

BODYPAINT 3DTM

PAINTING • TEXTURING • MAPPING

Tutorial Manual

BODYPAINT 3D™

Tutorial Manual

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Hall of Honor

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Introduction

BodyPaint 3D enables you to create and hand paint textures for each channel of a material directly on to a 3D model. This makes adding detail, that is specific to the geometry of a model, easier than ever before.

These tutorials will take you through the process of creating brushes and colors with which to paint. This should help you to explore the different settings, so that you can easily and quickly create the types of brushes and colors for the look you want in any particular scene.

While we can show you how to use the tools of the program and our results, BodyPaint 3D won't paint an object for you and we cannot teach you how to be an artist. The artistic part (actually putting paint to texture) is still up to you. So, with this in mind, we offer some suggestions.

Utilize reference material whenever you can. The art of painting is the ultimate challenge of hand-eye coordination. The challenge is to take what you see or can visualize in your head and reproduce it.

Everyone can create a mental image of something in their head. These images are a reconstruction from memory. However, these mental images are not an exact duplication of the real thing. Mental images are really only a personal perception of reality. The mind cannot possibly store all the information necessary to create a realistic reproduction. The best results will come from what you can look at and make reference to while working.

A sketchbook can be an indispensable tool. It's a place where you can plan future projects, keep a journal, a workbook, and it's a brainstorming tool. Take it with you when you are examining outdoor reference material. Use your sketchbook to make field sketches of reference material to remind your inner eye what something looked like.

A camera, better yet a digital camera, is another way of capturing reference material for painting later. The advantage of going digital is the ability to easily bring the images into BodyPaint 3D or another image-editing program for reference.

We will start the tutorial with an in-depth look into UV mapping, the cornerstone of 3D painting and texturing.

1 An Introduction to UVW

If you learn only one thing from this manual, please make it an understanding of UVW mapping.

Texture Map Projection Modes

How a material is mapped to an object affects the way paint is applied to the object. CINEMA 4D offers Cubic, Cylindrical, Spherical, Frontal, Spatial, Shrink-Wrap, and UVW mapping. All these modes can be used within BodyPaint 3D as well. However, UVW offers the most control and the best results when painting in 3D.

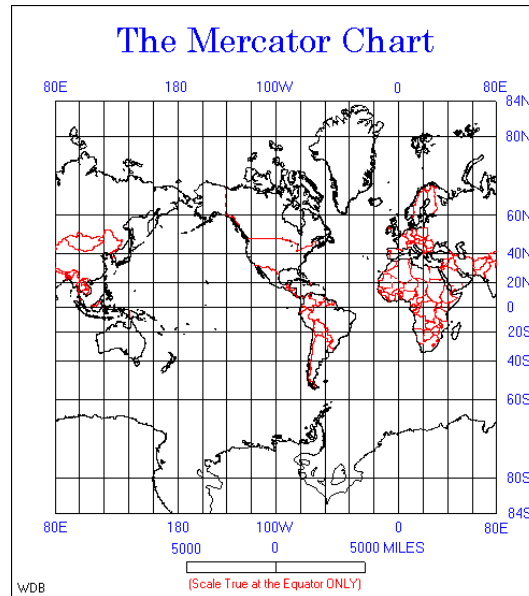
What is UVW Mapping?

A UVW mesh is an unwrapped, two-dimensional representation of a 3D surface. The points of a UVW mesh directly correspond to the points of the 3D object. Although the mesh may become distorted when manipulated, this point relationship always remains connected. So a UVW mapped material or texture is actually *pinned* to the points of the object.

For many reasons, UVW mapping will be the preferred method of mapping a material or texture for painting in 3D. If the model is deformed when animating, the material will move and stretch with the points of the object. UVW mapping is also the only mode in which you can manually change the position of the specific coordinates of a material so that you can paint more accurately on a model. This accuracy is dependent on how well defined the UVW coordinates are over the entire surface of your model.

The manipulation and modification of an object's UVW mesh is the most important step to painting accurately on your 3D model with BodyPaint 3D or any other 3D painting program

A clear illustration of how UVW map projection works is a Mercator projection. A Mercator projection is a mathematical method of creating a seamless rectangular map of the globe on a flat surface.



Gerhardus Mercator developed this projection in 1568. Before his technique, navigation charts for sailors did not correctly account for the recent discovery that the world was round.

Applying the Mercator equation to a UVW mesh preserves the basic shapes and directions, but causes size distortion. So the image of the map (the UVW mesh) is stretched to conform to the shape of the globe. However, the basic relationship still exists for accurate navigation.

Imagine inflating a balloon inside a cylinder. First it will touch the cylinder wall at the equator of the balloon. As you continue to blow it up, each point on the balloon is pressed against the wall of the cylinder. Although the equator of the balloon will not change much, the top and bottom will be stretched more and more until it touches the ends of the cylinder.

Although this is a good example of how a mesh might be changed to accommodate the shape of a 3D object, the distortion that occurs at the top and bottom of the balloon is actually an undesired effect when preparing your UVW mesh for painting in BodyPaint 3D. You actually want to avoid such distortion when preparing your UVW mesh. Ideally

you want to scale equally in both directions - east-west (U) and north-south (V) on the mesh. This will not always be possible, especially with complex organic models. The idea is to keep the distortion ratio as low as possible so you can accurately paint on your 3D model. If drastic distortion occurs, when painting, you will experience varying results as a brush moves from UVW polygon to polygon - a greatly undesired effect.

For the best results, you want to balance the amount of distortion and number of seams. Both should be at a minimum. However, both are bound to occur when preparing a UVW mesh for painting.

UVW Coordinates

In geometry, coordinates are defined by X, Y and Z. This is a reference system for placing geometry in three-dimensional space. UVW coordinates only measure repetitions along each axis. When looking at a bit map texture, the origin (U=0, V=0) is always the upper left corner. The lower left is U=0, V=1, the upper right is U=1, V=0, and the lower right is U=1, V=1. Basically, 0 is 0% and 1 is 100% of the whole image. This is true regardless of the size or shape of the texture, or how you scale or stretch a material or texture.

The actual numbers in UVW coordinates measure the repetitions or tiling of materials and textures applied to an object. The coordinate defined as U represents side to side, while V represents up and down, and W represents depth. When a texture has been tiled, the space between U=0, V=0 and U=1, V=1 is one repetition of the texture. Each tile adds 1 to the U and/or the V coordinates (or subtracts 1 if you tile in a negative direction). So a set of texture coordinates from U=0, V=0 to U=2, V=2 would be a grid of four tiles.

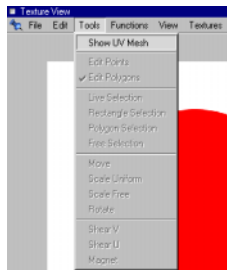
When viewing UV coordinates in the Structure manager, you can see that every UVW polygon has four points and each point has three numeric coordinates (e.g. U(A), V(A), W(A)). That is, each point has a U, V and W coordinate.

Manipulating a UV Mesh An Exercise

Let's start with a simple example of how UVW works and some of the tools for changing the way UVW affects texture placement. For the purposes of this exercise, you will not be manipulating the W coordinate of the UVW mesh. The W coordinate is only important when using volume shaders, affecting the depth of the shader. You will only be modifying the placement of a flat 2D texture in this exercise.

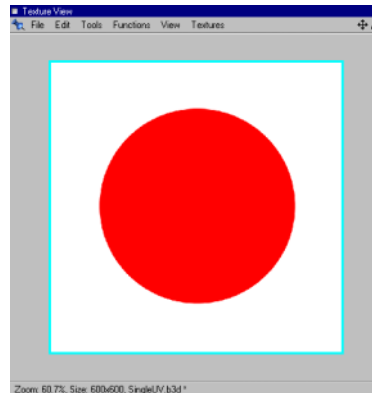
You will begin with a simple texture map of a red circle on a white plane. Open the 'UV1.c4d' project located in the 'Tutorials: US: BodyPaint 3D' folder (use **File > Open** for this).

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



Activating the UV Mesh

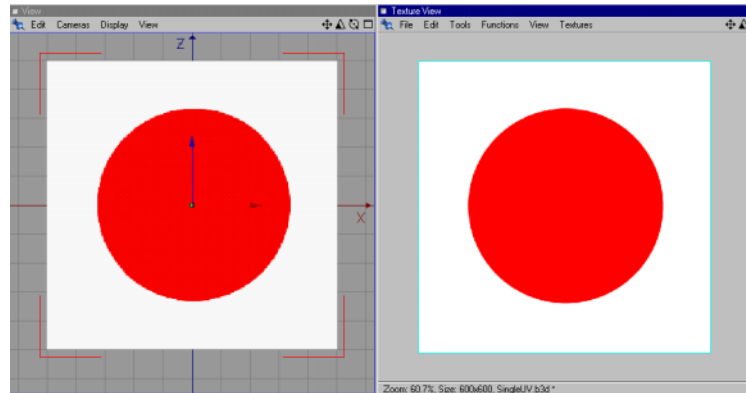
You'll note you already have a single polygon plane object in the scene with a material applied. Since the object is a single polygon model, it has only one set of UV coordinates. You can see the UV coordinates of your model by turning on Show UV Mesh. Before you do that though make sure that the texture is selected in the Texture View (Texture View – Textures > UV1.b3d) and that you can see the whole texture (zoom in or out with Texture View – View > Zoom In/Zoom Out).



You will see a light blue border around the edges of the texture map. This border represents the UV Map.

You can see that the UV Map is the same shape as the polygon it represents. This is not always the case. For now, you will work with this simple setup.

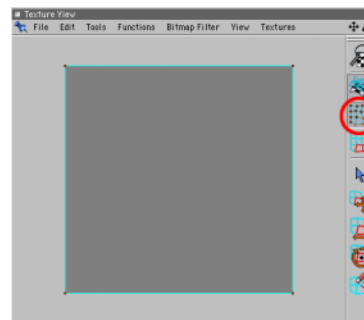
If you are in the Top View of the Perspective View window, the textured polygon looks like the texture view.



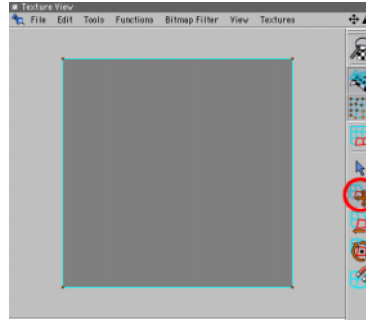
Now you can change the UV Mesh and see what happens to the circle on the object.

We are going to select tools from the UV Editor Tab which is the tab that is attached to the Texture View; it may be along the top of the window or to the side, depending on your preferences. Example tabs are shown below, as we select the tools.

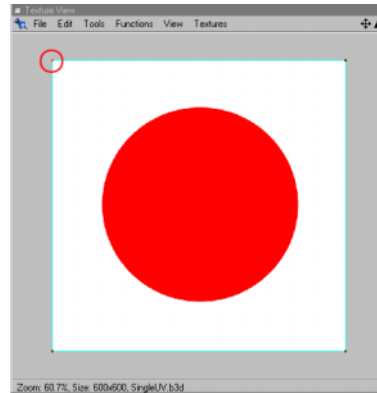
So, from the UV Editor Tab, select the Points mode as shown:



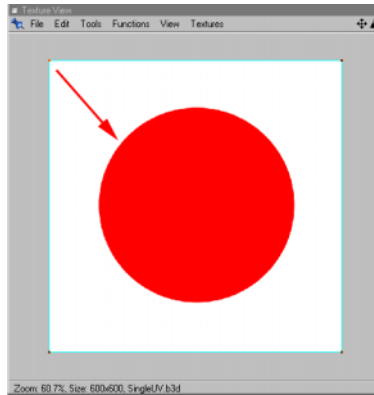
You should see four points selected, one at each corner of the UV mesh; zoom out the Texture View until you see these. Now select the UV Move Tool:



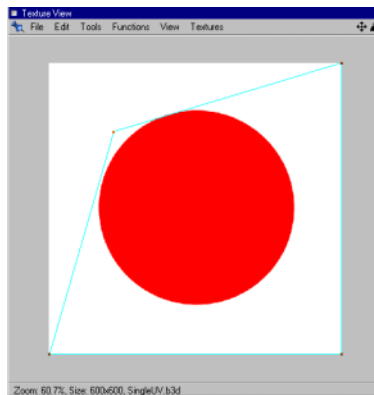
Click once on the upper left corner to select that point.



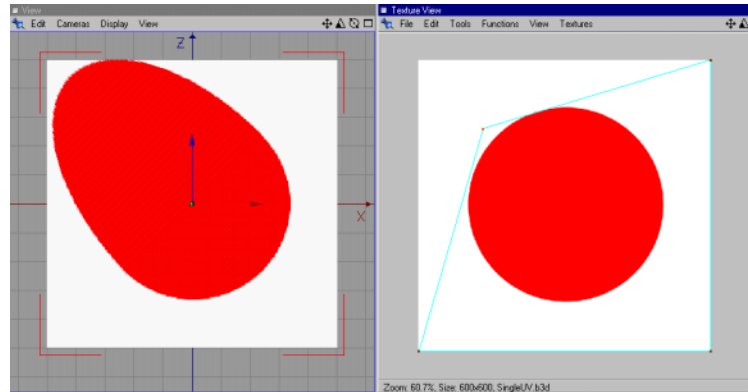
Click and drag to move this point towards the center of the texture map, about half way to the center.



Your UV Mesh should look something like this.



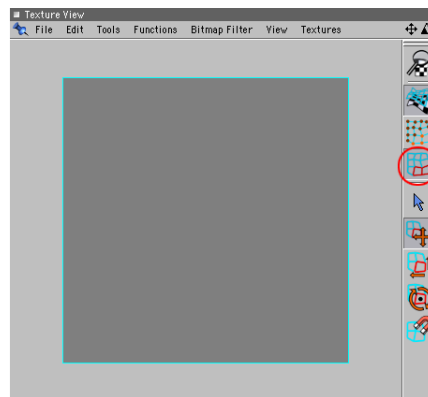
If you look in the Perspective View, you can see that the circle in the Texture Map is now stretched to fill most of the upper left corner of the polygon.



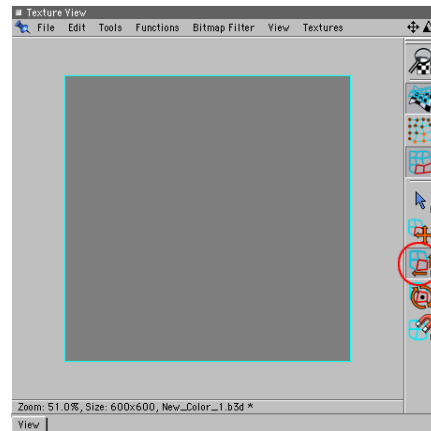
This is because the circle now occupies more of the UV mesh's upper left corner. If you move the other points around you can see their effect on the map as well.

Now you will look at the effect of scaling the UV mesh. First, restore the UV mesh back to its original state for clarity (Texture View: **Edit > Undo**).

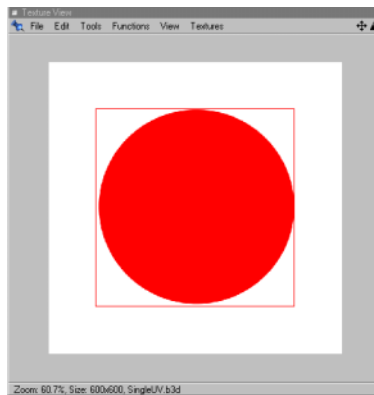
Switch to Edit Polygon mode in the UV Editor Tab:



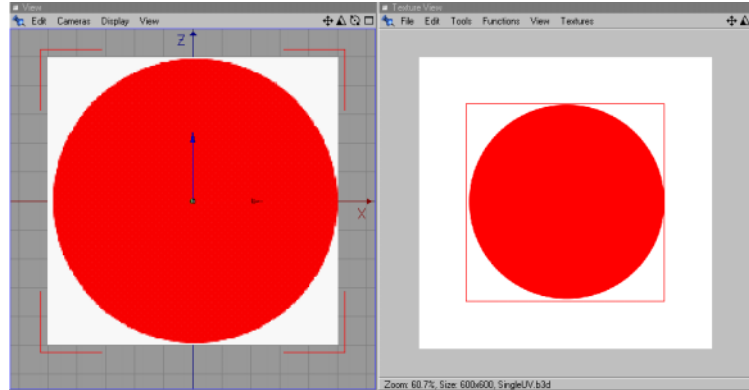
Select the UV Scale tool from the UV Editor Tab:



Click once to select the UV polygon. Then click and drag to scale down the UV polygon.



Looking in the Perspective View, you will see that the circle is now much larger on the object. This is for the same reason as before, the circle in the texture map now fills more of the UV mesh.



Now you will rotate the UV and see what that does to the final image.

Begin by opening the 'UV2.c4d' project located in the 'Tutorial Projects:UV Projects' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



Once this has loaded select the 'UV2.b3d' texture in the Texture View (Textures > UV2.b3d). You'll notice there is an arrow pointing up on the texture map.

Also, you'll note you already have a single polygon plane object in the scene with a material applied. Since the object is a single polygon model, it has only one set of UV coordinates. You can see the UV coordinates of your model by turning on Show UV Mesh, if it's not already on.

Texture View Menu: Tools=>Show UV Mesh
Keyboard Shortcut: None



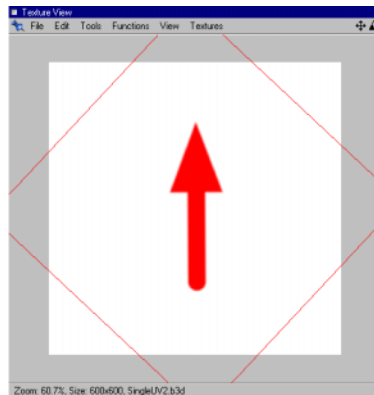
This will display a light blue border around the edges of the texture map. This border represents the UV map. You can see that the UV map is the same shape as the polygon it represents. This is not always the case. For now, you will work with this simple setup.

In the UV-Editor tab select the UV Rotate Tool:

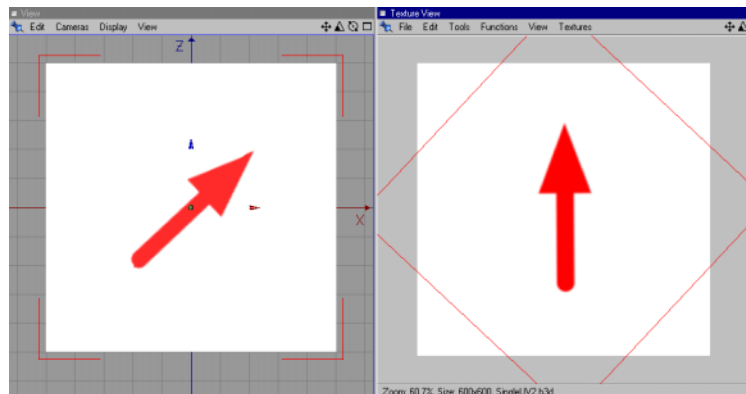


With the UV polygon selected, rotate the UV approx. 45 degrees.

You'll note that the corners of the UV are now off of the texture map.



Looking in the Perspective View you will see that the arrow is now rotated on the object.



Editing the UV Mesh of a Cube An Exercise

Now you will try these techniques on a slightly more complicated object, a cube. Actually, a cube presents a number of challenges to creating a usable UV map.

One of the important things to consider when UV mapping is defining the criteria by which you will judge the 'correctness' of your map.

There are several criteria to choose from and balance. A partial list of criteria would include:

- Correspondence of UV mesh to actual geometry.
- Number of disconnected surfaces or seams.
- Number of overlapping surfaces.
- Ability to paint in the 2D texture view.
- Recognizability of major geometric surfaces.

Each person is going to weigh these criteria differently. The two following examples illustrate this; the first would be the order of importance for someone who plans to do most of their painting in the 3D (Perspective) view, the second for someone who intends to do most of their painting in the 2D Texture View.

3D/Perspective View:

- Number of overlapping surfaces.
- Correspondence of UV mesh to actual geometry.
- Number of disconnected surfaces or seams.
- Ability to paint in the 2D texture view.
- Recognizability of major geometric surfaces.

2D View:

- Number of overlapping surfaces.
- Ability to paint in the 2D texture view.
- Recognizability of major geometric surfaces.
- Number of disconnected surfaces or seams.
- Correspondence of UV mesh to actual geometry.

So what do each of these criteria mean?

Correspondence of UV Mesh to Actual Geometry

This is a measure of how closely a UV polygon resembles the actual geometric polygon to which it belongs. The closer these two are, the less brush distortion you will experience when painting in the 3D view. However, because you are taking a 3D surface and converting it to 2D, there is no way to achieve perfect 1 to 1 correspondence. In addition, as you increase correspondence, it is likely that you will increase the number of disconnected or overlapping surfaces.

Number of Disconnected Surfaces or Seams

This is how many places there are in the UV map where the edges have been separated, even though the edges in the model are connected. As this number increases, it becomes harder to paint across the model in the 3D view without having seams appear in the render. These seams can be painted out with careful use of the brushes. Disconnecting some surfaces can help to increase the correspondence of the UV mesh to the actual geometry.

Number of Overlapping Surfaces

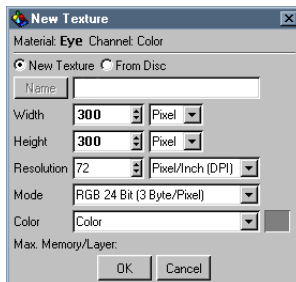
This is the amount of the UV mesh that occupies the same space on a texture map. For example, if you cylindrically map a coffee cup, parts of the handle's UV will be at the same location on the texture map as part of the cup. In most cases, you don't want any UV's to overlap one another. The only exception would be for the purposes of placing the exact same portion of the texture map in several places, such as different faces of a cube or to be able to paint on two sides of a symmetrical object simultaneously.

Ability to Paint in the 2D View

This is how easy it is to create a continuous brush stroke in the 2D view across surfaces that are connected in the model (for example the forehead and the nose). Usually, increasing paintability in the 2D view will decrease correspondence to the geometry as it requires distorting the UV mesh.

Recognizability of Major Geometric Surfaces

This determines whether or not you can identify which portion of the UV mesh represents which portion of the geometry. Increasing the recognizability will make it easier to paint in the correct location in the



Adding a texture for the Color channel

2D view. However, it is also likely to increase the number of seams in the UV mesh as you will often need to disconnect branching surfaces (surfaces that go off in a different direction from the rest of the model, such as a horn on a Viking helmet).

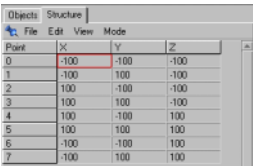
The default UV map setting for a cube has you painting the same texture on all six sides of the cube. What if you want to paint across the faces of the cube continuously?

For this, you will have to go through the steps of setting up the UV map for the cube. There are many different ways you can do this. In this case you will use a method which makes the UV look like the unfolded cube. Going back to our criteria, this will be based mostly on the 2D paintability. We will have several disconnected surfaces. The geometric shape will still be recognizable and there will no longer be any overlapping surfaces.

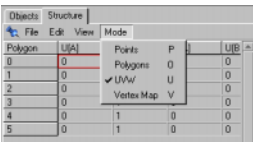
Time to get started.

Open the 'UVcube.c4d' scene from the 'Tutorials: US: BodyPaint 3D' folder. Or if you already have CINEMA 4D XL integrated with BodyPaint 3D, just create a cube and make it editable.

Create a new material.



The Structure manager



Selecting UVW Mode in the Structure manager

Material Manager: File=>New Material
Shortcut: Ctrl+N (pc) / Cmd+N (mac)

Apply this material to the cube by dragging the material to the Object manager and dropping it onto the cube. Accept the default mapping of UVW.

In the Layer manager, add a texture map to the Color channel of the material.

Accept the default size in the dialog, name your texture and click **OK**.

Make the texture active in the Texture View. There are many ways to do this - you can drag the texture layer (here labeled 'Background' on the right of the Layer manager) up to the Texture View or you can double-click on the texture's name in the Layer manager or you can select the texture from the **Textures** menu in the Texture View.

Turn on **Show UV Mesh**.

Texture View Menu: Tools=>Show UV Mesh
Keyboard Shortcut: None

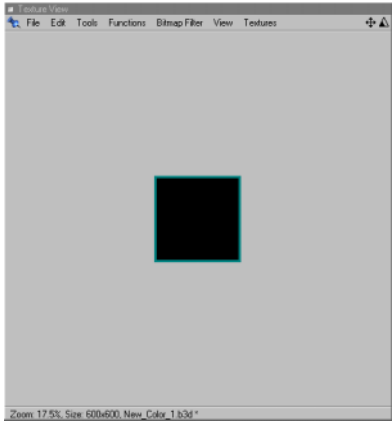




The Active Tool window for UV Move

Zoom out in the texture view so that you can fit five copies of your texture on the screen (to approximately 12%).

