Contents

Chord Identification

MusicWorks will specify a key and a set of notes. The notes are specified in 3 ways.
1) on the staff 2) in the note name window 3) on the piano keyboard
Your task is to identify the chord spelled by these notes. Use the chord select popup menu to enter your answer. First click on the chord type. This will cause a list of possible chord names to appear for this chord type. Click on the chord name.

Your answer is displayed in the chord ID answer area.

If you want to change your answer, you can start again by clicking on the show choices button, or you can click on clear.

(see also Theory Help for help with chords)

Chord Spelling

If activity is chord spelling, then you are asked to spell a given chord in a given key. There are two ways to do this:

1. using the piano keyboard, you click on the appropriate enharmonic choice within a given black or white key.

2. using the note-drag buttons**,** you can place notes directly on the staff. Click on the appropriate note type, and holding the mouse button down, drag the note over the note-drop measure. Use the note placement indicator window to guide you. When you have the note where you want it, release the mouse button to drop it. on the staff.

When you select a note using either of the above methods, the note is displayed in three ways:

1. your selection turns red
2. your selection appears symbolically on the staff in the note display area
3. your selection is indicated in writing in the note-name window

If you wish to change a selection click on the corresponding red piano key. It will revert to its normal, unselected state. If you wish to clear all selections, click on the clear button. You can do this any time before clicking OK.

When you are satisfied with your answer, submit it to MusicWorks by pressing the Submit Answer button.

see theory help for help with chords of all types

Introduction

MusicWorks is a comprehensive program that puts music theory into the context of a key signature reference frame. *MusicWorks* will help you learn the language of chord progressions used in classical and jazz composition and performance.

The first few sections of *MusicWorks* let you work on the basics - key signatures, common intervals, and diatonic chords constructed using the major, natural minor and harmonic minor scales. This can be combined with ear training exercises in intervals, triads and seventh chords. The remaining sections let you work on chromatic chords. Chromatic chords are divided into three sections: those arising from modal mixture, chromatic applied chords, and special function chromatic chords such as the augmented-sixth chords and the Flat-II. The chordal inversion option can be applied to all chords (except the augmented sixths).

Ultimately you will learn to construct and identify the most common chords that serve as the basis of chordal progression. *MusicWorks* always refers to these chords in the context of a key signature so that the function of the chord is emphasized, not just it's name. For example, a D major triad has many musical functions, depending on the key in which key it is utilized. The D chord in the key of G major serves as the Dominant, and acts to strengthen or "tonicize" the G chord. In the key of C minor, the D chord is a completely different beast..... it normally fulfills the roll of the pre-dominant harmony. Key context provides the necessary framework for awareness of this harmonic functionality.

If you are a beginning student of harmony we suggest that you work through the sections of *MusicWorks* in order. If you are a more experienced student, *MusicWorks* offers enough flexibility for you to design your own challenging curriculum.

All the exercises and drills in *MusicWorks* give you the option of choosing which keys to work in and which harmonies you want to work with in those keys. For information on how to customize your activities, see the "Program Help" file.

Though *MusicWorks* is designed primarily as instructional software, we encourage you to approach it as a game; *MusicWorks* will automatically keep track of your performance and you can generate performance reports. In the "Test" activity the program will keep track of the time you spend on each question and your success rate and give you a resulting score. There is really no highest score, you can keep getting better and getting higher scores. So have some fun!

Assumed Background Knowledge: *MusicWorks* is concerned with triad-based harmonies generated using the major and minor scales of the major-minor tonal system. The program assumes a BASIC knowledge of music notation, major and minor scale forms, key signatures, relative major and minor relations and intervals.

N.B. *MusicWorks* is not designed to replace a music teacher or a comprehensive theory text. To get the most out of *MusicWorks* it should be used in conjunction with a course of instruction, either private or at the high-school or university level.

MusicWorks THEORY HELP

Program Help

This section provides help on how to use MusicWorks. The Main Display Screen section provides a guided tour of the program, or you can choose from the topics below, which are organized by menu name.

Activities

The activity menu lets you tell MusicWorks what to do. There are 7 activities to choose from:

- Key Signature Identification
- Interval Spelling
- Interval Identification
- Chord Spelling
- Chord Identification
- Interval Ear Training
- Chord Ear Training

See also Changing Activities

Methods

There are two methods for working with MusicWorks. The **practice method** lets you work at one question at a time. You can keep trying until you get it right, or you can ask MusicWorks to tell you the right answer. In practice method, the emphasis is on accuracy and step-by step learning. The status bar will track your results.

When you wish to test both your accuracy and your speed (as happens often in life), use the **test method**. The test length is determined by the test length setting from the options menu. Once the test has begun, you cannot make changes to the options settings. If you make an error, MusicWorks continues on to the next question. Your score is displayed on the status bar along with the other performance parameters. When the test is complete, you can choose to review errors, and try to fix them.

Whenever you complete a practice session or a test session (by quitting or resetting MusicWorks), your results are written to a data file. MusicWorks uses this information to generate custom performance reports.

clef display : the clef is shown here - it can be bass or treble, depending on the clef selection options

Changing Activities: With the practice method, you can change activity at any time. MusicWorks will carry out the change when the current question is completed.
In the test method, you cannot change activity during a test.

Performance Report

MusicWorks keeps track of your progress. Choose **Utility | Performance Report** to create a custom report. The report will created for the current user id.

Select the report period: Use the relative setting to print a report for the last *n* days. You choose the value of n (default is 7, minimum is 1, maximum is 31). Use the absolute setting to set the start and end dates Use a three-letter abbreviation for the month. MusicWorks interprets your entries to see if they can be converted to dates which makes sense. If not, an error message displays. Check the report on the finished report to verify.

Select the report type: You can have a report for your practice sessions or your test sessions. These are kept separate because the practice method emphasizes accuracy, while the test method is concerned with grace under pressure. Your teacher may want to see your progress on both fronts.
You can also have a composite report which lumps both methods together for aggregate results. The reports produces a score for each category and an overall score for all categories.

Select the data file: the default is "felix.dat", which MusicWorks automatically maintains. If this file exceeds 1000 records, MusicWorks will warn you that the report creation time may be compromised.
If you see this message, you can archive (i e. rename) the file, and MusicWorks will automatically start a new "felix.dat" in the MusicWorks directory.
If you need to generate a report from the archived file, then click on choose file to change the report source file.

Reset: you can reset the program at any time after the Start button has been clicked, even during an error review. Once reset, MusicWorks gives you free access to all program functions. For example, if you want to generate a performance report, you can first do a Reset to end a practice or test session.

Quit: choose quit to exit MusicWorks at any time. Your performance data file will be updated before the program signs off.

Options

The options settings are the key to MusicWorks' versatility as a learning tool. There are 8 entries in the options menu, each of which triggers a particular dialog:

Key Settings
Chord Settings
Inversions
Interval Selection
Ear Training Chord Selection
Clef Selection
Key Signature Display
Test Length

Changes to options made during a practice session will in general take effect when the current question is complete.

As you improve, you can choose more demanding configurations to continuously challenge your abilities.

Key Settings: choose this command from the **options** menu. MusicWorks lets you choose specifically which keys you want to work in. You can also specify major keys only, or minor keys only, or both. The default setting is up to and including 3 sharps and flats, in both major and minor modes.

