._visible` retrieves the visible property. If it is `true`, the script sets it to `false`, thereby making the movie clip invisible. If it is not `true` (it is `false`), the `else` statement sets it to `true`. Because the `_visible` property is always either `true` or `false`, the script toggles the visibility of the targeted movie clip on and off.

Using else if

If you have a situation with multiple possibilities and you want a different action to execute depending on the situation, use `else if`. You use `else if` when you want your script to respond in different ways — one way if condition A is `true`, another way if condition B is `true`, yet another way if condition C is `true`, and not at all if no condition is true.

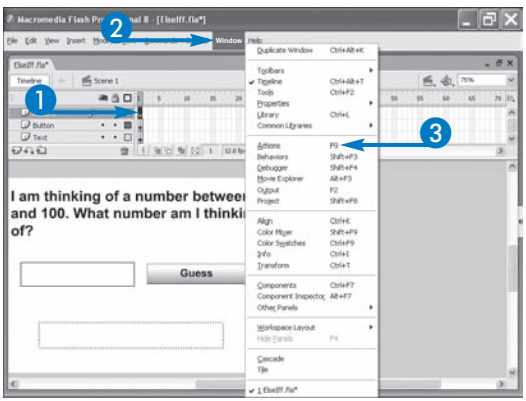
The `else if` action evaluates the first condition and executes the statements if the condition is `true`. If the condition is `false`, it evaluates the next condition and executes it if it is `true`. If the second condition is `false`, the action evaluates the next condition. It continues to evaluate conditions until it finds a condition that is `true` or there are no more conditions to evaluate. The following is the syntax for `else if`:

```
if (condition) {
     statement(s);
}else if (condition) {
     statement(s);
}
```

Using else if

Note: *This example uses the file ElseIf.fla, which you can find on the CD-ROM that accompanies this book.*

1. Click the frame in which you want to add your actions.
2. Click Window.
3. Click Actions.



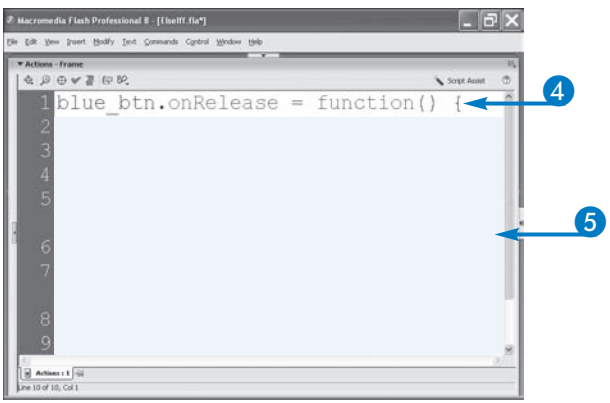
The Actions panel appears.

Note: *See Chapter 31 to learn how to work with the Actions panel.*

4. Add an event handler.

Note: *The event handler causes the code you type to execute when the event you choose occurs. In this example, the event occurs when you release the `blue_btn`. See Chapter 31 to learn how to add event handlers.*

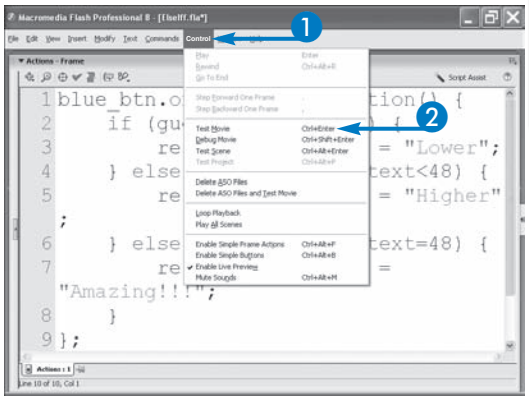
5. Type the code.



The code evaluates the `if` expression. If the `if` expression is `true`, it executes the statements that follow `if`; otherwise it executes the statements that follow `else`.

Test your movie

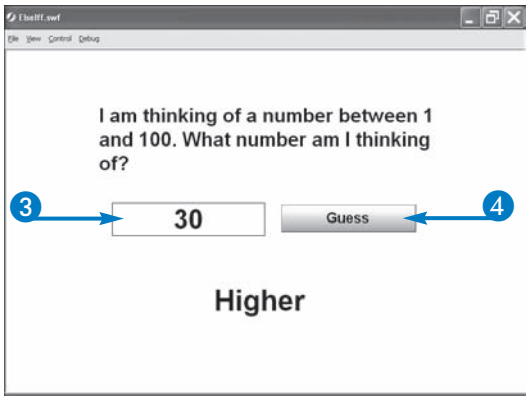
1. Click Control.
2. Click Test Movie.



Flash Player appears.

3. Type in a number.
4. Click the Guess button.

ActionScript responds to your guesses based on the numbers you enter.



What does < and > mean?

The < and > represent the less than (<) and greater than (>) comparison operators. You use the less than operator to compare two expressions to determine if the first expression is less than the second expresson. If the first expression is less than the second expression, ActionScript returns the Boolean value `true`. Otherwise it returns the Boolean value `false`. You use the greater than operator to compare two values to determine whether the first expression is greater than the second expression. If the first expression is greater than the second expression, ActionScript returns the Boolean value `true`. Otherwise it returns the Boolean value `false`.

Are there any other comparison operators?

Yes. You use the less than or equal to (<=) operator to compare two expressions to determine if the first expression is less than or equal to the second expression. If the first expression is less than or equal to the second expression, ActionScript returns the Boolean value `true`. Otherwise it returns the Boolean value `false`. You use the greater than or equal to (>=) expression to compare two values to determine whether the first expression is greater than or equal to the second expression. If the first expression is greater than or equal to the second expression, ActionScript returns the Boolean value `true`. Otherwise it returns the Boolean value `false`.

What's on the CD-ROM

You can use the CD-ROM included in this book to access many useful files and programs. Before installing any of the programs on the disc, you should check that you do not already have a newer version of the program already installed on your computer.

To install different versions of the same program, you should contact the program's manufacturer. For the latest and greatest information, please refer to the ReadMe file located at the root level of the CD-ROM.

System Requirements

To use the contents of the CD-ROM, your computer must have the following:

Windows:

- 800 MHz Intel Pentium III processor (or equivalent) and later
- Windows 2000, Windows XP
- At least 256MB of total RAM installed on your computer (1GB to run Dreamweaver and Flash simultaneously)
- 650MB available disk space (Dreamweaver 8)
- 710MB available disk space (Flash Professional 8)
- Graphics card supporting 1024 x 768, 16-bit display (32-bit recommended)

Mac:

- 600 MHz PowerPC G3 and later
- Mac OS X 10.3, 10.4
- 256MB RAM (1GB recommended to run Dreamweaver and Flash simultaneously)
- 1024 x 768, thousands of colors display (millions of colors recommended)
- 300MB available disk space (Dreamweaver 8)
- 360MB available disk space (Flash Professional 8)

Author's Files

Author files are located on the CD-ROM that accompanies this book. You can use these files to follow along with the step-by-step instructions in various sections in this book. In this manner, you can read the steps as you see the actual results in Dreamweaver or Flash. When a particular section has a file that you can follow on the CD-ROM, you see the following icon: simply open Dreamweaver or Flash, open the file that is indicated in the steps, and then follow the steps in the section. You can browse the files directly from the CD-ROM, or you can copy them to your hard drive and use them as the basis for your own projects. To find the files on the CD-ROM, open the `D:\Samples` folder. Flash files that end in _f.fla are completed examples.

