

Music Theory: A Thorough and Fast-Paced Review Of Theory I, II, III, and IV

By

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Composing Music with Notation

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Music Theory: A Thorough and Fast-Paced Review of Theory I, II, III, and IV

By Floyd Richmond, Author of Alfred's MusicTech Series, Composing Music with Notation

Theory I

This book provides a fast-paced review of music theory from the fundamentals of diatonic harmony through advanced chromatic harmony and into post-tonal and contemporary music including jazz and popular music.

Why is Music Theory Important

There are many reasons to study music theory. A few are listed below.

1. It gives us a greater understanding of the inner workings of music. Understanding music enables us to do more with it and to enjoy it more.
2. It gives us a vocabulary for describing music and helps us communicate with other musicians.
3. It fills in gaps in our knowledge and helps us avoid being uninformed.
4. It enables us to assume a leadership role when working with other musicians
5. It exposes us to a variety of styles and forms of music.
6. It helps us understand music of the past, so as we create and re-create music, we can do so accurately and effectively.
7. It helps us understand music of the present in context. The chords, harmonies, formal structures, and other musical devices used in the music of today originated in the classical era or before.
8. It helps us understand when musicians are doing something unique, different, or new.
9. It helps us become better musicians, listeners, performers, teachers, conductors, improvisors, composers, arrangers, songwriters and much more.

For example,

- (1) As we understand which notes are more and less active, we can more quickly and accurately balance chords.
- (2) As we understand what to listen for in music, we can more quickly help our students correct their mistakes.
- (3) As we understand key signatures, scales, modes and chords, we are able to be more creative in music

Music Theory Throughout History

The rules of music theory which came into use around 1600 continued through the following years and are strongly represented in the music of today. The period from 1600 to the present is known as the common-practice period, but the foundations of this style were laid in the years before. Music historians use the labels below to define more specific musical styles from history. Memorize these and their dates.

Earliest Recorded Music – 1400 B.C.
Medieval – 476 to 1400
Renaissance – 1400 to 1600
Baroque – 1600 to 1750
Classical – 1750 to 1800
Romantic – 1800 to 1900
Post Tonal and Contemporary – 1900 to present

Music Theory Minute Videos: Music History: <https://youtu.be/J3oeWplcZl0>

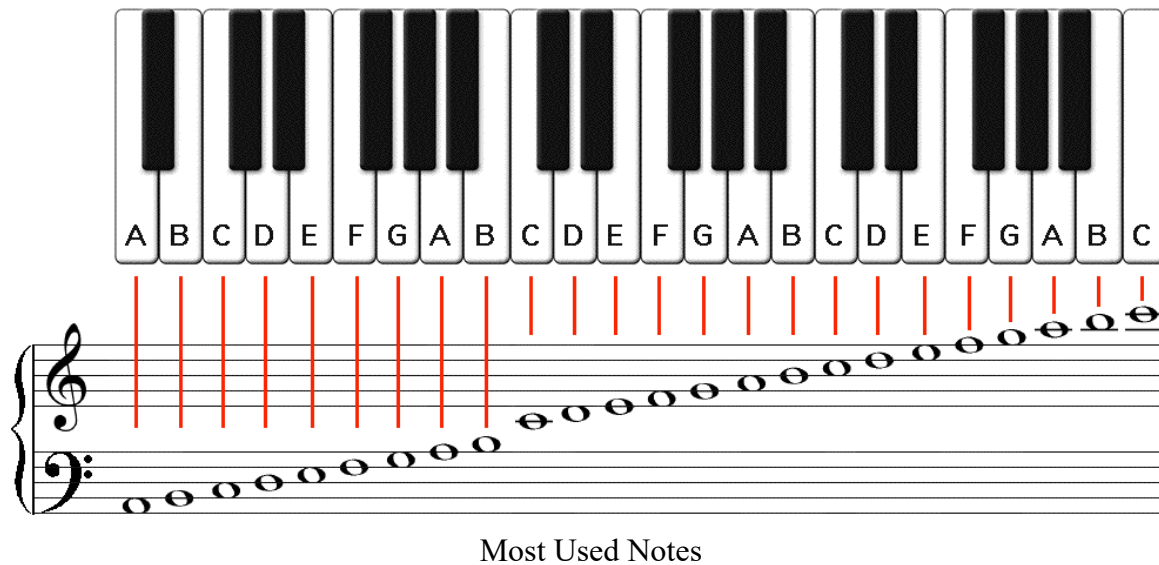
Which Note to Play

One of the most basic roles of music notation is to tell the performer which note to play.

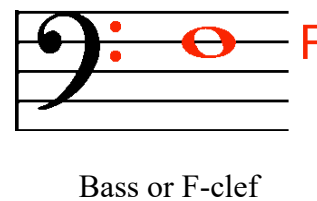
Most wind and string instruments can play 36 to 40 notes in different ranges, but a piano may play 88, and electronic instruments may play up to 120.



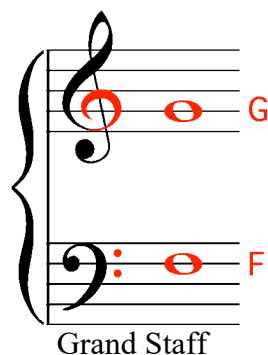
To indicate which of these notes to play, notes are placed on a staff. The most used notes are shown below.



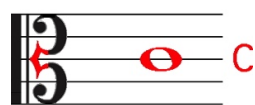
Most instruments use a single staff, but the piano uses two. On the piano, lower notes are on the left and higher notes are on the right. On the staves, lower notes are placed in the bass clef and higher notes, in the treble clef.



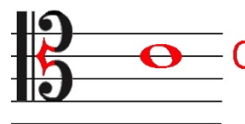
The treble clef shows the position of the note G and is often called the G Clef. The bass clef shows the position of F. Together these two clefs make up the grand staff.



The clefs above cover most musical uses, but two C clefs are occasionally used. The alto clef is used for notes which are too low for the treble clef but not low enough for the bass clef. The viola is the primary instrument which uses alto clef. The tenor clef is for notes lower than alto, but not low enough for bass clef. Although trombone and bassoon primarily use bass clef, occasionally they use the alto or tenor clefs for higher notes.

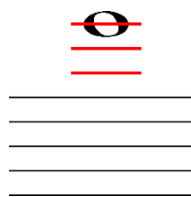


Alto or C-clef

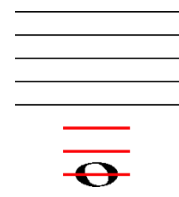


Tenor or C-clef

Ledger lines are used above and below the staves to indicate the position of extremely high and low notes.



High Notes



Low Notes

Performers find it difficult to “keep their place” when using more than two or three ledger lines. Often high notes are written in the staff with an instruction to play them eight notes higher or lower. This is easy for piano and for many other instruments because the arrangements of notes, or fingerings repeat (or are similar) every 8 notes. The distance of eight notes is called an octave. In music notation, “8va” means play an octave higher and “8vb” means play an octave lower.