Chord Settings: Choose this command from the Options menu. MusicWorks lets you choose specifically what chords you want to be questioned on. The default setting is *All Triads*, without mixture. The lists often contain two or more chords separated by a slash (/). The chord to the left of the slash is the chord which occurs in major keys. The chord(s) to the right occur in minor keys.

If you turn *mixture on* for triads and/or seventh chords, you will see a number of chords in brackets added to the list. The chords in brackets are the mixture chords which MusicWorks will ask you about. Mixture chords and diatonic chords will be mixed randomly, so be on your toes! The format is again (major/minor).

See the Theory Help section on Mixture Chords for more information.

Test length: choose this command from the options menu. MusicWorks lets you choose the length of the test that will be given. (5, 10, 15 or 20 questions). The default is 10 questions.

Environment

MusicWorks provides extra flexibility through the environment options.

Turn Tones off or on
Turn Beeps off or on
Hide or show the status bar.
MusicWorks offers the option of auto-shutdown after an idle period.

Status Bar: The status bar is normally shown at the right of the main display screen. It indicates the current work activity and method, and summarizes the current performance parameters, including: total elapsed time for the session, attempts, successes, success rate, average time per question, and score.

Key Signature: Applies to chord identification activity only.

Choose this command from the Options menu. MusicWorks lets you chose how the key will be presented in the identification activity. The default setting is *written.* This means the key is displayed in writing in the question display area (top left).

If you choose *symbolic,* the question display area will indicate the key mode (major or minor) and the specific key will be identified by its signature in the note-drop measure of the staff.

If you choose *both,* the key will be displayed both symbolically, and in writing.

Starting a Session

When MusicWorks is first loaded, you will be asked to enter your user identification. Choose a code- most likely your initials- and use this code for all logins. Your performance data will be stored in relation to this identifier.

Next you will see the startup screen. There is a large start button in the top left corner. The default activity is chord *spelling,* and the default method is *practice* method. In addition, the chord setting is initially set to all *triads* (with mixture off), and the key setting is up to and including *3 sharps and flats*, in *both major and minor keys*. Default test length is 10 questions. Beeps and tones are set to *on*, and the default idle time before shutdown is *never.*

Before clicking the start button, you can change any of these settings. Clicking on the Start button initializes the performance tracking parameters, and these are displayed on the status bar. If you have started a test, you cannot make changes to the options settings until the test is complete, or the program has been reset.

You can change options and activities anytime during a practice session. In general, these changes will take effect ONCE THE CURRENT QUESTION IS COMPLETE.

Question display: The question number and the question are displayed in the top left corner of the screen.

Inversions

MusicWorks offers 3 inversion options for working with chord spelling and identification:

1. inversions off (all chords in root position only)
2. inversions on, basic notation
   when this option is selected, inversions are referred to as root position, first inversion, second inversion, and third inversion (for sevenths)
3. inversions on, figured bass notation
   when this option is selected, inversions are referred to using the full figured bass notation.

see Theory help for help with inversions

Error review: When you have finished a test, you have the option of reviewing any errors. MusicWorks will present for a second time any questions that you answered incorrectly. Your original answer will be shown also, so you can identify the error you made and correct it. If you answer is still wrong, MusicWorks will tell you the right answer. There is no error review for the key signature id activity.

MusicWorks Conventions

These are the conventions employed by MusicWorks :

1) Harmonies are designated using a combination of Roman numerals, text and figured bass symbols:

a) The number of the Roman numeral signifies the root of the chord (e.g. "ii" means that the root of the chord is scale degree 2).

b) Upper case roman numerals (e.g. "III") signify major chords, lower case roman numerals (e.g. "vi") signify minor chords.

c) The abbreviation "-dim" placed following a lower case roman numeral signifies a diminished chord.

d) The number "7" placed following a roman numeral signifies a seventh chord.

e) The abbreviation "-maj7" placed following an upper case Roman numeral signifies a major seventh chord.

f) The combined symbol "-half-dim7" signifies a half-diminished seventh chord.

g) The word "Flat-" placed in front of a roman numeral signifies a chord with a lowered root.

h) The text "Augmented 6" following the words "Italian", "French" or "German" signifies the various types of augmented-sixth chords.

The above symbols are used in various combinations to represent all the harmonies that *MusicWorks* will ask you about. Here are some examples:

IV	a major triad with scale degree 4 as the root.
vi	a minor triad with scale degree 6 as the root.
ii-dim	a diminished triad with scale degree 2 as the root.
V7	a major triad with an added minor seventh with scale degree 5 as the root.
iv7	a minor triad with an added minor seventh with scale degree 4 as the root.
III-maj7	a major triad with an added major seventh with scale degree 4 as the root.
vii-dim7	a diminished triad with an added diminished seventh with scale degree seven as the root.
vii-half-dim7	a diminished triad with an added minor seventh with scale degree seven as the root.
Flat-II	a major triad with lowered scale degree 2 as the root.

2) All chords are spelled in closed form. Inversions are applicable to all chords

EXCEPT the augmented sixth chords :

a) The Augmented-sixth harmonies are spelled in the following order: lowered scale degree six, followed by the remaining chord tones in closed form (in the order they occur above lowered six).

3) Nomenclature and conventions for applied chords.

Applied chords are signified as follows: the applied harmony is written first and is separated by the word "of" from the harmony that it is applied to. The individual chord symbols used are as described in number 1) above. Here are a couple of examples:

V7 of ii	a dominant seventh chord applied to a ii harmony.
vii-dim7 of III	a diminished seventh chord applied to a III harmony.

Another common way of signifying applied chords is to separate the harmonies involved with a slash (/). Using this method the above examples would look like this:

V7/ii
vii-dim7/III

Both of these methods represent the same relationship. *MusicWorks* uses the "of" method, but you should be aware of the "/" method as it is frequently used in analysis.

N.B. Applied chords are never applied to diminished harmonies, for example you will never be asked to identify or spell vii-dim7 of ii-dim or V7 of vii-dim.

The following section gets you started with basic chord construction, diatonic scale forms and how to use them to construct harmonies triads and seventh chords.

Next topic:

Key Signatures

Tones

MusicWorks allows you to hear the notes as they are selected, as long as your system is configured to drive the midi media player. And when the correct answer is achieved, it will be replayed for reinforcement. Each note takes about 0.7 seconds to play, so if your trying for a record high score, or if you are in a really quiet place, you could turn off the tones to speed things up, or quiet things down a bit.

In the ear training activity, MusicWorks won't allow you turn off the tones of course. During ear training, you can repeat the question as often as you like using the Repeat Tones button.

Major Key	Relative minor	Key Signature
C	a	
G	e	F#
D	b	F# C#
A	f#	F# C# G#
E	c#	F# C# G# D#
B	g#	F# C# G# D# A#
F#	d#	F# C# G# D# A# E#
C#	a#	F# C# G# D# A# E# B#
F	d	b-flat
B-flat	g	b-flat e-flat
E-flat	c	b-flat e-flat a-flat
A-flat	f	b-flat e-flat a-flat d-flat
D-flat	b-flat	b-flat e-flat a-flat d-flat g-flat
G-flat	e-flat	b-flat e-flat a-flat d-flat g-flat c-flat
C-flat	a-flat	b-flat e-flat a-flat d-flat g-flat c-flat f-flat

Diatonic Chords: Scale Forms and Harmony

A diatonic chord is any chord constructed using only the notes of a diatonic scale. If a chord contains any notes not belonging to the diatonic scale it is considered a chromatic chord.

MusicWorks considers all the chords constructed using the *major* and *natural minor* scales as diatonic chords.