Dreamweaver 8, Trial Version

For Windows 2000/XP and Mac.

Dreamweaver is a full-featured application for designing, publishing, and maintaining Web sites. This trial version expires 30 days after you install it. For more information, visit `www.macromedia.com/dreamweaver`.

Flash Professional 8, Trial Version

Flash Professional 8 is an application for creating interactive websites, digital experiences, and mobile content. With Flash Professional 8, you can design interactive content that includes video, graphics, and animations. This trial version expires 30 days after you install it. For more information, visit `www.macromedia.com/software/flash/flashpro/`.

Fireworks 8, Trial Version

Fireworks 8 lets you create, edit, and optimize images for use on your Web pages. You can create images in Fireworks and then add them to the pages that you build in Dreamweaver. This trial version expires 30 days after you install it. For more information, visit `www.macromedia.com/fireworks`.

Troubleshooting

The programs on the CD-ROM should work on computers with the minimum of system requirements. However, some programs may not work properly.

The two most likely problems for the programs not working properly include not having enough memory (RAM) for the programs you want to use, or having other programs running that affect the installation or running of a program. If you receive error messages such as `Not enough memory` or `Setup cannot continue`, try one or more of the methods below and then try using the software again:

- Turn off any anti-virus software
- Close all running programs
- In Windows, close the CD-ROM interface and run demos or installations directly from Windows Explorer
- Have your local computer store add more RAM to your computer

Customer Care

If you have trouble with the CD-ROM, please call the Wiley Product Technical Support phone number at (800) 762-2974. Outside the United States, call 1(317) 572-3994. You can also contact Wiley Product Technical Support at `http://support.wiley.com`. John Wiley & Sons will provide technical support only for installation and other general quality control items. For technical support on the applications themselves, consult the program's vendor or author. To place additional orders or to request information about other Wiley products, please call (877) 762-2974.

Wiley Publishing, Inc. End-User License Agreement

READ THIS. You should carefully read these terms and conditions before opening the software packet(s) included with *Master VISUALLY Dreamweaver 8 and Flash 8*. This is a license agreement ("Agreement") between you and Wiley Publishing, Inc. ("WPI"). By opening the accompanying software packet(s), you acknowledge that you have read and accept the following terms and conditions. If you do not agree and do not want to be bound by such terms and conditions, promptly return the Book and the unopened software packet(s) to the place you obtained them from for a full refund.

1. **License Grant.** WPI grants to you (either an individual or entity) a nonexclusive license to use one copy of the enclosed software program(s) (collectively, the "Software") solely for your own personal or business purposes on a single computer (whether a standard computer or a workstation component of a multi-user network). The Software is in use on a computer when it is loaded into temporary memory (RAM) or installed into permanent memory (hard disc, CD-ROM, or other storage device). WPI reserves all rights not expressly granted herein.

2. **Ownership.** WPI is the owner of all right, title, and interest, including copyright, in and to the compilation of the Software recorded on the disc(s) or CD-ROM ("Software Media"). Copyright to the individual programs recorded on the Software Media is owned by the author, or other authorized copyright owner of each program. Ownership of the Software and all proprietary rights relating thereto remain with WPI and its licensers.

3. **Restrictions on Use and Transfer.**

   (a) You may only (i) make one copy of the Software for backup or archival purposes, or (ii) transfer the Software to a single hard disc, provided that you keep the original for backup or archival purposes. You may not (i) rent or lease the Software, (ii) copy or reproduce the Software through a LAN or other network system or through any computer subscriber system or bulletin-board system, or (iii) modify, adapt, or create derivative works based on the Software.

   (b) You may not reverse engineer, decompile, or disassemble the Software. You may transfer the Software and user documentation on a permanent basis, provided that the transferee agrees to accept the terms and conditions of this Agreement and you retain no copies. If the Software is an update or has been updated, any transfer must include the most recent update and all prior versions.

4. **Restrictions on Use of Individual Programs.** You must follow the individual requirements and restrictions detailed for each individual program in the appendix of this Book. These limitations are also contained in the individual license agreements recorded on the Software Media. These limitations may include a requirement that after using the program for a specified period of time, the user must pay a registration fee or discontinue use. By opening the Software packet(s), you will be agreeing to abide by the licenses and restrictions for these individual programs that are detailed in the appendix and on the Software Media. None of the material on this Software Media or listed in this Book may ever be redistributed, in original or modified form, for commercial purposes.

5. **Limited Warranty.**

   (a) WPI warrants that the Software and Software Media are free from defects in materials and workmanship under normal use for a period of sixty (60) days from the date of purchase of this Book. If WPI receives notification within the warranty period of defects in materials or workmanship, WPI will replace the defective Software Media.

   (b) WPI AND THE AUTHOR OF THE BOOK DISCLAIM ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SOFTWARE, THE PROGRAMS, THE SOURCE CODE CONTAINED THEREIN, AND/OR THE TECHNIQUES DESCRIBED IN THIS BOOK. WPI DOES NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE SOFTWARE WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE SOFTWARE WILL BE ERROR FREE.

(c) This limited warranty gives you specific legal rights, and you may have other rights that vary from jurisdiction to jurisdiction.

6. **Remedies.**

(a) WPI's entire liability and your exclusive remedy for defects in materials and workmanship shall be limited to replacement of the Software Media, which may be returned to WPI with a copy of your receipt at the following address: Software Media Fulfillment Department, Attn.: *Master VISUALLY Dreamweaver 8 and Flash 8*, Wiley Publishing, Inc., 10475 Crosspoint Blvd., Indianapolis, IN 46256, or call 1-800-762-2974. Please allow four to six weeks for delivery. This Limited Warranty is void if failure of the Software Media has resulted from accident, abuse, or misapplication. Any replacement Software Media will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

(b) In no event shall WPI or the author be liable for any damages whatsoever (including without limitation damages for loss of business profits, business interruption, loss of business information, or any other pecuniary loss) arising from the use of or inability to use the Book or the Software, even if WPI has been advised of the possibility of such damages.

(c) Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation or exclusion may not apply to you.

7. **U.S. Government Restricted Rights.** Use, duplication, or disclosure of the Software for or on behalf of the United States of America, its agencies and/or instrumentalities (the "U.S. Government") is subject to restrictions as stated in paragraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause of DFARS 252.227-7013, or subparagraphs (c) (1) and (2) of the Commercial Computer Software - Restricted Rights clause at FAR 52.227-19, and in similar clauses in the NASA FAR supplement, as applicable.

8. **General.** This Agreement constitutes the entire understanding of the parties and revokes and supersedes all prior agreements, oral or written, between them and may not be modified or amended except in a writing signed by both parties hereto that specifically refers to this Agreement. This Agreement shall take precedence over any other documents that may be in conflict herewith. If any one or more provisions contained in this Agreement are held by any court or tribunal to be invalid, illegal, or otherwise unenforceable, each and every other provision shall remain in full force and effect.