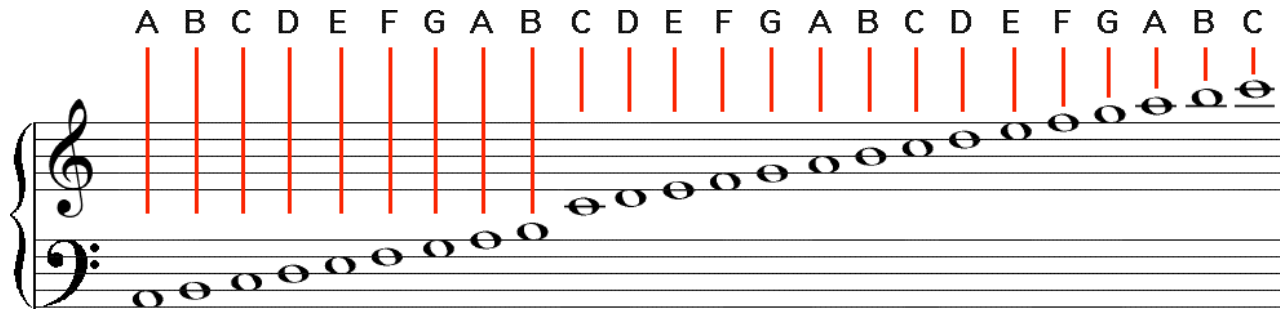
Keywords
Staff, Clef, Treble (G), Bass (F), Alto (C), Tenor (C), Ledger Lines, Octaves

Music Theory Minute Videos: A Basic Role of Notation: <https://youtu.be/-MNPmZ04A1c>

Music Theory Minute Videos: Ledger Lines: <https://youtu.be/9ShnLDMRO44>

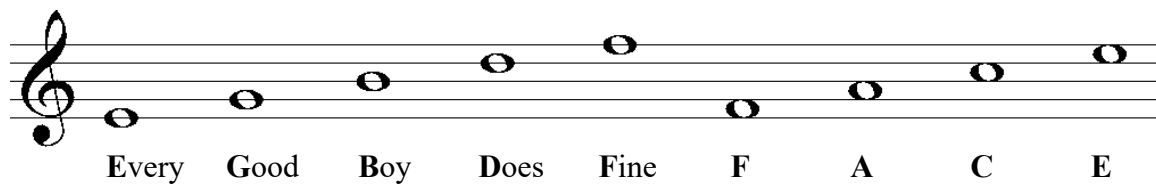
Naming the Notes

The names of notes use the first seven letters of the alphabet: A B C D E F and G. After G, the notes repeat. Note names repeat every octave, correlating with the pattern of keys and fingerings on many musical instruments in each octave.

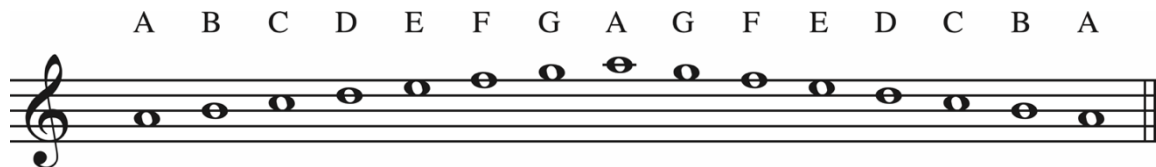


Note Names Repeat Every Octave

Note Names on the Treble or G-Clef: Notes on staves are either on a line or a space. There are several mnemonic devices used for memorizing the names of the notes on lines or spaces in the various staves. In the treble clef, line notes may be identified using a saying such as “Every Good Boy Does Fine.” The space notes may be identified by spelling the word “FACE.”



In music it’s more common to move alphabetically (alternating lines and spaces) than to move by lines or spaces. It may be more practical to just remember the alphabetic arrangement of notes on the staff.



In music, notes go up and down. Students should become familiar with the letter names in both directions



Bass or F-Clef Notes: Similar mnemonic devices are used for the bass clef.



Again, students may find it easier just to memorize the notes alphabetically.



Music Theory Minute Videos: Note Names: <https://youtu.be/0Jn6BOouRGE>

Accidentals

On a keyboard, special symbols are required to indicate that the black notes should be played. Most commonly the sharp and flat signs are used.

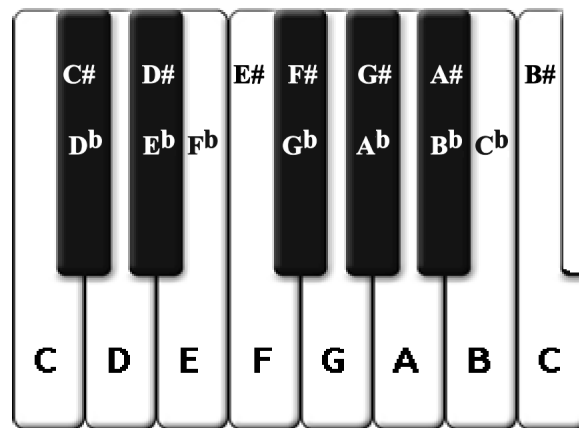


Sharp Sign



Flat Sign

When the sharp sign is encountered, the performer plays the black note immediately to the right (above) the indicated note. C# is the black note directly above C. When the flat sign is encountered, the performer plays the black note immediately to the left (below) the indicated note. Db is the black note directly below D. All black notes have two names (C# and Db, D# and Eb, F# and Gb, G# and Ab, and A# and Bb). These notes are *enharmonically equivalent*. Because some white notes do not have black notes between them (E to F, B to C), these notes also have two enharmonically equivalent names (E and Fb, E# and F, B# and C, Cb and B).



When the effect of a sharp or flat needs to be cancelled, a third accidental, a natural sign, is used. While sharp and flat symbols are required to identify the black notes (and some white ones), a natural sign always identifies a white note. Natural notes have long and short names. A and A natural are the same. B and B Natural are the same, and so on.



Natural Sign

When pronouncing the names of notes with sharps and flats, we always say the letter name first, for example C#, Db, and so on. When drawing the notes on the staff, however, in order to help the performer, we place the accidental before the note to which it applies.



Half Steps and Whole Steps

The distance from one note to the next nearest note (for example C to C# or D to Db) is a *half-step*. A *half-step* is sometimes called, a *semitone*. Two *half steps* (for example C to D or D to E) make up a *whole step*, sometimes called a *tone*.

The accidentals above (sharps, flats and naturals) cover most musical uses, but when a composer wants to raise or lower a pitch by a *whole step*, they use a double sharp or double flat sign. A double sharp raises a note by a *whole step* and a double flat lowers a note by a *whole step*. A *whole step* is occasionally called a *tone*.