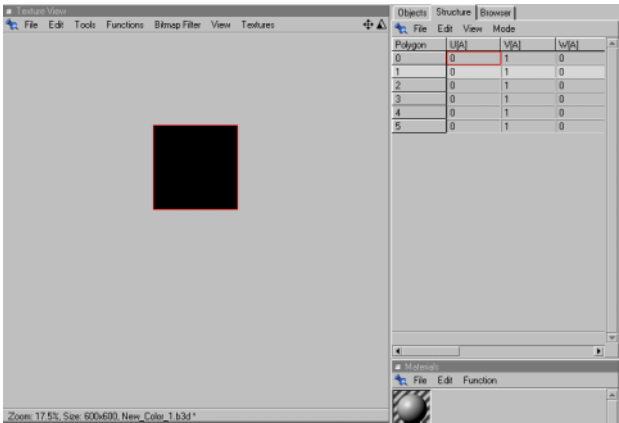
Texture View: **View > Zoom Out** (as many times as you need, probably about 8 times) or Texture View: **View > Set Zoom...** to 12%.



You'll need to have the Structure manager (**Window > Structure manager**) available in order to accomplish the next step.

First, set the Structure manager to UVW mode.

Select the first UV by clicking on the number 1 in the **Polygon** column. A red outline should appear around the texture map, indicating you have this UV polygon selected.

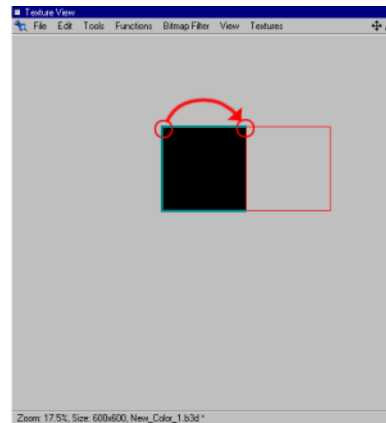


Select the UV Move tool (Texture View: **Tools > Move**).

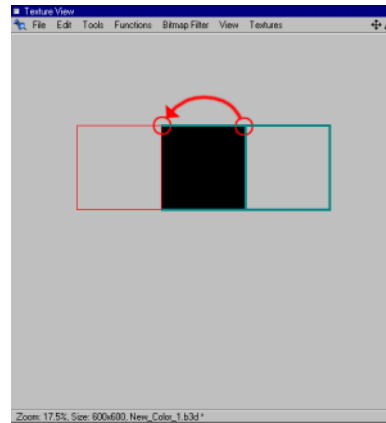
Go to the Active Tool manager (click on the tab or select **Active Tool manager** from the main Window menu).

Make sure **Keep Face Neighbors** is off in the Options tab and **Point Snapping** is on in the Snapping tab. Increase the radius to 10%. This will make snapping much easier, and in a simple situation like this, it is unlikely you'll have any problems.

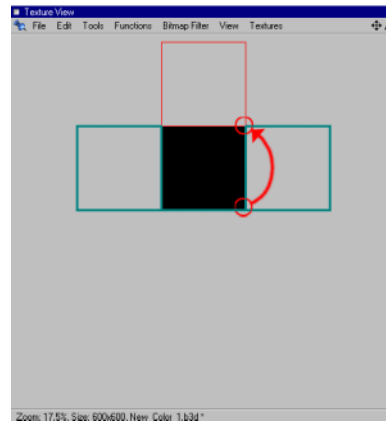
Click the upper left corner of the selected polygon and drag it to the right, to the upper right corner of the texture map until it snaps into place. You will see that the UV mesh has moved.



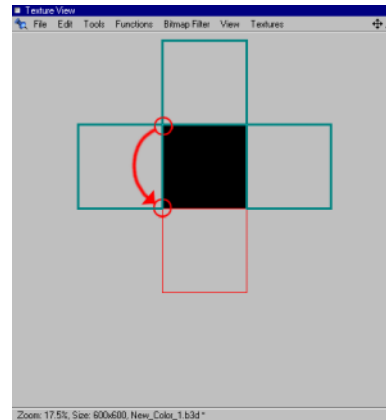
Select UV polygon 3 in the Structure manager. Click on the upper right corner of this polygon and drag it to the upper left corner of the texture map until it snaps in place.



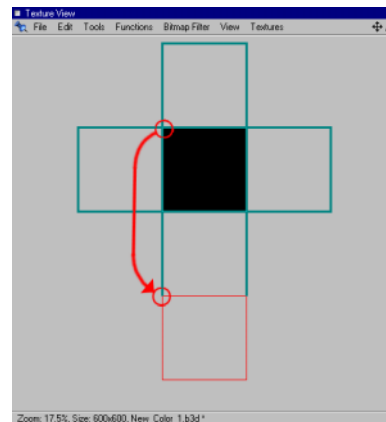
Select polygon 0 in the Structure manager. Click on the bottom right corner of this polygon and drag it up until it snaps to the upper right corner of the texture map.



Now select polygon 2 in the Structure manager. Click on its upper left corner and drag down until it snaps into place at the bottom left corner of the texture map.

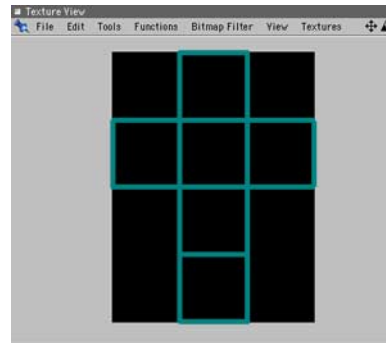


Select polygon 4 and click on its upper left corner. Drag it down until it snaps into place at the bottom left corner of polygon 2. Your UV map should look like a 't' as shown.



Now you can test this setup to see if it is ready for final painting. First, you need to make the texture map the same size as the UV map. You could scale down the UV map, but instead you'll use the **Fit Canvas to UV** function to grow the texture to the size of the UV.

To use this function simply select **Fit Canvas to UV** from the Functions menu of the Texture View.



Your texture map should now be as large as the UV map and no larger. There will be some wasted space, but that is ok. You will only see the texture map on the parts of the texture where the UV are placed

Now that the map is the correct size, you need to test it.

To test the map, simply paint from one face to another in the 3D/ Perspective View. First, make sure you are in painting mode

File Menu: Tools=>3D Painting Mode
Keyboard Shortcut: None



and that you have a brush selected

File Menu: Painter=>Tools=>Brush
Keyboard Shortcut: None



then select a brush color from the Color manager, and paint.

Watch the results in the 2D view to determine if it is working. A good way to check a cube is to paint corner to corner diagonally. This lets you see if the brush stroke really is lining up correctly. In the Texture View, it should look like you are painting straight lines. If it looks like the pen is jumping all over, then the UV map still needs work.

You may notice that Polygon 2 (the first polygon under the horizontal part of the 't') is not working properly, it is probably flipped in both the U and V directions from where it should be.

To fix this, select the polygon (Tools > Live Selection in the Texture View) and select **Mirror U** from the Functions menu of the Texture View.

Texture View Menu: Functions=>Mirror U
Keyboard Shortcut: None



Now flip it on the V by choosing **Mirror V**.

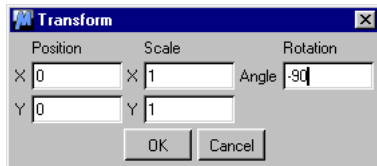
Texture View Menu: Functions=>Mirror V
Keyboard Shortcut: None



Now retest this polygon to be certain that it works properly. At this point, the vertical part of the 't' should be painting correctly. Now you just need to fix the two outer parts of the 't'.

If you paint on the wings of the 't' you will notice that Polygon 3 is rotated 90° from where it should be. To fix this, select this polygon and run **Transform**.

Texture View Menu: Functions=>Transform
Keyboard Shortcut: None



In the **Rotation** field, enter 90 and click **OK**. Be sure to do a paint test again to ensure this has fixed the problem.

Finally, check the last polygon in this row. It too has been rotated incorrectly. Rotate it -90° to correct the problem.

Your cube should now be easily paintable with no distortions. You will have to be careful painting across the disconnected seams, but this is not too much of an issue.

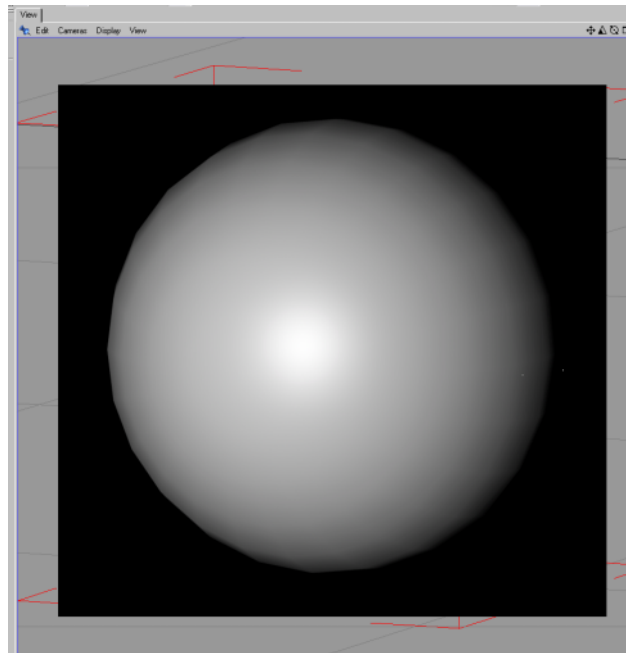
2 Painting an Eyeball

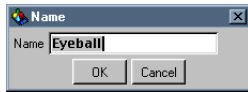
An eyeball is a great place to begin, as it will be relatively simple to paint and will simply illustrate how to use BodyPaint 3D.

Basically, you will create a new material that utilizes the Color, Bump and Specular channels. This will be the material that defines the surface aspects of the eyeball. After the material has been created you will create textures for the Color and Bump channels in the Texture manager. Then you will paint these textures to define what the eye looks like.

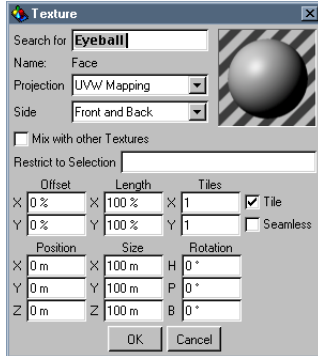
Step 1: Open the 'EyeBall.c4d' Project located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)

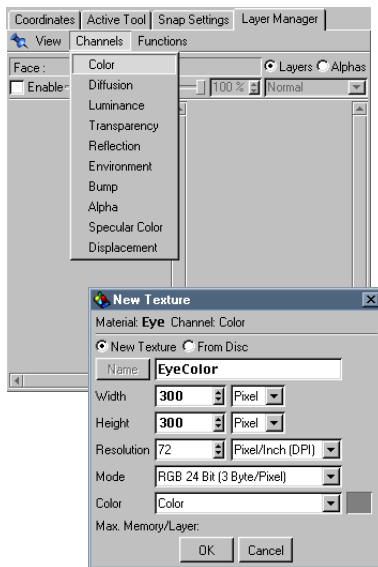




Step 2: Naming the material



Step 3: The Texture dialog



Step 4: Selecting the Color channel and naming the texture

Step 2: Create a new Material.

Material Manager: File=>New Material
Shortcut: Ctrl+N (pc) / Cmd+N (mac)

Double-click on the text 'New' under the gray sphere representing the new material in the Material manager. This opens a dialog that allows you to change the name of the material. Change it to 'Eyeball'. Click **OK**.

Step 3: Apply the material to the Eye model by dragging the material icon from the Material manager onto the Eye in the Object manager. When you drop the material, a dialog will open with options for how the material is projected onto the Eye.

The default, **UVW Mapping** is what you want to use, so click **OK** to close the Texture dialog.

Step 4: Create a new texture for the Color channel of the material.

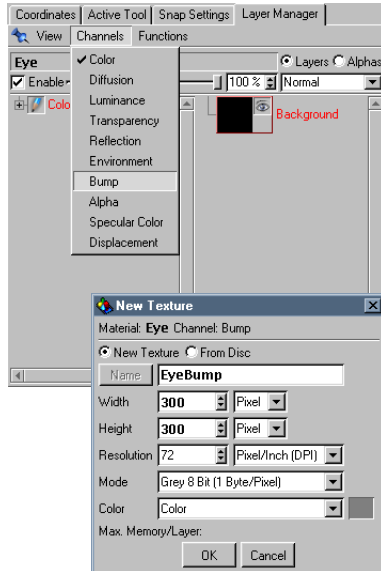
Ensure the Eyeball material is active in the Material manager. Go to the Layer manager and create a texture for the Color channel.

In the dialog that opens, name the texture 'EyeColor' ('.b3d' will be added, automatically, as the file extension). Set the map size to 300x300 pixels with a resolution of 72dpi. Using a small texture map here is all that is needed and helps to conserve project and file size. Anything larger would be overkill.

Note

The higher the resolution of the image you are painting, the more RAM required. For the best results, use only the maximum size texture you will need for the final render. A scene with several textures in RAM, will greatly reduce the performance of BodyPaint 3D. Even just a few high-resolution images in one material can be very RAM intensive. You can remove textures from RAM but using the Enable checkbox in the Layer manager. With a material selected, uncheck the Enable checkbox. This removes the textures of this material from RAM. If changes have been made to those textures, you will be asked if you want to save those changes.

At the bottom of this dialog you can also set the overall color for the texture.



Step 5: Creating and naming the texture for the Bump channel

Clicking on the color box to the right of the **Color** pull down menu will open your system color picker. However, for the purposes of remaining platform independent, you will add the base color later.

Click **OK** to accept the settings you have input.

Step 5: Create a new texture for the Bump channel of the material.

Make sure the Eyeball material is still active in the Material manager. In the Layer manager, create a texture for the Bump channel.

This will automatically enable the bump channel of your material.

In the dialog that opens, name the texture 'EyeBump'. Set the size to 300x300, keep the resolution at 72dpi.

Note

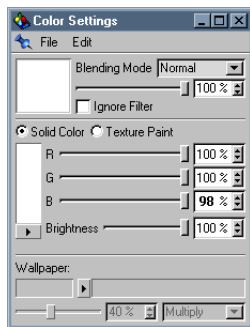
When you have textures on multiple channels of a material, it is best to make all textures the same size. You cannot use multi-channel brushes and colors, unless the texture maps are the same size. If needed, you can use different sized textures on material channels, as long as you do not intend on using multi-channel brushes and colors.

The default of 50% gray color is exactly what you want for a bump map. Gray is a neutral color and therefore creates no bump at all. Painting white on a bump texture will create raised areas and painting black will create sunken areas.

Later you will paint white on this map to define raised areas on the iris of the eye. By clicking on the **Color** and **Bump** names in the Layer manager you can jump between painting the image maps that define the eye.

Click **OK** to accept the settings you have input.

Step 6: Make the color texture active in the Texture View so you can paint it. There are a number of ways to do this - you can drag the relevant texture layer (here labeled 'Background') up to the Texture View or you can double-click on the texture color icon or you can select the name of the color channel texture in the Textures menu of the Texture View.



Step 7: Selecting the Foreground color to bring up the Color Settings

Step 7: The first thing you want to do is fill the texture with an overall base color. To do this, click on the foreground color of the color channel; the icon for the color channel foreground/background colors is shown on the left and is to be found at the top right of the Paint tab (there are separate foreground/background colors for each channel). This will open/activate the Color Settings dialog.

Now choose the color for the eyeball. You can choose any color you like. The settings we used are R=100%, Green: 100%, Blue: 98%, Brightness: 100%.

The Color Settings window is a non-modal dialog, so you can leave it open, let it float, dock it some place else or just close it.

To fill the EyeColor texture with the foreground color you have just chosen, go to the Texture View and use the Fill Layer tool.

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None



Step 8: Now you will paint the iris. To do this, you will select only the area of the eyeball that represents the pupil and fill it with a color.

First make the UV mesh visible if it isn't already.

Texture View Menu: Tools=>Show UV Mesh
Keyboard Shortcut: None



Use the rectangle selection tool

File Menu: Painter=>Bitmap Selection=>Select Rectangle
Keyboard Shortcut: None

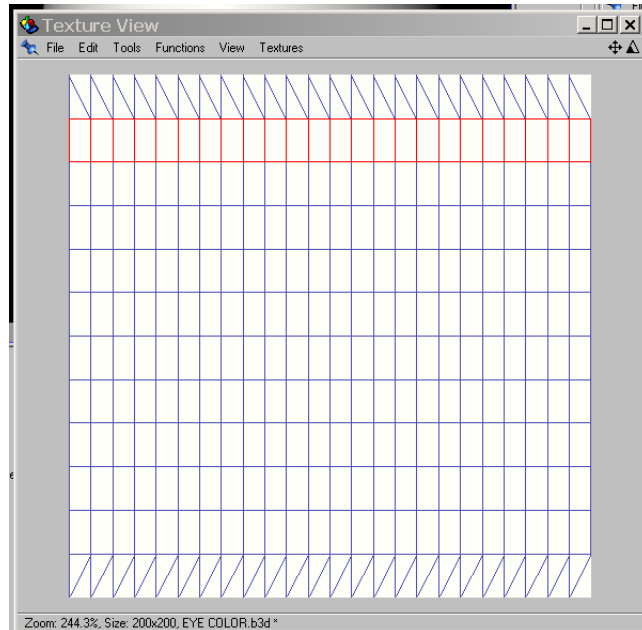


to select the area of the texture that defines the front of the eyeball i.e. drag out the rectangle selection until you have enclosed the required area of the UV mesh, then let go of the mouse button. In this case the required area is the second 'row' of the UV mesh (see next page).

The Texture View shown below illustrates what you are trying to achieve.

Note

To locate a specific area on a model you can do two things: you can paint on the model to see its relation to the 2D UV map in the Texture View, then undo what you have painted. Or, you can select the polygons of the object and see the related area. You will see it is fairly obvious where the pupil is located on this map.



Now choose the color for the iris. Open the Color Settings dialog again by clicking on it, if it is still open, or by clicking on the foreground color of the color channel.

The settings we used for this color were R=60%, Green: 70%, Blue: 100%, Brightness: 100%.

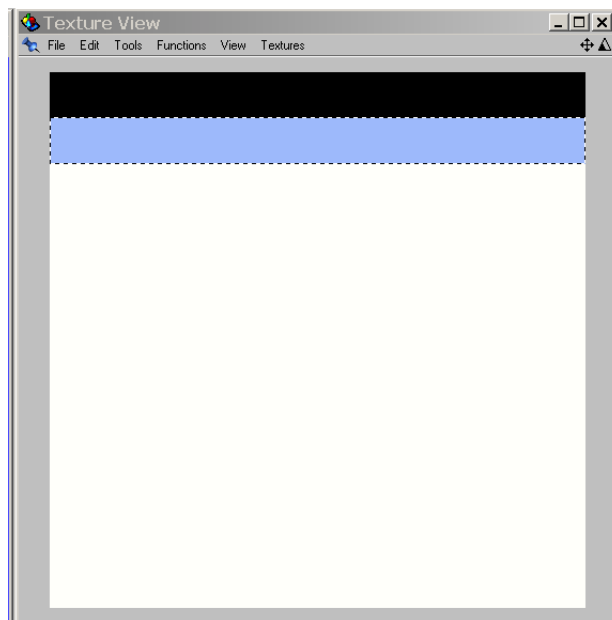
Fill the selected UVs with the new foreground color

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None



Step 9: Now you will paint the pupil. To do this, you will select only the area of the eyeball that represents the pupil and fill it with black.

Use the rectangle selection tool again to select the area of the texture that defines the front of the eyeball as shown (the black area in the picture below - this shows the area already filled with black).



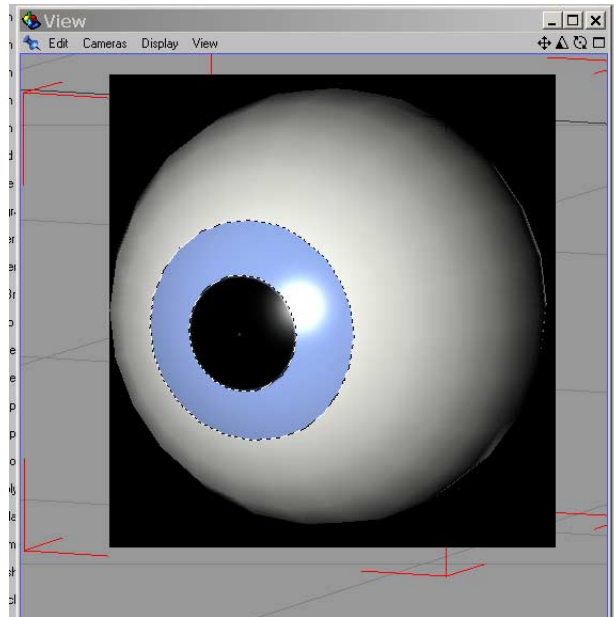
Switch the foreground and background colors. You do this by clicking on the angled line with arrows on the bottom left of the foreground and background colors. Black should now be the foreground color. If it isn't, edit the Color Settings to get black.

Fill the selected UVs with the black foreground color.

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None

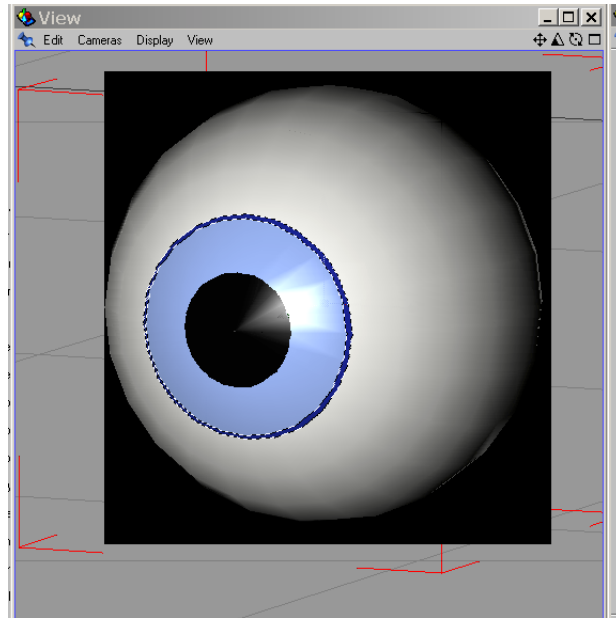


Here's what the final result should look like so far:

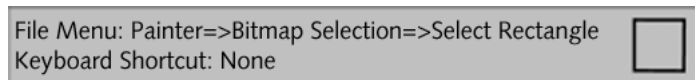


Now, we'll move on to work the outside of the iris.

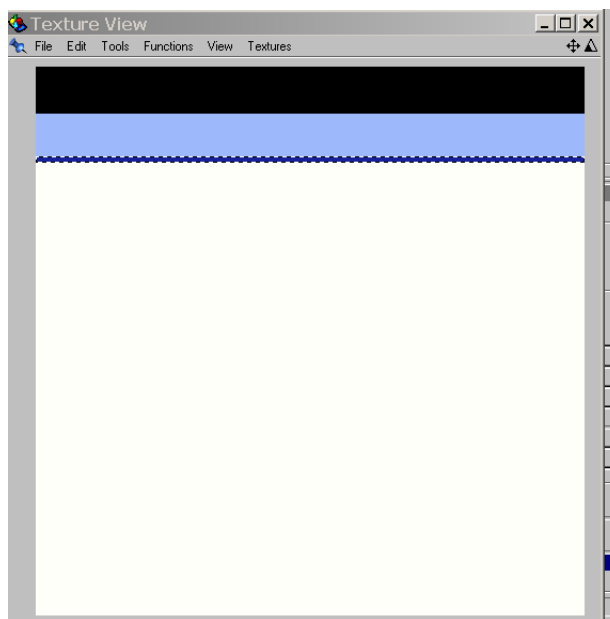
Step 10. To simulate the dark border of color surrounding the iris of the eye, you will make another small selection on the very outside of your color bar and fill it using a darker shade of the blue used for the eye.



So, make a small selection at the bottom of the iris color area with the rectangular selection in the Texture View window.



The selection should look like the dark blue area shown in the Texture View below (we have shown the selection already filled with dark blue).



Then click on the Eyedropper icon

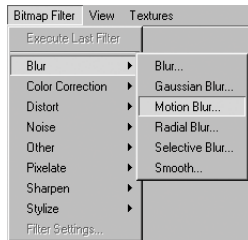
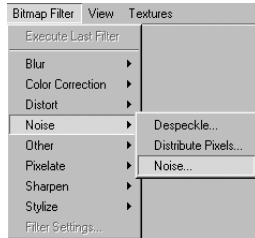


or select it from **Painter > Tools > Eyedropper**. Use this to get the color of the iris (blue) into the Color Settings and then change the **Brightness** value in the Color Settings to 60%. This gives a color that is a darker hue of the original iris color.

Fill this small selection.

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None





Step 11: Applying noise and motion blur

Step 11: The transition of color between the different shades of blue hardly looks subtle. So you will use a filter to improve it.

Use the rectangle selection tool to select all the blue color of the texture in the Texture View window.