Symbols

— (emdash), inserting in text, 73
– (endash), inserting in text, 73
== (equal signs), equality operator, 621
!= (exclamation, equal sign), inequality operator, 621
> (greater than), 625
< (less than), 625
{ } (curly braces), syntax, 576
; (semicolon), syntax, 576

A

absolute paths, 510
actions, 220, 222, 224–225. *See also* ActionScript actions.
Actions panel, 582–585
ActionScript. *See also* behaviors.
    Actions panel, 582–585
    anti-aliasing, 581
    arguments, 577
    assigning to objects, 588–589
    automatic formatting, 583
    versus behaviors, 507
    character embedding, 579
    code hints, 585
    comments, 577
    creating draggable objects, 515, 523
    current version, displaying, 339
    definition, 324
    description, 576–577
    device fonts, 581
    dot syntax, 577
    enable code hinting, 511
    event handlers, 586–587
    expressions, 577
    find and replace, 583
    font rendering, 581
    form passwords, 579
    interactive graphics, 406
    jumping to specific points, 583, 594–595
    Line Type Field, 579
    movie clips, 493
    playing movies, 592–593
    rearranging code, 584
    Render Text as HTML, 581
    sharing code, 589
    statements, 576
    stopping movie clips, 591
    stopping movies, 590–591
    syntax, 576
    syntax checking, 583
    syntax colors, 585
    text boxes, 578–581
    text sharpness, 581
    Version 1.0 *versus* 2.0, 576
    viewing code, 583
    writing scripts, 582–583
ActionScript actions, 590–599. *See also* actions.
aligning
    images, 89–91
    layers, 217
    objects on the Stage, 389
    polygons, 355
    stars, 355
    tables, 124
    text, 396–397
`_alpha` property, 602–603
Alpha setting, motion tweens, 476–477
alpha value of objects, changing, 455
Anchor Onion option, 488–489
animated masks, 482–483
animation
    See also frames
    See also keyframes
    See also movies
    See also Timeline
    See also video
    adding frames, 434–435
    along a path, 474–475
    and browser window size, 241
    buttons, 498–499, 500–503
    coordinating with sounds, 535, 536–537
    curved-line, 242
    dragging a path, 244–245
    frame rate, 248–249
    frame-by-frame, 486–487
    image duration, 436–437

onion skinning, 488–489
previewing, 446–447
removing, 243
repeating, 241
speed, changing, 241, 245, 248–249
straight-line, 240–241
triggering with behaviors, 250–251
tweened. *See* motion tweens; shape tweens.
anti-aliasing, 581
Anything option, 235
Apache Web server, 255, 258–261, 268–269. *See also* IIS (Internet Information Services).
appearance, changing, 26–27, 49
application servers, 256–257, 264–267, 270–273, 279, 281
See also Dreamweaver sites
See also dynamic Web sites
See also Web pages
See also Web sites
arguments, ActionScript, 577
ASP (Application Server Pages), 257, 279, 307, 309, 311, 313, 315
ASP.NET, 257
attributes, 64–65, 376–379. *See also* properties.
audio. *See* sound.
audio channels, 541
authoring files, 560–561
autostretch cells, 140

B

background
cell color, 131
layer color, 213
Stage, 335
tables, 136–137
Web pages, 95
Bandwidth Profiler, 448
Basic option, 5
behaviors, 220–225, 250–251, 504–507, 510. *See also* ActionScript; movie clips, behaviors.
Behaviors panel, 220–221, 508–509
binding form information to Web pages, 302–303
bitmaps, 352–353, 368–371, 384–385. *See also* vector graphics.
blank keyframes, 434–437, 441, 502–503
Blur effect, 456
Bold font style, 76
bookmarks, and frames, 159
Boolean data types, 616
borders, 92, 117, 131–133, 170–171
Break Apart command, 402–403
breaking apart text, 402–403
brightness, motion tweens, 476–477
Bring to Front behavior, 522–523
browsers
compatibility checking, 18–19
and CSS (Cascading Style Sheets), 197
customized windows, 232–233
frame rate, 249
and frames, 165
previewing Web sites, 15
target browser list, 18
testing movies, 447
window size, and animation, 241
windows, and behaviors, 232–233
Brush colors, as gradients, 363
brush modes, 349
brush strokes, drawing, 348–349
Brush tool, 340, 348–349, 363, 371
bulleted lists, 84–85
bullets, color, 85
buttons. *See also* radio buttons; *specific buttons*.
animating, 498–499, 500–503
assigning ActionScript to, 589
assigning sounds to, 528–529
behaviors, 504–507
blank keyframes, 502–503
changing, 503
creating, 496–499
event handlers, 586
Insert toolbar, 36–37
and layers, 499
from other Flash files, 497
predefined, 497
previewing, 497
selecting, 499
shape-changing, 500–503
states, 496–497

continued

buttons *(continued)*
symbols for, 406–407
testing, 499
Timeline layer, 333

C

caps (stroke ends), 358–359
Cascading Style Sheets (CSS). *See* CSS (Cascading Style Sheets).
CD-ROM (back of book), 626–627
cells, 118, 128–131, 133–135, 140–141, 299
center point, Free Transform tool, 381
Change Links to field, 111
character embedding, 579
Check Target Browsers, 19
checkboxes, 150–151
checking files in and out, 23–25
circles, drawing, 346–347
class styles, 196–203
Clear Keyframe, 441
code
ActionScript. *See* ActionScript.
HTML. *See* source code.
reusing. *See* snippets.
code hints, 511, 585
Code Inspector, 61
Code view, 56, 60–61
ColdFusion
accessing Web pages, 273
cookies, 309, 311
description, 257
enabling session support, 315
help for, 271
installing, 272–273
obtaining, 270–271
passing information with URLs, 307
session variables, storing, 313
starting/stopping, 273
testing, 279
trial version, 271
collapsing/expanding
Insert toolbar, 36–37
source code, 33
collecting user input. *See* forms.
color
ActionScript syntax, 585
cells, 131, 133
class styles, 201
columns, 133
fills, 352–353
fonts, 79
frame borders, 171
hexadecimal codes, 61, 81
hyperlinks, 107
layer background, 213
list bullets, 85
objects, changing, 455, 462
rows, 137
schemes for tables, 138
shape tweens, 479
table background, 136–137
table borders, 132–133
text, 79–81
Timeline effects, finding, 463
transitions, Flash Timeline, 450–451
Web-safe, 81
Color Picker, 61
Color Threshold, 369
Color tools, 341
columns (table), 122–123, 126–127, 133
commands, 38–39, 46. *See also specific commands.*
Commands menu, 38–39
comments, 33, 577
common library, 417
comparison operators, 625
compatibility checking, browsers, 18–19
compression, 543, 563
configuring Dreamweaver. *See* workspace.
control point positions, 485
Convert to Blank Keyframes, 441
Convert to Keyframes, 441
converting
keyframes to/from frames, 441
objects to symbols, 407
strokes to fills, 361
vector graphics from bitmaps, 368–369

cookies, 308–311, 315
Copy Frames command, 443
Copy to Grid command, 452–453
copying
    Dreamweaver sites, 22
    frames, 442–443
    movie clips, 516–517
    movie scenes, 491
    object attributes, 376–379
    objects, 454–455
    objects on the Stage, 376–377
    Stage objects, 376–377
    symbols, 407
    templates, 187
    text box attributes, 397
Corner Threshold, 369
Create Transform dialog box, 460–461
cropping images, 93
CSS (Cascading Style Sheets), 196–209
curly braces ({ }), syntax, 576
Curve Fit, 369
curved-line animation, 242
curves, smoothing, 345, 350–351
customizing Dreamweaver. *See* preferences; workspace.
Cut Frames command, 443