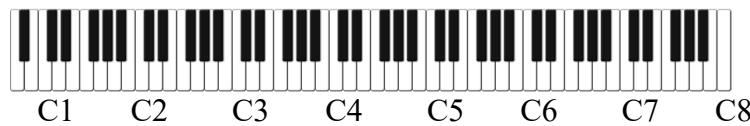
Double Sharp Sign



Double Flat Sign

How Many Cs are on a Keyboard?

C is a great place to start when learning the piano or other keyboard instrument. To find C on the keyboard, find any two black notes and move to the white note below the lower one. If one places their right-hand thumb on C and plays all white notes, the keys will form a scale from which many familiar melodies may be performed. There are eight Cs on an 88-note keyboard. In order to specify which is which, they are numbered from left to right with C4 being the middle C on the keyboard.



The notes above each C are said to be in the same octave. C4, D4, E4, F4, G4, A4, B4, and C5 make up a C major scale. This means that the note immediately to the left of C4 is B3. This begs the question, “Why did we not start numbering notes with A instead of C?” Alphabetically that would make more sense. The key of A, however, is more difficult to play. Numbering the octave starting on C helps more when learning to play the keyboard. Other numbering systems for the octaves are in use, but this will be the tradition observed in this book.

Practice Activities for Notes and Clefs:

- | | |
|--|---|
| <ul style="list-style-type: none">○ Identify 10 notes on the treble clef.○ Identify 10 notes on the bass clef.○ Identify 10 notes on the alto clef.○ Identify 10 notes on the tenor clef.○ Identify 10 notes on a keyboard.○ Identify 20 notes on the treble, bass, alto and tenor clefs with ledger lines. | <ul style="list-style-type: none">○ Place 10 notes on the treble clef staff.○ Place 10 notes on the bass clef staff.○ Place 10 notes on the alto clef staff.○ Place 10 notes on the tenor clef staff.○ Place 10 notes on a keyboard.○ Place 20 notes on the treble, bass, alto and tenor clefs with ledger lines |
|--|---|

To complete the activity, click the link above.

- Click the *start challenge* button.
- When done answering questions, a score report appears.
- On that report, click the *view report* button.
- Type your name and click the *sign report* button.
- Copy the link and submit it to your teacher to record your grade.

Keywords


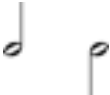

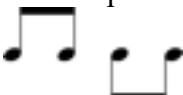

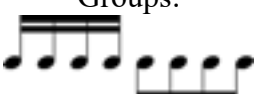



Lines, Space, Accidentals, Sharps, Flats, Naturals, Double Sharps, Double Flats, Octave Numbers

Music Theory Minute Videos: Accidentals: <https://youtu.be/8czFQIX8r7Q>

Music Theory Minute Videos: Ledger Lines: <https://youtu.be/IedPCZ-kENY>

Rhythm

Another basic role of music notation is to tell the performer how long to hold each note. This is done using different shaped note heads, stems and flags or beams. The chart below shows the most common note shapes. The durations indicated are for common time signatures such as 2/4, 3/4, or 4/4.

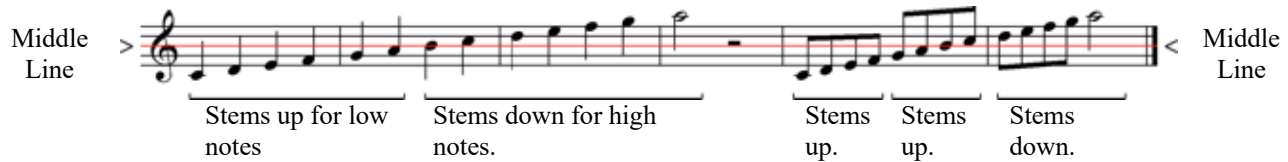
Shape	Name	Duration
	Whole Notes	4 beats
	Half Notes	2 beats
	Quarter Notes	1 beat
Groups:  Individual Notes: 	Eighth Notes	1/2 beat
Groups:  Individual Notes: 	Sixteenth Notes	1/4 beat
Groups:  Individual Notes: 	Triplets	1/3 beat

Keywords

Note Shape, Heads, Stems, Beams, Rhythmic Names, Duration

Stem Direction

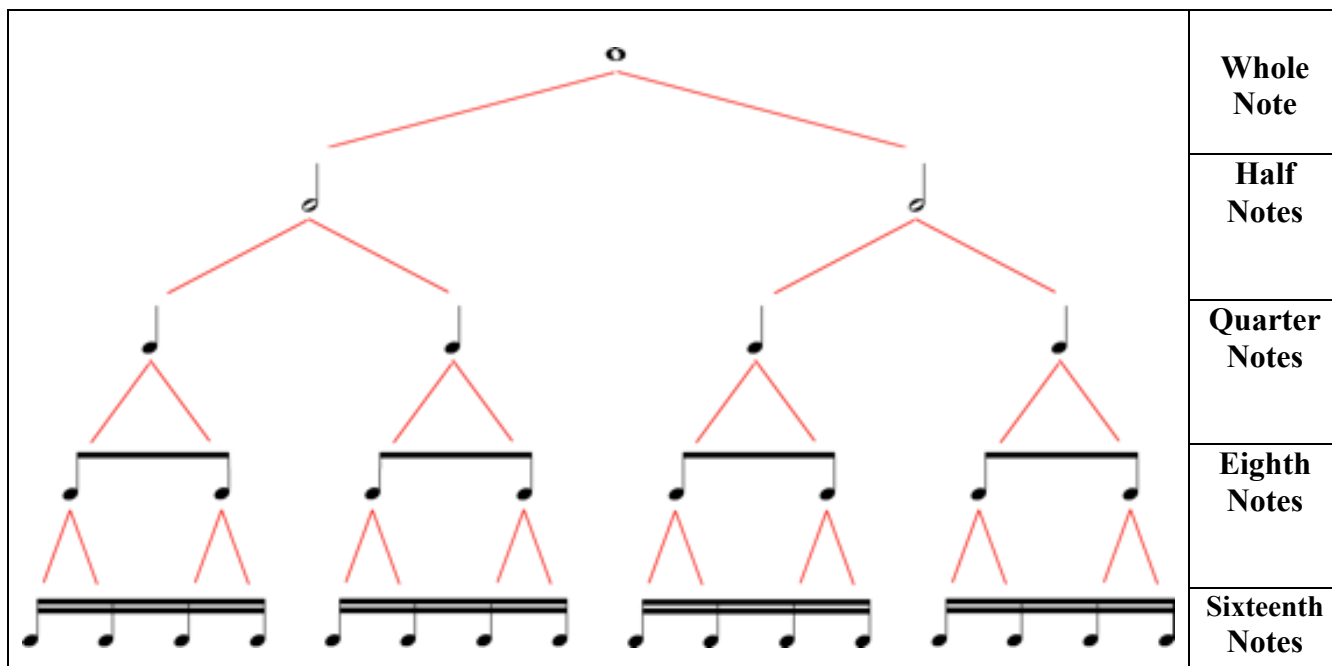
Stems on notes go up if the note head is below the middle line and down if above. Notes on the middle line may go either direction. When notes are beamed in groups, the stem direction is based on whether more notes are above or below the middle line. Stems going up are always drawn on the right side of the note and those going down, on the left.