File Menu: Painter=>Bitmap Selection=>Select Rectangle
Keyboard Shortcut: None



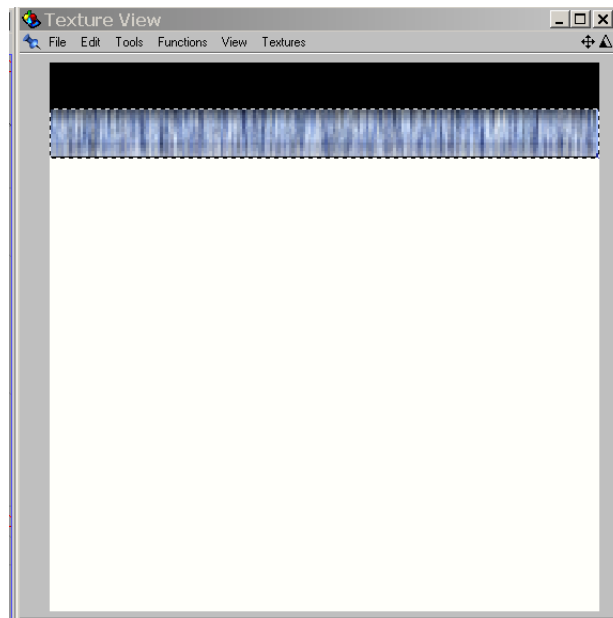
Next, use the **Noise > Noise...** filter to randomize this area of the texture.

Set the **Noise** to 99.9% and toggle **Monochromatic** on so you only get black and white noise and lots of it.

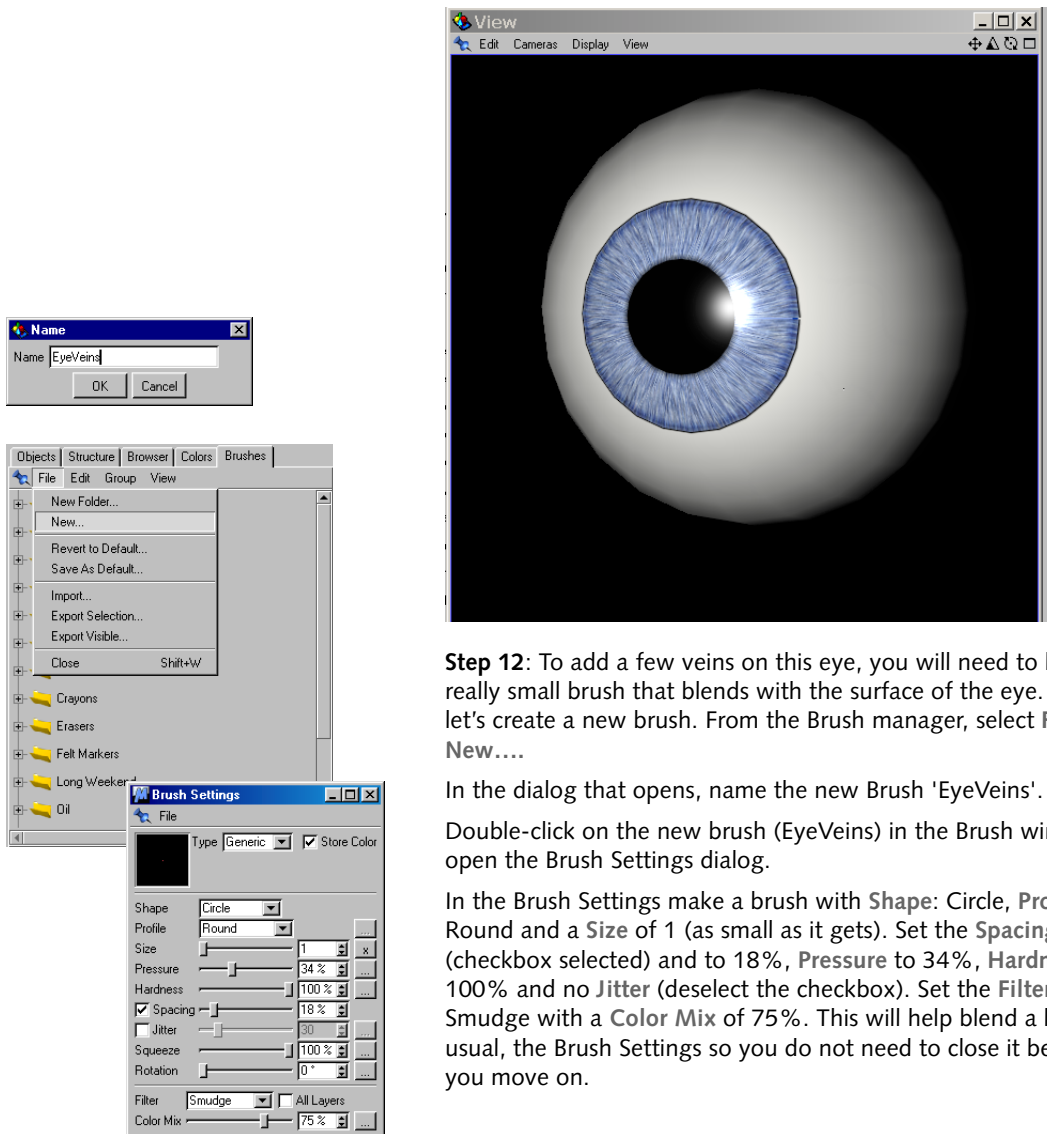
After the effect has been applied use the **Motion Blur** plugin filter to soften the effect.

Set the **Angle** to 90°, **Length** to 10 and **Blend** to 100%. This will produce the color streaks within the iris.

Click **OK**. View the results; here's what the Texture View should look like:



and the Perspective View:



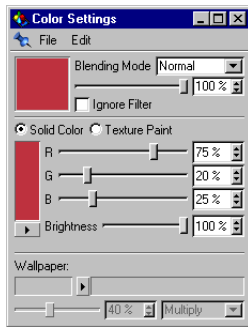
Step 12: To add a few veins on this eye, you will need to build a really small brush that blends with the surface of the eye. First, let's create a new brush. From the Brush manager, select **File > New...**

In the dialog that opens, name the new Brush 'EyeVeins'.

Double-click on the new brush (EyeVeins) in the Brush window to open the Brush Settings dialog.

In the Brush Settings make a brush with **Shape:** Circle, **Profile:** Round and a **Size** of 1 (as small as it gets). Set the **Spacing** on (checkbox selected) and to 18%, **Pressure** to 34%, **Hardness** to 100% and no **Jitter** (deselect the checkbox). Set the **Filter** to Smudge with a **Color Mix** of 75%. This will help blend a little. As usual, the Brush Settings so you do not need to close it before you move on.

Step 12: Setting up a brush



Step 12: Setting the brush color

Go to the Color Settings and choose a reddish color. The settings we used were Red: 75%, Green: 20%, Blue: 25%, Brightness: 100%.

Select the white of the eye in the Texture View window with the rectangle selection tool.

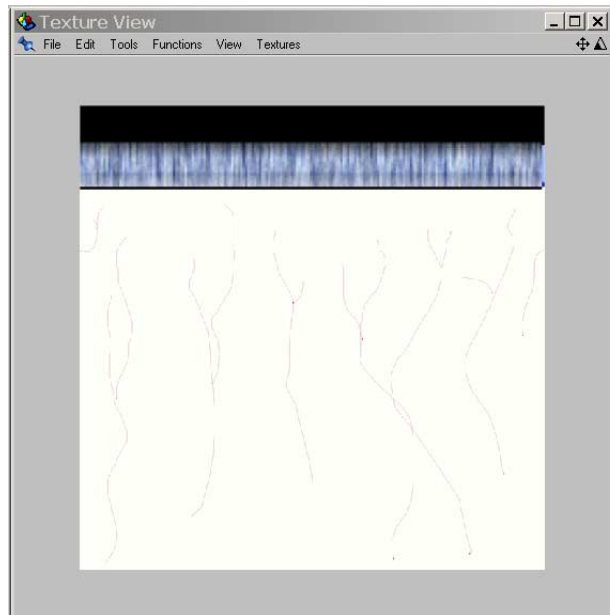
File Menu: Painter=>Bitmap Selection=>Select Rectangle
Keyboard Shortcut: None

You are effectively selecting everything below what you have already painted.

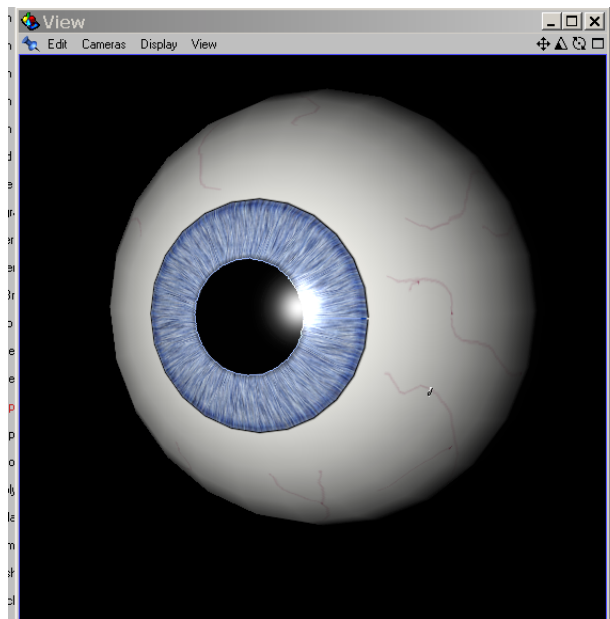
Go back and select the new brush you built in the Brush manager and select the brush tool icon (or Painter > Tools > Brush)



and then lightly draw (mostly vertical) veins in the Texture View window as shown. The more you draw, the more tired the character will become!



You'll end up with an eye that should look something like this:



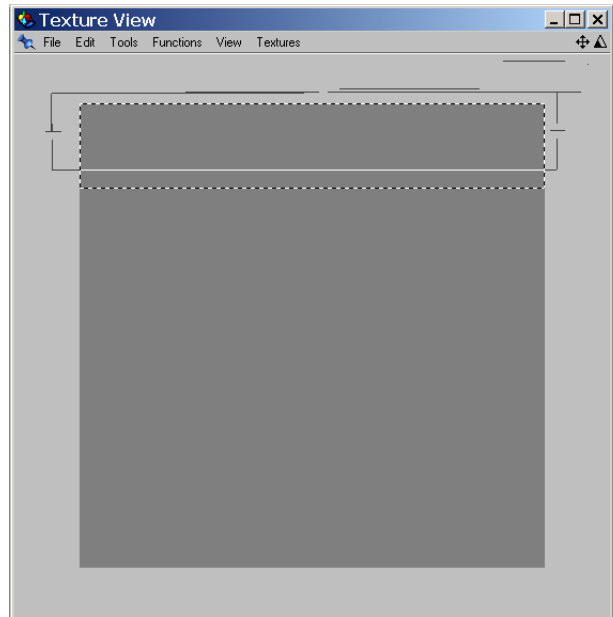
Step 13: For a more realistic look, the pupil and the iris of the eyeball need to be raised a little on the surface. This is easily done on the bump channel using the selection tool and the line tool.

First, select the area of the colored iris and pupil with the rectangle selection tool to define the area you want raised.

File Menu: Painter=>Bitmap Selection=>Select Rectangle
Keyboard Shortcut: None



Go to the Layer manager and select the Bump Channel texture. Double-click on the Bump texture in your Layer manager (or select **Textures > Eyebump.b3d** in the Texture View). This will bring the bump texture into the Texture View, while maintaining the rectangular selection.

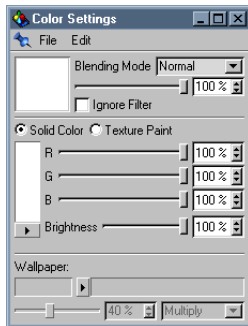


Now you need to select a white-ish color from your Color Settings.

Open the Color Settings dialog (if not already open) by clicking on the foreground color of the bump channel. This opens/activates the Color Settings dialog.

Choose a pure white. The settings we used are Red:100%, Green: 100%, Blue: 100%, Brightness: 100%. This will really offset the raised area on the surface of the pupil.

Activate the Draw Line tool.

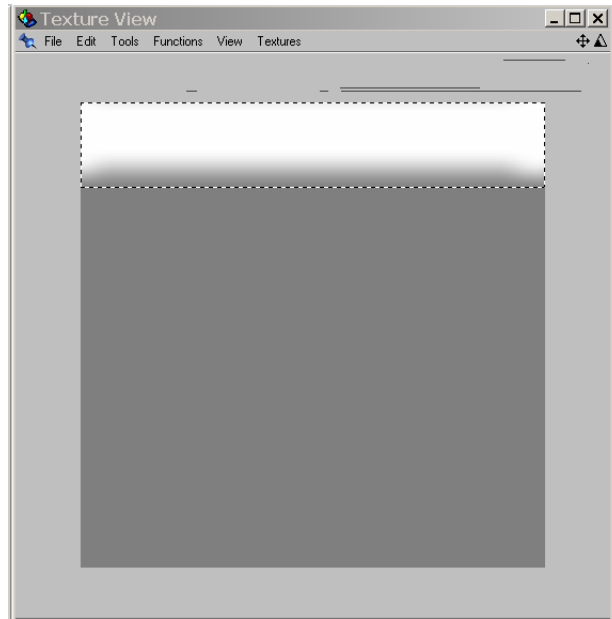


Step 13: Selecting a white color for the Draw Line tool

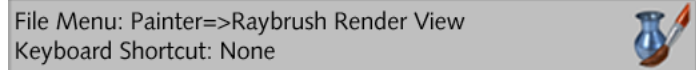
File Menu: Painter=>Tools=>Draw Line
Keyboard Shortcut: None

Go to the Active Tool manager and define some settings for this line. You want a fat line with a smooth gradient of color. This will create a bulging area where the pupil and iris reside. Set the Endings at None, Line Width: 100, Feather: 50.

Draw a line horizontally along the top of the selected area in your Texture View window as shown.



This effect will not show in the Perspective View; you can see the results of your bump placement by doing a quick preview render.



Step 14: An eyeball has a uniform shininess or specular. You won't need to create and paint a texture map in BodyPaint to simulate this. Instead you will just turn on the Specular channel in your material.

Double-click on the Eyeball material icon in the Material manager to open the Material dialog. Click on Specular in the channel list to bring up its options. You will want a really shiny, wet looking eye so set the **Width** to 3% and the **Height** to 100%. This will give you the wet eye you need.

Click **Refresh** in the right corner of the Material manager to show your settings and then close the window.

Give the Perspective View window a quick render to see how your work looks and tweak the settings to your personal tastes.

File Menu: Painter=>Raybrush Render View
Keyboard Shortcut: None



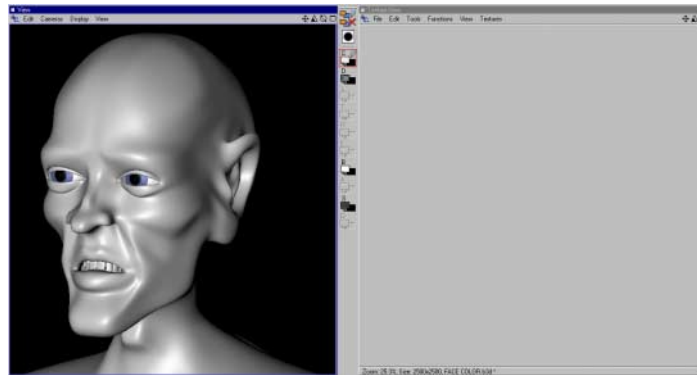
3 Painting a Base Skin Texture

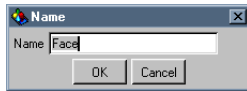
Now it's time to start the rest of the head. The process will start out very similarly to the eye you just painted, generating texture layers of color, bump, and now diffusion to surface the model. You'll build several different brushes to paint skin, lips, eyebrows, freckles, stubble, blemishes, scars, veins and tattoos into those layers simultaneously. Sounds pretty daunting, but after this walk through you'll be painting your own models with confidence.

Step 1: You need to first generate an overall base face material. This is where you will start and build all the other details on top of that.

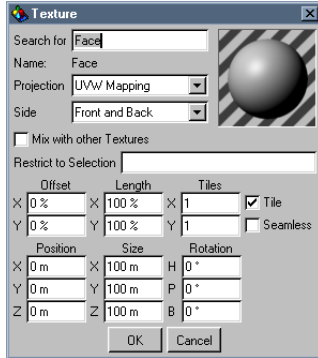
Open the 'PlainHead.c4d' project located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)

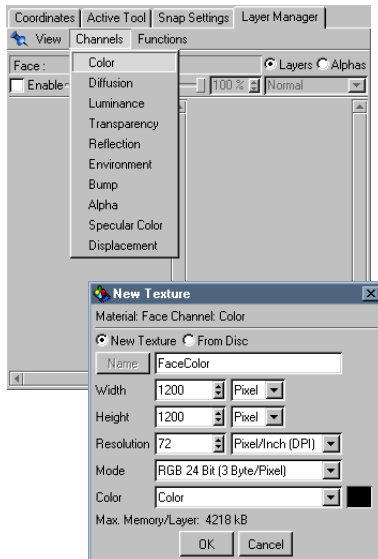




Step 2: Creating a new Face material



Step 3: Applying the Face material to the head object



Step 4: A Color channel for the face texture

Step 2: Create a new Material.

Material Manager: File=>New Material
Shortcut: Ctrl+N (pc) / Cmd+N (mac)

Double-click on the text 'New' under the gray sphere representing the new material in the Material manager. This opens a dialog that allows you to change the name of the material. Change it to 'Face'. Click **OK**.

Step 3: Apply the Material to the head model by dragging the material icon from the Material manager onto the head object in the Object manager (ensure the Object manager is open first). When you drop the material, a dialog will open with options for how the material is applied to the head.

The default, **UVW Mapping** is what you want to use, so click **OK** to close the dialog.

Step 4: Now you can create the textures for each of the channels you will be painting. First, you will create a new texture for the Color channel of the material.

Make sure the Face material is active in the Material manager. Go to the Layer manager and create a texture for the Color channel.

In the dialog that opens, name the texture 'FaceColor'. At this point, as always, you have a choice of size for the texture map you are creating. We will use 1200x1200 pixels (medium resolution) with a density of 72dpi but you can opt for a higher resolution if you have sufficient memory in your computer.

Note that we have chosen a resolution significantly larger than the eye map, because there will be a lot of minute detail in the skin (pores, etc.). Bear in mind, as you work through subsequent projects, that if you have chosen a resolution different to 1200x1200 you must use appropriate settings for your brushes as the size of the texture greatly affects how a brush works.

Note

The texture size you choose to create depends on the resolution at which the project will be rendered. For print resolution and animations rendered in close up, a high resolution could be necessary. The resolution we have chosen for this project (1200x1200 pixels) will be suitable for most situations. An even

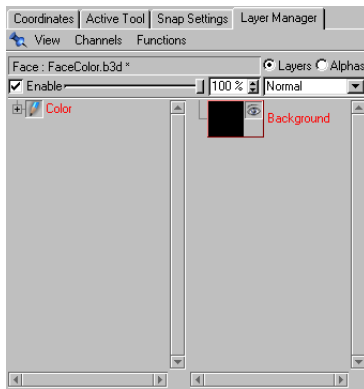
lower resolution version could be used for some projects like characters for games where detail needs are low. Large textures require a significant amount of RAM to maintain smooth workflow. If you find you cannot work efficiently with a high resolution texture, please consider using a lower resolution version.

How much RAM is needed for painting texture maps in BodyPaint 3D?

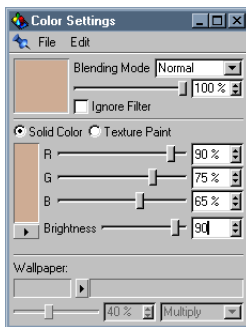
Each texture or layer needs a minimum of $(x*y*4)*(number\ of\ layers+1)$ bytes. For instance, your color channel texture (1200x1200 pixels) needs just over 11Mb of RAM (1200x1200x8), assuming one layer. A high-resolution version (say 2500x2500 pixels) needs 50Mb of RAM (2500x2500x8). Normal textures, those that aren't being painted, take up much less RAM. In addition, undo memory can take up several times the amount of RAM depending on the undo settings; consider reducing the number of undo steps if memory is tight. Grayscale images (like those used for bump, specular, reflection, etc.) require much less RAM.

Back to the plot. At the bottom of the texture channel dialog you can also set the overall color for the texture. Clicking on the black box to the right of the **Color** pull down menu will open your system color picker. However, for the purposes of remaining platform independent, you will add the base color in a moment.

Click **OK** to accept the settings you have input.



Step 5: The new Color channel in the Layer manager



Step 6: Setting the color for the texture

Step 5: Make the color texture active in the Texture View so you can paint it. There are many ways to do this - you can drag the texture layer (here labeled 'Background') up to the Texture View or you can double-click on the channel name in the Layer manager or you can select the texture name from the Textures menu of the Texture View.

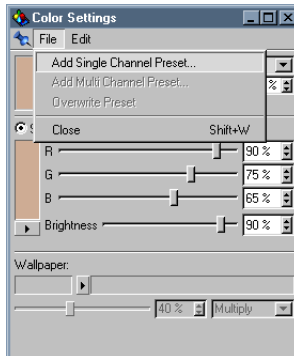
Step 6: Now, fill the color texture with an overall base color. To do this, click on the foreground color of the Color channel. This will open/activate the Color Settings dialog.

Now choose the color for the skin color. You can choose any color you'd like. The settings we used are Red: 90%, Green: 75%, Blue: 65%, Brightness: 90%.

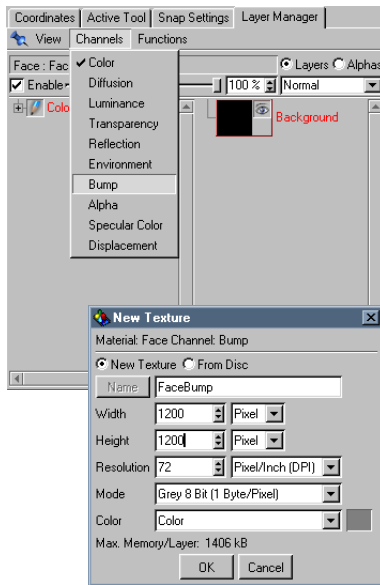
The Color Settings window is a non-modal dialog, so you can leave it open, let it float, dock it some place else or just close it.

To fill the FaceColor texture with the foreground color you have just chosen, go to the Texture View and use the Fill Layer tool.

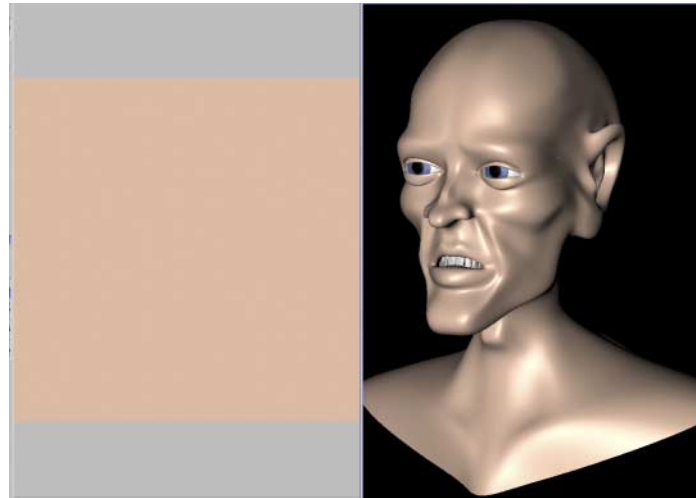
File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None



Step 7: Naming and saving a color preset



Step 8: The FaceBump bump channel



Step 7: Now to save this flesh color for future use. In the Color Settings use the **Add Single Channel Preset** function from the File menu.

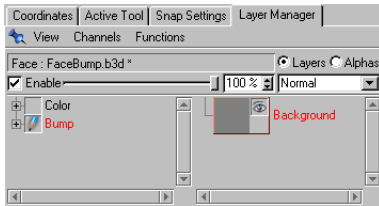
Name this color **Flesh** in the dialog that appears and click **OK**. The color has now been added to the color presets and you can just click on it in the Color manager to reactivate it.

Step 8: Create a new texture for the bump channel of the material.

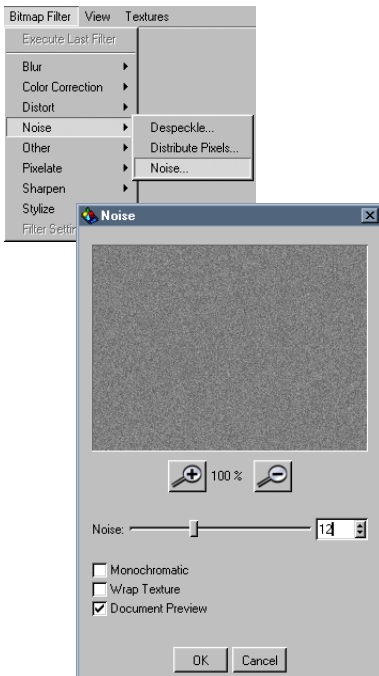
Make sure the **Face** material is still active in the Material manager. In the Layer manager, create a texture for the **Bump** channel.

This will automatically enable the bump channel of your material.

In the dialog that opens, name the texture 'FaceBump' Set the size to 1200x1200 or the same as you used for the size of the Color channel. Keep the resolution at 72dpi. Since you will be painting the skin with multi-channel brushes and colors, the texture maps will need to be the same size.



Step 9: One way of activating a texture in the Texture View; double-click on its layer icon, in this case Background



Step 9: Using a noise filter to create skin texture

The default of 50% gray color is exactly what you want for a bump map. Gray is a neutral color and therefore creates no bump at all.

Step 9: Double-click on the Background bump icon in the Layer manager to make the new bump texture map active in the Texture View window.