Two chords that contain scale degree raised 7 of the *harmonic minor* scale, the dominant chord and the leading-tone chord (V and vii-dim and their seventh chord forms) are so common that *MusicWorks* also considers them as diatonic (although scale degree raised 7 is, strictly speaking, a product of mixture).

In the context of a scale, triads and seventh chords are constructed as follows:

1) Choose a scale degree to act as the root.
2) To construct a triad write in the notes of the scale that lie a third and a fifth above the root.
3) To construct a seventh chord add to the triad the note that lies a seventh above the root.

The quality of a triad or seventh chord is determined by the structure of the scale used to build it. For example, if in a triad the note of the scale that lies a third above the root is a major third above, and the note that lies a fifth above the root is a perfect fifth above, then the triad is major.

These scale based harmonies are named using Roman numerals, text and figured bass symbols (see *MusicWorks* Conventions) according to the scale degree that is the root, the quality of the triad and the quality of the seventh (if there is one).

The next topics in this section:

The Triad

The triad is the basic harmonic unit of tonal music. It consists of three notes built up in thirds. The lowest note is called the root. The note a diatonic third above the root is called the third and the note a diatonic fifth above the root is called the fifth. There are four different qualities (or types) of triads:

THIRD ABOVE ROOT	+ FIFTH ABOVE ROOT	= TRIAD QUALITY
Major	Perfect	Major
Minor	Perfect	Minor
Major	Augmented	Augmented
Minor	Diminished	Diminished

MusicWorks will ask you to identify and spell all of these triad qualities, and identify them by ear in the Chord Ear Training activity.

Next topics in this section:

The Seventh Chord

The Seventh Chord

After the triad, the most common chord form found in tonal music is the seventh chord. A seventh chord is constructed by adding to a triad a note that lies a seventh above the root of that triad. The following is a chart of the seventh chord qualities that *MusicWorks* will ask you about:

TRIAD	+	ADDED 7th	=	SEVENTH CHORD QUALITY
Major		Major		Major seventh chord
Major		Minor		"Dominant seventh" chord*
Minor		Minor		Minor seventh chord
Diminished		Minor		Half-diminished seventh chord
Diminished		Diminished		Fully-diminished seventh chord (or just Diminished seventh chord)

* The "Dominant seventh" chord is so named because this quality of seventh chord normally occurs with scale degree 5 (the dominant) as the root. If the root of this chord is other than scale degree 5, it is properly termed "major-minor seventh".

You may have noticed that the chart leaves out several possible triad/seventh combinations (e.g. a major triad with a diminished seventh, etc.). These chords, although theoretically possible, are so rare in practice that Musicworks leaves them out. As always, consult your teacher and/or text with regards to the specific practice you should follow.

Next topic: Inversions

Applied Dominant Seventh Chords

N.B. *MusicWorks* will not ask you about applied dominant *triads*, only about applied dominant *seventh chords*. He assumes that if you can spell the applied dominant seventh chord that he is asking you about then you can spell the applied dominant triad.

By now you should have studied the role of the V or V7 chord in strengthening the identity of a key. In a diatonic context the movement from V or V7 to I (a perfect or authentic cadence) or inversions of V or V7 to I help to establish and identify the key. The purpose of an applied dominant seventh chord is to exploit this relationship to temporarily strengthen a chord other than the tonic triad (I or i) of the key that you are in. This is done by preceding the chosen chord with it's "own" dominant triad or dominant seventh chord. For example, if within the context of C major you wanted to strengthen the ii chord (D, F, A) you would precede it with the chord spelled A, C-sharp, E (V in D major/minor) or A, C-sharp, E, G (V7 in D major/minor). We would refer to this chord as "V of ii" or "V7 of ii" and it is often notated as V/ii or V7/ii.

You will note the chromatic nature of the above chords: they contain C-sharp, a note not found in diatonic C major. This raises an important issue when spelling applied chords (or any chromatic chords for that matter): *you must always enter any necessary accidentals to counteract the key signature that you are working within*. Another example to illustrate this point: if in the key of F minor you wanted to tonicize the iv chord (B-flat, D-flat, F) using it's dominant triad, you would spell the applied chord F, *A-natural*, C. *You need to use the natural to counteract the diatonic A-flat in the key signature*. If *MusicWorks* asked you the above question and you answered without *specifying A-natural* you would be wrong. Here are a few more examples (the chromatic notes are in italics):

KEY	DIATONIC CHORD	APPLIED V OR V_7
B-flat	vi (G, B-flat, D)	D, *F#*, A, or "V of vi"
C minor	iv (F, A-flat, C)	C, *E-natural*, G, B-flat, or "V7 of iv"
F	iii (A, C, E)	E, *G#*, *B-natural*, or "V of iii"
C#	V (G#, B#, D#)	D#, *F-double sharp*, A#, C#, or "V7 of V"

So, when answering questions for *MusicWorks* you must always keep *two* key signatures in mind: the one of the key that you are working in and the one that belongs to the applied harmony. As a result of this you will sometimes have to make up a key signature that "doesn't exist". Look at the last example above. The key signature of C# major, although perhaps less common than others, does occur. But how often do you

find a piece in G# major?! In order to answer the above question correctly you would have to create a theoretical key signature that includes a double sharp.

Another way to think about it would be to construct a major chord (or a major chord with an added minor seventh in the case of an applied V7) on the note a perfect fifth above the root of the chord that is to be tonicized. This way you avoid those messy "non-existent" key signatures. But remember, *MusicWorks* doesn't care how you come up with your answer so long as it is correct, so just use the method that is the fastest and most accurate for you.

Once you have mastered these chords in root position, try using the Inversions option to make things even more intersting!!

Next section:

Applied vii Diminished Seventh Chords

Applied vii Diminished Seventh Chords

N.B. *MusicWorks* will not ask you about applied vii diminished *triads*, only about applied vii diminished *seventh chords*. He assumes that if you can spell the applied vii diminished seventh chord that he is asking you about then you can spell the applied vii diminished triad.

The process of spelling applied vii diminished seventh chords is very similar to applied dominant or dominant seventh chords but there is one important difference that you need to remember: *applied vii diminished seventh chords are always vii fully-diminished seventh chords*. This is a little different than applied dominant chords where the harmony you are applying is always diatonic in the key of the harmony that you are applying it to ("V7 of VI" in F minor, spelled A-flat, C, E-flat, G-flat is a chromatic chord in F minor but occurs diatonically in the key of VI: D-flat major).

As applied diminished seventh chords are always vii fully-diminished seventh chords, they are spelled as they occur in the "applied key" only when that key is a minor key (i.e. when the chord you are tonicizing is a minor triad). If you are applying a vii diminished seventh chord to a major triad you must always lower the seventh one chromatic semitone from what it is in the key of that major triad. Lets break down the process:

QUESTION: Spell vii-dim7 of IV in C major.

1) IV in C major is an F major triad.
2) vii half-dim7 in F major is spelled E, G, B-flat, D.
3) vii (fully-)dim7 of F major would be spelled E, G, B-flat, *D-flat*.
4) vii dim7 of IV in C major is spelled E, G, B-flat, *D-flat*.

That is one way to think about it. Another way would be to think in the minor key of the scale degree you are tonicizing. For the above question it would go something like this:

1) IV in C major is an F major triad.
2) Think in terms of *F minor*.
2) vii-dim7 in F minor is spelled E-natural, G, B-flat, D-flat.
4) vii-dim7 of IV in C major is spelled E, G, B-flat, *D-flat*.