Keywords
Stem Direction, Special Cases, Center Line, Beamed Notes

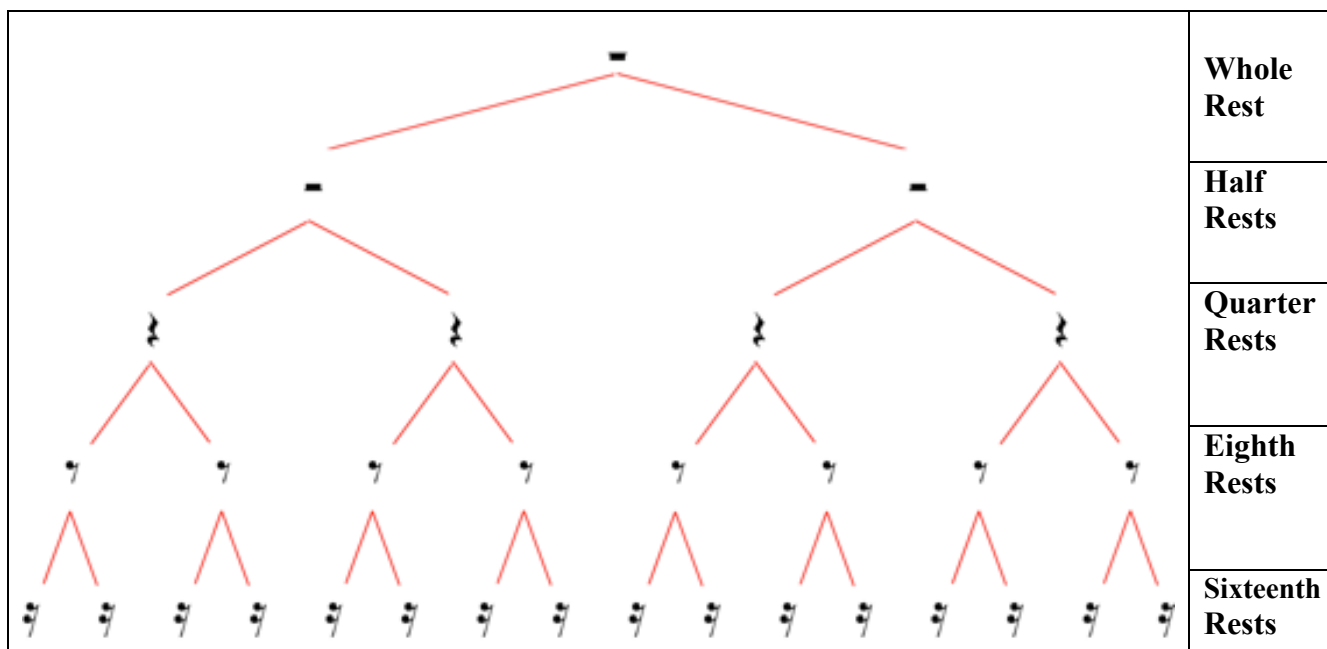
Rhythmic Relationships

The chart below shows the mathematical and durational relationships of common notes. A whole note may be divided into two half notes, which each may be divided into two quarter notes, and so on. For notes getting less than a beat in common time signatures such as 2/4, 3/4, and 4/4, beams are used to group notes into beats.



Keywords
Whole Notes, Half Notes, Quarter Notes, Eighth Rests, Sixteenth Notes








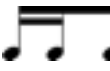
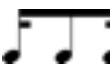



Rests: Each note has a corresponding rest which indicates that the performer should make no sound. Rests do not have beams but are grouped with notes by the beat. It is a tradition to use the fewest notes possible, while not obscuring the beat. For example, a quarter rest would be used instead of two eighth rests, or four sixteenth rests, unless it is necessary to do otherwise to show the beat.



Keywords
 Whole Rests, Half Rests, Quarter Rests, Eighth Rests, Sixteenth Rests

Patterns and Counting

Notes are frequently used in patterns as shown on the chart below. Common methods of counting these notes are also shown.

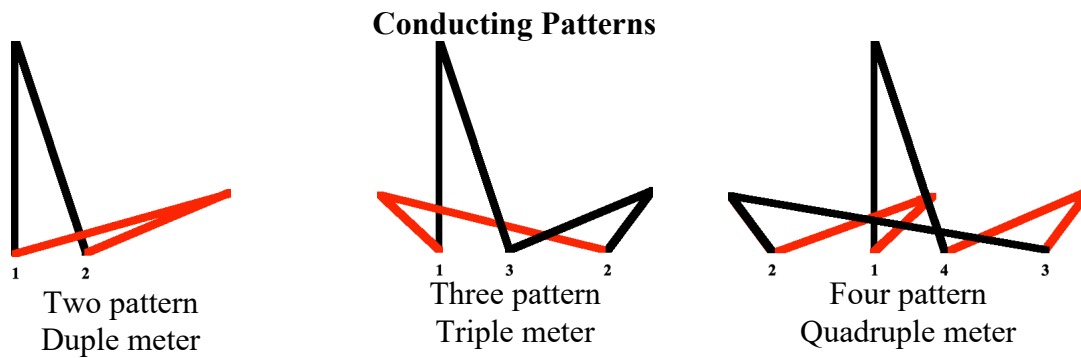
Note	Name	Kodály	Gordon	Traditional	Eastman
	Whole Note	Ta-ah-ah-ah	Du - - -	1-(2)-(3)- (4)	1 - - -
	Half Note	Ta-ah	Du -	1-(2)	1 -
	Quarter Note	Ta	Du	1	1
	Eighth Note	Ti-ti	Du-de	1 &	1 te
	Sixteenth Note	Ti-ka-ti-ka,	Du-ta-de-ta,	1 e & a	1 ti te ta
	Triplets	Trip-le-ti	Du-da-di	1 la li or tri-ple-let	1 la li
	One-Beat Pattern	Ti-ti-ka	Du-de-ta	1 & a	1 - te ta
	One-Beat Pattern	Ti-ka-ti	Du-ta-de	1 e &	1 ti te -
	One-Beat Pattern	Syn-co-pah	Du-ta-ta	1 e (&) a	1 ti - ta
	One-Beat Pattern	Trip-ka	Du--ta	1 (e) (&) a	1 - - ta
	Two-Beat Pattern	Syn-co-pah	Du-de-de	1 & (2) &	1 te - te
	Two-Beat Pattern	Ta-i-ti	Du--de	1 (2) &	1 - - te

Keywords

One Beat Patterns, Two Beat Patterns, Kodaly, Gordon, Traditional

Meter and Time Signatures

Music is most commonly organized into duple, triple, and quadruple meters with two, three or four beats in each measure. This organization makes it easier to dance or march to the music. Conductors have come to use patterns like those shown below to indicate the meter and to lead the musicians in staying together.