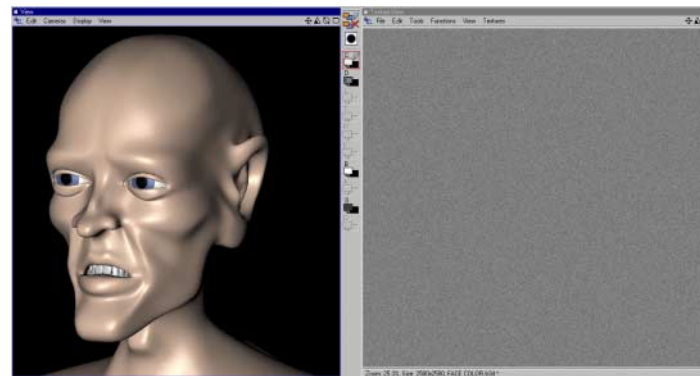
Note

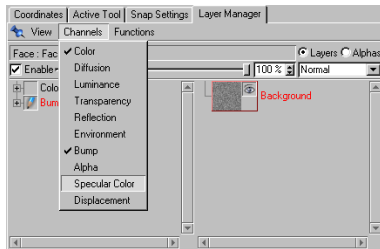
By double-clicking on the any layer in the Layer manager you can jump between the texture maps.

Now you will use the Noise filter to create the effect of pores on the skin texture. First, open the Noise filter (**Bitmap Filter > Noise > Noise...** within the Texture View).

Set the **Noise** to 12%, make sure **Monochromatic** is not active and click **OK**. This will create a base gray tone with variation for the pores, the dark areas define the depth of a pore. The darker the area, the deeper the pore. White areas in the bump channel will appear raised when rendered.

Double-click on the **Face** material in the Material manager, go to the Bump channel (select **Bump** on the left-hand side of the Material dialog) and set the bump **Strength** to 20%. This will soften the effect.





Step 10: Creating a Specular Color channel

Step 10: Create a new texture for the Specular Color channel of the material.

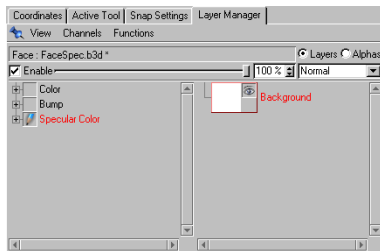
Make sure the **Face** material is still active in the Material manager. In the Layer manager, create a texture for the Specular Color channel.

This will automatically enable the Specular and Specular Color channels of your material.

In the dialog that opens, name the texture 'FaceSpec'. Set the size to 1200x1200, keep the resolution at 72dpi. Since you will be painting the skin with multi-channel brushes and colors, the texture maps need to be the same size.

At the bottom of this dialog you can also set the overall color for the texture. Clicking on the white box to the right of the Color pull down menu will open your system color picker. You can do that now to avoid the next step if you like.

Click **OK** to accept the settings you have input.

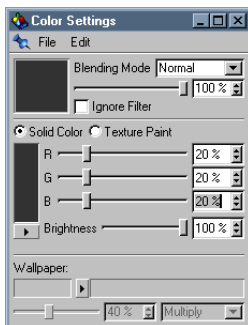


Step 11: Activating the Specular Color texture

Step 11: Double-click on the Specular Color texture to activate it in the Texture View.

Step 12: Next, fill the Specular texture with an overall base color. To do this, click on the foreground color of the specular channel. This will open/activate the Color Settings dialog.

Now choose the color for the skin specularity. Ensure **Solid Color** is checked; now you can choose any color you like. The settings we used are Red: 20%, Green: 20%, Blue: 20%, Brightness: 100%. This will give you a base dark gray in your specular color layer.



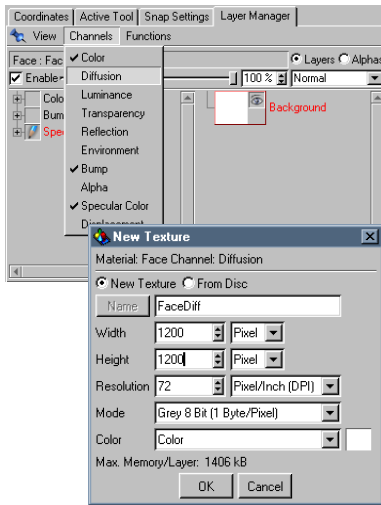
Step 12: The Specular Color texture's color

The Color Settings window is a non-modal dialog, so you can leave it open, let it float, dock it some place else or just close it.

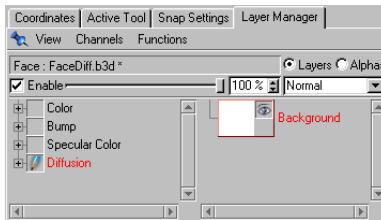
To fill the FaceSpec texture with the foreground color you have just chosen, go to the Texture View and use the fill tool.

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None

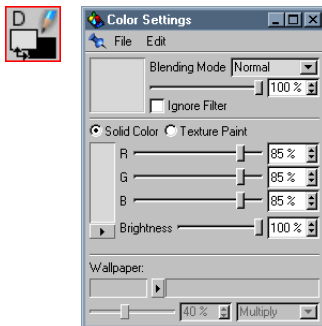




Step 13: Creating a Diffusion channel



Step 14: Activating the Diffusion channel



Step 15: The Diffusion channel color

Step 13: Create a new texture for the diffusion channel of the material.

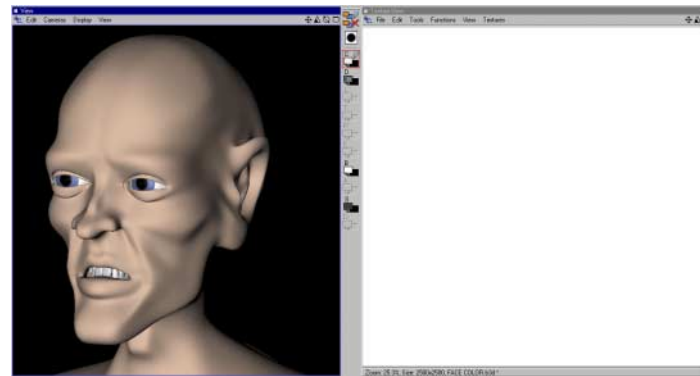
Make sure the **Face** material is still active in the Material manager. In the Layer manager, create a texture for the Diffusion channel.

This will automatically enable the diffusion channel of your material.

In the dialog that opens, name the texture 'FaceDiff'. Set the size to 1200x1200, keep the density at 72dpi. Again, since you will be painting the skin with multi-channel brushes and colors, the texture maps will need to be the same size.

Click **OK** to accept the settings you have input.

Step 14: Double-click on the Diffusion texture to activate it in the Texture View.

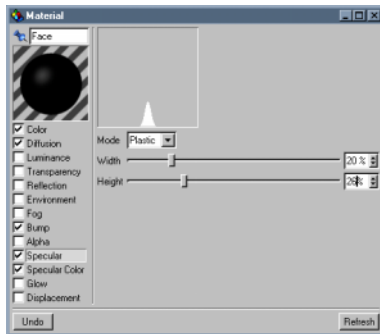
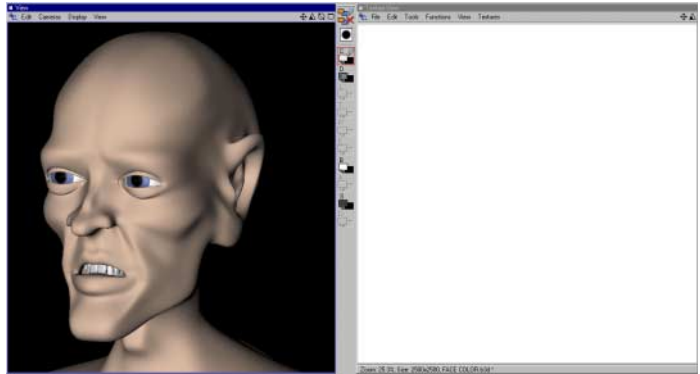


Step 15: Next, fill the Diffusion texture with an overall base color. To do this, click on the foreground color of the color channel. This will open/activate the Color Settings dialog.

Now choose the color for the skin diffusion. You can choose any color you'd like. The settings we used are Red: 85%, Green: 85%, Blue: 85%, Brightness: 100%. This will give you a base light gray in your diffusion layer. This will slightly darken the skin surface. This is the effect of the map filtering out light refracted back to the viewer's eye. It's the last layer of realism.

To fill the **FaceDiff** texture with the foreground color you have just chosen, go to the Texture View and use the fill tool.

File Menu: Painter=>Functions=>Fill Layer
Keyboard Shortcut: None



Step 16: Setting the Specular parameters

Step 16: The last step in the overall skin texture will be to define the specularity.

Double-click on the **Face** material icon in the Material manager to open the Material dialog. Click on **Specular** in the channel list to bring up its options.

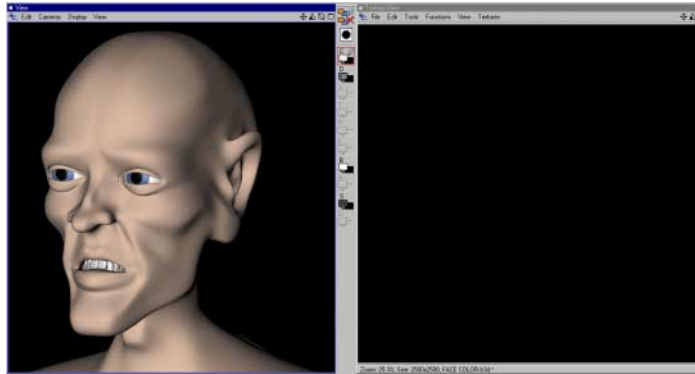
Here you will define the overall *shine* of the model. The Specular map helps 'dull down' areas of the face. Set the **Width** of the highlight to 20%, set the **Height** of the highlight to 26%.

Click **Refresh** in the right corner of the Material dialog to update your settings on the face and then close the window.

Give the Perspective View window a quick render to see how your work looks and tweak the settings to your personal tastes.

File Menu: Painter=>Raybrush Render View
Keyboard Shortcut: None





With all these maps in place it is time to move on. Next, you will learn to build brushes that paint in one or many channels. These are called *single* and *multi-channel brushes*. You use them to paint wrinkles, scars, freckles and all types of detail onto your model.

4 Adding Highlights and Coloration

Now you need to add a little coloration and overall specularity to the face. To achieve this you need a few different *single-channel brushes*. You will start with single-channel brushes before moving on to the multi-channel brushes.

One brush will be used to paint in a little redness onto the face in the color channel, one to create a darker area around the eye, one to highlight and add some randomness to the color. You will also paint white into the specular channel to shine up the forehead and the bridge of the nose.

After weeks of staring at people's faces and playing with brush settings, we've come to a conclusion. Skin is hard to paint. The settings given here are not perfect for a photorealistic face - they are only meant to get you started in BodyPaint 3D.

The rest of the tutorial sections consist of suggestions for skin detail, instructions on how to define brushes and the results that we painted with the very same brush. Feel free to explore and experiment.

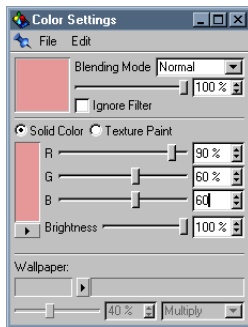
In the next sections you'll import bitmaps to use as brushes. You'll add random rotation, size and pressure to simulate the blood vessels under the skin. A reddened version of the original skin tone will be used and the brush will be saved to your presets. The second brush is a darker version of the first.

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorials: US: BodyPaint 3D' folder.

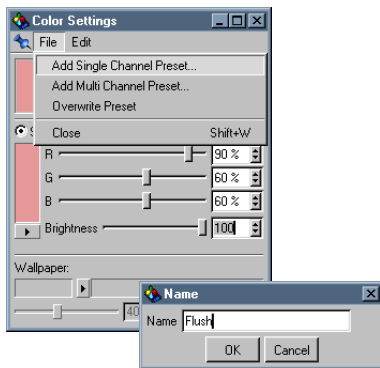
Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



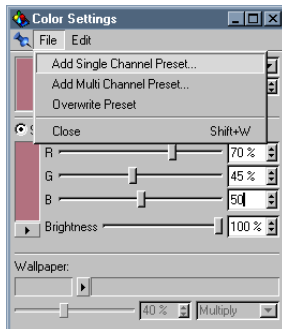
If you are continuing with the project from the previous section, you are going to want to take care of memory management. The more textures and layers you have in memory, the more RAM is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.



Step 2: The 'Flush' color



Step 2: Saving the color as a preset



Step 3: The 'EyeFlush' color

You do that by selecting the particular channel in the Layer manager and using **Functions > Flatten Layers**.

Layer Manager Menu: Functions=>Flatten Layers
Keyboard Shortcut: None



Step 2: In the previous tutorial you created a new color preset called **Flesh**. You are now going to use this same method to create variations of color for the face.

First, activate the Color Settings. Now set up a new color as follows:

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 90%, **G:** 60%, **B:** 60%

Brightness: 100%

Wallpaper: None

Percentage: N/A

Mode: N/A

Save this as a new preset color; in the Color Settings box select **File > Add Single Channel Preset**.

Name this color 'Flush' in the dialog that appears and click **OK**. Now you can just click on this color in the Color manager to reactivate the same color.

Step 3: Now create an even darker color to be used just under the eyes. The settings used here are:

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 70%, **G:** 45%, **B:** 50%

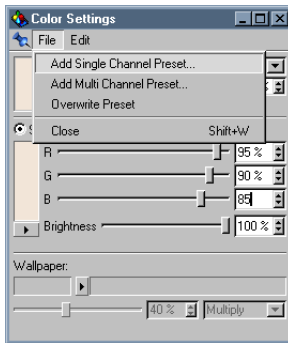
Brightness: 100%

Wallpaper: None

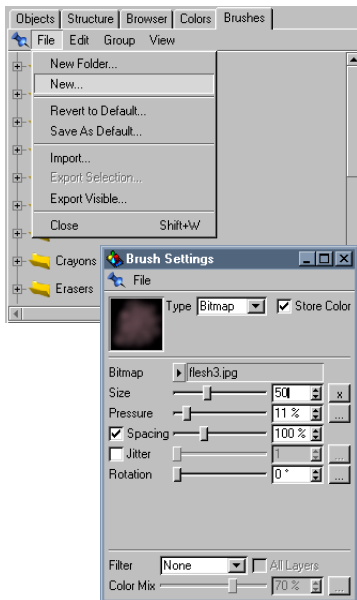
Percentage: N/A

Mode: N/A

Save this as a new preset color, in the same way that you did for the 'Flush' color, in Step 2 above. Name it 'EyeFlush'; it will be added to the color presets.



Step 4: The 'LtFlesh' color



Step 5: Creating a new brush

Step 4: Lastly, create a lighter color for all around coloration. The settings we used are:

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 95%, **G:** 90%, **B:** 85%

Brightness: 100%

Wallpaper: None

Percentage: N/A

Mode: N/A

Now save this as a new preset color and name it 'LtFlesh'. See Step 2 if you are unsure how to do this.

Step 5: Now to create a single channel brush.

The first brush we make will be one to draw the highlights and general flesh patterning on the face and the top of the head. So, create a new brush, using the Brush manager (**File > New...**).

In the dialog that opens, name the new Brush 'LtFlesh'.

Double click on the new brush in the Brush manager to open the Brush Settings dialog. The settings used here are:

Type: Bitmap

Store Color: Enabled

Bitmap: flesh3.jpg

Size: 50

Pressure: 11%

Spacing: 100% (to space out the bitmap images as you paint)

Jitter: None (unchecked)

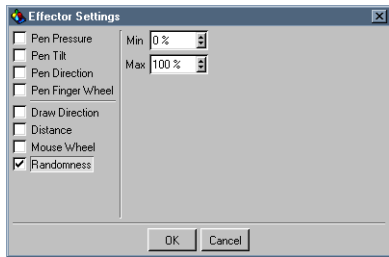
Rotation: 0

Toggle on the Effector Settings (click the ... to the right of **Rotation**), enable **Randomness** and accept the 0-100% default (this will spin the bitmap brush in random rotations to keep the map looking natural and not repetitive)

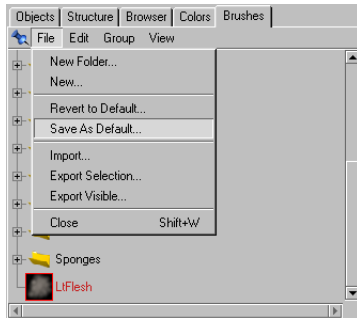
Filter: None

Color Mix: None

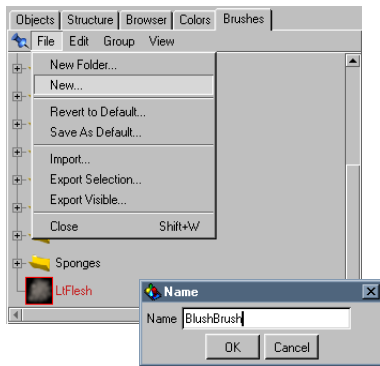
Remember, the Brush Settings is a non-modal dialog so you can leave it open, the changes take effect immediately.



Step 5: The Rotation Effector Settings for our new brush



Step 6: Saving our first brush



Step 7: Creating the 'BlushBrush' brush

Note

*If you ever want to add your own bitmap brush, all you have to do is choose **Load From Disk...** from the **Bitmap** pull down directory within the **Brush Settings** dialog. Once you have selected the bitmap you want, you will be given the option to add it to the presets.*

Note for Graphic Tablet users

*To modify the **Effector Settings** of a brush characteristic, just click the box next to the setting for the attribute of the brush. Each characteristic can be mapped to a different function for better pen and tablet interactivity. For this brush you should open the dialog for the **Pressure** **Effector Settings** and set **Pen Pressure** on. This will give you more control by making your brush pressure dependent upon how hard down you press on the tablet with the pen. Alternately you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click **OK**.*

Step 6: Lastly, make sure the color is locked into this brush. In the Color manager, select 'LtFlesh' so it is active in the window.

Go back to the **Brush Settings** dialog and make sure **Store Color** is active (you should have already checked this option but we're just being careful!).

Your first brush is now ready. All you have to do is save it in the **Brush manager** (**File > Save As Default...**).

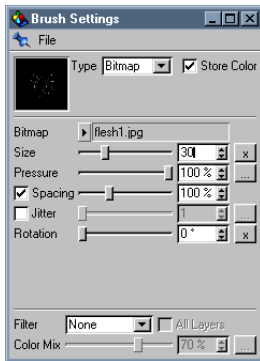
Click **Yes** in the dialog that appears This will save your brush to use later, even after closing the project.

Step 7: Next, you need a brush to draw the tiny veins that color the face giving it a flushed look. Create a new brush.

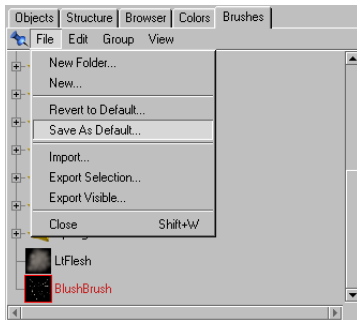
In the dialog that opens, name the new brush 'BlushBrush'.

Double click on the new brush in the **Brush manager** to open the **Brush Settings** dialog. Set up the brush as follows:

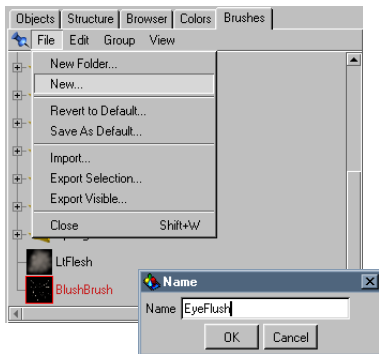
Type:	Bitmap
Store Color:	Enabled
Bitmap:	flesh1.jpg
Size:	30
Pressure:	11%
Spacing:	100% (to space out the bitmap images as you paint)



Step 7: The settings for 'BlushBrush'



Step 8: Saving the 'BlushBrush' brush



Step 9: Creating a new 'EyeFlush' brush

Jitter: None (unchecked)

Rotation: 0

Toggle on the Effector Settings (click the ... to the right of **Rotation**), enable **Randomness** and accept the 0-100% default (this will spin the bitmap brush in random rotations to keep the map looking natural and not repetitive)

Filter: None

Color Mix: None

Note for Graphic Tablet users

*Click on the **Pressure Effector Settings** and set **Pen Pressure** on. This will give you more control by making your brush pressure dependent upon how hard down you press on the tablet with the pen. Alternately you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click **OK**.*

Step 8: Lastly, make sure the color we want is locked into this brush. In the Color manager, select 'Flush' so it is active in the window.

Go back to the Brush Settings dialog and make sure **Store Color** is active. Now save it in the Brush manager as shown on the left (**File > Save As Default**). This will save your brush to use later, even after closing the project.

Step 9: Next you need a brush to darken the area around this character's eyes.

It will be very similar to the BlushBrush you just created. This time you will include a blurred vein map and a darker tone. Create a new brush.

In the dialog that opens, name the new brush 'EyeFlush'.

Double click on the new brush in the Brush manager to open the Brush Settings dialog. Set the brush up as follows:

Type: Bitmap

Store Color: Enabled

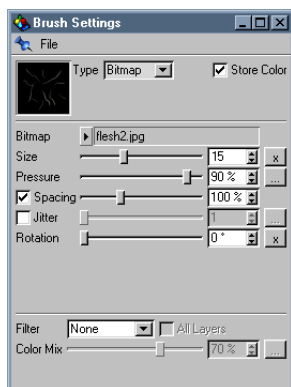
Bitmap: flesh2.jpg

Size: 15

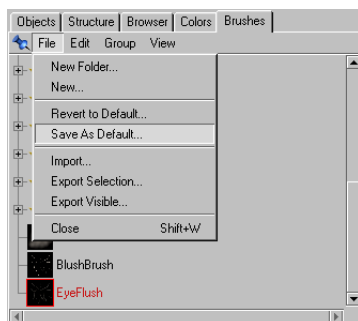
Pressure: 90%

Spacing: 100% (to space out the bitmap images as you paint)

Jitter: None (unchecked)



Step 9: The brush setup for the 'EyeFlush' brush



Step 10: Saving the color and other settings for the 'EyeFlush' brush

Rotation: 0

Toggle on the Effector Settings (click the ... to the right of **Rotation**), enable **Randomness** and accept the 0-100% default (this will spin the bitmap brush in random rotations to keep the map looking natural and not repetitive)

Filter: None

Color Mix: None

Note for Graphic Tablet users

*Click on the **Pressure** Effector Settings and set **Pen Pressure** on. This will give you more control by making your brush pressure dependent upon how hard down you press on the tablet with the pen. Alternately you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click **OK**.*

Step 10: Lastly, make sure the color is locked into this brush.

In the Color manager, select 'EyeFlush' so it is active in the window. Go back to the Brush Settings dialog and make sure **Store Color** is active. Now save it in the Brush manager. This will save your brush to use later, even after closing the project.

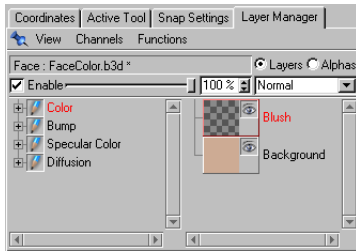
Step 11: Now you need a layer to paint on. Instead of painting directly in the color channel, you will add a new layer on top of the color channel and paint on that. This helps organize the coloration better. If you wanted to add a tattoo later on you would paint it on a layer. If you change your mind later, the layer could be deleted leaving your original map intact. This also helps conserve file size.

Select the Color channel in the Layer manager. Now, make the Color texture active in the Texture View; again, either drag the texture layer up to the Texture View or double click on the texture to activate it in the Texture View.

Create a new layer for this texture.

Layer Manager Menu: Functions=>New Layer
Keyboard Shortcut: None





Step 11: The 'Blush' layer

Name the new layer.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Name it 'Blush' and close the dialog.

Double-click on this layer to make it active in the Texture View.

Step 12: Now you are ready to paint on this layer.

Firstly, make sure that you have the FACEPOLY object selected in the Object manager. Now, make its UV mesh visible.

Texture View Menu: Tools=>Show UV Mesh
Keyboard Shortcut: None



Select your LtFlesh brush from the Brush manager and add some color to the model. Use the LtFlesh color to fill in the areas around the seams. You can do this easily in the 2D Texture View.

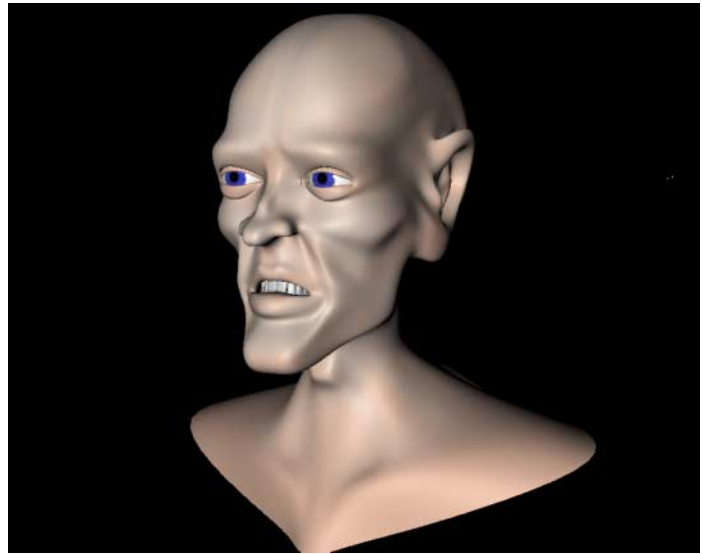
Note

A word about seams. When a model's UV polygons are split apart to lie on a flat 2D texture (as this model's are) it inevitably causes seams. The problem for the 3D painter is that when you paint on a seam, there can be a difference when a brush stroke flows between the two map edges. More often than not, the result is a minor flaw that may not be noticeable. To work around the seam in the head you may need to paint solid color over these seams to avoid possible unsightly flaws.