D

data types, 616, 619
Database Management System (DBMS), 280
databases
    adding data to, 300–301, 319
    application servers, 281
    communicating with, 281
    connecting to Dreamweaver sites, 292–293
    data entry forms, 301
    DBMS (Database Management System), 280
    displaying data on Web pages, 296–299
    Dreamweaver and, 281
    filters, 294
    hidden fields, 301
    Master/Detail page set, 320–321
    Oracle, 280
    organization, 280
    protecting fields, 301
    querying. *See* MySQL; SQL (Sequential Query Language).
    RDBMS (Relational Database Management System), 280
    recordsets, 294–295, 297, 319
    retrieving data from, 294–295
    Search/Results page set, 318–319
    software for, 280
    sorting displayed data, 299
    SQL (Sequential Query Language), 281
dates, 75
DBMS (Database Management System), 280
debugging Flash movies, 563
declaring variables, 617
deleting
    actions, 224
    animations, 243
    attributes, 64–65
    class styles, 200
    columns, 123
    Dreamweaver sites, 9
    external style sheets, 207
    frames, 163, 243, 439
    frames in motion tweens, 466
    gradients, 365
    HTML tag style, 205
    hyperlinks, 108
    instances of symbols, 409
    keyframes, 243
    movie scenes, 491
    rows, 123
    selection highlight, 373
    symbol library items, 417
    transforms, 382
deleting saved History commands, 391
description, 220–221
Design view, 31, 56, 63
Detect Flash Version option, 565
device fonts, 395, 566, 581
Distort modifier, 380–383
distorting objects, 380–383
Distribute to Layers command, 432–433
Distributed Duplicate effect, 454–455

distributing Flash movies. *See* publishing Flash movies.
docking panel groups, 42
Document toolbar, 26
Document window, 26, 29–31
documents. *See* Web pages.
dot syntax, ActionScript, 577
downloading videos, 550–551
drag and drop, 443, 514–515
draggable objects, creating, 514–515, 523
drawing models, 386–387
drawings, 342–351, 354–355. *See also* images; *specific shapes.*
Dreamweaver sites, 4–11, 20–22, 48, 50. *See also* Web pages; Web sites.
drop shadows, 457
Duplicate Movieclip behavior, 516–517
`duplicateMovieClip()` action, 517, 598–599
dynamic text, 392–393
dynamic text boxes, 580–581
dynamic Web sites
    See also application servers
    See also Dreamweaver sites
    See also Web pages
    See also Web sites
    Apache Web server, 255, 258–261, 268–269
    binding form information to Web pages, 302–303
    cookies, 308–311, 315
    and Dreamweaver, 255
    IIS (Internet Information Services), 255, 262–263, 268
    page counters, 317
    paging through multiple records, 316–317
    passing information with URLs, 304–307
    PWS (personal Web Server), 263, 268
    session information, 312–315
    setting up, 255, 274–275
    software for, 254
    testing sites, 255, 274–275
    Web pages navigation bar, 317
    Web servers, 254

E

Ease control, 478–479
edit points, 382
editable region indicator, 175
editable regions, 184–185, 186–187
editing
    attributes, 64–65
    class styles, 201
    frame-by-frame animation symbols, 487
    groups, 387
    images, 87
    instances of symbols, 413
    objects, 380–383
    snippets, 179
    source code, 32, 60–61. *See also* editing, tags.
    tag attributes, 62, 63
    tags, 60–63. *See also* editing, source code.
    text, 58–59
    Timeline effects, 465
    Web pages, 56
`else if` statements, 624–625
e-mail, 114, 235
embedded style sheets, 196, 209
Embedded Video... behaviors, 554–559
embedding video, *versus* importing, 553
emdash (—), inserting in text, 73
Emphasis font style, 76
Encoding screen, 551
end treatment, strokes, 358–359
endash (–), inserting in text, 73
entities, 72–73. *See also* symbols.
Envelope modifier, 380–383, 403
equal signs (==), equality operator, 621
Eraser tool, 340, 356–357
erasing objects, 356–357
event handlers, 586–587
Event sounds, 530–531
events, 220–221, 223, 225, 250–251, 506–507
exclamation, equal sign (!=), inequality operator, 621
Expand effect, 458
expanding objects, 458
Explode effect, 459
exploding objects, 459
Export device sounds, 563

exporting
Dreamweaver sites, 10–11
embedded style sheets, 209
Flash movies to other formats, 570–571
single Flash frames, 571
sounds, 542–543
tables, 143
expressions, ActionScript, 577
extending text boxes, 392–393
external style sheets, 196, 206–208
Eye Dropper tool, 340

F

fades, 450–451, 463, 464–465
fast forward video, 559
Favorites category, 37
file management, 23–25, 53
File Transfer Protocol (FTP), 67
file transfers, 50, 67, 154–155
files
checked out, finding, 55
closing, 328–329
compacting, 329
finding on local/remote sites, 54–55
imported, deleting, 367
newer, finding, 55
opening, 43, 326–327
saving, 328–329
saving as a new name, 329
saving as another format, 329
selecting on local/remote sites, 54–55
transferring to Web sites, 50
uploading, form fields, 154–155
Files panel, 43–44
fills, 352–353, 355, 357, 370–371, 385
filters, 294
Final Alpha option, 462–463
fixed text boxes, 392–393
fixed width cells, 140–141
Flash Alignment option, 567
Flash projectors, creating, 568–569
Flash version, detecting, 565
Flash window, illustration, 332
Flip Horizontal command, 470–471
Flip Vertical command, 470–471
flipping objects, 383, 411, 470–471
font rendering, 581
fonts, 76–77, 79, 395, 416, 566. *See also* text.
form objects, 144
formats for images, 86–87
formatting
cells, 134
frame borders, 171
hyperlinks, 106–107
Insert toolbar, 36–37
strokes, 358–361
table borders, 132–133
text, 394–395
forms, 144–157, 234–235, 302–303, 579
frame borders, turning off, 170
frame rates, 248–249, 335, 437, 537, 553
frame-by-frame animation, 486–487
frames
adding content to, 164–165
adding to animations, 434–435
adding to movies, 437
assigning ActionScript to, 588–589
assigning sounds to, 526–527, 539
blank keyframes, 434–437
and bookmarks, 159
borders, 170–171
and browsers, 165
copying, 442–443
creating, 159
deleting, 439
disadvantages, 159
dividing browser windows, 158–159
drag and drop, 443
hyperlinking to, 169
jumping to, 159, 594–595
motion tweens, 435
moving, 442–443

continued

frames *(continued)*
naming, 168
nesting, 162
placeholder, 435
previewing, 441
properties, modifying, 440–441
removing, 163, 243
resizing, 166–167
saving, 160–161
and search engines, 159
selecting, 438, 493
shape tweens, 435
tweened, 435
frameset designs, 162
framesets, 158, 161–162
Free Transform tool, 340, 380–383, 471–473
freeform lines, 344–345
FTP (File Transfer Protocol), 67