Here are a few more examples (this time the lowered sevenths are in italics):

KEY	DIATONIC CHORD	APPLIED vii-dim7
A	ii (B, D, F#)	A#, C#, E, G-natural or "vii-dim7 of ii"
D minor	V (A, C#, E)	G#, B-natural, D-natural, *F-NATURAL*

		or "vii-dim7 of V"
G minor	VI (E-flat, G, B-flat)	D, F, A-flat, *C-flat* or "vii-dim7 of VI"
A-flat	IV (D-flat, F, A-flat)	C, E-flat, G-flat, *B-double flat* or "vii-dim7 of IV"

Just as with applied dominant seventh chords you may find yourself having to think in some pretty bizarre keys. If confronted by such a situation fall back on your knowledge of intervals: vii fully-diminished seventh chords are stacks of minor thirds. Here is an example of a question and a possible solution:

QUESTION: Spell vii-dim7 of iii in C# major

1) iii in C# major is spelled E#, G#, B#.
2) The key signature of E# minor is....uh-oh.
3) The note a diatonic semitone below E# (the root of its vii-dim7 chord) is D-double-sharp, a minor third above that is F-double-sharp, a minor third above that is A-sharp and a minor third above that is C-sharp.
4) vii-dim7 of iii in C# major is spelled D-double-sharp, F-double-sharp, A-sharp, C-sharp. (Whew!)

This method of stacking minor thirds will never let you down, even on questions a lot easier than that one!

Once you have mastered these chords in root position, try using the Inversions option to make things even more interesting!!

If you feel ready to tackle the last family of chromatic chords, move on to the section:

Chromatic Chords III: Special Functions

Augmented-sixth Chords

Augmented-sixth chords are a special breed of chromatic chords: there are three different types and they don't all have the same number of chord tones! Let us show you what we mean.

The three types of augmented-sixth chords are spelled the same way in major and minor and are constructed as follows:

ITALIAN AUGMENTED-SIXTH CHORD (a 3-note chord)

Scale degree lowered 6 (diatonic in minor, lowered in major)
Scale degree 1
Scale degree raised 4

GERMAN AUGMENTED-SIXTH CHORD (a 4-note chord)

Scale degree lowered 6 (as above)
Scale degree 1
Scale degree lowered 3 (diatonic in minor, lowered in major)
Scale degree raised 4

FRENCH AUGMENTED-SIXTH CHORD (a 4-note chord)

Scale degree lowered 6 (as above)
Scale degree 1
Scale degree 2
Scale degree raised 4

MusicWorks will always ask you to spell these chords in the order they are listed above. And the augmented sixth chords do not really have a root position, so the inversion options do not apply to these chords.

Why do we spell the augmented sixth chord with the lowered 6th as the root?

Because, if we spell the chord above lowered 6 (A-flat) then the F-sharp lies an *augmented sixth* (aha!) above the lowest note. Chords containing augmented intervals above the root are not generally thought of as true triadic chords (you learned earlier that the III-augmented chord in a minor key is very rare: in fact it almost never occurs in practice). When you add all these factors together you end up with a chord that does not fit the general rules of triadic harmony. A strange breed indeed.

The easiest way to think about augmented-sixth chords is in relation to scale degree 5 (and you will learn in your harmony studies that augmented-sixth chords almost always resolve to a V chord). Two of the chord tones, lowered 6 and raised 4, are a diatonic semitone above and below scale degree 5 respectively. Those two tones, along with

scale degree 1, are contained in all three types of the augmented-sixth chord; the Italian augmented-sixth chord is made up solely of those three tones.

The tones that then differentiate the German and French augmented-sixth chords from the Italian are scale degree lowered 3 in the German augmented-sixth chord and scale degree 2 in the French augmented-sixth chord. Another way to think about these last two tones is this: scale degree lowered 3 (German) is a perfect fifth above the lowest note of the chord (lowered 6), and scale degree 2 (French) is an augmented fourth above the lowest note of the chord (still lowered 6!).

Just as with the applied chords we were looking at earlier you must always remember to keep the key signature of the key you are working with in mind and use any necessary accidentals to counteract it.

Here are a couple of questions and one way to think through the answers (the chromatic notes are in italics):

QUESTION 1: Spell the German augmented-sixth chord in F major.

1) The first tone is scale degree lowered 6 (a semitone above scale degree 5): *D-flat*.
2) The next tone is the tonic of the key we are in: F
3) The next tone is scale degree lowered 3 (or the note a perfect fifth above the lowest note): *A-flat*.
4) The last tone is raised scale degree 4 (a semitone below scale degree 5): *B-natural*.

ANSWER: The German augmented-sixth chord in F major is spelled *D-flat*, F, *A-flat*, *B-natural*.

QUESTION 2: Spell the French augmented-sixth chord in E major.

1) The first tone is scale degree lowered 6 (a semitone above scale degree 5): *C-natural*.
2) The next tone is the tonic of the key we are in: E
3) The next tone is scale degree 2 (or the note an augmented fourth above the lowest note): F-sharp.
4) The last tone is raised scale degree 4 (a semitone below scale degree 5): *A-sharp*.

ANSWER: The French augmented-sixth chord in E major is spelled *C-natural*, E, F-sharp, *A-sharp*.

Just as with all the other chords you are learning to spell, feel free to come up with your own way of thinking about augmented-sixth chords. *MusicWorks* only wants you to use the method that is most *reliable* and *fastest* for you.

Next section:

Flat-II (Neapolitan) Chords

Flat-II (Neapolitan) Chords

The last of the chromatic chords in *MusicWorks* is the Flat-II or "Neapolitan" chord (this is becoming an exercise in geography!). As you might have already guessed, the Flat-II chord is a major triad with scale degree lowered 2 as its root. This chord occurs most frequently in first inversion and as such is usually referred to as the Flat-II6 or "Neapolitan 6th". (The 6 is the abbreviated figured bass symbol for first inversion).

Root: Scale degree lowered 2
Third: Scale degree 4
Fifth: Scale degree lowered 6 (diatonic in minor, lowered in major)

Here are some examples of a Flat-II chords (the chromatic notes are in italics):

Flat-II in E-flat major is spelled: *F-flat*, A-flat, *C-flat*
Flat-II in A minor is spelled: *B-flat*, D, F
Flat-II in F-sharp major is spelled: *G-natural*, B, *D-natural*
Flat-II in G-sharp minor is spelled: *A-natural*, C-sharp, E

That is really all there is to spelling Flat-II chords. Just remember that they mostly occur in first inversion, but your text and/or your teacher will have much more to say about that.

Congratulations: You have made it to the end of theory help!!!

Product Support and Information

Technical Support:

Paul Davis

e-mail: davis.therien@sympatico.ca

Note placement indicator window: In spell mode only, if you drag a note into the note drop measure, the small window to the left of the staff will tell you exactly where the note is, so that you can make accurate drops.

Chord button: visible only in identify mode. Use it to bring up the chord select popup menu at any time.

Note drop area: The first of the two measures on the staff. It has two purposes, depending on the activity, and key signature selections:

In identify mode, if you have chosen **options | key signatures | symbolic** or **options | key signatures | both**, then the key signature will appear in the note-drop measure.

In spell mode, you can enter your answer by using the note drag buttons to drag your selections into the drop area.

Note display area: the second of two measures on the staff. Displays user-selected notes in spell activity, and given notes in identification activity.