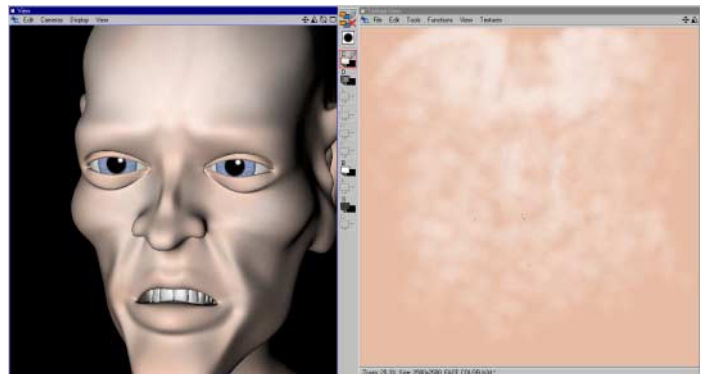
You can paint in any view you like. It is recommended in some instances to go from the 3D Perspective View to the Texture View window and back. It is especially useful when working around seams to be sure they are even.

After laying down some color with these settings, you should explore and be creative with the settings for the best results. Add a little randomness by increasing the size of the brush to 100 in the Brush Settings, then paint a little with it. You can also darken the flesh color a little to 95% by dragging the **Brightness** slider in the Color Settings dialog, and paint a little more.

Here's an example of what you are trying to achieve; a tonal depth to the skin.

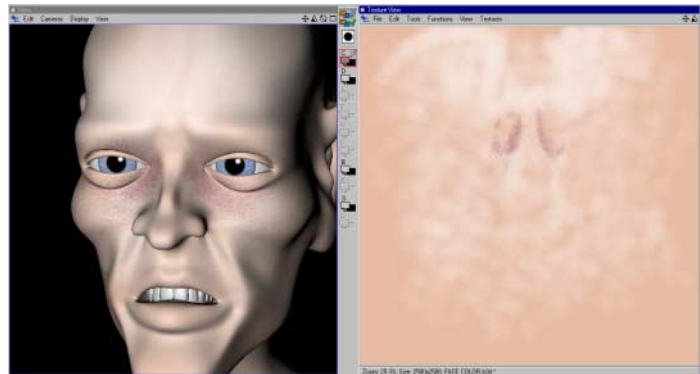
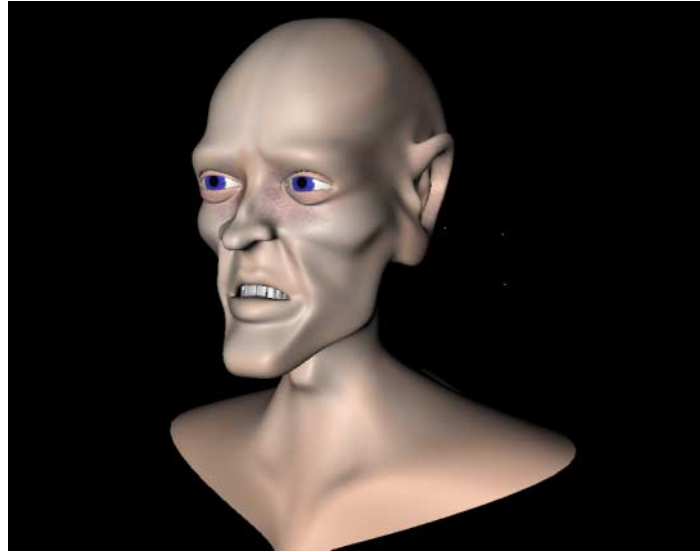


And here's the texture map.

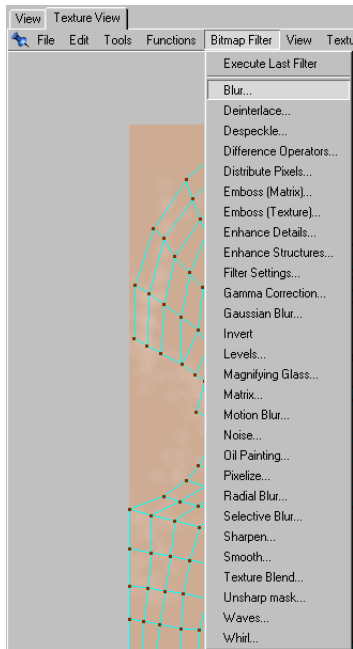


Feel free to keep adding colors, changing brush sizes etc. until you are happy with the results.

Step 13: Next use the EyeBrush you created to darken the areas around the eyes and the ears.

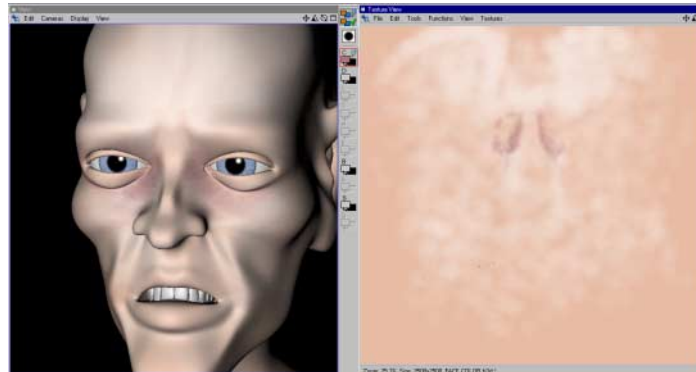


Your results may look strange at first. That's why you will blur it a little.



When you are ready, choose the Blur filter (Texture View: **Bitmap Filters > Blur...**).

Set the blur **Horizontal Radius** to 5 (with **Synchronize Sliders** selected). Click **OK**. This blurs the entire layer a bit, blending what you have added. The effect is subtle; all make-up takes some time, so you may need to use many brush strokes.



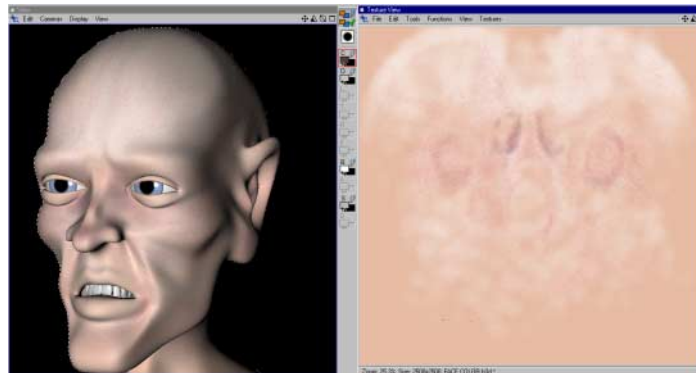
Feel free to go back and add more color. Then, blur again at any time.

Step 14: Next, add some blush to the cheeks, chin and wherever else you like. Again, many brush strokes may be needed.

First, activate the BlushBrush you created and then start laying down color on the cheeks, chin, etc. Play around a little. After all, you have lots of undos to work with.

Note

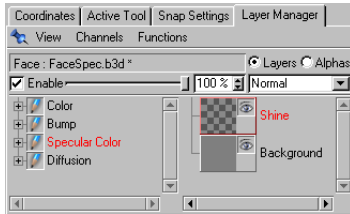
A word about the eraser tool. You have one, use it. You also have plenty of undos, so don't be shy, be creative!



Step 15: Now a little specularity needs to be added.

The forehead, bridge of the nose and cheeks seem to be the shiniest spots on the face. Therefore, with a soft white brush in the Specular color channel, you will paint in this attribute.

First double-click on the Specular Color channel in the Layer manager to make it active in the Texture View. Then create a new layer.



Step 15: Adding the 'Shine' layer to the Specular Color channel

Layer Manager Menu: Functions=>New Layer
Keyboard Shortcut: None



Next name the new layer.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Name it 'Shine' and confirm the dialog.

Double-click on this layer to make it active in the Texture View.

Step 16: In the Color Settings, make sure you have a subtle gray as your setting.

Blending Mode: Normal, slider set to 50%

Ignore Filter: Disabled

Type: Solid Color

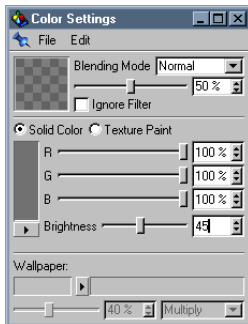
R: 100%, **G:** 100%, **B:** 100%

Brightness: 45%

Wallpaper: None

Percentage: N/A

Mode: N/A



Step 16: A subtle shade of gray

Step 17: Now create a generic, circular brush with the following attributes:

Type: Generic

Store Color: Enabled

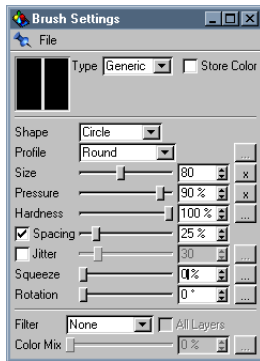
Shape: Circle

Profile: Round

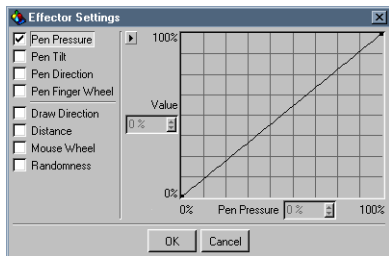
Size: 80

Pressure: 90%

Hardness: 100%



Step 17: A brush for adding some shine



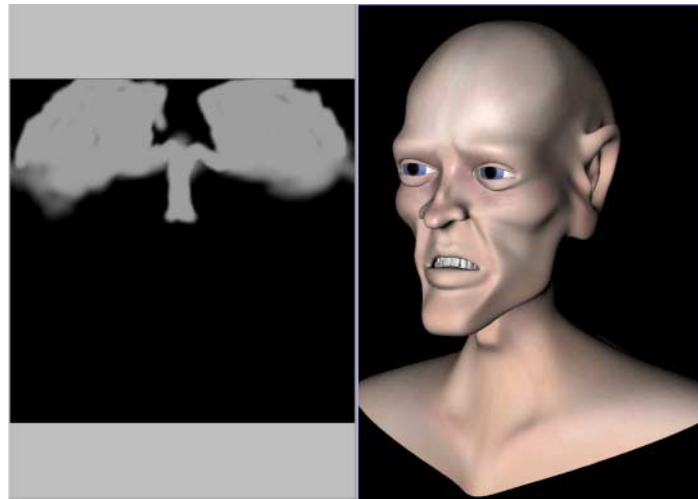
Step 17: The Pressure Effector Settings – useful for users of graphic tablets

Spacing: 25%
 Jitter: None (unchecked)
 Squeeze: 0%
 Rotation: 0%
 Filter: None
 Color Mix: None

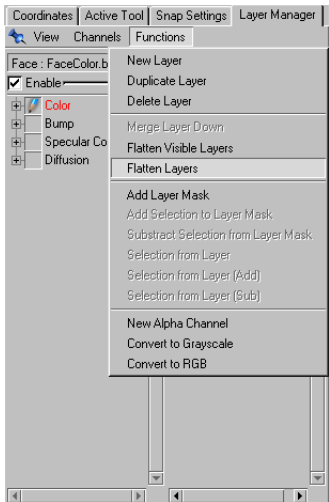
Note for Graphic Tablet users

*Click on the **Pressure Effector Settings** and set **Pen Pressure** on. This will give you more control by making your brush pressure dependent upon how hard down you press on the tablet with the pen. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click **OK**.*

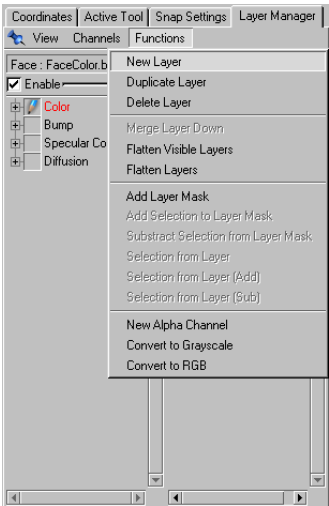
Paint the top of the head, the bridge of the nose and a some of the cheeks to add a little shine. You can see where we painted to get a better idea.



5 Painting Stubble



Step 1: Flattening the Color channel layers



Step 2: Creating a new Color layer

It's best to start off painting a characteristic that will cover a large area of the face. This warrior is going to need some stubble to make him look manly and unkempt. To do this, you will make a *multi-channel brush* for this exercise. This brush will use the Color, Diffusion, Bump and Specular Co

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorial Projects' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)

If you are continuing with the project from the previous section, you going to want to take care of memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: Now add a new layer to the Color channel of your material.

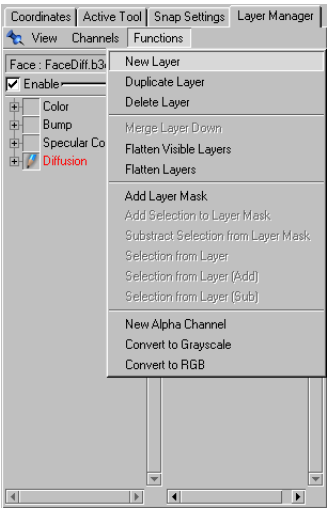
With the Face material selected and the Color channel active in the Layer manager, create a new layer.

Open the Bitmap Info dialog.

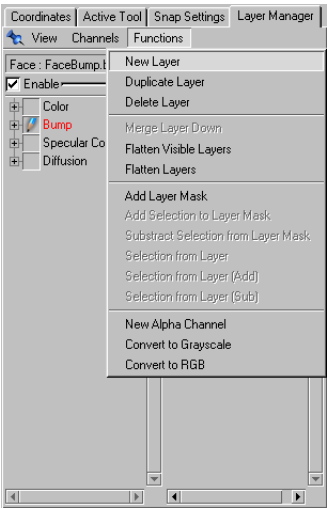
File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None

Rename the layer 'StubbleColor' and close the dialog.

Double-click on this layer to make it active in the Texture View.



Step 3: A new Diffusion layer

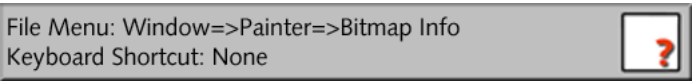


Step 4: A new Bump layer

Step 3: Now, in a similar way, add a new layer to the Diffusion channel of your material.

With the Face material selected and the Diffusion channel active, create a new layer.

Open the Bitmap Info dialog.



Rename the layer 'StubbleDiff' and close the dialog.

Step 4: Now, just the same, add a new layer to the Bump channel of your material.

With the Face material selected and the Bump channel active, create a new layer.

Open the Bitmap Info dialog.



Rename the layer 'StubbleBump' and close the dialog.

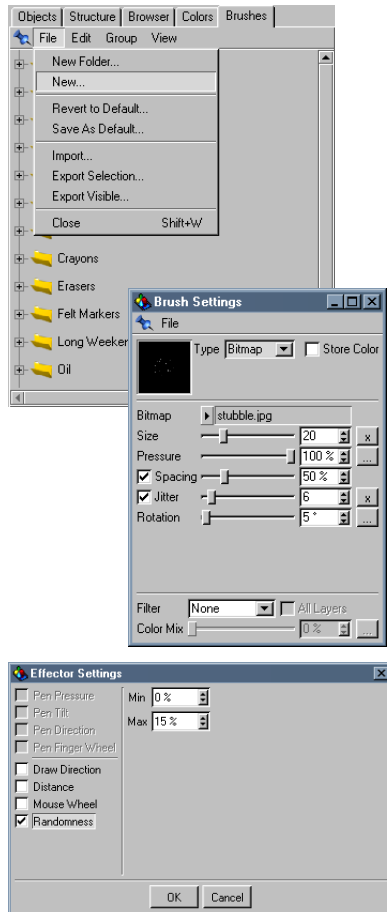
Step 5: Finally, layer-wise, add a new layer to the Specular channel of your material.

With the Face material selected and the Specular Color channel active, create a new layer.

Open the Bitmap Info dialog.



Rename the layer 'StubbleSpec' and close the dialog.



Step 6: A brush for painting stubble

Step 6: Next, you will create a brush for adding stubble to the skin. Create a new brush.

In the dialog that opens, name the new brush 'StubbleBrush'.

Double-click on the new brush in the Brush manager to open the Brush Settings dialog and enter the following values.

Type: Bitmap
 Store Color: Enabled
 Bitmap: stubble.jpg
 Size: 20
 Pressure: 100%
 Spacing: 50%
 Jitter: 6
 Rotation: 5°
 Filter: None
 Color Mix: None

Note for Graphic Tablet users

Click on the Jitter Effector Settings and set Randomness on. Set the Randomness from 0% (Min) to 15% (Max). Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click OK.

Step 7: The next step involves setting the color for each of the channels you will be painting on.

First you must enable multi-channel painting. You do that by clicking on the multi-channel icon (next to the channel icons on the Painter icon bar) so that the green checkbox is showing.

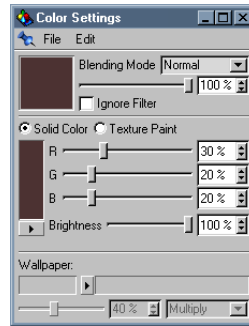


Next you must enable the channels you wish to paint on by clicking on each channel icon in the Layer manager so that you can see the pencil in the icon. This indicates that the channel is active for painting.

The color settings we used here are given on the next page.

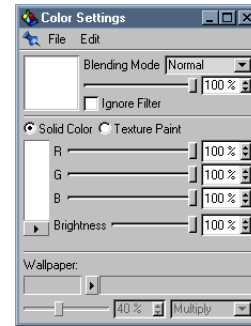
The Color Settings for the various channels of our first multi-channel brush

The Bump channel color will make the hairs seem to rise off the face a little.



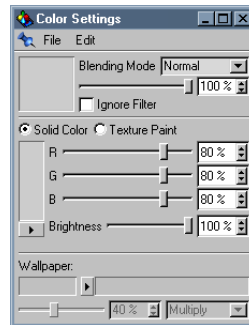
Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 30%, G: 20%, B: 20%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



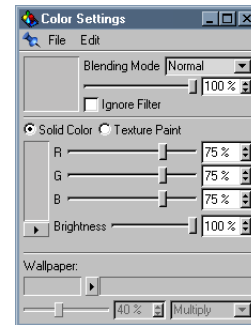
Bump Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 100%, G: 100%, B: 100%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



Diffusion Channel

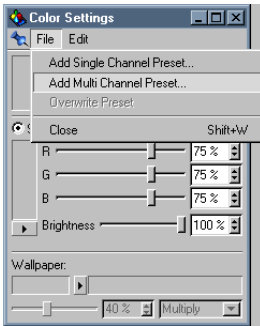
Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 80%, G: 80%, B: 80%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



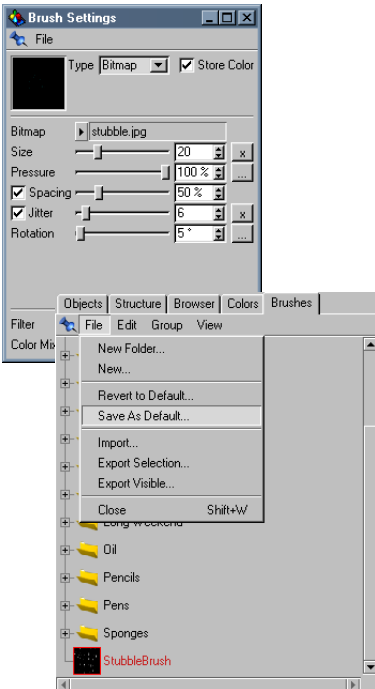
Specular Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 75%, G: 75%, B: 75%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

The Specular channel color will give the stubble some shine.



Step 7: Saving the multi-channel color



Step 8: Saving the 'StubbleBrush' brush

Now save all these colors together, as a new multi-channel preset; in the Color Settings dialog select the **Add Multi-Channel Preset** function from the File menu.

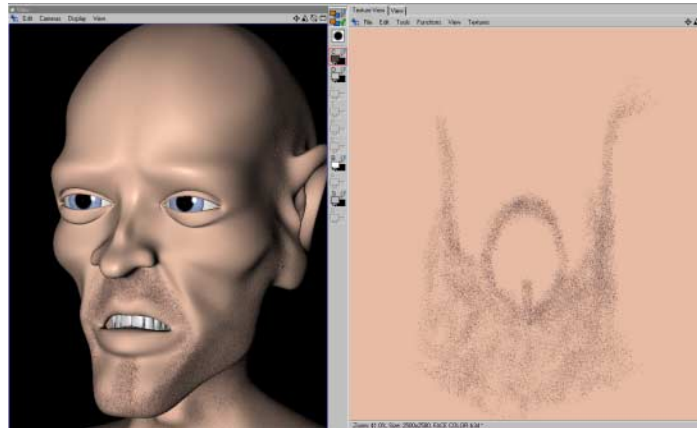
Name this preset 'Stubble' in the dialog that appears and click OK. Now you can just click in the Color manager to activate this multi-channel color, at any time. Note that all the color attributes of all the active channels will be added into this preset.

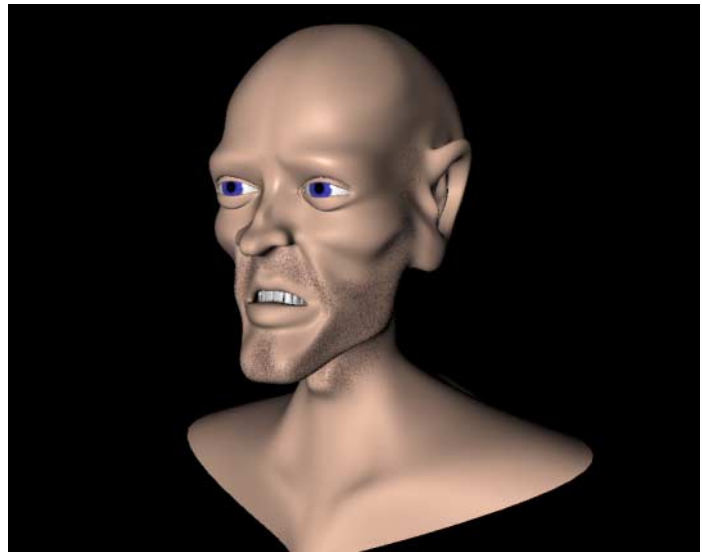
Step 8: Lastly, make sure this color is locked into the StubbleBrush. In the Color manager, make sure the Stubble color is active in the window.

Go back to the Brush Settings dialog for the StubbleBrush and ensure **Store Color** is active. Now save it in the Brush manager with **File > Save As Default...**

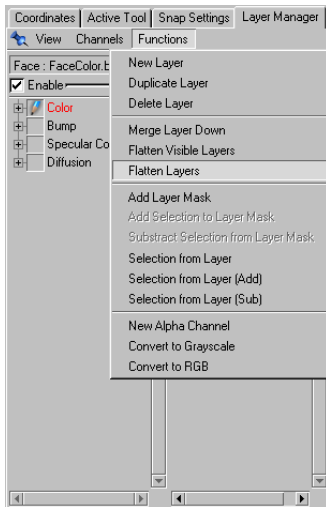
Confirm the dialog that appears. This will save your brush to use later, even after closing the project.

Step 9: Now paint all the stubble this guy needs! You can even go so far as to do the top of the head if you wish; have fun with it.

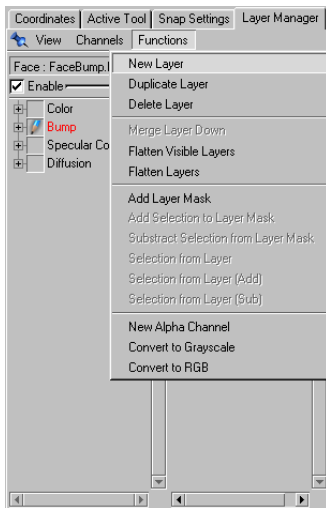




6 Painting Lips



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Bump layer

The lips need to be handled in two parts; the bump alone, then the color and the specularity. This is because the bump map will be radically different from the color map.

You'll need to build two brushes for this.

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It is located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, you going to want to take care of memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: First you will add a new layer to the bump channel of your face material.

With the Face material selected and the bump channel active in the Layer manager, create a new layer.