G

gap size, specifying, 353
Gap Size modifier, 353
GIF format, 87
Go to Web Page behavior, 505
Goto behavior, 512–513
`gotoAndPlay()` action, 594–595
`gotoAndStop()` action, 594–595
Gradient Transform tool, 340, 384–385
gradients, 352–353, 362–365, 384–385, 395
graphics. *See* drawings; images.
greater than (>), 625
grids
deleting instances of, 453
frame-by-frame animation, 487
modifying, 453
motion tweening, 453
snapping to, 487
Timeline effects, 452–453
undoing a break apart, 453
grouping/ungrouping objects, 387
growing/shrinking objects, 472–473
guides, as drawing aids, 343

H

headings
tables, 116
text, 70–71. *See also* paragraphs; text.
`_height` property, 610–611
height-to-width ratio, 86, 88
help
code hinting, enabling, 511
code hints, 585
ColdFusion, 271
Flash, 325
HTML code hints, 32
listing tag attributes, 63
syntax colors, 585
Tag Chooser tool, 60–61
hexadecimal color codes, 61, 81
highlighting text, 83
hints. *See* help.
History panel, 46–47, 390–391
horizontal rules, 96
HTML (Hypertext Markup Language), 16–17, 72–73. *See also* tags.
HTML Alignment option, 567
HTML code. *See* source code.
HTML format, Flash movies, 564–567
HTML tag style
applying, 205
creating, 204–205
definition, 196
mimicking other tags, 205
removing, 205
HTML templates, 565
hyperlinks
blue line around, 103
changing, 109–111
checking, 115
color, 107
description, 98–99
destination display, suppressing, 231
destinations, 99
formatting, 106–107
to frames, 169
image maps, 112–113

images as, 102–103, 112–113
invisible, 107
irregular shapes, 113
launching e-mail with, 114
moved destinations, 111
named anchors, 104–105
removing, 108
renamed destinations, 111
in Site Maps, 101
to specific places in documents, 104–105
states, 106–107
text as, 100
titles, 99
updating, 111
visited, 107
Hypertext Markup Language (HTML), 16–17, 72–73. *See also* tags.

I

`if else` statements, 622–623
`if` statements, 620–621
IIS (Internet Information Services). *See also* Apache Web server.
configuring for PHP, 268
description, 255
installing, 262–263
Windows versions, 263
image maps, 112–113
images. *See also* drawings.
aligning, 89–91
borders, 92
common formats, 86–87
cropping, 93
default folder, 7
editing, 87
GIF format, 87
height-to-width ratio, 86, 88
as hyperlinks, 102–103, 112–113
importing, 366–367
inserting, 86–87
invisible, 97
JPEG format, 87
placeholders, 94
PNG format, 87
resizing, 86–88
rollover image links, 228–229
rollover images, 226–227
spacers, 97
symbols, 406–407
as table background, 136–137
text wrap, 89–91
thumbnails, 102
vector-based graphics, 324
as Web page background, 95
whitespace, inserting, 92
imported files, deleting, 367
importing
deleting imported files, 367
Dreamweaver sites, 10–11
graphics, 366–367
sound files, 524–525
symbol libraries, 417
tables, 142–143
video, *versus* embedding, 553
indents, text boxes, 398–399
Ink Bottle tool, 340, 379
inline styles, 196
input from users, collecting. *See* forms.
input text, 392–393
input text boxes, 578–579
insert snippets, 176–177
Insert toolbar, 26, 34, 36–37
inspectors, 40–41
installing
Apache Web server, 260–261
ColdFusion, 272–273
IIS (Internet Information Services), 262–263
MySQL, 284–285
PHP on a Mac, 265
PHP on a PC, 266–267
instances, 408–411, 413, 511
interactivity. *See* ActionScript; behaviors.
Internet Information Services (IIS). *See* IIS (Internet Information Services).
invisible hyperlinks, 107
invisible images, 97
Italic font style, 76

J

joins, 359
JPEG files, loading, 521
JPEG format, 87
JSP (JavaServer Pages), 257
jumping to
    ActionScript points, 583, 594–595
    frames, 159, 594–595
    movie locations, 512–513

K

kerning text, 396–397
keyframes
    adding to the Timeline, 434
    blank, 434–435, 441
    clearing, 441
    converting to/from frames, 441
    definition, 238
    removing, 243

L

labels
    checkboxes, 150–151
    popup, 247
    radio buttons, 148–149
Lasso tool, 340, 374–375
Layer Properties dialog box, 420–421
layers
    adding, 418–419
    adding content to, 212
    aligning, 217
    background color, 213
    buttons, 499
    converting to tables, 219
    copying, 425
    creating, 210–211
    default background, 213
    deleting, 418–419
    deleting folders, 427
    deleting from folders, 427
    distributing objects, 432–433
    guide, 421, 428–429
    hiding, 421, 422–423
    hiding folders, 427
    identifying objects, 433
    locking, 421, 422–423
    locking folders, 427
    locking guide layers, 429
    mask, 421, 430–431
    motion guide, 428–429, 474–475
    moving, 214
    nesting, 197, 214
    normal, 421
    organizing in folders, 426–427
    outline colors, 421
    outlining, 423
    overlapping, 197, 218
    plain guide, 428–429
    positioning, 215
    positioning Web page elements, 197
    properties, setting, 246–247, 420–421
    renaming, 422–423, 451
    resizing, 215
    rotating, 245
    scrolling, 425
    selecting, 211
    selecting contents of, 211
    selecting every object, 373
    sounds, 525
    stacking, 424–425
    stacking objects, 388
    stacking order, 218, 246–247, 427
    on the Timeline, 422–423
    types of, 421
    visibility, 216
    z-index, 218, 246–247
layout, tables, 140–141
layout, Web pages
    See CSS (Cascading Style Sheets)
    See frames
    See layers
    See tables

less than (<), 625
levels, paths, 510
libraries
    definition, 174
    sounds, 529
    symbols, 414–417
library items, 180–183
licensing projector files, 569
line breaks, inserting, 74
Line tool, 340, 342–343
Line Type Field, 579
linear fills, 385
linear gradients, 362–363, 384–385
lines. *See also* horizontal rules.
    automatic connection, 343
    drawing, 342–345, 350–351
links. *See* hyperlinks.
List options, 153
lists, 84–85, 152–153
Load External Movieclip behavior, 518–521
Load Sound from Library behavior, 545
Load Streaming MP3 File behavior, 545, 549
loading
    external movie clips, 518–521
    JPEG files, 521
    MP3 files, 545, 549
    sounds from libraries, 545
    SWF files, 521
Local playback, 563
local sites, 4–5, 43, 51–55
Lock Fill option, 385
locked regions, 184–185, 186–187
locking
    bitmap fills, 385
    groups, 387
look and feel, customizing. *See* preferences; workspace.
Loop command, 538–539
loops
    ActionScript statements, 620–625
    movie clips, 512–513
    sounds, 533, 538–539