Elapsed time: MusicWorks keeps track of how long you have been working on a given test or practice session. This value is displayed in the status bar. It is reset when a test is completed, or a reset is invoked.

answer display area : when doing identification activities, your answer will be displayed here.

Default settings

Here is a list of all default settings

Activity: Chord Spelling

Method:Practice

Options Settings:

Key Settings: up to and including 3 sharps and flats, in both major and minor
Chord Settings: All triads, no mixture
Inversions : off
Interval Selection: basic intervals, built from chosen keys
Ear Training Chord Selection: Triads only
Clef Selection: both bass and treble clef, randomly chosen
Key signature display (for chord identify only) : written only
Test Length: 10 questions

Environment Settings:

Tones: on
Beeps : on
Status bar: on
Auto shutdown: never

Report defaults

data source file: felix.dat
report period: last 7 days
report type: composite (test and practice combined)

Score: your score in test method is determined by your accuracy and speed. For example, if you get 100% of the total test questions correct, with an average time of 10 seconds per question, you will have a score of 1000.

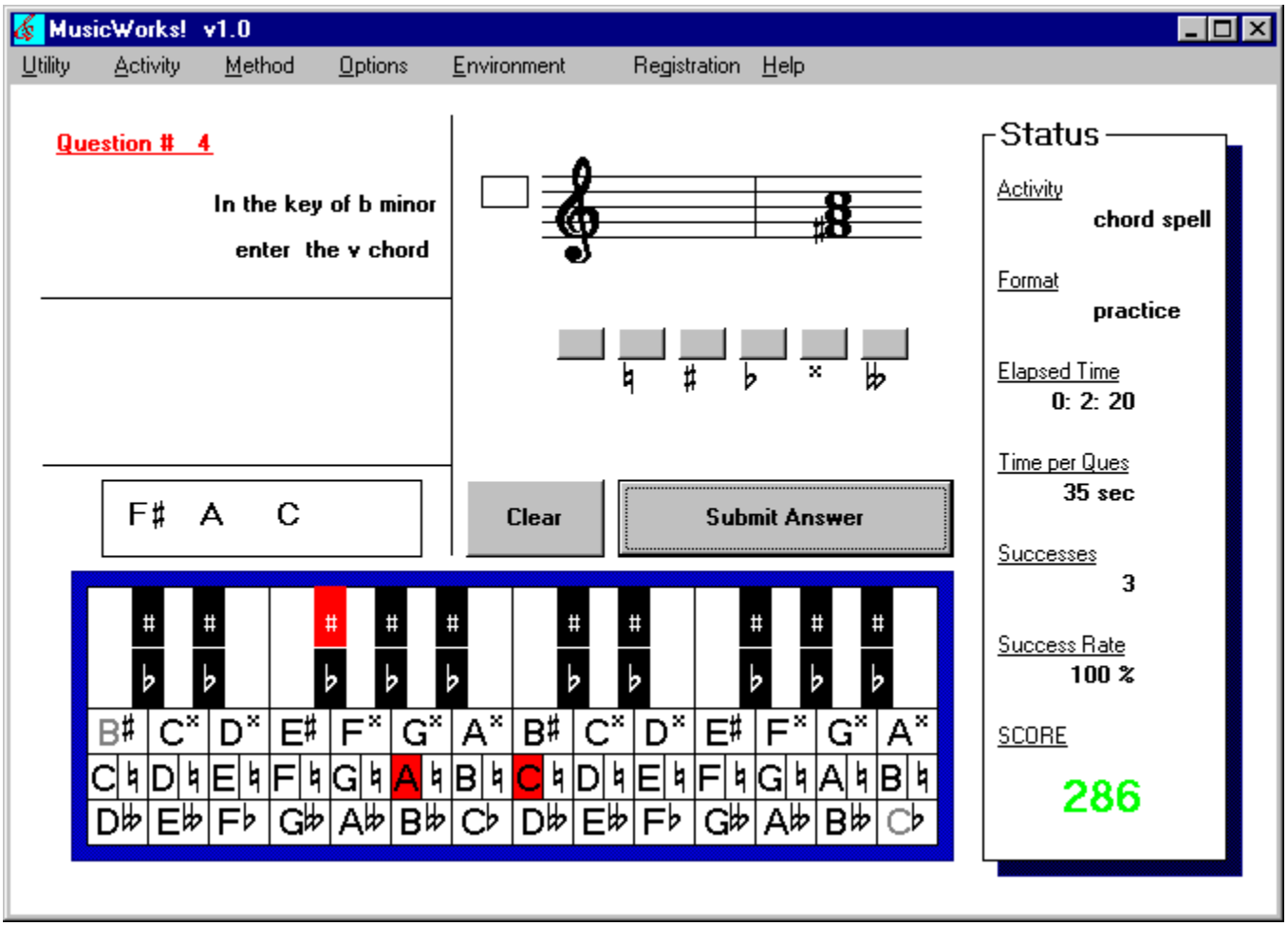
Piano keyboard : this tool lets you enter your spelling answers, and make corrections quickly and easily. It also helps you see enharmonic equivalence, and you can visualize the physical spacing of the notes within various chords. Selected notes turn red. Click on a red note to return it to its unselected state (in spell mode). In identify mode, the given notes are highlighted in red on the keyboard, but cannot be altered.

Note that the "natural" designation is disabled for interval exercises, as these exercises are key-independent.

Note-name window: In spell mode, your note selections will be indicated here (just above the clear button) in ascending order.
In identify mode, the given notes will be displayed here. You must determine what chord they spell.

Main Display Screen

Click anywhere the hand appears below to get a functional description. The example below shows chord spelling question #4 in practice mode. The user has entered an answer, but not yet submitted it for validation. The user has correctly answered the first 3 questions



Interval Spelling

MusicWorks will ask you to spell a variety of intervals depending on the interval options you have selected, and the keys settings you have made. Also use in conjunction with the clef select option to practice hearing intervals in different octaves

Note drag buttons: use these buttons to select a note type which you drag into the note drop area, thus entering your answer in spell activity.

Clear Button: when spelling, the clear button clears all selected.notes
In identify mode, your answer is cleared and chord select popup menu displayed.

Submit Answer Button: when you are satisfied with your answer, click on this button to submit it to MusicWorks for checking.

Key Signature Identification

MusicWorks will ask you to identify any and all key signatures that you have chosen using the key settings dialog. In this way you can concentrate on certain keys, and certain modes, or all keys in major or minor - it's up to you! Also use in conjunction with the clef select option for added variety.

Bibliography

Edward Aldwell and Carl Schachter, Harmony and Voice Leading
(Harcourt Brace Jovanovich)

Eric Taylor, The AB Guide to Music Theory, (Associated Board)

Barbara Wharram, Elementary Rudiments of Music (Frederick Harris Music Co. Ltd.)

I would also like to thank Dr. Murray Dineen of the University of Ottawa Music Department, to whom I owe the inspiration and knowledge that has made this project possible.

Chromatic Chords II: Applied Chords

A chromatic chord is any chord that includes a note or notes that fall outside the diatonic field of the key established by the key signature. The second family of chromatic chords that we are going to look at are *applied chords*.

In the section on mixture, you incorporated tones in major borrowed from the parallel minor and vice versa in order to construct new (chromatic) chords. In the next two sections, "Applied dominant seventh chords" and "Applied diminished seventh chords", you will learn how to *borrow entire chords from one key into another*.