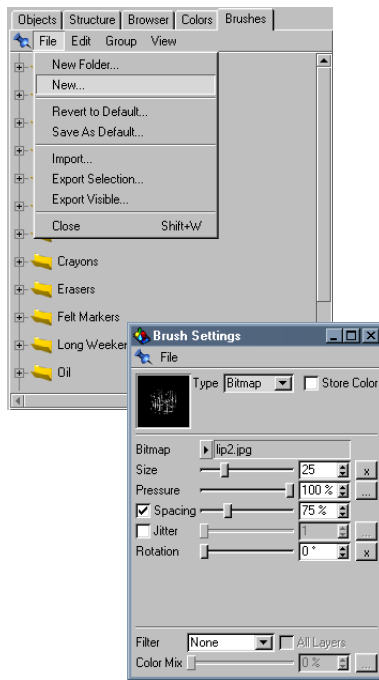
Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None

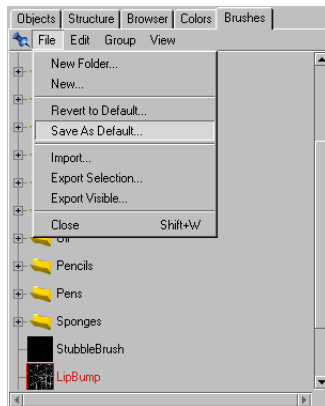


Rename the layer 'LipsBump' and close the dialog.

Double-click on this layer to make it active in the Texture View.



Step 3: A brush for painting lip wrinkles



Step 3: Next you will create a brush to draw the tiny wrinkles in the lips.

So, create a new brush from the Brush manager.

In the dialog that opens, name the new brush 'LipBump'.

Double-click on the new brush in the Brush manager to open the Brush Settings dialog and set up this brush as follows.

Type: Bitmap
 Store Color: Disabled
 Bitmap: lip2.jpg
 Size: 25
 Pressure: 100%
 Spacing: 75%
 Jitter: None (disabled)
 Rotation: 0°
 Filter: None
 Color Mix: None

Ensure that you turn off the Effector settings for **Rotation**; when you set up a new brush, the settings from the previous brush are used – in this case you would have the wrong Effector settings.

Now save it in from the File menu in the Brush manager.

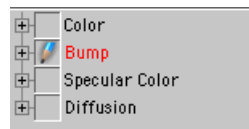
Confirm the save dialog. This will save your brush to use later, even after closing the project.

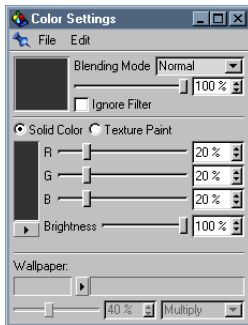
Step 4: Now you need to let BodyPaint 3D know this is a single channel brush.

At the top of the foreground/background tabs is the multi-channel enable button. Toggle it off



and ensure that only the bump layer has a pencil icon active, indicating that it will be the painted channel.





Step 4: A good color for lip wrinkles

Set up a brush color for this bump channel:

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 20%, **G:** 20%, **B:** 20%

Brightness: 100%

Wallpaper: None

Percentage: N/A

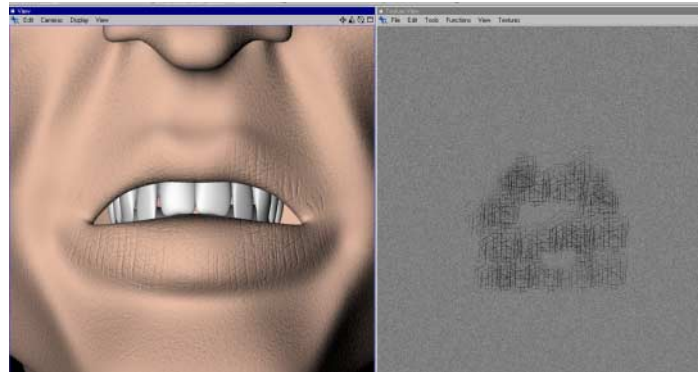
Mode: N/A

This will be good for creating the subtle creases in the lips.

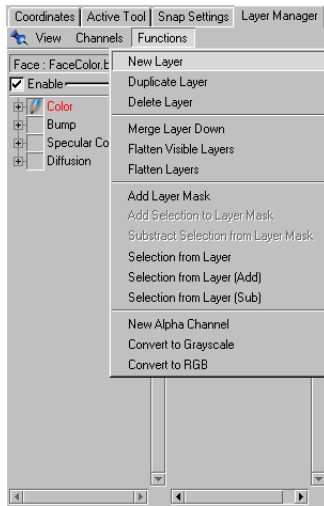
Then brush on lip bump in the Texture Window. Applying the bump here rather than the 3D view offers more precision and is easier to control the placement of paint in such a small area of the model. Lay down enough texture to create a solid looking lip.

Note

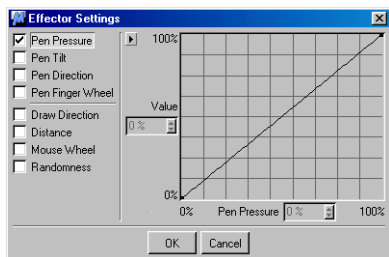
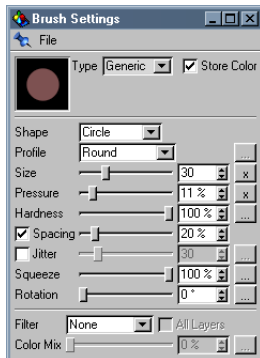
Always remember to check that you have a relevant object and texture selected (in this case FACEPOLY and Face respectively) and that the channel on which you want to paint is the one in the Texture View.



Then get ready for more painting in the color channel with a new brush.



Step 5: Creating the 'LipsColor' layer

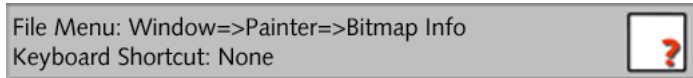


Step 6: A generic brush for painting the lips

Step 5: Now it's time to add some color to the lips.

First you will add a new layer to the color channel of your material. With the Face material selected and the Color texture channel active in the Layer manager, create a new layer.

Open the Bitmap Info dialog.



Rename the layer 'LipsColor' and close the dialog.

Double-click on this layer to make it active in the Texture View.

Step 6: Now select a brush for painting the lips.

For this, you will only need a generic circular brush.

Type: Generic

Store Color: Enabled

Shape: Circle

Profile: Round

Size: 30

Pressure: 11%

Hardness: 100%

Spacing: 20%

Jitter: None (disabled)

Squeeze: 100%

Rotation: 0°

Filter: None

Color Mix: None

Note for Graphic Tablet users

Click on the *Pressure Effector Settings* and set *Pen Pressure* on. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click *OK*.

Step 7: Now you need to let BodyPaint 3D know this is a single channel brush. At the top of the foreground/background tabs is the multi-channel enable button.

Toggle it off



and ensure that only the color layer has a pencil icon active,



indicating that it will be the painted channel.

Now set up a brush color for the Color channel as follows.

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

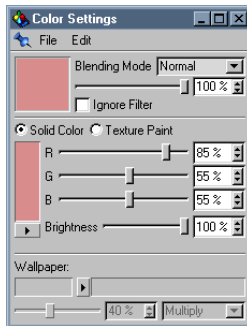
R: 85%, **G:** 55%, **B:** 55%

Brightness: 100%

Wallpaper: None

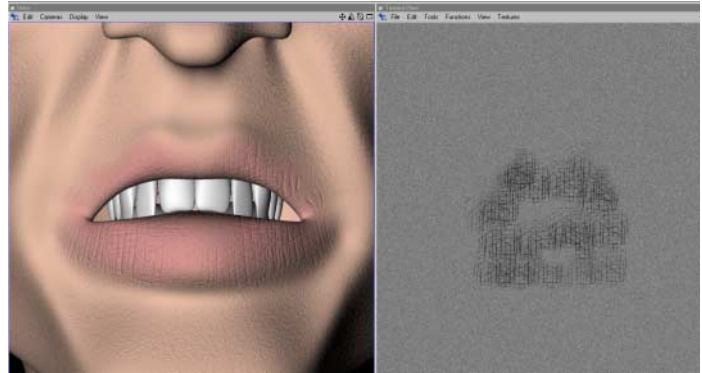
Percentage: N/A

Mode: N/A

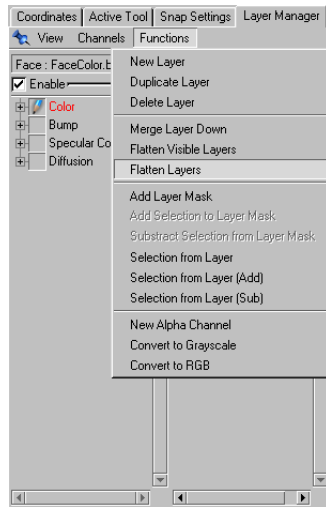


Step 7: A good lip color

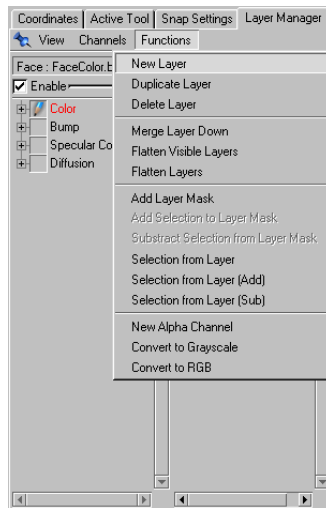
Step 8: Then brush on lip color in the Texture Window. Again, applying the color here rather than the 3D/Perspective View offers more precision and it is easier to control the placement of paint in such a small area of the model.



7 Painting Freckles



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Color layer

Time to add some freckles to the face.

Our artist stared at his girlfriend's face for hours, and came to the conclusion the freckle brush is only a single channel brush using the color channel.

Step 1: Your ongoing project should already be open. If not, you can, as usual, use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, you should remember to take care of memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: First you will need to add a new layer to the Color channel of your material.

With the Face material selected and the color channel active in the Layer manager, create a new layer, as shown on the left.

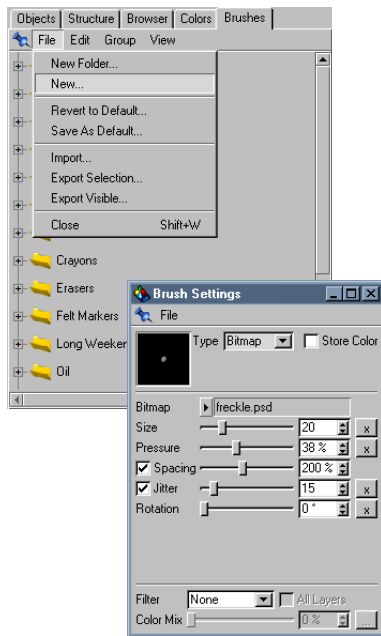
Then open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'Freckles' and close the dialog.

Double-click on this layer to make it active in the Texture View.



Step 3: A brush for painting freckles

Step 3: Next, you will create a brush for adding freckles to the skin of the face.

Create a new brush in the Brush manager.

In the dialog that opens, name the new brush 'FreckleBrush'.

Double-click on the new brush in the Brush manager to open the Brush Settings dialog and set it up as follows.

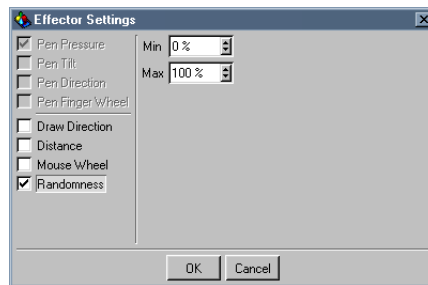
Type: Bitmap

Store Color: Enabled

Bitmap: freckle.psd

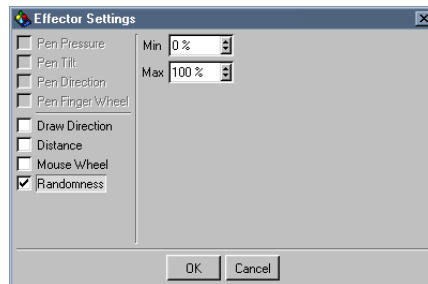
Size: 20

Toggle on the Effector Settings (click the ... to the right of Size), enable Randomness and accept the 0 to 100% default:



Pressure: 38%

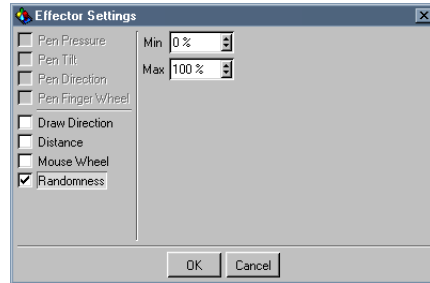
Toggle on the Effector Settings (click the ... to the right of Pressure), enable Randomness and accept the 0-100% default:



Spacing: 200%

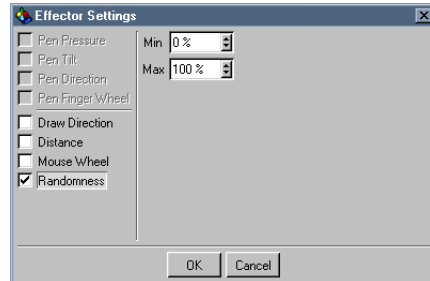
Jitter: 15

Toggle on the Effector Settings (click the ... to the right of Jitter), enable **Randomness** and accept the 0 to 100% default:



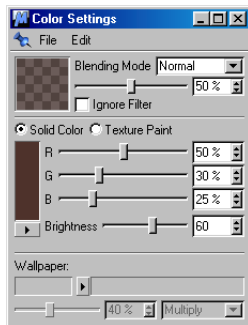
Rotation: 0

Toggle on the Effector Settings (click the ... to the right of Rotation), enable **Randomness** and accept the 0-100% default:

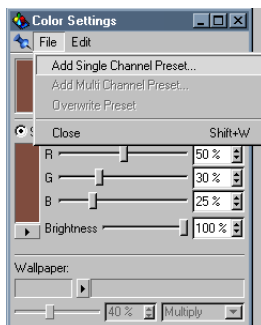


Filter: None

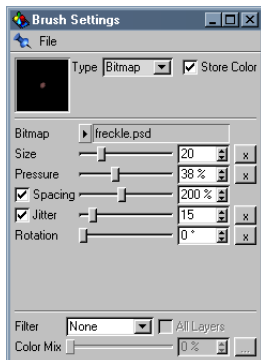
Color Mix: None



Step 4: A good color for freckles



Step 4: Saving our freckles color



Step 5: Ensuring we have the 'Freckles' color locked to our brush

Step 4: Create the color for our freckle brush.

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 50%, **G:** 30%, **B:** 25%

Brightness: 60%

Wallpaper: None

Percentage: N/A

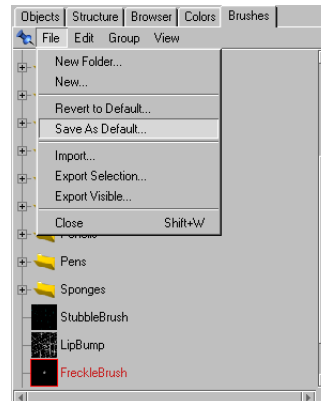
Mode: N/A

Now save this as a new preset color. In the Color Settings dialog, select **Add Single Channel Preset** from the File menu.

Name this color 'Freckles' in the dialog that appears and confirm the dialog. Now, whenever you need this color, you can just select it in the Color manager.

Step 5: Lastly, make sure that this color is locked into the Freckles brush. In the Color manager, make sure the Freckle color is active in the window.

Go back to the Brush Settings dialog for the FreckleBrush and make sure **Store Color** is active. Now go to the Brush manager and select **File > Save As Default...**



Confirm the save dialog. This will save your brush to use later, even after closing the project.

Step 6: Now you need to let BodyPaint 3D know this is a single channel brush.

At the left of the foreground/background tabs is the multi-channel enable button. Toggle it off

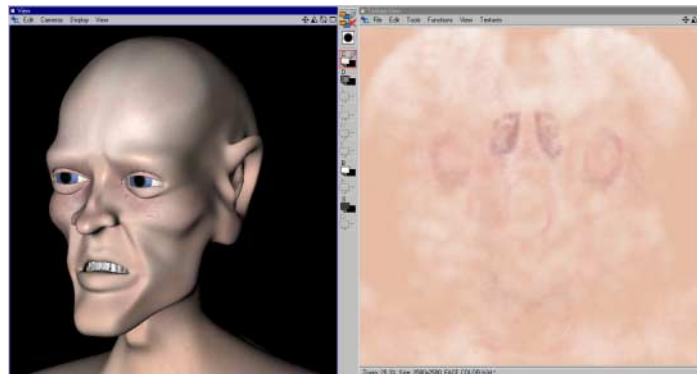


and ensure that only the Color channel has a pencil icon active

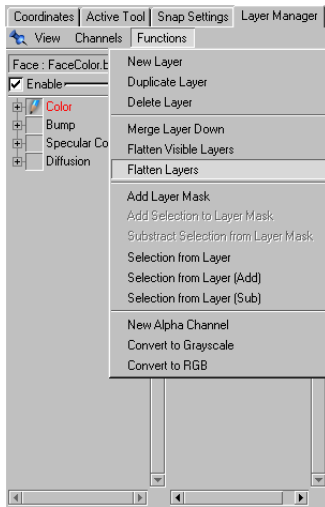


indicating that it will be the painted channel.

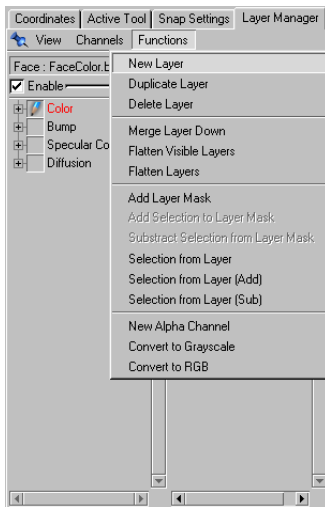
Now try out a few freckles around the cheeks and nose. This is frequently where freckles end up on a face. Feel free to modify the settings as you please.



8 Painting Blemishes



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Color layer

Now you will create a brush that will scatter color over the face to simulate blemishes and pimples.

This is very similar to the Freckle brush, only this time your brush and color will need to work on multiple channels - Color, Diffusion, Bump and Specular all at the same time.

Step 1: Your ongoing project should already be open.

If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, you should do the memory housekeeping before continuing. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: First you will need to add a new layer to the Color channel of your material.

With the Face material selected and the Color texture channel active in the Layer manager, create a new layer, in the usual way.

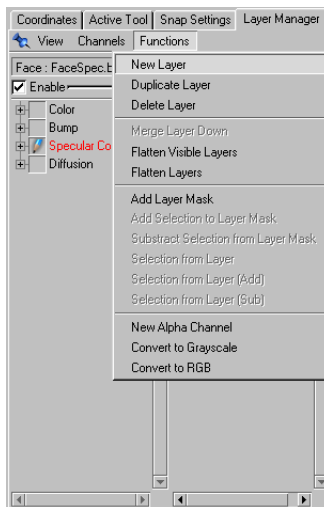
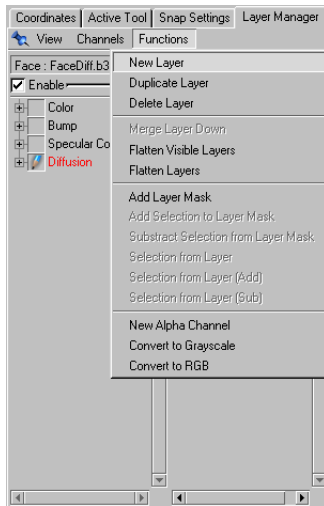
Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'BlemColor' and close the dialog.

Double-click on this layer to make it active in the Texture View.

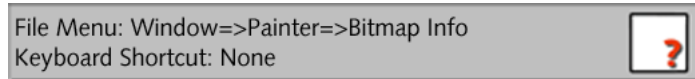


Steps 3-5:
**Creating new layers for Diffusion,
 Bump & Specular Color channels**
(we've omitted the dialog for Bump)

Step 3: Now add a new layer to the Diffusion channel of your face material.

With the Face material selected and the diffusion texture active in the Layer manager, create a new layer with **Functions > New Layer**.

Open the Bitmap Info dialog.

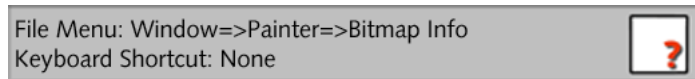


Rename the layer 'BlemDiff' and close the dialog.

Step 4: Add another new layer, this time to the Bump channel of your material.

With the Face material selected and the bump texture active in the Layer manager, create a new layer.

Open the Bitmap Info dialog.

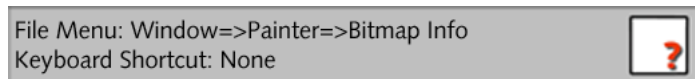


Rename the layer 'BlemBump' and close the dialog.

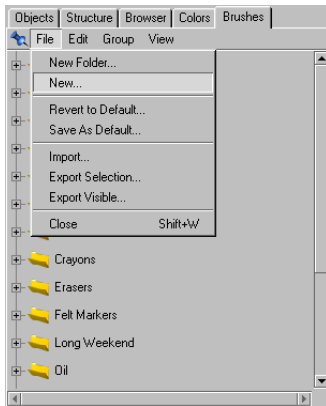
Step 5: Now add a final, new layer; to the Specular channel of your material.

With the Face material selected and the specular texture active in the Layer manager, create a new layer.

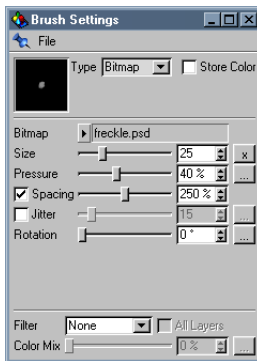
Open the Bitmap Info dialog.



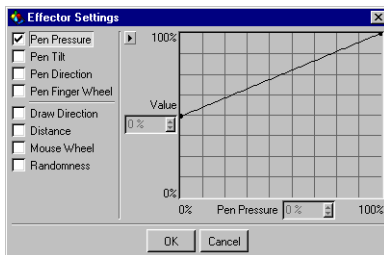
Rename the layer 'BlemSpec' and close the dialog.



Step 6: Creating a new blemish brush



Step 6: The Brush Settings for 'BlemishBrush'



Step 6: Owners of graphic tablets can use the Effector Settings to increase pen responsiveness

Step 6: Next, you will build a brush for adding blemishes etc. to the skin.

Create a new brush in the usual way, as shown on the left.

In the dialog that opens, name the new brush 'BlemishBrush'.

Double-click on the new brush in the Brush manager to open the Brush Settings dialog and use the following settings.

Type: Bitmap
 Store Color: Enabled
 Bitmap: freckle.psd
 Size: 10
 Pressure: 40%
 Spacing: 250%
 Jitter: None (disabled)
 Rotation: 0°
 Filter: None
 Color Mix: None

Note for Graphic Tablet users

Click on the *Pressure Effector Settings* and set *Pen Pressure* on. This will give you more control by making your brush pressure dependent upon how hard down you press on the tablet with the pen. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click *OK*.

Step 7: The next step involves setting the color for each of the channels on which you will be painting.

First you must enable multi-channel painting.

You do that by clicking on the multi-channel icon so that the green checkbox is showing.



Next you must enable the channels on which you wish to paint by clicking on each channel icon so that you can see the pencil in the icon.

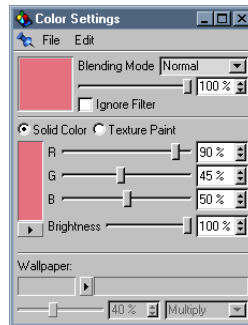


This indicates that the channel is active for painting.

Step 8: Now you must create the color settings for each of the active channels. Click on the foreground color

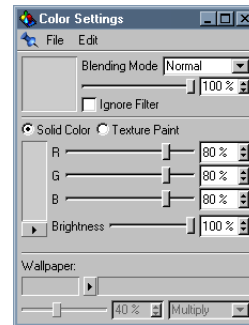


of each channel to open the Color settings dialog. The settings we used are as follows:



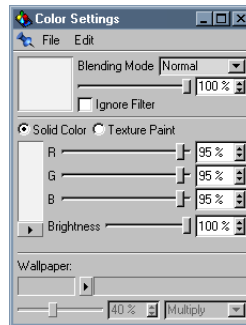
Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 90%, G: 45%, B: 50%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

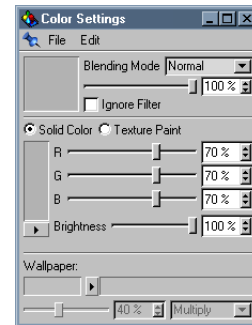


Diffusion Channel

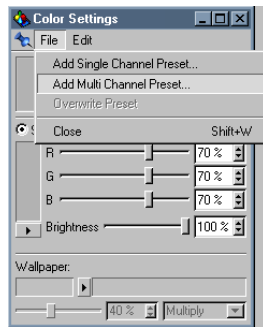
Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 80%, G: 80%, B: 80%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

**Bump Channel**

Blending Mode: Normal
 Ignore Filter: Disabled
 Type: Solid Color
 R: 95%, G: 95%, B: 95%
 Brightness: 100%
 Wallpaper: None
 Percentage: N/A
 Mode: N/A

**Specular Color Channel**

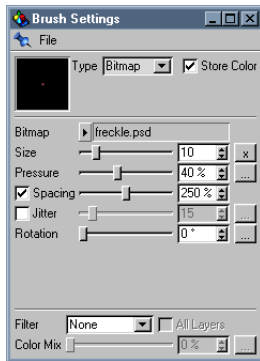
Blending Mode: Normal
 Ignore Filter: Disabled
 Type: Solid Color
 R: 70%, G: 70%, B: 70%
 Brightness: 100%
 Wallpaper: None
 Percentage: N/A
 Mode: N/A

**Step 8: Saving our multi-channel color**

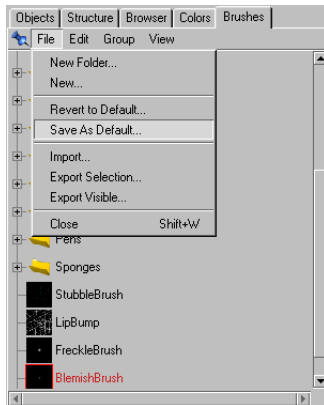
Now save all these colors as a new multi-channel preset.