M

Magic Wand modifier, 375
magnifying. *See* zooming.
maps of Dreamweaver sites, 48
margins, text boxes, 398–399
mask layers, 482–483
Master/Detail page set, 320–321
Menu bar, 26, 332
Menu options, 153
Merge Drawing model, 386–387
merging cells, 130
messages, 230–231, 237
Minimum Area, 369
Modify Onion Markers menu option, 488–489
morphing. *See* shape tweens.
Motion Ease option, 462–463
motion guide layers, 474–475
motion tweens. *See also* shape tweens.
    adding frames to, 435
    Alpha setting, 476–477
    animation along a path, 474–475
    brightness, 476–477
    color, 476–477
    control point positions, 485
    creating, 466–467, 470–473
    deleting frames, 466
    flipping objects, 470–471
    grids, 453
    growing/shrinking objects, 472–473
    length, adjusting, 466
    opacity, 476–477
    repeating, 471
    reversing, 468–469
    rotating, 469, 470, 473
    scaling, 473
    versus shape tweens, 479
    skewing, 470
    speed control, 484–485
    text color, opacity, brightness, 466
    Transform options, 470–473
    velocity curves, 485

Move to Position, 461
movie clips
along a path, 483
assigning ActionScript to, 589
behaviors, 511–513, 516–523
copying, 516–517
creating, 492–493
data types, 616
draggable objects, creating, 514–515, 523
event handlers, 587
external, loading, 518–521
height, setting, 610–611
JPEG files, loading, 521
jumping to specific location, 512–513
loops, 512–513
moving across the Stage, 612–613
moving up and down, 614–615
naming, 493
properties. *See* properties, movie clips.
relative *versus* absolute paths, 601
retrieving, 600–601
rotating, 606–607
stacking order, 522–523
stopping, 513, 591
SWF files, loading, 521
symbols, 406–407
transparency, 602–603
viewing. *See* Movie Explorer.
visibility, 604–605
width, setting, 608–609
Movie Explorer, 494–495
movies. *See also* animation; frames; video.
adding frames, 437
imported files, deleting, 367
jumping to specific frames, 594–595
length, determining, 436–437
moving, 443
performance, and modem speed, 448
playing, 592–593
preferred frame rate, 437
previewing, 446–449
scenes, 490–491
stop after specified scene, 491
stopping, 513, 590–591
testing, 446–449
moving
contents of cells, 135
Dreamweaver sites, 10–11
frames, 442–443
Insert toolbar, 37
layers, 214
objects, 461
objects on the Stage, 376–377
panel groups, 42
Stage objects, 376–377
text boxes, 400–401
music. *See* sound.
MySQL, 282–291

N

named anchors, 104–105
naming
checkboxes, 150–151
class styles, 198
Dreamweaver sites, 7
events, 223
frames, 168
instances, 511
layers, Flash, 451
movie clips, 493
panel groups, 41
radio buttons, 148
saved History commands, 391
sounds, 531
symbol library items, 415
variables, 617
Web pages, 13
windows, 233
workspace layouts, 27
navigation bar, Web pages, 317
nesting
frames, 162
layers, 197, 214

lists, 84
tables, 118, 141
templates, 194–195
numbered lists, 84–85
numbers, data type, 616

O

Object Drawing model, 386–387
objects
data types, 616
selecting, 372–375
On Drag Out event, 506
On Drag Over event, 506
On Key Press event, 506
On Press event, 506
On Release event, 506
On Release Outside event, 506
On Roll Out event, 506
On Roll Over event, 506
opacity, 476–477, 479. *See also* transparency.
Optimize Curves dialog box, 345
Oracle, 280
ordered lists, 84–85
organizing Web pages
See CSS (Cascading Style Sheets)
See frames
See layers
See tables
Orient to path option, 475
Oval tool, 340, 346–347
ovals, drawing, 346–347
overlapping layers, 197, 218
Override sound settings, 563

P

page counters, 317
page designs, 14. *See also* templates.
Paint Bucket tool, 340, 352–353
painting, with gradients, 363. *See also* Brush tool.
panel groups, 26, 40–42
panels
description, 336–337
Files, 43–44
illustration, 26, 332
organizing, 337
panning sounds, 541
paragraphs, 70–71
passwords, 146, 291, 579
Paste Frames command, 443
Pasteboard, 332
paths
absolute, 510
animation along, 474–475
with behaviors, 510
description, 510
dragging, 244–245
levels, 510
movie clips along, 483
Orient to path option, 475
relative, 510
root, 510
patterns for Web pages. *See* templates.
pausing video, 558
Pen tool, 340, 350–351
Pencil tool, 340, 344–345
performance, and modem speed, 448
personal Web Server (PWS), 263, 268
photographs. *See* images.
PHP
compatible databases, 265, 267
cookies, 311
description, 257
installing on a Mac, 265
installing on a PC, 266–267
MySQL communication, 288–291
obtaining, 264–265
outside extensions, 266
passing information with URLs, 307
"PHP Startup: Unable to load..." message, 289
pictures. *See* images.
placeholders, 94, 435

play() action, 592–593
Play Sound behavior, 546
playing
movies, 592–593
sounds, 546
video, 557
PNG format, 87
Point Size field, 355
Polygon Mode option, 375
Polygon tool, 113
polygons, 354–355, 375
PolyStar tool, 354–355
popup labels, 247
popup messages, 237
preferences, setting, 49
Preferences dialog box, 49
Preview, 441
Preview in Context, 441
Preview Type, 177
previewing
buttons, 497
in Design view, 31
Flash movies, 561
Web sites, 15
primitive data types, 619
progressive download, 550–551
projector files, 568–569
properties, movie clips. *See also* attributes; Property inspector.
_alpha, 602–603
description, 600–601
_height, 610–611
_rotation, 606–607
setting, 600–601
_visible, 604–605
_width, 608–609
_x, 612–613
_y, 614–615
Property inspector
changing properties, 338–339
closing, 339
description, 338–339
displaying properties, 44–45
editing tag attributes, 62
editing tags, 62
illustration, 26, 332
missing properties, 45
moving, 339
publish settings, 339
Stage settings, 339
Publish Settings dialog box, 561
Publish *versus* Export Movie, 561
publishing Dreamweaver sites, 20–21
publishing Flash movies
anti-aliasing fonts, 566
authoring files, 560–561
compression, 563
creating documents for, 560–561
debugging, 563
device fonts, 566
in Dreamweaver documents, 571
error messages, 566
exporting single frames, 571
exporting to other formats, 570–571
Flash Alignment option, 567
in Flash format, 562–563
Flash projectors, creating, 568–569
Flash version, detecting, 565
HTML Alignment option, 567
in HTML format, 564–567
HTML templates, 565
omitting trace actions, 563
previewing movies, 561
printing frames, 572–573
properties, modifying, 571
Publish Settings dialog box, 561
Publish *versus* Export Movie, 561
Scale option, 567
size reports, 563
sound settings, 563
PWS (personal Web Server), 263, 268