The purpose of applied chords is to strengthen, or *tonicize* a specific harmony within a key. Once again *MusicWorks* treads into controversial territory, so beware! The difference between tonicization and modulation is a fine line: both are the temporary strengthening of a specific scale degree and the harmony associated with that scale degree within the larger context of a key. You might think of tonicization as the strengthening of only one degree and the chord built on that degree whereas modulation is the strengthening of an entire key area. You might also think of tonicization as an "isolated" event in which the actual key does not change whereas modulation is generally defined by a change of key. As with mixture, we suggest that you consult your text and/or your teacher about the specific definitions of tonicization and modulation that you are to follow.

Next sections:

Applied Dominant Seventh Chords
Applied vii Diminished Seventh Chords

Chromatic Chords III: Special Functions

A chromatic chord is any chord that includes a note or notes that fall outside the diatonic field of the key established by the key signature. In this part we will look at two types of chromatic chords that have special functions; Augmented-sixth chords and Flat-II (Neapolitan) chords. *MusicWorks* will help you in learning to spell and identify these chords, but consult your teacher and/or text about their special functions (how they are used in relation to other chords).

Next sections:

Interval Selection

The interval selection option dialog box presents 2 option groups:

1. common, or advanced intervals

a)common intervals include all perfect, major and minor intervals, as well as the tri-tone (in the diminished fifth form).
b)Advanced intervals include the common intervals as well as diminished and augmented intervals.

2. interval selection from selected keys, or from all possible notes

a)if you wish intervals to be built from the keys selected in the key settings dialog, choose intervals based on chosen keys.
b) build intervals on all possible notes: this option allows intervals to be built on all notes, including those for which no key exists (B# for example).

Note that choosing 1.b) will force 2.a), and
choosing 2.b) will force 1.a)

This is to ensure that no unmanageable intervals are arrived at (such as an augmented 5th above B#, for example, which would be F-tripple-sharp, which is pretty rare in practice).

Mixture Seventh Chords in Minor

Of the possible mixture seventh chords in minor, *MusicWorks* only works with four. Remember that V7 and vii-dim7 are so common that *MusicWorks* considers them as diatonic chords, but we include them here because strictly speaking they are mixture chords:

DIATONIC FORM	MIXTURE CHORD	ALTERED DEGREE
ii-half-dim7	ii7	raised 6
iv7	IV7	raised 6
v7	V7	raised 7
VII7	vii-dim7	raised 7

If you feel ready to learn about a new family of chromatic chords, move on to the next section:

Chromatic Chords II: Applied Chords

Diatonic Triads in Major

The following is a chart of the triads as they occur in a major key:

ROOT	QUALITY	SYMBOL
Scale degree 1	Major	I
Scale degree 2	Minor	ii
Scale degree 3	Minor	iii
Scale degree 4	Major	IV
Scale degree 5	Major	V
Scale degree 6	Minor	vi
Scale degree 7	Diminished	vii-dim

The roots of the chords will change from key to key (the root of a ii chord in C major will be different from the root of a ii chord in F major) but the quality will always be the same: a triad based on scale degree 4 in a major key will always be a major triad (until we get to mixture, but that's a whole other story...).

Next topics in this section:

Diatonic Triads in Minor
Diatonic Seventh Chords in Major
Diatonic Seventh Chords in Minor

Diatonic Seventh Chords in Major

Once you have mastered diatonic triads, diatonic seventh chords should not pose much of a problem. As stated in the first section, Triads and Seventh Chords, to construct a seventh chord you simply add a seventh above the root of a triad. The seventh, just like the other chord tones, is a note from the scale you are using. Here are the diatonic seventh chords as they occur in a major key:

ROOT	QUALITY	SYMBOL
Scale degree 2	Minor seventh chord	ii7
Scale degree 3	Minor seventh chord	iii7
Scale degree 4	Major seventh chord	IV-maj7
Scale degree 5	"Dominant" seventh chord	V7
Scale degree 6	Minor seventh chord	vi7
Scale degree 7	Half-diminished seventh chord	vii-half-dim7

You will likely have noticed that there is no seventh chord with scale degree 1 as its root. Because the identity of key is paramount in tonal music, tonic chords are generally left as triads. But as always, you should consult your teacher and/or text about the specific practice you should follow with regards to this chord.

Next topic in this section:

Diatonic Seventh Chords in Minor

Chord Ear Training

This activity helps you learn to identify the quality of triads and seventh chords by ear.

MusicWorks will present you with a variety of intervals depending on the Chord Ear Training Selection options you have selected, and the keys you have chosen using the key settings dialog.

When ear training begins, the Chord Ear Training Selection dialog is presented. You can choose from triads, seventh chords, or both. The main screen is hidden (to encourage you to use your ear) and a special ear training control window is presented.

Use the "Repeat Tones" button to listen to the question as often as you like (remember, the clock is ticking on your score).
If you get stuck, you can show the display using the "Show Display" button.

During a test, you can not show the display - this makes sure your test score reflects your ear training progress. However, you can show the display during test error review.

Use the "Reset" button to end your ear training session and return to the main display.

Consult theory help for help with triads and seventh chords

Chromatic Chords I : Mixture

A chromatic chord is any chord that includes a note or notes that fall outside the diatonic field of the key established by the key signature. The first family of chromatic chords that we will look at are triads and seventh *chords resulting from mixture*.

N.B. Different teachers have different ideas about what chords are mixture chords and how to notate them. As a result, mixture can be a contentions subject. *MusicWorks* tries to avoid controversy as often as possible but in the case of mixture this may be impossible. So when dealing with mixture be sure to consult your text or your teacher regarding the different types of mixture and the practices you should follow with regards to mixture.

The term *mixture* refers to the use of pitches in a major key which are borrowed from the parallel minor or vice versa. Strictly speaking you are already working with mixture when you build triads and seventh chords in minor that include raised scale degree 7 (V and vii-dim and V7 and vii-dim7): the harmonic minor scale borrows raised scale degree seven (the leading tone) from the major scale and thus is a product of mixture. As stated earlier in Diatonic Chords, those two chords and their seventh chords are so common that *MusicWorks* considers them to be diatonic. *However, in theory all the chords containing scale degree raised 7 of the harmonic minor and scale degrees raised 6 and 7 of the melodic minor scale are actually products of mixture.*

Next topics:

Mixture Triads in Major
Mixture Triads in Minor
Mixture Seventh Chords in Major
Mixture Seventh Chords in Minor

Utilities

The utilities menu includes 3 entries:

Performance report
Reset
Quit

Intervals

All intervals have 2 basic attributes : numerical size and quality.

Numerical Size:
The numerical size is determined by the number of letter names spanned by the two tones which make up the interval. For example, the interval C-A spans 6 letter names and is therefore a sixth. Similarly, B-double-flat to G also forms the interval of a sixth.

In the space of one octave, the following interval sizes are possible:

unison, second, third, fourth, fifth, sixth, seventh, and octave.

Interval Quality:
To completely identify an interval, it is also necessary to determine its quality. There are five main interval qualities possible:

major
minor
perfect
augmented
diminished

Unisons, fourths, fifths and octaves can be perfect, diminished, or augmented.

if the upper tone of an interval belongs to the major scale of the lower tone, then the interval is perfect
if the upper tone is a chromatic semitone larger than the perfect tone, it is augmented
if the upper tone is a chromatic semitone smaller than the perfect tone, it is diminished

seconds, thirds, sixths, sevenths can be major, minor, diminished, or augmented.