The numbers at the beginning of piece are music are the time signature. The most common duple time signatures are 2/4 and 6/8. The most common triple time signatures are 3/4 and 9/8. The most common quadruple time signatures are 4/4 and 12/8.

Bar lines divide the music into measures of two, three, or four beats each.

Are You Sleeping?

French Folk Tune



Keywords
Meter, Quadruple Meter, Triple Meter, Duple Meter, Conducting Patterns

Pickup Notes

It is common for songs to begin with one or more pick-up notes as shown below in Amazing Grace. Pickup notes do not make a complete measure, but prepare or lead into the accented note of the first complete measure. These pose a challenge for conductors, who often have to begin in the middle of a measure to cue performers. Conductors, especially of young performers commonly give the missing beats (in this case beats 1 and 2) in small gestures, with a large gesture the beat before performers enter (in this case beat 2). Practice conducting and singing this song.

Amazing Grace

A - maz - ing__ grace, how sweet the sound, that saved a__ wretch like me_____ I

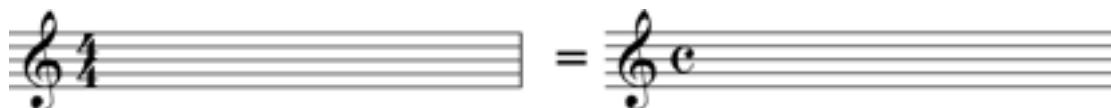
once__ was lost, but now__ an__ found, was blind but now I see.

When a song begins with pick-up notes, the missing beats are added to the last measure. This makes it easy to repeat the song without skipping (or adding) a beat. The technical name for pickup notes is an anacrusis.

Keywords
Anacrusis, Conducting

More about Time Signatures

The numbers at the start of a piece of music are the time signature which indicate the meter of the song. The most common time signature is 4/4 which is also called common time. 4/4 or Common time are indicated using the numbers and symbols below.



In this case, the 4 on the top of the time signature indicates the meter is quadruple. The number on the bottom indicates the speed at which the performer counts. Four on the bottom is often considered the standard and time signatures with a 2 on the bottom go twice as fast. Time signatures with an 8 on the bottom go twice as slow. This is illustrated in the chart below.

Shape	Name	Duration for Various Time Signatures		
		2 on the bottom (2/2, 3/2, 4/2)	4 on the bottom (2/4, 3/4, 4/4)	8 on the bottom (2/8, 3/8, 4/8)
	Whole Notes	2 beats	4 beats	8 beats
	Half Notes	1 beat	2 beats	4 beats
	Quarter Notes	1/2 beat	1 beat	2 beats
	Eighth Notes	1/4 beat each	1/2 beat each	1 beat each
	Sixteenth Notes	1/8 beat each	1/4 beat each	1/2 beat each

In the chart above, the number on the bottom of the time signature indicates which note gets one beat. In time signatures with a 2 on the bottom, a 1/2 note gets the beat. In time signatures with a 4 on the bottom, the 1/4 note gets the beat. In time signatures with an 8 on the bottom, the 1/8 note gets the beat.

Keywords

Common Time, Rhythmic Durations, Time Signatures with a 2, 4, or 8 on the bottom, Simple meter, 2/4, 3/4, 4/4

Compound Time Signatures





One unique thing that happens most commonly with time signatures with an eight on the bottom (for example 6/8, 9/8, or 12/8), is that, while they may be performed slowly with the same length of notes as in simple meters, they are more frequently performed three times faster. Because there are, in effect, three eighth notes in every beat, the dotted quarter note gets the beat. Music written in 6/8 feels as though it has two beats per measure (duple meter 123 456); music in 9/8 feels as though it has three (triple meter 123 456 789); and music in 12/8 feels as though it has four (quadruple meter 123 456 789 10 11 12). Because each beat is subdivided into three parts, the meter is said to be compound. In simple meter, the beat is commonly divided into two parts.



Keywords

6/8, 9/8, 12/8

Dotted Note Values

Composers use dots to add length to notes. A note with a single dot should be held its full duration plus $\frac{1}{2}$ longer. For example, in 4/4, a half note gets two beats. A dotted half note would get three beats (2 beats for its regular value) plus 1 beat ($\frac{1}{2}$ of 2 = 1) for the dot. Notes without dots are easily divided into twos as shown on the charts above. Notes with dots are easily divided into threes, making them especially useful for compound meters as shown on the chart below. Red items below indicate the most important information. Learn them first!

Shape	Name	Duration for Various Time Signatures		
		2 on the bottom <small>Simple: (2/2, 3/2, 4/2) Comp: (6/2, 9/2, 12/2)</small>	4 on the bottom <small>Simple: (2/4, 3/4, 4/4) Comp: (6/4, 9/4, 12/4)</small>	8 on the bottom <small>Simp: (2/8, 3/8, 4/8) Comp: (6/8, 9/8, 12/8)</small>
	Dotted Whole Notes	Simple: 3	Simple: 6	Simple: 12
		Compound: 1	Compound: 2	Compound: 4
	Dotted Half Notes	Simple: $1\frac{1}{2}$	Simple: 3	Simple: 6
		Compound: $\frac{1}{2}$	Compound: 1	Compound: 2
	Dotted Quarter Notes	Simple: $\frac{3}{4}$	Simple: $1\frac{1}{2}$	Simple: 3
		Compound: $\frac{1}{4}$	Compound: $\frac{1}{2}$	Compound: 1
	Dotted Eighth Notes	Simple: $\frac{3}{8}$	Simple: $\frac{3}{4}$	Simple: $1\frac{1}{2}$
		Compound: $\frac{1}{8}$	Compound: $\frac{1}{4}$	Compound: $\frac{1}{2}$

As indicated in the chart of rhythmic patterns further above, notes are often grouped in combinations that equal a beat or two beats. The dotted quarter note is often paired with an eighth note for example for a 2 beat pattern ($1\frac{1}{2}$ beats plus $\frac{1}{2}$ beat = two beats).  The dotted eighth note is often paired with a sixteenth note for a 1 beat pattern. ($\frac{3}{4}$ beat plus $\frac{1}{4}$ beat = one beat). 