Q

query strings, 304–307
Quick Tag Editor, 63
QuickTime video, 551

R

radial gradients, 362–363, 384–385
radio buttons, 148–149. *See also* buttons.
RDBMS (Relational Database Management System), 280
recordsets, 294–295, 297, 319
Rectangle tool, 340, 346–347
rectangles, 346–347
Redo button, 57–58
redoing actions. *See* undoing/redoing.
Reference panel, 66
registration points, 413
regular edit points, 382
relative paths, 510
remote sites
    comparing to local, 51
    description, 4–7
    file management, 43
    finding files, 54–55
    last-modified date discrepancies, 53
    selecting files, 54–55
    synchronizing to local, 52
    and time zones, 53
    viewing, 51
Remove Frames command, 439
renaming. *See* naming.
Render Text as HTML, 581
repeating
    animations, 241
    motion tweens, 471
    regions, 190–191
    tables, 192–193
repositioning objects. *See* moving.
Reset button, 157
resizing
    columns, 126–127
    Document window, 29
    fonts, 77
    frames, 166–167
    images, 86–88. *See also* cropping images.
    layers, 215
    objects, 455
    rows, 126–127
    tables, 125
    text boxes, 400–401
    windows, 233
Reverse Frames command, 468–469
reversing motion tweens, 468–469
rewinding video, 559
rollover image links, 228–229
rollover images, 226–227
root paths, 510
Rotate and Skew modifier, 380–383
rotating
    layers, 245
    motion tweens, 469, 470, 473
    movie clips, 606–607
    objects, 380–383, 462–463, 471
    text boxes, 401
`_rotation` property, 606–607
rounded rectangles, 347
rows, table
    color, 137
    inserting, 122
    removing, 123
    resizing, 126–127
rulers, as drawing aids, 343
rules (lines). *See* horizontal rules; lines.
rules (style), 196, 199

S

saving
    frames, 160–161
    pages as templates, 184–185
    Web pages, 13
    workspace layouts, 27
Scale modifier, 380–383
Scale option, 567
scaling. *See also* Free Transform tool.
    motion tweens, 473
    objects, 380–383
    objects proportionately, 463
scope of variables, 617
scripting. *See* ActionScript; behaviors.
search engines, and frames, 159

searching
for attributes, 64–65
contents of tags, 65
pattern search, 58–59
repeating searches, 59
saving search queries, 59
for tag information, 66
for tags, 64–65
text, 58–59
Search/Results page set, 318–319
security, forms, 145, 234–235
selecting
buttons, 499
contents of layers, 211
files on local/remote sites, 54–55
Flash objects, 372–375
frames, 438, 493
layers, 211
strokes, 359
tables, 120–121
workspace layouts, 26
selection highlight, removing, 373
Selection tool, 340
semicolon (;), syntax, 576
Send Backward behavior, 522–523
Send to Back behavior, 522–523
Sequential Query Language (SQL), 281
session information, 312–315
sessions, 314–315
setting up Dreamweaver. *See* workspace.
shape hints, 480–481
shape recognition, turning off, 361
shape tweens. *See also* motion tweens.
adding frames to, 435
animated masks, 482–483
color, 479
control point positions, 485
creating, 478–479
hiding elements, 482–483
mask layers, 482–483
versus motion tweens, 479
opacity, 479
shape hints, 480–481
speed control, 484–485
transforming, 479
velocity curves, 485
sharing. *See also* libraries.
ActionScript code, 589
sounds, 529
Show/Hide button, 26
site information, 8
Site Maps, 48, 101
size reports, Flash movies, 563
skewing objects, 380–383, 401, 470
Smooth options, 345
smoothing
Brush tool objects, 349
curves, 345, 350–351
lines, 344–345
vector graphic edges, 369
Snap to Objects feature, 487
snapping to gird, 487
snippets, 174, 176–179
sorting
displayed data, 299
radio buttons, 149
symbol libraries, 416
tables, 139
sound effects, 540–541
sounds
assigning to buttons, 528–529
assigning to frames, 526–527, 539
audio channels, 541
behaviors, 544–549
compression, 543
coordinating with animation, 535, 536–537
determining which is which, 527
editors, 541
Event, 530–531
exporting, 542–543
file size, 525, 543
and frame rate, 537
importing sound files, 524–525
layer height, 533

libraries of, 529
loading, 545, 549
looping, 533, 538–539
multiple in one movie, 525
from other movies, 527
panning, 541
playing, 546
renaming, 531
on separate layers, 525
settings for Flash movies, 563
sharing, 529
Start, 532–533
Stop, 534–535, 539
stopping, 547, 548
streaming, 536–537
in symbol libraries, 416
Sync type, 533
unassigning, 531
waveforms, 526–527
source code. *See also* tags.
collapsing, 33
comments, 33
editing, 60–61
editing and viewing, 32
hints, 32
reusing. *See* snippets.
syntax checking, 33
viewing, 61
viewing noncontiguous lines, 33
yellow highlights, 33
space. *See* whitespace.
spacer images, 97
spacers, cells, 141
spacing between characters, 396–397
special characters, 72–73
speed control
animations, 241, 245, 248–249
motion tweens, 484–485
shape tweens, 484–485
spell check, 401
Spin option, 462–463
splitting cells, 128–129
SQL (Sequential Query Language), 281
squares, drawing, 346–347
stacking order, 218, 246–247, 522–523
Stage
aligning objects, 389
background color, changing, 335
copying objects, 376–377
default settings, changing, 335
description, 334–335
extending bitmap fills, 385
illustration, 332
moving objects, 376–377
unit of measure, specifying, 335
Standard toolbar, 26
stars, drawing, 354–355
Start Dragging Movieclip behavior, 514–515
Start Page, 326–327
Start sounds, 532–533
`startDrag()` action, 596–597
statements, ActionScript, 576
states, buttons, 496–497
static text, 392–393
Status bar, 26
status bar messages, 230–231
`stop()` action, 590–591
Stop All Sounds behavior, 548
Stop Dragging Movieclip behavior, 514–515
Stop Sound behavior, 547
Stop sounds, 534–535, 539
`stopDrag()` action, 596–597
stopping
movie clips, 591
movies, 513, 590–591
sounds, 547, 548
video, 554
stored commands, 38–39
straight lines, 342–343, 344–345, 350–351
Straighten options, 345
straight-line animations, 240–241
streaming sounds, 536–537
strings, data type, 616

strokes
caps, 358–359
converting to fills, 361
editing points, 351
end treatment, 358–359
fill, changing, 355
fills, 355
formatting, 358–361
gradients, as colors, 363
gradients as color, 363
joins, 359
polygons, 355
selecting, 359
shape recognition, turning off, 361
style, 360–361
thickness, 360–361
Strong font style, 76
style sheets. *See* CSS (Cascading Style Sheets).
styles, 196
Submit button, 157
subscript characters, 399
Subselection tool, 340
superscript characters, 399
Swap Images dialog box, 227
swapping instances of symbols, 409
SWF files, 521, 569
symbols
attaching behaviors, 507
buttons, 406–407
converting objects to, 407
copying, 407
creating, 406–407
graphics, 406–407
instances, 408–411, 413
movie clips, 406–407
organizing. *See* libraries, symbols.
registration point, 519
registration points, 413
storing. *See* libraries, symbols.
Sync type, 533
synchronizing local/remote sites, 52
syntax checking, 19, 33, 583. *See also* validation.
syntax colors, 585