If the upper tone belongs to the major scale of the lower tone, then the interval is major
if the upper tone is a chromatic semitone larger than major, the interval is augmented
if the upper tone is a chromatic semitone smaller than major, the interval is minor
if the upper tone is a chromatic semitone smaller than minor, the interval is diminished

Next topic: Triads and Seventh chords

Interval Identification

MusicWorks will ask you to identify a variety of intervals depending on the interval options you have selected, and the keys settings you have made. Also use in conjunction with the clef select option to practice hearing intervals in different octaves.

Ear Training Chord Selection

This option can be chosen from the options menu. In addition, the Ear Training Chord Selection dialog box will be presented at the beginning of a chord ear training session.

Choose Triads, Seventh Chords or both.

see theory help for help with triads and seventh chords

Beep on/off: When you enter your answer, MusicWorks beeps. You can turn of this sounds using the beep off command in the environment menu. To turn beep on again, select beep on. MusicWorks beeps twice to confirm your choice.

NOTE: if you can't get the sound to stop, you may need to disable the default sound in your Windows 95 control panel.

Chord ID answer: In Identify method, your answer will be displayed in this area, just above the note name window. During an error review, the original (wrong) answer will be displayed here so you can try to see where you went astray.

Diatonic Triads in Minor

The issue of diatonic triads in minor is a little more complicated than in major. Because there are three forms of a minor scale, the natural, harmonic and melodic forms, there are more possible triads. As stated at the beginning of this section, Diatonic Chords, *MusicWorks* considers all the triads based on the *natural minor* scale as diatonic. Strictly speaking the raised scale degree 7 of the harmonic minor scale is a chromatic alteration, but two of the chords that contain it , V and vii-dim (and the seventh chords based on those triads), are so common as to be considered diatonic and *MusicWorks* considers them so. The third chord containing raised scale degree 7, III-augmented, although theoretically possible is so rare in practice that *MusicWorks* leaves it for a later section (the section on mixture). That being said, you should consult your teacher and/or text about the specific practice you should follow with regards to III-augmented triads.

MusicWorks considers all the chords that include raised scale degree 6 of the *melodic minor* scale as chromatic chords and discusses them in Chromatic Chords I: Mixture.

So, here are the (diatonic) triads in *natural minor*:

ROOT	QUALITY	SYMBOL
Scale degree 1	Minor	i
Scale degree 2	Diminished	ii-dim
Scale degree 3	Major	III
Scale degree 4	Minor	iv
Scale degree 5	Minor	v*
Scale degree 6	Major	VI
Scale degree 7	Major	VII

And add to those the two common triads containing raised scale degree seven of the harmonic minor:

ROOT	QUALITY	SYMBOL
Scale degree 5	Major	V
Scale degree 7	Diminished	vii-dim

*This chord is quite rare. The major V chord that results from the raised scale degree 7 of the harmonic minor scale is much more common than the diatonic minor v found in the natural minor.

Next topics in this section:

Diatonic Seventh Chords in Major

Diatonic Seventh Chords in Minor

Chord select pop-up menu: this pop-up menu is used to enter answers in identify activity. It can be brought up using the Chord Button. Once visible it allows you to first chose a chord type, then a specific chord name.

Triads and Seventh Chords

All of the chords that *MusicWorks* deals with are (with the exception of the Augmented-sixth chords) triads or seventh chords. The first section of this Help File defines the different types of triads and seventh chords and tells you how to construct them.

The topics in this section are:

Clef Selection

This option allows you to choose treble clef, bass clef, or a random selection of the two. Use this option to improve your reading skills and your ear in different registers.

Diatonic Seventh Chords in Minor

Just as with triads, *MusicWorks* considers all the seventh chords built using the *natural minor* scale as diatonic seventh chords (see Diatonic Triads in Minor). Here are the diatonic seventh chords as they occur in natural minor:

ROOT	QUALITY	SYMBOL
Scale degree 2	Half-diminished seventh chord	ii-half-dim7
Scale degree 3	Major seventh chord	III-maj7
Scale degree 4	Minor seventh chord	iv7
Scale degree 5	Minor seventh chord	v7 (rare)
Scale degree 6	Major seventh chord	VI-maj7
Scale degree 7	"Dominant" seventh type*	VII7

* This chord is identical in structure to a "Dominant" seventh chord but with scale degree 7 instead of 5 as its root. It rarely occurs as a "VII7" but instead as a chromatic applied dominant. As a result, this chord is addressed as a chromatic chord (V7 of III) in Part 5: Applied Chords: Applied Dominant Seventh Chords.

And add to the above chart the common seventh chords that include raised scale degree 7 of the harmonic minor scale:

ROOT	QUALITY	SYMBOL
Scale degree 5	"Dominant seventh" chord	V7
Scale degree raised 7	Fully-diminished seventh chord	vii-dim7

If you feel ready to start learning some chromatic chords, move on to the next section:

Chromatic Chords I: Mixture

Table of Inversions

Inversion	Figured Bass name	Common Abbreviation
<u>Triads</u>		
root position	5-3	figures left out completely*
first inversion	6-3	6
second inversion	6-4	6-4 (no abbreviation)
<u>Seventh chords</u>		
root position	7-5-3	7
first inversion	6-5-3	6-5
second inversion	6-4-3	4-3
third inversion	6-4-2	4-2

*for example, a V 5-3 chord is normally referred to as simply a V chord.

Mixture Seventh Chords in Major

Just as with a diatonic triad you can add a seventh to a mixture triad. *MusicWorks* only works with the more common mixture seventh chords. Here is a chart of the most common mixture chords in major:

DIATONIC CHORD	MIXTURE CHORD	ALTERED DEGREE(S)
ii7	ii-half-dim7	lowered 6
IV7	iv7	lowered 6 and 7
V7	v7	lowered 7
vii-half-dim7	vii-(fully-)dim7	lowered 6

Next topic:

Mixture Seventh Chords in Minor

Mixture Triads in Minor

As stated earlier, the altered (or inflected) forms of the natural minor scale, the *harmonic minor* (raised scale degree 7) and the *melodic minor* (raised scale degrees 6 and 7) contain tones borrowed from the upper tetrachord of the parallel major. Although you may not have learned about it as such, this borrowing is a form of mixture, and several new chords result. The chart below restates the diatonic triads (those found in natural minor) and shows how those triads are altered through mixture (the use of harmonic and melodic minor). You will notice that not all the chords change, the i chord stays the same: *only those chords that contain raised scale degrees 6 and 7 are mixture chords*.

DIATONIC CHORD	MIXTURE CHORD	ALTERED DEGREE
ii-dim	ii	raised 6
III	III-aug	raised 7
iv	IV	raised 6
v	V	raised 7
VI	vi-dim	raised 6
VII	vii-dim	raised 7

Next topics:

Mixture Seventh Chords in Major
Mixture Seventh Chords in Minor

Mixture Triads in Major

Several mixture chords are possible in a *major key* through the borrowing of lowered scale degrees 3, 6 and 7 from the *natural minor* scale:

DIATONIC MAJOR	MIXTURE CHORD	ALTERED DEGREE(S)
I	i	lowered 3
ii	ii-dim	lowered 6
iii	Flat-III	lowered 3 and 7
IV	iv	lowered 6
V	v	lowered 7
vi	Flat-VI	lowered 6 and 3
vii-dim	Flat-VII	lowered 7

Next topics:

Mixture Triads in Minor
Mixture Seventh Chords in Major
Mixture Seventh Chords in Minor

Interval Ear Training

This activity helps you learn to identify interval size and quality by ear.