Keywords
Dotted Quarter/Eighth, Dotted Eighth/Sixteenth

Ties

Another means of lengthening a note is to “tie” them together using a curved line. Look at the example to the right. In time signatures with a four on the bottom, the half note would get two beats and the quarter, one. The “tie” tells the performer to play one note for three beats. This is especially useful for combining notes over a bar line, or for combining notes of odd durations (for example, those that cannot be represented with dots). Ties are always between two notes of the same pitch (If this is treble clef, C and C in this example).



Tie

Slurs

The tie looks much like another common musical symbol called a slur. Slurs indicate the music is to be played as smoothly as possible (legato). Wind players typically do not tongue slurred notes and string players typically do not change the direction of their bow. The key difference between ties and slurs is that slurs connect two different notes. Because there are two pitches, they cannot possibly be combined into one note of a longer duration.



Slur

Practice Activities for Rhythms

Click the link below. Click *New Rhythm*. Click *Start Playback*. Clap the rhythm.

Have a friend grade you: (1 error = A, 2 = B, 3 = C, etc.).

If you do multiple problems, the scale changes: (for example, for 5 problems A is ≤ 5 , B is ≤ 10 , etc.)

Submit your grade to your teacher.

All problems have a 4-beat count-off.

[Level 01](#) – 4/4 (Q, QR, EE, E.S) Q=96 (2 bars)

[Level 02](#) – 4/4 (Add: SSSS, SSE, ESS, SES, TTT) Q=88 (2 bars)

[Level 03](#) – 4/4 (Add: Dotted Note Combinations) Q = 88 (2 bars)

[Level 04](#) – 4/4 (Add: Eight Rest Combinations and EQE) Q = 80 (2 bars)

[Level 05](#) – 4/4 (Add: Quarter and eighth triplets) Q = 80 (2 bars)

[Level 06](#) – 4/4 (Most everything reasonable) Q = 80 (4 bars)

[Level 07](#) – 6/8 (Basic 6/8 rhythms) Q = 88 (4 bars)

[Level 08](#) – 6/8 (Add: SE combinations) Q = 72 (4 bars)

[Level 09](#) – 6/8 (Add triplets and other SE combinations) Q = 72 (4 bars)

[Level 10](#) – 6/8 (Most everything reasonable) Q = 72 (4 bars)

Repeats

Many symbols have come into use to represent various types of repeats in music.

One Measure Repeat



This symbol means repeat the immediately previous measure.

Two Measure Repeat



This symbol means repeat the immediately previous two measures.

Forward and Backward Repeats



The forward and backward repeat symbols in this case mean play these two measures twice.

First and Second Endings



The first and second ending indicate the performer should play measure 1 with the first ending (under the bracket with 1), then play it again but the second time, use the second ending (the music under bracket 2).

DC al Fine



The DC at the end of the line means return to the top of the music (measure 1).

(DC or Da Capo means “the cap,” like on the top of the head).

Al Fine means “until the finish.”

Fine means finish . . . the second time. The first time, just remember where it is.

DS al Fine



The DS in the second measure of the second line means return to the sign (measure 2).

(DS or Dal Segno means “the sign,” which looks like an S with dots and a slash).

Al Coda means play until the Coda sign (in this case, the last measure of the first line), then jump to the Coda (the ending – or last two bars in this case).

It is possible to also have a DC al Coda and a DS al Fine. A DS al Fine is shown below.

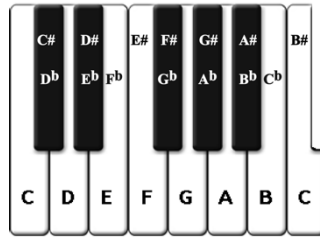


Keywords

One-measure Repeats, Two measure Repeats, Simple Repeats, First and Second Endings, DC al Fine, DS al fine, DC al Coda, DS al Coda

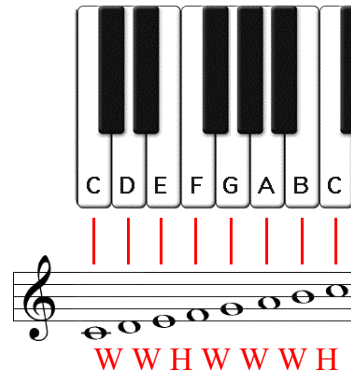
Major Scales

There are twelve notes in every octave and playing these in order produces a chromatic scale. It is rare, however, for all twelve notes to be used in a single song.



Twelve half-step notes in an octave.

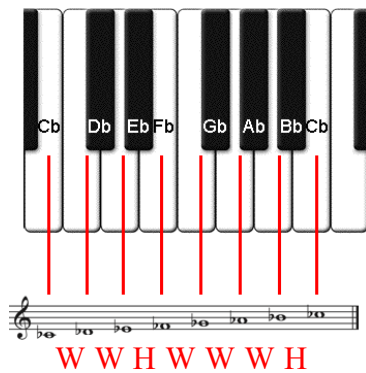
Most songs focus on eight of those notes as shown below, in this case starting on C. Play those eight notes on the piano to hear the familiar notes of a major scale, often sung with Italian *solfege* syllables as *do, re, mi, fa, sol, la, ti, do*.



Eight notes in a C major scale.

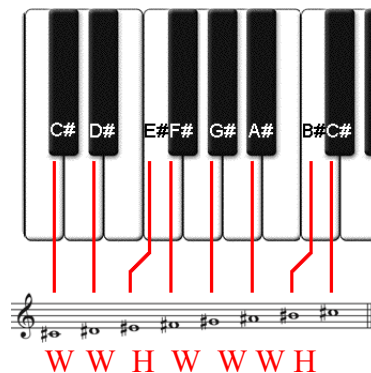
Each note name is alphabetically consecutive.

Note that the pattern of whole and half steps in a major scale is W, W, H, W, W, W, H. Start on any note and apply that pattern to generate a major scale. See the examples below.



Eight notes in a C_b major scale.

Each note name is alphabetically consecutive.



Eight notes in a C[#] major scale.

Each note name is alphabetically consecutive.

Some areas of the world used *fixed do* where C is always *do*.

Most of America uses *movable do* where the note on which the scale is built is *do*.

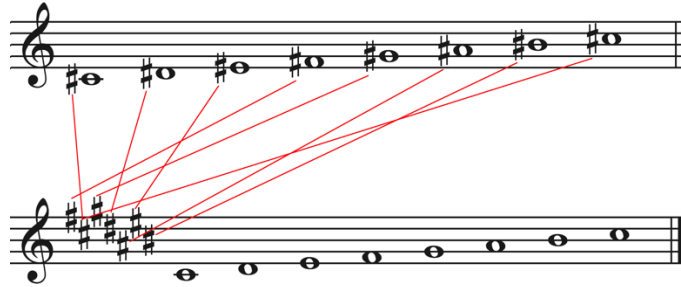
Keywords

Chromatic Scale, Major Scale, Solfege, *do, re, mi, fa, sol, la, ti, do*, Fixed and Movable *do*, Whole and Half Steps in a Major Scale,

Music Theory Minute Videos: Major Scales: <https://youtu.be/MZh3XuY2nOI>

Key Signatures

It has become common practice to write a *key signature* at the beginning of a piece of music that will identify the notes that will be sharp or flat in that song. The reason for this was likely to save time and ink in the typesetting and printing processes in the early days of printed music.