In the Color Settings box select **Add Multi-Channel Preset** from the File menu.

Name this color 'Blemishes' in the dialog that appears and click **OK**. Now, at any time, you can select this multi-channel color from the Color manager simply by clicking on it.



Step 9: Ensuring that the Blemishes color is stored with the BlemishBrush brush



Step 9: Saving the BlemishBrush brush

Step 9: Lastly, make sure this color is locked into the BlemishBrush.

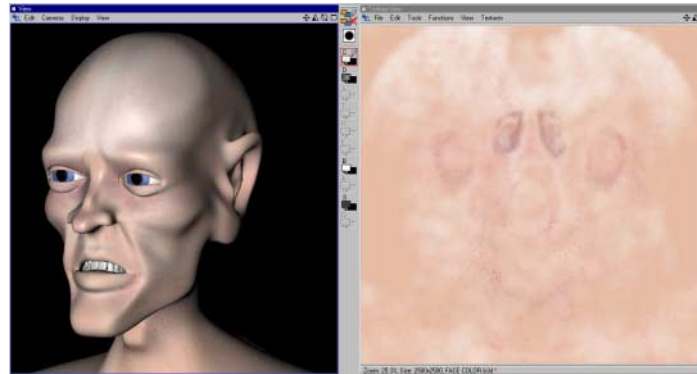
In the Color manager, make sure the Blemishes color is active in the window.

Go back to the Brush Settings dialog for the BlemishBrush and make sure **Store Color** is active. Now save the brush from the Brush manager, by selecting **Save As Default...** from the File menu.

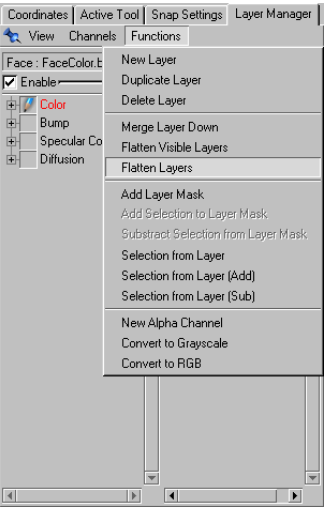
Confirm the Save dialog. This will save your brush for later use, even after closing the project.

Step 10: Now try placing a few blemishes around the chin, cheeks and nose. The effect is very subtle, so you may need to make a few brush strokes to see results.

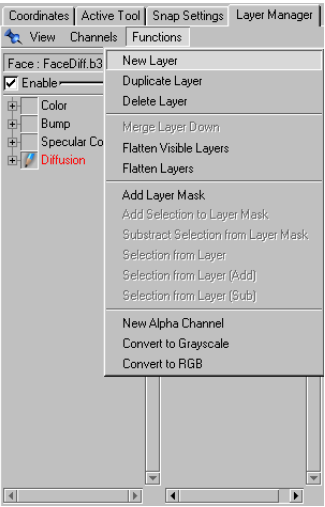
Again, feel free to change the settings if you please.



9 Painting Wrinkles



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Diffusion layer

Wrinkles always add that extra bit of realism to a character. To create them, you will build a multi-channel brush that paints on the Diffusion, Bump, and Specular channels in one stroke.

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It is located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, remember to take care of memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: Now add a new layer to the Diffusion channel of your face material.

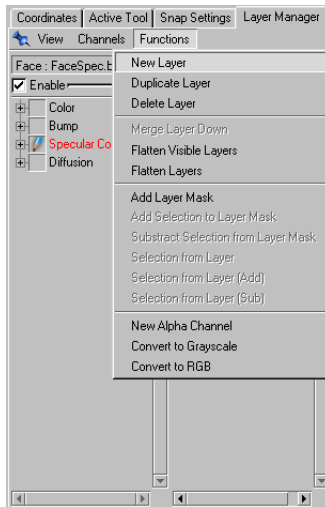
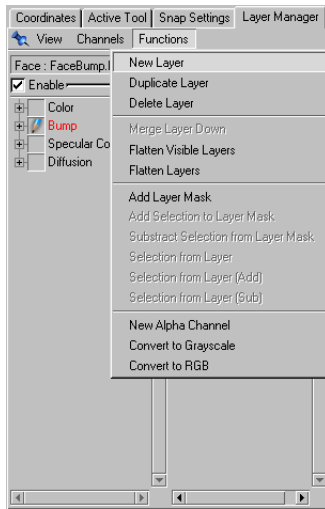
With the Face material selected and the diffusion texture active in the Layer manager, create a new layer as shown on the left.

Then open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'WrinkleDiff' and close the dialog.
Double-click on this layer to make it active in the Texture View.

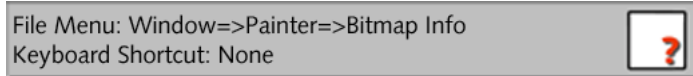


Steps 3 & 4:
Creating new layers for the Bump
and Specular Color channels

Step 3: Now you'll add a new layer to the Bump channel of your material, in a similar way.

With the Face material selected and the bump texture active in the Layer manager, create a new layer, as before.

Open the Bitmap Info dialog.

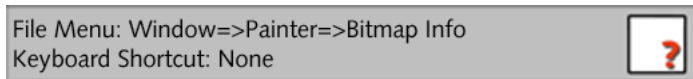


Rename the layer 'WrinkleBump' and close the dialog.

Step 4: Now add a final new layer to the Specular Color channel of your material.

With the Face material selected and the specular color channel active in the Layer manager, create another new layer.

Open the Bitmap Info dialog.



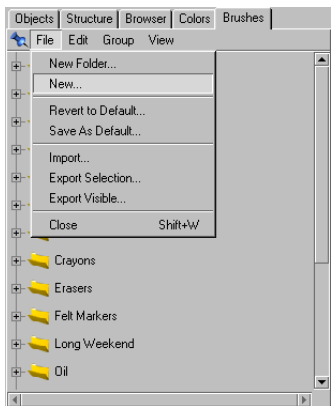
Rename the layer 'WrinkleSpec' and close the dialog.

Step 5: Next, you will design a new brush for adding wrinkles to the skin.

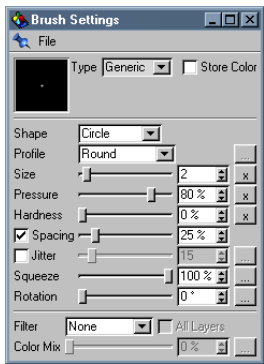
First, create a new brush from the Brush manager, by selecting **File > New....**

In the dialog that opens, name the new brush 'WrinkleBrush'.

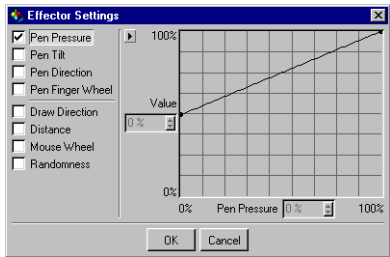
Double-click on the new brush in the Brush manager to open the Brush Settings dialog and enter the values shown on the next page.



Step 6: Creating a new brush for wrinkles



Step 6: The Brush Settings for WrinkleBrush



Step 6: Owners of graphic tablets can use the Effector Settings to increase pen responsiveness

Type: Generic
Store Color: Enabled
Shape: Circle
Profile: Round
Size: 2
Pressure: 80%
Hardness: 0%
Spacing: 25%
Jitter: None (unchecked)
Squeeze: 100%
Rotation: 0°
Filter: None
Color Mix: None

Note for Graphic Tablet users

Click on the *Pressure Effector Settings* (the ... to the right of the *Pressure* value) and set *Pen Pressure* on. This will give you more control by making your brush pressure dependent upon how hard you press down on the tablet with the pen. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click OK.

You may also want to change the *Effector Settings* for *Size* and *Hardness* – feel free to experiment until you get the right feel.

Step 6: The next step involves setting the color for each of the channels on which you will be painting. First you must enable *multi-channel painting*. You do that by clicking on the multi-channel icon (on the Paint icon bar, to the left of the channel icons) so that the green tick is showing.



Next you must enable the channels on which you wish to paint by clicking on each channel icon in the Layer manager so that you can see the pencil in the icon.

This indicates that the channel is active for painting. Here we need Diffusion, Bump and Specular Color channels to be selected.

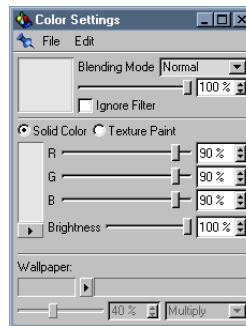


Now we can get down to the task of creating the colors for our multi-channel color preset. The easy way to do this is to select the foreground color (from the Paint icon bar)



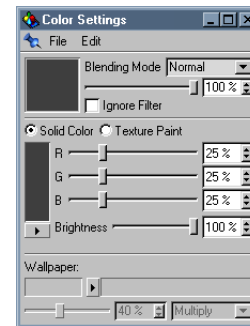
of each channel in turn and assign the color attributes that we want. Then we save the colors for the selected channels as one multi-color preset.

Here are the colors we used for the wrinkle color.



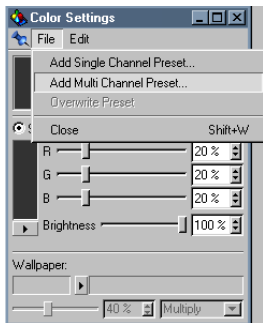
Diffusion Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 90%, G: 90%, B: 90%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

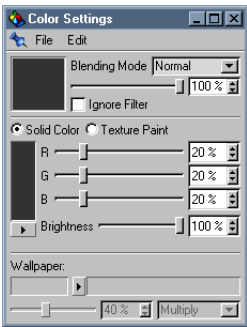


Bump Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 25%, G: 25%, B: 25%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



Step 6: Saving the Wrinkles multi-channel color



Specular Color Channel
Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 20%, **G:** 20%, **B:** 20%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

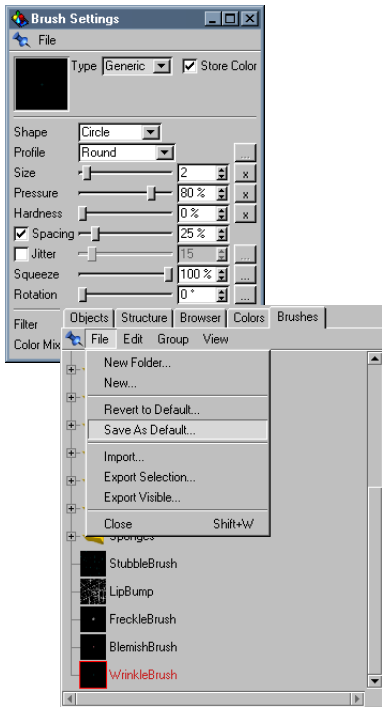
Now save all these colors together, as a new multi-channel preset; in the Color manager select **Add Multi-Channel Preset** from the File menu.

Name this color 'Wrinkles' in the dialog that appears and then confirm the dialog (click **OK**). Now you can just click on this preset in the Color manager to select the vein multi-channel colors.

Step 7: Lastly, make sure this color is locked into the WrinkleBrush brush. First, in the Color manager, ensure that the Wrinkles color is selected.

Go back to the Brush Settings dialog for the WrinkleBrush (check that this is selected in the Brush manager) and make sure that **Store Color** is active. Now select **File > Save As Default...** in the Brush manager to save the settings for this brush.

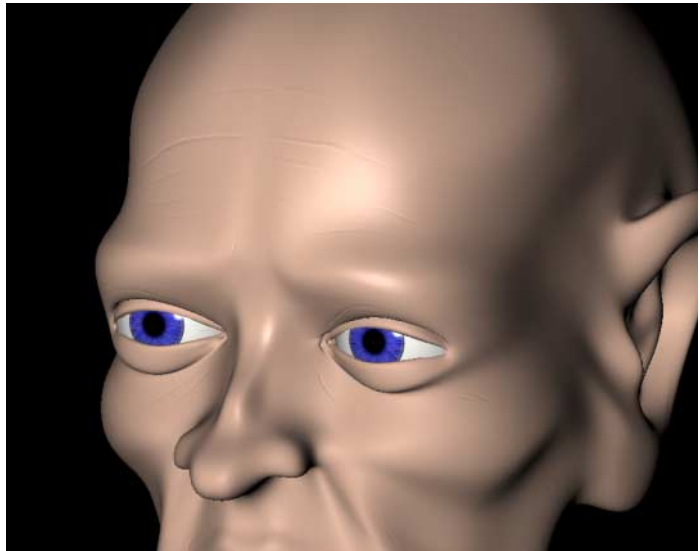
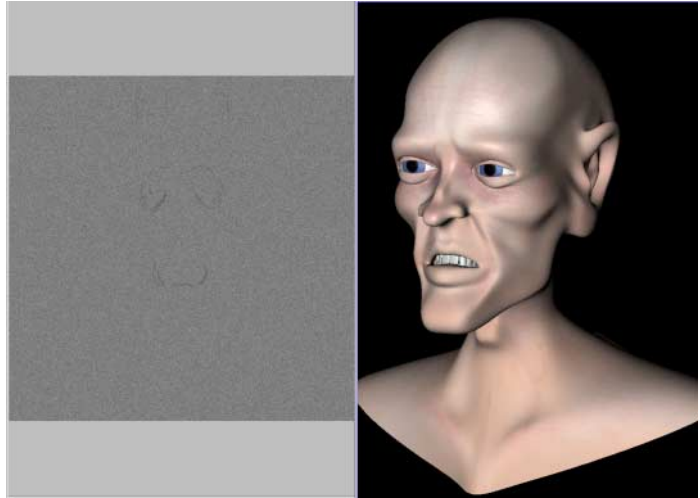
Confirm the save dialog. This will save your brush for use later, even after closing the project.



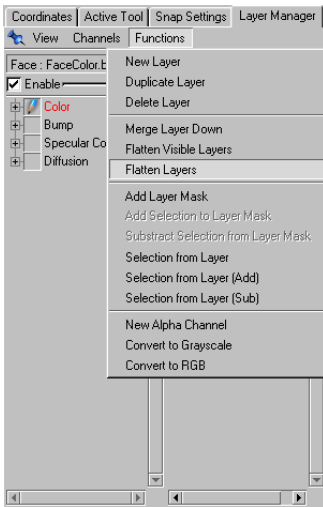
Step 7: Ensuring the Wrinkles color is saved with the WrinkleBrush brush settings

Step 8: Now you can begin painting a few wrinkles on the forehead and around the eyes.

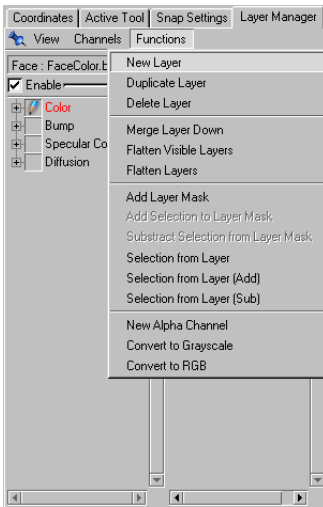
If these settings do not work for you, feel free to change and modify them to your liking.



10 Painting Veins



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Color layer

This guy doesn't look mean enough – and what implies mean better than bulging veins?

So, again, you will build a multi-channel brush for this exercise. This one will use, as you might expect, the Color, Diffusion, Bump and Specular channels.

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, remember to take care of memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to *flatten* the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: Now you'll add a new layer to the Color channel of your face material.

With the Face material selected and the color channel active in the Layer manager, create a new layer as shown on the left.

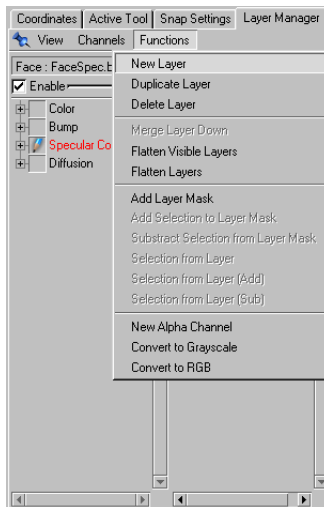
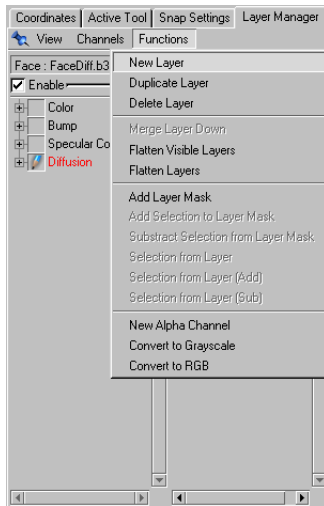
Open the Bitmap Info dialog.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



Name the layer 'VeinColor' and close the dialog.

Double-click on this layer to make it active in the Texture View.



Steps 3-5:
**Creating new layers for Diffusion,
 Bump & Specular Color channels**
(we've omitted the dialog for Bump)

Step 3: Now a new layer for the Diffusion channel.

With the Face material selected and the diffusion channel selected in the Layer manager, create another new layer.

Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
 Keyboard Shortcut: None



Rename the layer 'VeinDiff' and close the dialog.

Step 4: Add a new layer to the Bump channel of your material.

Note

First, make sure that the Bump channel is set to the default 20% within the Material Editor.

With the Face material selected in the Material manager and the bump channel selected in the Layer manager, create another new layer.

Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
 Keyboard Shortcut: None



Rename the layer 'VeinBump' and close the dialog.

Step 5: Now, finally in this layer section, add a new layer to the Specular Color channel of your material.

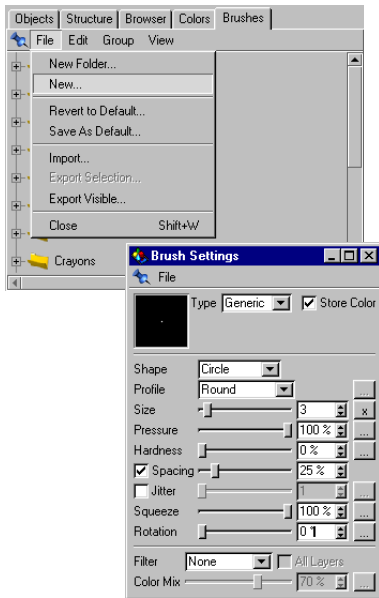
With the Face material selected and the specular color channel selected in the Layer manager, create another new layer.

Again, open the Bitmap Info dialog.

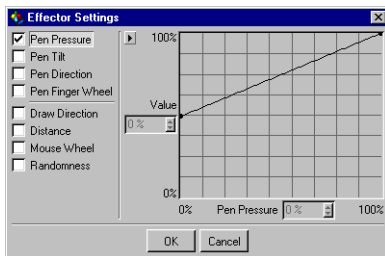
File Menu: Window=>Painter=>Bitmap Info
 Keyboard Shortcut: None



Rename the layer 'VeinSpec' and close the dialog.



Step 6: Creating a new brush and the settings for our vein brush



Step 6: Owners of graphic tablets can use the Effector Settings to increase pen responsiveness

Step 6: Next, you will create a brush for adding veins to the skin.

First off, let's get a new brush; go to the Brush manager and select **New** from the file menu.

In the dialog that opens, name the new brush 'VeinBrus'.

Double-click on this new brush in the Brush manager to open the Brush Settings dialog. Enter the following values.

Type: Generic
 Store Color: Enabled
 Shape: Circle
 Profile: Round
 Size: 3
 Pressure: 100%
 Hardness: 0%
 Spacing: 25%
 Jitter: None (unchecked)
 Squeeze: 100%
 Rotation: 0°
 Filter: None
 Color Mix: None

Note for Graphic Tablet users

Click on the *Pressure Effector Settings* and set *Pen Pressure* on. This will give you more control by making your brush pressure dependent upon how hard you press down on the tablet with the pen. Alternatively you can use the mouse wheel if you do not use a tablet. Adjust the curve so that it appears similar to the one in the illustration to the left. Click *OK*.

Step 7: The next step involves setting the color for each of the channels on which you will be painting.

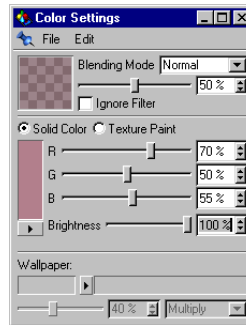
First you must enable *multi-channel painting*. You do that by clicking on the multi-channel icon (on the Paint icon bar, to the left of the channel icons) so that the green tick is showing.



Next you must enable the channels on which you wish to paint by clicking on each channel icon so that you can see the pencil in the icon. This indicates that the channel is active for painting. In this example of veins, we will be painting on four channels.



This is how we set up the vein colors for the various channels.



Color Channel

Blending Mode: Normal, 50%

Ignore Filter: Disabled

Type: Solid Color

R: 70%, G: 50%, B: 55%

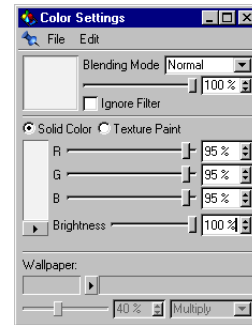
Brightness: 100%

Wallpaper: None

Percentage: N/A

Mode: N/A

This should be a good vein color.



Diffusion Channel

Blending Mode: Normal

Ignore Filter: Disabled

Type: Solid Color

R: 95%, G: 95%, B: 95%

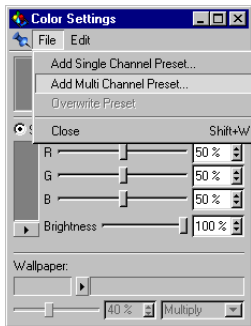
Brightness: 100%

Wallpaper: None

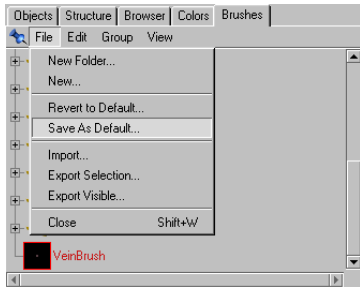
Percentage: N/A

Mode: N/A

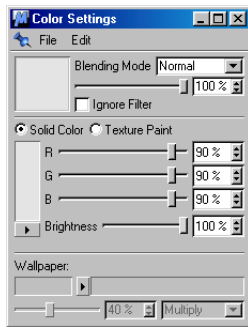
This will darken the veins extremely subtly.



Step 7: Saving our multi-channel Veins color



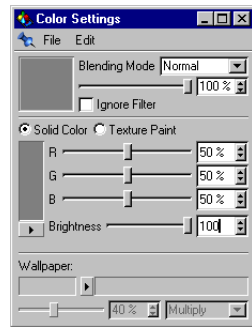
Step 8: Saving the settings for the VeinBrush brush



Bump Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 90%, G: 90%, B: 90%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

This will make the veins seem to rise off the face a little.



Specular Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 50%, G: 50%, B: 50%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

This will give the veins some shine.

Now save all these colors together, as a new multi-channel preset; in the Color manager select **Add Multi-Channel Preset** from the File menu.

Name this color 'Veins' in the dialog that appears and then confirm the dialog (click **OK**). Now you can just click on this preset in the Color manager to select the vein multi-channel colors.

Step 8: Lastly, make sure this color is locked into the VeinBrush brush. First, in the Color manager, ensure that the Veins color is selected.

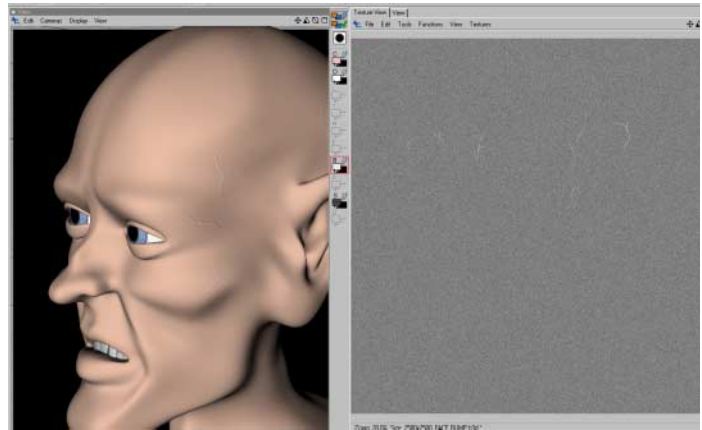
Go back to the Brush Settings dialog for the VeinBrush (check that this is selected in the Brush manager) and make sure that **Store Color** is active. Now select **File > Save As Default...** in the Brush manager to save the settings for this brush.

Confirm the save dialog. This will save your brush for use later, even after closing the project.