MusicWorks will present you with a variety of intervals depending on the interval options you have selected, and the keys you have chosen using the key settings dialog.

When ear training begins, the main screen is hidden (to encourage you to use your ear) and a special ear training control window is presented.

Use the Repeat Tones button to listen to the question as often as you like (remember, the clock is ticking on your score).
If you get stuck in practice mode, you can show the display using the Show Display button.

During a test, you can not show the display - this makes sure your test score reflects your ear training progress. However, you can show the display during test error review.

Use the reset button to end your ear training session and return to the main display.

Consult theory help for help with intervals

Inversions

MusicWorks offers two inversion options : basic notation and figured bass notation.

The inversion of a chord is determined by the lowest note in the chord. The normal position, in which the lowest tone is the root of the chord, is known as *root position*. If the third of the triad is the lowest note in the chord, the triad is in first inversion. When the fifth of the triad is the lowest note, the triad is in second inversion.

Take for example, a C triad in first inversion. The first note is E, the G falls a third above the E, and the C falls a sixth above the E. For any triad written in closed form, in first inversion, the upper notes fall a sixth and a third above the lowest note. The first inversion is often termed "a 6-3 chord", . This is known as figured bass notation.*

Example: In the key of C-major, the I 6-3 chord is E,G,C. In fact, this is often abbreviated as simply
"the I 6 chord".

Seventh chords can be addressed with a similar nomenclature. For example, in C major, the V7 chord (dominant seventh) is G B D F.
In first inversion, the notes are B D F G. That is, the upper notes are to be found a third, a fifth and a sixth above the B. The seventh in first inversion is therefore known as "the 6-5-3 chord", and this is usually abbreviated to "the 6-5 chord".

Example: In the key of C-minor, the ii-half-diminished-6-5 chord is F A-flat C D.

Maybe that seems a bit complicated, but MusicWorks will help you get onto inversions (with or without figured bass notation) in no time!)

A table of inversions is provided.

Next Topic: Diatonic Chords: Scale Forms and Harmony

* Figured bass notation came about during the renaissance as a means of specifying the chordal inversion without having to write out the entire chord. A harpsichord player would be provided with a bass line with figures written below to indicate the chord to be played. This saved on the considerable effort required to write out entire chords (with a quill pen).

The 30 day evaluation version of MusicWorks offers complete functionality to allow a thorough assessment of the program's capabilities. If you like the software, please register as soon as possible.

The evaluation program will function for 30 days following date of first use.

Registration Menu

For your convenience, a registration menu is provided on the main display. This enables 2 important actions:

1. select the **Print Form** menu item to print a registration form

   The registration form provides details on how to register your copy of MusicWorks.
   Once you have sent in your registration form with payment, you will promptly receive a registration key that you can use to register MusicWorks.

2.select the **Register Now** menu item to enter the Registration Key and complete registration your evaluation copy.

   Once you have received confirmation of registration and your Registration Key, then simply enter the information into the registration dialog box.

The 30-day evaluation version is fully functional in order that you may completely evaluate the program's capabilities. Registration ensures that your copy will function beyond the evaluation period.

Key Signatures

MusicWorks phrases questions in the context of particular key (except for intervals), so it is important to be familiar with all key signatures.

A scale can be defined by the "distance" between the adjacent pitches that make it up.

So, starting on C, for example, a major scale is built by placing a full tone between all notes, except between scale degrees 3 and 4, and between scale degrees 7 and 8.

Regardless of which note is chosen as the starting point, the pattern of tones and semi-tones for a major scale is always the same: 1 t 2 t 3 s 4 t 5 t 6 t 7 s 8 (where t for "tone" and s for "semitone" denote the step size between scale degrees). Thereore, using C major as our example, the notes in this scale are CDEFGABC - all white keys on the piano. The key signature of C major thus has no sharps or flats.

Now let's take another example. If we begin on A, we can build the major scale as follows:

A t B t C# s D t E t F# t G# A

So you can see that in order to maintain the major scale pattern (t t s t t t s) a major scale starting on A must include F#,C# and G#. That is, the key signature of A has 3 sharps.

The minor key signatures are derived similarly using the following pattern for the natural minor scale:

1 t 2 s 3 t 4 t 5 s 6 t 7 t 8 (t s t t s t t)

Applying this pattern to a series of notes beginning on A, we get the following:

A t B s C t D t E s F t G t A. That is, all white keys. The scale of a-minor (natural) has no sharps or flats, just like C major. In fact, a-minor is known as the relative minor of C-major (and C is the relative major of a).

A table of key signatures is included.

MusicWorks provides a key signature identification activity to help you polish up your key signatures. This will be essential for composing diatonic, and later, chromatic harmonies.

Next Topic: Intervals

Auto Shutdown: if you want MusicWorks to shutdown automatically if left idle for a certain period, you can select this option from the options menu. If you don't want this to happen, stick with the default setting- *never.*

Changing Options Settings: you can make changes to the option settings except during a test. When you change key or chord settings, MusicWorks will implement the changes when the current question is completed.

Chord Type: during identify activity, when entering an answer, first choose the chord type from the chord select pop-up menu. The chord types are triads, sevenths, applied V7, applied vii-dim7, augmented sixth, and Flat-II.

Chord name: during identify activity, when a chord type has been selected from the chord select pop-up menu, a list of specific chord names will appear, from which you select your answer.

Technical Support

The following topics are covered in this section:

Vendor Information
Un-install instructions
Registration Information
Association of Shareware Professionals (ASP) Ombudsman Statement
What is Shareware

Vendor Information

Technical support is available for registerd users.

Site liscence arrangements are available on a case-specific basis.

The license agreement (see file vendinfo.diz) specifies that this program is for individual use. Arrangements for institutional or group use of this software can be made by contacting the author.

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Ombudsman Statement

Ombudsman Policy as of August, 1997

This program is produced by a member of the Association of Shareware Professionals (ASP). ASP wants to make sure that the shareware principle works for you. If you are unable to resolve a shareware-related problem with an ASP member by contacting the member directly, ASP may be able to help. The ASP Ombudsman can help you resolve a dispute or problem with an ASP member, but does not provide technical support for members' products.

Please write to the ASP Ombudsman at 157-F Love Ave, Greenwood, IN 46142 USA, FAX 317-888-2195, or send email to omb@asp-shareware.org.

What is Shareware

Shareware is sometimes called "User Supported" or "Try Before You Buy" software. Shareware is not a particular kind of software, it's a way of marketing software. Users are permitted to try the software on their own computer system (generally for a limited period of time) without any cost or obligation. Payment is required if the user has found the software to be useful or if the user wishes to continue using the software beyond the evaluation (trial) period.

Payment of the registration fee to the author will bring the user a license to continue using the software. Most authors will include other materials in return for the registration fee - like printed manuals, technical support, bonus or additional software, or upgrades.

Un-install

MusicWorks can be automatically removed from your system using the Add/Remove Programs utility found in the Windows Control Panel.

This Add/Remove utility will remove all files, EXCEPT data files created by MusicWorks during its normal operation. For this reason, the Un-install process may not remove the MusicWorks application directory
(normally named C:\program_files\muswrk20, unless this default path was modified during installation).

Once the Remove Program Utility has been run, you can manually remove the MusicWorks application directory and its contents to complete the Un-install process.