Sharps in the key signature, not beside each note.

Every note in a song is sharp, flat, or natural according to the accidentals in the key signature. When composers need a note which is not in the key signature, they use accidentals as described earlier (sharps, flats, naturals, double sharps, or double flats). Accidentals may be overridden by another accidental in the same measure if desired. Because accidentals are usually only used in short bursts, they are active only for the remainder of the measure. When performers reach the next measure, the next chord is likely to begin so they return to observing the sharps and flats from the key signature.

Key signatures always use the same sharps and flats in order. The sharps in order are the same as the flats in order, but backwards. Memorize this.



F C G D A E B

Mnemonic: Fred Can Go Down and Eat Breakfast



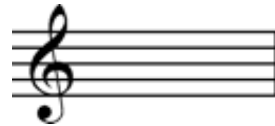
Flats in order: B E A D G C F

Mnemonic: BEAD spells bead. GCF: Greatest Common Factor

When writing sharps and flats, it has become the convention to write them in the locations shown (F# on the fifth line of the treble clef, instead of the first space, for example). Memorize their correct locations. A general rule of thumb is key signature accidentals may be used on lines and spaces of the staff, but not on ledger lines above or below.

There are fifteen possible major keys as shown below. As students write and perform music, they become acquainted with most of these. Memorize the major key signatures below.

Key signature names progress around the circle of fifths as they add accidentals (more later).



C (No sharps or flats)



G D A E B F# C#



F Bb Eb Ab Db Gb Cb

Keywords

Order of Sharps and Flats, Mnemonic Devices, Placement on the Staff, 15 Major Key Names and Number of Sharps and Flats

Music Theory Minute Videos: Key Signatures: https://youtu.be/_IUCkAsOw0o

Practice Activities for Key Signatures

[Identify 10 - major key signatures.](#)
[Identify 15 - number of sharps and flats - major.](#)
[Identify 10 – minor key signatures](#)
[Identify 15 – number of sharps and flats – minor](#)
[Identify 15 – major or minor key signatures](#)
[Identify 15 – number of sharps and flats – major or minor](#)

Tonality

Tonality is a system of musical composition whereby a single *key* or *tone* serves as the foundation for a song. *Scales* are built on that tone using the *key signature* of that note. Melodies are built by choosing notes from that scale. Melodies are organized so the first note of the scale, often called the *tonic*, receives the greatest emphasis. *Harmonies* are created using notes from chords built on each note of those the scales. Harmonies progress in a manner that starts on and resolves to chords built on that tone. If the scale used is a major scale, the resulting tonality is major. The next most common tonality is minor, which is based on variations of the minor scale.

Music Theory Minute Videos: Tonality: <https://youtu.be/1hGo8xXJN-M>

Minor Scales

There are three kinds of minor scales: *natural*, *harmonic*, and *melodic*. *Natural* minor scales are the oldest and simplest. Most music from the Medieval and Renaissance periods uses minor scales like the natural minor. *Harmonic* minor scales came into increased use in the Baroque and subsequent musical periods. Harmonic minor scales are used to create the most common harmonies used in minor songs. Their strength is that by modifying one note of the natural minor scale, they produce stronger harmonic motion much like that which is found naturally in major keys. A unique feature of harmonic minor scales is the leap of a whole step and a half between the sixth and seventh scale degrees. *Melodic* minor scales also saw increased use in the Baroque and subsequent musical periods. The melodic minor scale is artificially contrived to show patterns of notes that might be used when writing ascending and descending melodies in minor keys. A unique feature of the melodic minor scale is that it is different going up than down.

Music Theory Minute Videos: Introduction to Minor Scales: https://youtu.be/_0HOg9Lg3tQ

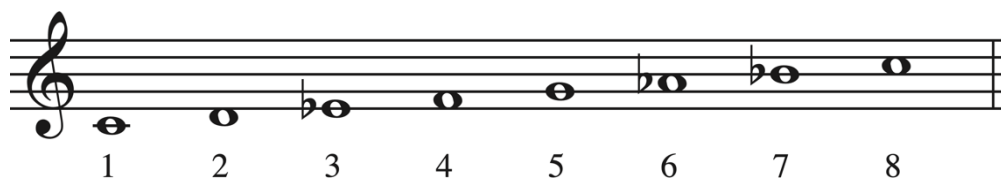
There are two ways to construct minor scales: *parallel* and *relative*. *Parallel* minor scales start with a major scale and modify notes to generate the minor scales. Parallel major and minor scales start and end on the same note. *Relative* minor scales start with the sixth note of a major scale and run alphabetically through the octave, modifying notes as needed. This is explained further below.

Constructing Minor Scales Starting on the Parallel Major Scales

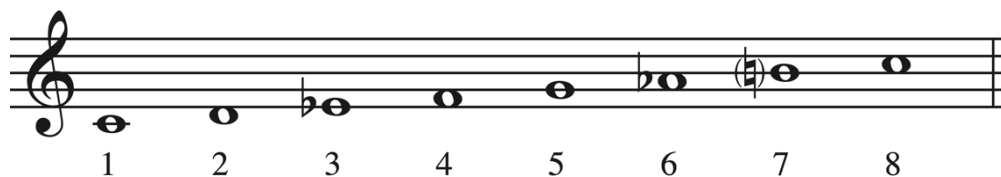
The first method of generating minor scales that examined will be starting with a major scale.



C major scale with scale degrees numbered
The scale conforms to the C major key Signature.



The C **natural minor** scale is like the parallel C major scale but the 3rd, 6th, and 7th scale degrees are lowered.



The C **harmonic minor** scale is like the parallel C major scale but the 3rd and 6th scale degrees are lowered. The 7th scale degree is the same as in major keys.



The C **melodic minor** scale is like the parallel C major scale but only the 3rd scale degree is lowered when going up. When coming down, the scale is identical to the natural minor with the 3rd, 6th and 7th degrees lowered.

What Key Signature is Used for C minor?

When using the key signature of C major for C minor, three notes (3rd, 6th, and 7th scale degrees) will need frequent accidentals. It would make more sense to use a key signature that has those accidentals already. The C natural minor scale constructed above uses 3 flats, Bb, Eb, and Ab. The major key which has those three flats is Eb major. Therefore, the key signature of Eb major is used for songs written in C minor. In fact, these two keys are related. Eb is the relative major of C minor, and C minor is the relative minor of Eb major. As a rule, use the key signature of the relative major when writing songs in minor keys. Additional information about relative major and minor scales is found below.