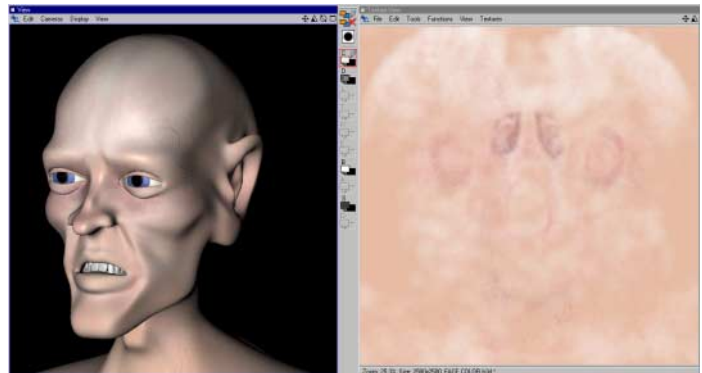
Step 9: Now you can begin painting a few veins on the temple.

If these settings do not work for you, feel free to change and modify them to your liking.

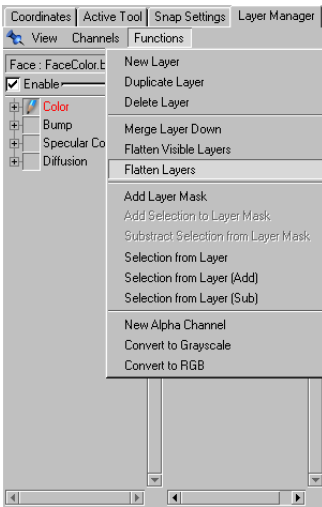
Here we have used the bump channel to illustrate the map because its far more visible than the color channel.



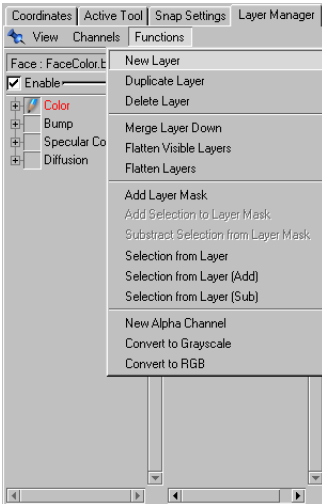
Here's what the Color channel looks like.



11 Painting a Scar



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Color layer

In this next part of the BodyPaint 3D tutorial, you will add some scars to make this warrior look somewhat battle-worn.

It is important to note that everyone scars differently. Some scar a light shade and the skin tends to draw inward. Others, however, scar outward and the tone of the skin is darker. Be sure to play with the settings to paint a scar that fits your character. The scars we will create are more dramatic, gory scars. This warrior doesn't stitch his wounds and wears them with pride.

This is another multi-channel brush exercise; we will concurrently paint on the Color, Diffusion, Bump and Specular channels.

Step 1: Your ongoing project should already be open. If not, you can use the 'BaseHead.c4d' project which includes the head with the basic skin and eye textures applied. As you may well know by now, it's located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, remember that, the more textures and layers you have in memory, the more RAM is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: Now add a new layer to the Color channel of your face material. With the Face material selected and the color texture active in the Layer manager, create a new layer.

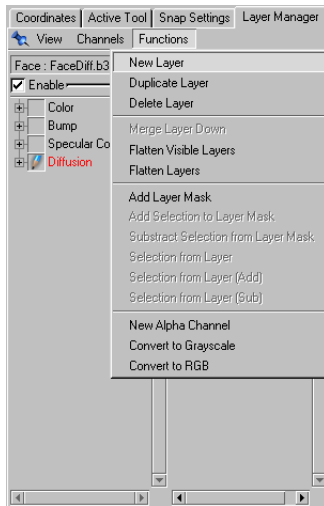
Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'ScarColor' and close the dialog.

Double-click on this layer to make it active in the Texture View.



Step 3: Now add a new layer to the Diffusion channel.

With the Face material selected and the diffusion channel selected in the Layer manager, create a new layer.

Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'ScarDiff' and close the dialog.

Step 4: Now you will add another new layer, this time to the Bump channel of your material.

With the Face material selected and the bump texture active in the Layer manager, create a new layer, in the usual way.

Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Name this layer 'ScarBump' and close the dialog.

Step 5: Now, finally as far as layers go for the moment, add a new layer to the Specular channel of your material.

With the Face material selected and the specular texture selected in the Layer manager, create another new layer.

Open the Bitmap Info dialog.

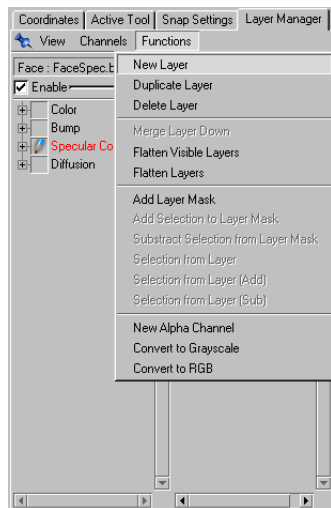
File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None

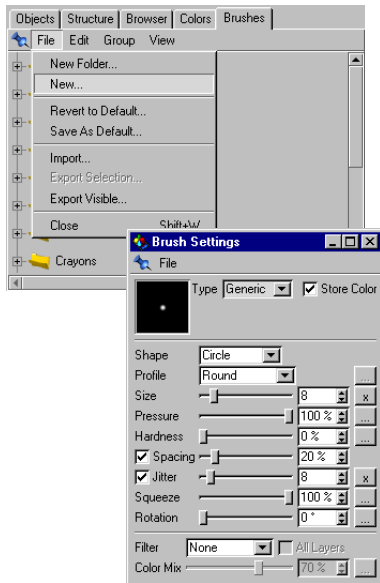


Name this last layer 'ScarSpec' and close the dialog.

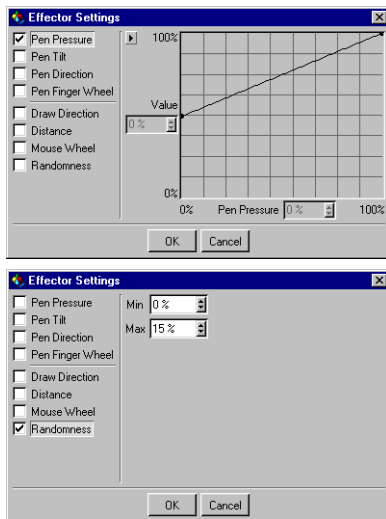
Steps 3-5:

**Creating new layers for Diffusion,
Bump & Specular Color channels**
(we've omitted the dialog for Bump)





Step 6: Creating a brush for scarring



Step 6: Owners of graphic tablets can use the Effector Settings to increase pen responsiveness

Step 6: Next, you will make a brush for adding scars to our hero's already less-than-perfect skin.

Start by selecting a new brush from the File menu of the Brush manager.

In the dialog that opens, name the new brush 'ScarBrush'.

Double-click on this new brush in the Brush manager to open the Brush Settings dialog.

Now, to get a good brush for scars, set up this dialog as follows.

Type: Generic
 Store Color: Enabled
 Shape: Circle
 Profile: Round
 Size: 8
 Pressure: 100%
 Hardness: 0%
 Spacing: 20%
 Jitter: 8
 Squeeze: 100%
 Rotation: 0°
 Filter: None
 Color Mix: None

Note for Graphic Tablet users

Click on the Pressure Effector Settings and set Pen Pressure on. This will give you more control by making your brush pressure dependent upon how hard you press down on the tablet with the pen. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click OK.

Also, click on the Jitter Effector Settings and set Randomness on. Set the Randomness value to 15%. Alternatively you can use the mouse wheel if you do not use a tablet. The linear default curve is fine. Click OK.

Step 7: The next step involves setting the color for each of the channels on which you will be painting.

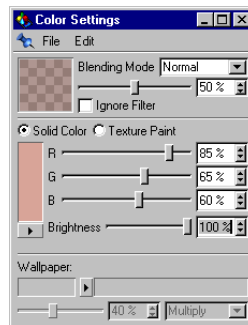
First you must enable *multi-channel painting*. You do that by clicking on the multi-channel icon (found on the Paint icon bar, to the left of the channel icons at the top of the screen) so that the green tick is showing.



Next you must enable the channels on which you wish to paint, by clicking on each channel icon so that you can see the pencil in the icon. This indicates that the channel is active for painting. In this case we need all four channels selected in the Layer manager.



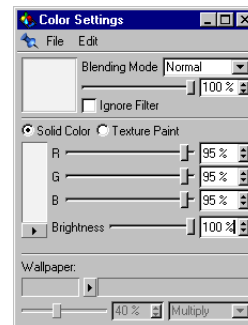
This is how we set up the scar colors for the various channels.



Color Channel

Blending Mode: Normal, 50%
 Ignore Filter: Disabled
 Type: Solid Color
 R: 85%, G: 65%, B: 60%
 Brightness: 100%
 Wallpaper: None
 Percentage: N/A
 Mode: N/A

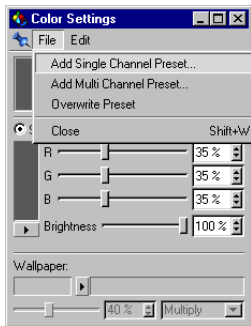
This should be a good scar color.



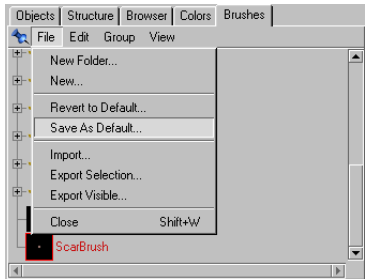
Diffusion Channel

Blending Mode: Normal
 Ignore Filter: Disabled
 Type: Solid Color
 R: 95%, G: 95%, B: 95%
 Brightness: 100%
 Wallpaper: None
 Percentage: N/A
 Mode: N/A

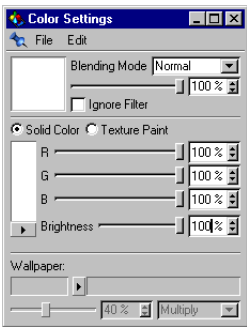
This will darken the scar very subtly.



Step 7: Saving our multi-channel scar color



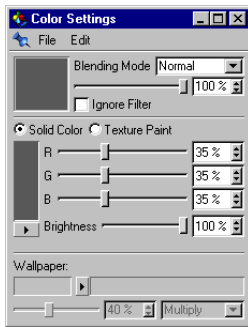
Step 8: Saving the 'ScarBrush' brush settings



Bump Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 100%, G: 100%, B: 100%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

This will make the scars seem to rise off the face a little. If you want indented scars, take the Brightness down to about 10%.



Specular Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 35%, G: 35%, B: 35%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

This makes the scars less shiny than the rest of the face.

Now save all these colors together, as a new multi-channel preset; in the Color manager select **Add Multi-Channel Preset** from the File menu.

Name this color 'Scars' in the dialog that appears and then confirm the dialog. Now you can just click on this preset in the Color manager to select the multi-channel colors.

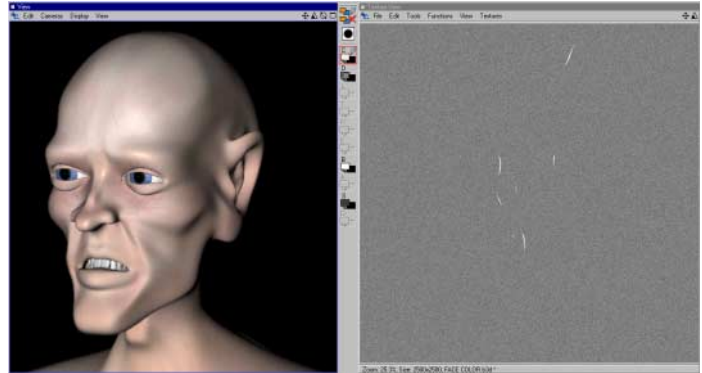
Step 8: Lastly, you should make sure this color is locked into the ScarBrush brush. First, in the Color manager, ensure that the Scars color is selected.

Go back to the Brush Settings dialog for the ScarBrush (check that this is selected in the Brush manager) and make sure that **Store Color** is active. Now select **File > Save As Default...** in the Brush manager to save the settings for this brush.

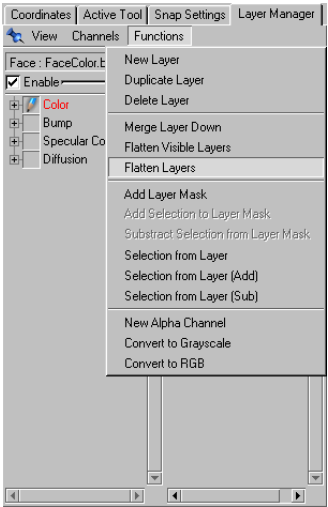
Confirm the save dialog. This will save your brush for use later, even after closing the project.

Step 9: Now paint all the scars you want. You can even go so far as to deface the whole head if you wish, have fun with it.

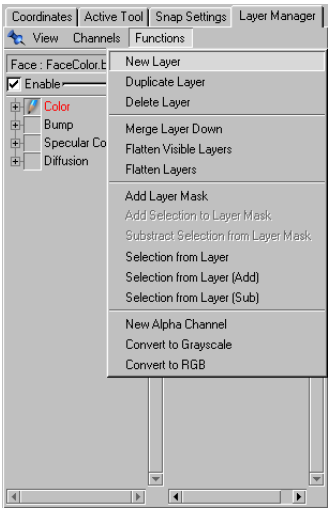
Here we have used the bump channel to illustrate the map because it is far more visible than the color channel.



12 Painting Eyebrows



Step 1: Flattening the Color channel layers to save memory



Step 2: Creating a new Color layer


One of the most challenging brushes is the eyebrow brush.

It will be accomplished with two bitmap brushes, and some play with the rotation setting in the Brush Settings dialog. This way you can get pretty close to a random feel, and rotate the brush as you need while painting – to match the arc of the eyebrow. This brush will use the Color, Diffusion, Bump and Specular channels.

Step 1: Your ongoing project should already be open.

If not, you can use the 'BaseHead.c4d' project which includes the head with just the basic skin and eye textures already applied. It's located in the 'Tutorials: US: BodyPaint 3D' folder.

Editor: File=>Open
Shortcut: Ctrl+O (pc) / Cmd+O (mac)



If you are continuing with the project from the previous section, remember your memory management. The more textures and layers you have in memory, the more RAM that is required. Even just a few textures can be RAM intensive. A quick way to save memory is to flatten the layers of each channel.

You do that by selecting the channel in the Layer manager and using the **Flatten Layers** function from the Functions menu.

Step 2: Now you'll add a new layer to the Color channel of your face material.

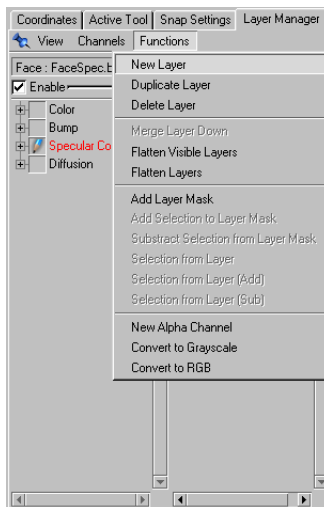
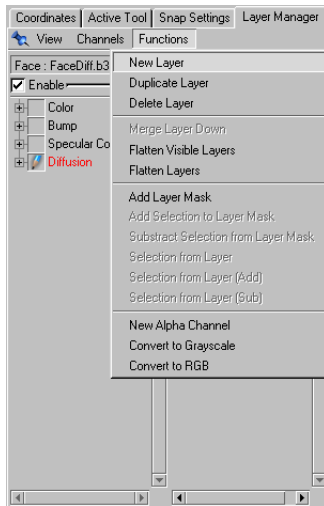
With the Face material selected and the color texture active in the Layer manager, create a new layer, as shown on the left.

Open the Bitmap Info dialog.

File Menu: Window=>Painter=>Bitmap Info
Keyboard Shortcut: None



Rename the layer 'BrowColor' and close the dialog.
Double-click on this layer to make it active in the Texture View.

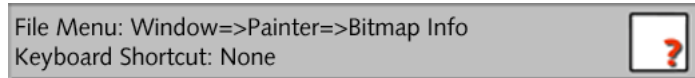


Steps 3-5:
**Creating new layers for Diffusion,
 Bump & Specular Color channels**
(we've omitted the dialog for Bump)

Step 3: Now, in a similar way, add a new layer to the Diffusion channel of your material.

With the Face material selected and the diffusion channel active in the Layer manager, create a new layer.

Open the Bitmap Info dialog.

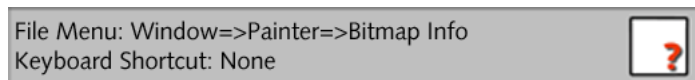


Rename the layer 'BrowDiff' and close the dialog.

Step 4: Now, in just the same way, add another new layer, but this time for the Bump channel of your material.

With the Face material selected and the bump channel active in the Layer manager, create a new layer.

Open the Bitmap Info dialog.

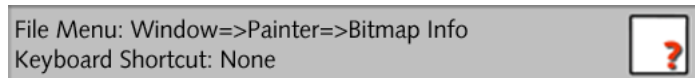


Name the layer 'BrowBump' and close the dialog.

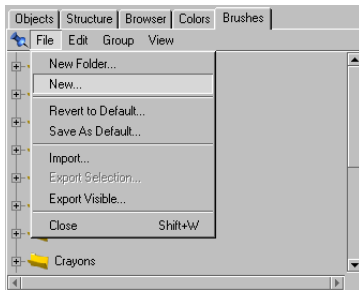
Step 5: Finally, layer-wise, add a new layer to the Specular Color channel of your material.

With the Face material selected and the specular color channel active in the Layer manager, create a new layer.

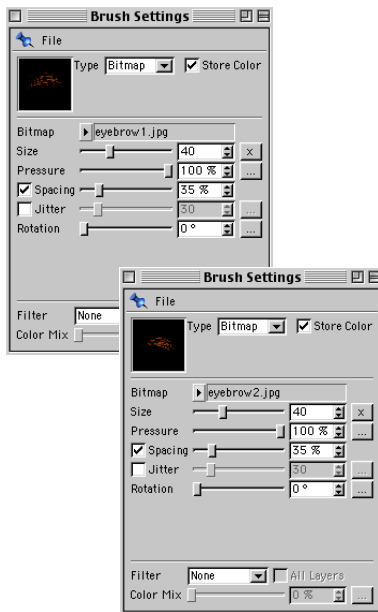
Open the Bitmap Info dialog.



Rename the layer 'BrowSpec' and close the dialog.



Step 6: A new brush, which will be our right eyebrow brush



Step 6: The right (top) and left eyebrow brushes (on a Macintosh!)

Step 6: Next, you will create two multi-channel brushes for painting right and left eyebrows on to the skin.

First, let's have a new brush; go to the Brush manager and select **New...** from the File menu.

In the dialog that opens, name the new brush 'BrowBrushR' and confirm the dialog.

Double-click on the new brush in the Brush manager to open the Brush Settings dialog and use the following values.

Type: Bitmap
 Store Color: Enabled
 Bitmap: eyebrow1.jpg
 Size: 40
 Pressure: 100%
 Spacing: 35%
 Jitter: None (disabled)
 Rotation: 0°
 Filter: None
 Color Mix: None

Now save this, which is our right eyebrow brush, from within the Brush manager using **File > Save As Default...**

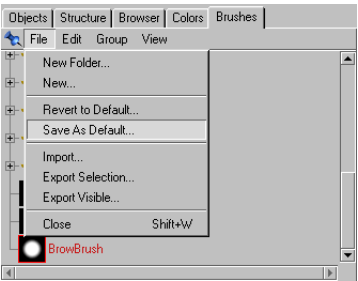
Confirm the save dialog. This will save your brush for later use, even after closing the project.

Now repeat the above steps to create a left eyebrow brush. Call this brush 'BrowBrushL' and use 'eyebrow2.jpg' as the bitmap within the Brush Settings; otherwise, everything else is the same.

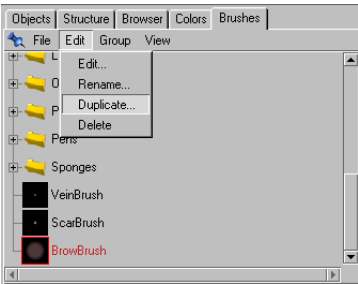
Note

*You may find it just as easy to duplicate your right eyebrow brush by selecting it in the Brush manager and using **Edit > Duplicate** from within the Brush manager's menu. You then name this new brush 'BrowBrushL' and change the Brush Settings to look for the 'eyebrow2.jpg' bitmap. Then save as before.*

Alternatively, you can create just one brush and switch the bitmaps, live, as and when you need a different base image. Normally, though, it would be more sensible, and easier to use, to create two, separate brushes.



Step 6: Saving a brush, with default settings (see above)



Step 6: Using Duplicate to obtain a new brush (see above)

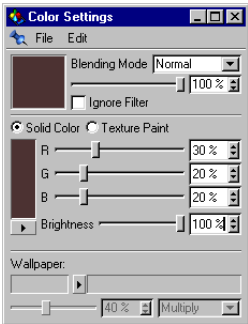
Step 7: The next step involves setting the color for each of the channels you will be painting on. First you must enable *multi-channel painting*. You do that by clicking on the multi-channel icon so that the green checkbox is showing.



Next you must enable the channels you wish to paint on by clicking on each channel icon so that you can see the pencil in the icon. This indicates that the channel is active for painting. We need all the channels set.

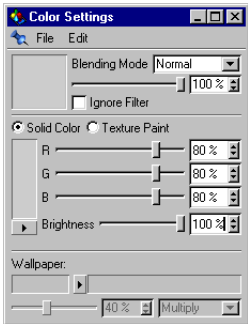


This is how we set up the colors for the various channels.



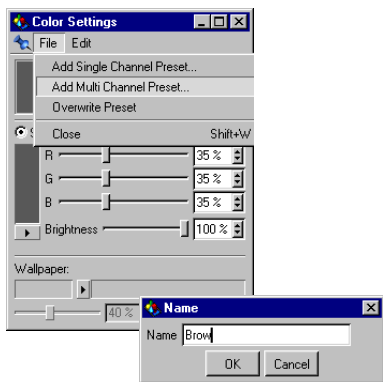
Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 30%, G: 20%, B: 20%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

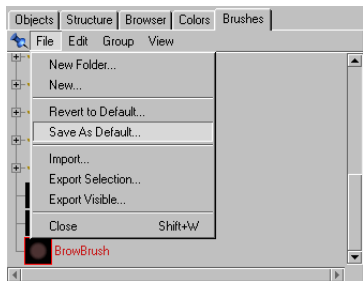


Diffusion Channel

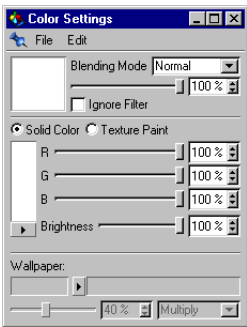
Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 80%, G: 80%, B: 80%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



Step 7: Saving our multi-channel color

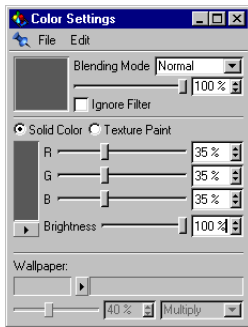


Step 8: Saving the settings for the 'BrowBrush'



Bump Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 100%, G: 100%, B: 100%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A



Specular Color Channel

Blending Mode: Normal
Ignore Filter: Disabled
Type: Solid Color
R: 35%, G: 35%, B: 35%
Brightness: 100%
Wallpaper: None
Percentage: N/A
Mode: N/A

Now save all these colors as a new multi-channel preset. In the Color Settings dialog select **Add Multi-Channel Preset** from the file menu.

Name this preset 'Brow' in the dialog that appears and click **OK**. Now you can just click on this preset in the Color manager to reactivate the same multi-channel color, whenever you need it.

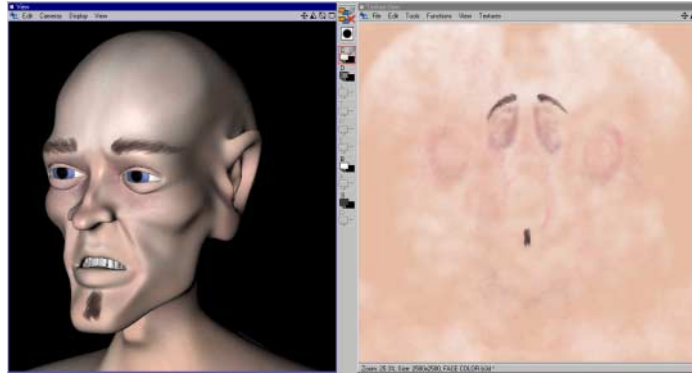
Step 8: Lastly, let's be sure that this color is locked into the BrowBrush.

First, in the Color manager, make sure the Brow color is selected.

Then go back to the Brush Settings dialog (with the BrowBrush selected in the Brush manager) and ensure that **Store Color** is active. Now save the brush settings as the default for this brush.

Confirm the save dialog. This will save your brush for use later, even after closing the project.

Step 9: Now try out the eyebrow brushes on both sides, switching between the two brushes for the right and the left eyebrows; perhaps even a little goatee beard!



We hope you have enjoyed this BodyPaint 3D tutorial and, above all, have found it a useful starting point for future work.

Any 3D painting task is complicated and it will take much practice, together with trial and error to achieve the results you are looking for. Now, with BodyPaint 3D at your disposal, you have all the tools to achieve remarkable results.

Have fun!