T

tab delimited files, 142
table designs, 138
tables
aligning, 124
background, 136–137
blank cells, 119
borders, 117, 131–133
cell padding, 131, 134
cell spacing, 131, 134
cells, 118, 128–131, 133–135, 140–141, 299
color schemes, 138
columns, 122–123, 126–127, 133
converting from layers, 219
cutting and pasting, 143
displaying structure of, 121
exporting, 143
headers, 116
HTML code for, 119
images as background, 136–137
importing, 142–143
inserting content, 118–119
layout, 140–141
nesting, 118, 141
resizing, 125
rows, 122–123, 126–127, 137
selecting, 120–121
sorting, 139
spacer images, 97
tab delimited files, 142
within tables, 118
undoing changes, 127
Web page layout, 116–117
Tag Chooser, 60–61
Tag Editor, 60–61
Tag inspector, 62
tags. *See also* HTML; source code.
customizing. *See* CSS (Cascading Style Sheets).
displaying as text, 73
editing, 60–63
mimicking other tags, 205
searching, 64–66

tangent handles, 382
target browser list, 18
templates. *See also* page designs.
connecting to Web pages, 189
copying, 187
creating, 184–185
creating Web pages from, 186–187
definition, 174
description, 330–331
disconnecting from Web pages, 189
editable region indicator, 175
editable regions, 184–185, 186–187
locked regions, 184–185, 186–187
Modern Photo Slideshow, 331
nesting, 194–195
PDA devices, 331
photographic slideshows, 331
presentations, 331
previewing reusable items, 175
repeating regions, 190–191
repeating tables, 192–193
saving pages as, 184–185
updating, 188–189
use indicator, 175
yellow page outlines, 175
testing. *See also* validation.
behaviors, 507
buttons, 499
ColdFusion, 279
Dreamweaver sites, 21
hyperlinks, 115
movies, 446–449
movies in browsers, 447
Web pages, 21
Web sites, 21
testing sites, setting up, 255, 274–275
text. *See also* fonts; headings; paragraphs.
adding to the Stage, 392–393
aligning, 396–397
breaking apart, 402–403
color, 79–81
converting to graphics, 402–403
default color, 80
dynamic, 392–393
editing, 58–59
entities, 72–73
formatting, 394–395
highlighting, 83
as hyperlinks, 100
input, 392–393. *See also* forms.
kerning, 396–397
line breaks, inserting, 74
making selectable, 399
in motion tweens, 466
properties, changing, 82–83
sharpness. *See* anti-aliasing.
spacing between characters, 396–397
special characters, 72–73
spell check, 401
static, 392–393
subscript characters, 399
superscript characters, 399
undoing formatting, 83
vertical, 397
whitespace, inserting, 73
wrapping around images, 89–91
text areas, forms, 146–147
text boxes
copying attributes, 397
description, 392–393
dynamic, 580–581
extending, 392–393
fixed, 392–393
indents, 398–399
input, 578–579
margins, 398–399
moving, 400–401
resizing, 400–401
rotating, 401
skewing, 401
text fields, forms, 146–147
Text tool, 392–393
thickness, lines, 343, 360–361
tiling bitmaps, 370–371, 384

time zones, 53
Timeline. *See also* animation; frames; keyframes.
adding keyframes, 434
description, 333
frame numbers, 333
frames, 333
illustration, 332
layer buttons, 333
layers, 333
playhead, 333
Timeline controls, 333
Timeline effects
alpha value of objects, changing, 455
Blur effect, 456
blurs, 456
Change Color option, 462–463
Change Position by, 461
color of objects, changing, 455, 462
color transitions, 450–451
colors, finding, 463
Copy to Grid command, 452–453
copying objects, 454–455
Create Transform dialog box, 460–461
Distributed Duplicate effect, 454–455
drop shadows, 457
editing, 465
Expand effect, 458
expanding objects, 458
Explode effect, 459
exploding objects, 459
fades, 450–451, 463, 464–465
Final Alpha option, 462–463
grids, 452–453
Motion Ease option, 462–463
motion tweening, 453
motion tweening grids, 453
Move to Position, 461
moving objects, 461
renaming Flash layers, 451
resizing objects, 455
rotating objects, 462–463
scaling objects proportionately, 463
Spin option, 462–463
Transform dialog box, 460–461
transform speed, changing, 462–463
transforming animations, 460–463
Transition effect, 464–465
transitions, 464–465
transparency, 457, 462–463
wipes, 464–465
Timeline Options menu, 440–441
timelines. *See also* animation; frames; keyframes.
animating Web page elements, 238
and browsers, 238
description, 238
layer properties, changing, 246–247
rotating layers, 245
Timelines inspector, 239
titles, hyperlinks, 99
tool modifiers, 341
toolbars, 26, 34
Tools panel, 340–341
Trace Bitmap command, 368–369
Transform dialog box, 460–461
Transform options, motion tweens, 470–473
transform speed, changing, 462–463
transformations. *See also* Free Transform tool.
animations, 460–463
gradient fills, 384–385
shape tweens, 479
Transition effect, 464–465
transitions, 464–465
transparency. *See also* opacity.
drop shadows, 457
movie clips, 602–603
of objects, 462–463
table background, 137
tweened animation. *See* motion tweens; shape tweens.
tweened frames, 435
typefaces, 77

U

Undo button, 57–58
undo level, resetting, 391
undoing/redoing actions. *See also* Eraser tool.
    Flash History panel, 391
    History panel, 46–47
    Redo button, 57–58
    table changes, 127
    text formatting, 83
    Undo button, 57–58
unordered lists, 84–85
updating
    library items, 182–183
    templates, 188–189
uploading files. *See* file transfers.
URLs, passing information with, 304–307
use counts, 415
user input, collecting. *See* forms.
user interface
    Dreamweaver. *See* workspace; *specific elements*.
    Flash. *See* Flash window; *specific elements*.

V

validation, 16–17, 234–235. *See also* syntax checking; testing.
Validator, 16–17
variables, 616–619
vector graphics, 324, 368–369. *See also* bitmaps.
vector graphics, scaling. *See* Free Transform tool.
velocity curves, 485
vertical text, 397
video. *See also* animation; movies.
    Encoding screen, 551
    fast forward, 559
    file types supported, 553
    in Flash files, 552–553
    frame rate, 553
    hidden, showing, 556
    hiding, 555
    importing *versus* embedding, 553
    pausing, 558
    playing, 557
    progressive download, 550–551
    QuickTime, 551
    rewind, 559
    stopping, 554
View tools, 341
visibility
    forms, 145, 156
    layers, 216
    movie clips, 604–605
`_visible` property, 604–605
visited hyperlinks, 107

W

waveforms, 526–527
Web browsers. *See* browsers.
Web pages. *See also* Dreamweaver sites; Web sites.
    adding elements, 56
    browser compatibility, 236
    creating, 12, 276–277
    display type, changing, 28
    dynamic, 276–279
    editing, 56
    inserting elements, 36–37
    layout. *See* frames; layers; tables.
    naming, 13
    navigation bar, 317
    opening, 28
    organizing. *See* frames; layers; tables.
    page counters, 317
    paging through multiple records, 316–317
    patterns for. *See* templates.
    positioning elements with layers, 197
    predefined. *See* page designs.
    removing elements, 56
    saving, 13
    space, inserting, 73–74
    testing, 21
    validating, 16–17
Web servers. *See* Apache; IIS (Internet Information Services).

Web sites. *See also* Dreamweaver sites; dynamic Web sites; Web pages.
maps of, 48
previewing, 15
testing, 21
updating, 50
uploading files to, 50
Web-safe color, 81
whitespace
around images, 92
in text, 73
Web pages, 73–74
`_width` property, 608–609
windows, naming and resizing, 233
wipes, 464–465
word wrapping, 147
workspace, 26–27. *See also specific elements.*
wrap snippets, 176–177

X

`_x` property, 612–613

Y

`_y` property, 614–615
yellow highlighting
library items, 183
page outlines, 175
source code, 33

Z

z-index, 218, 246–247
zooming, 341