Constructing Minor Scales Using the Key Signature of the Relative Major Key

The second method of generating minor scales will use the key signature of the relative major to generate the natural minor scale, and the harmonic and melodic scales will be derived from that.

The relative minor of any major key is the sixth scale degree of the major scale. Conversely, the relative major of any minor key is the third scale degree of the minor scale.

IMPORTANT: Another way to think about this is, the relative minor of any major key is the note three half steps lower than the first scale degree of the major scale. C is the relative minor of Eb (C is three half steps lower than Eb). Conversely, the relative major of any minor key is the note three half steps higher than the first scale degree of the minor scale. Please keep the **direction** in mind. Relative major to minor is **down** 3 half steps. Relative minor to major is **up** 3 half steps. **If you do not know which scales are relative majors and minors**, this is a good way to calculate the key names.

Apply this information to build a minor scale starting with the key signature of the relative major. Use the same scale as above, but the *relative* process to construct it.

Assume for this example that one wants to build a C minor scale, but the notes of the C minor scale are unknown. To determine which is the relative major, instead use the information from the block above. Calculate which note is three half-steps above C. That will be an Eb, so Eb is the relative major of C minor. Use the key signature of Eb running the scale from C to C (C D Eb F G Ab Bb C) to reveal a C natural minor scale.

The first staff shows a scale starting on Eb in the key signature of Eb major. The notes are Eb, F, G, Ab, Bb, C, D, Eb. Fingerings are 1, 2, 3, 4, 5, 6, 7, 8.

The second staff shows the same scale starting on C. The notes are C, D, Eb, F, G, Ab, Bb, C. Fingerings are 6, 7, 1, 2, 3, 4, 5, 6.

The scale degrees for the minor scale have been renumbered below for easier reference.

The scale is shown starting on C with notes C, D, Eb, F, G, Ab, Bb, C. The scale degrees are numbered 1 through 8 from left to right.

After generating the natural minor scale, the next step is to transform it to harmonic and melodic scales.

Harmonic: Starting with the C natural minor scale, raise the 7th scale degree (Bb) to B natural.

The scale is shown starting on C with notes C, D, Eb, F, G, Ab, B, C. The scale degrees are numbered 1 through 8 from left to right.

The melodic scale is different going up and down. Generate the scale going up and down as shown.

Melodic Up: Starting with the C natural minor scale, raise the 6th and 7th scale degrees (A flat to A natural, B flat to B natural).

Melodic Down: For the melodic scale going down, use the natural minor scale (Bb, Ab, and Eb).

The scale is shown starting on C with notes C, D, Eb, F, G, A, B, C. The ascending scale degrees are numbered 1 through 8. The descending scale degrees are numbered 7 through 1.

Both processes (*parallel* and *relative*) yield the same results. The biggest difference may well be when the key signature to be used is calculated. When constructing parallel minor scales, determining the key signature is the last step. When constructing relative minor scales, determining the key signature is the first step. Learn these processes well enough so they are not confused or mixed.

There are fifteen possible minor keys which are shown below with their relative majors. Memorize these.

C
Am
(No sharps or flats)

G	D	A	E	B	F#	C#
Em	Bm	F#m	C#m	G#m	D#m	A#m

F	Bb	Eb	Ab	Db	Gb	Cb
Dm	Gm	Cm	Fm	Bbm	Ebm	Abm

Keywords

Natural, Harmonic, and Melodic Minor Scales, Construction, 15 Mine Key Names and Number of Sharps and Flats

Music Theory Minute Videos: Constructing Minor Scales: <https://youtu.be/5xlpMMZpCWo>

Relative Keys - <https://youtu.be/mjsL6VXIakU>

Modes

There are two additional minor scales that are frequently used: Dorian (natural minor with a raised 6th scale degree) and Phrygian (natural minor with lowered 2nd). Likewise, there are two additional major scales: Lydian (Major with raised 4th) and Mixolydian (Major with lowered 7th). There is one additional scale which is neither major or minor: Locrian (natural minor with lowered 2nd and 5th).

These names are from Greek and are described in the writings of both Plato and Pythagoras. The Greek name for the natural minor scale is Aeolian, and for the major scale is Ionian. Examples of all modes are found in the chart further below.

For a good illustration of these modes, rewrite the melodies and harmonies of a scalar song such as *Joy to the World* in each mode.

It is possible to easily write modal scales as follows:

Start with the key signature of any major scale.

Ionian: Use notes starting on the 1st scale degree through an octave

Dorian: Use notes starting on the 2nd scale degree.

Phrygian: Use notes starting on the 3rd scale degree.

Lydian: Use notes starting on the 4th scale degree.






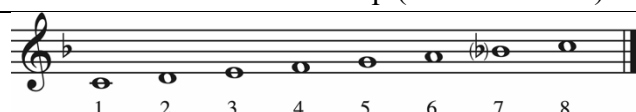

Mixolydian: Use notes starting on the 5th scale degree.

Aeolian: Use notes starting on the 6th scale degree.

Locrian: Use notes starting on the 7th scale degree.

Modes in Practice

The chart below shows the Minor and Major modes and describes their construction with examples.

Minor Modes		
Aeolian	Natural minor, or use 6 to 6 in major key.	 <p>The KS is that of the relative major.</p>
Dorian	Natural minor but with a raised 6th scale degree, or use 2 to 2 in any major key.	 <p>The KS has one less flat (or one more sharp).</p>
Phrygian	Natural minor but with a lowered 2nd scale degree or use 3 to 3 in any major key.	 <p>The KS has one more flat, (or one less sharp).</p>
Major Modes		
Ionian	Major (Use 1 to 1 in any major key)	 <p>The KS is the major.</p>
Lydian	Major but with a raised 4th scale degree, or use 4 to 4 in any major key.	 <p>The KS has one more sharp (or one less flat).</p>
Mixo-Lydian	Major but with a lowered seventh scale degree, or use 5 to 5 in any major key.	 <p>The KS has one more flat (or one less sharp).</p>
Other		
Locrian	Natural minor scale but with a lowered 2nd and 5th scale degree, or use 7 to 7 in any major key.	 <p>The Locrian scale is usually written in the major key signature a half step higher than its first note.</p>

Practice Activities for Scales

Identify 10 Mm scales.	Listen and identify 10 Mm scales.	Construct 10 Mm scales
Identify 10 modes	Listen and identify 10 modes.	Construct 10 modes.

Other Scales	
Pentatonic: China (Scales are played modally on other notes) (1) Do, Re, Mi, Sol, La, Do (gong) CDEGAC (2) Re, Mi, Sol, La, Do, Re (shang) DEGACD (3) Mi, Sol, La, Do, Re, Mi (ju) EGACDE (4) Sol, La, Do, Re, Mi, Sol (zhi) GACDEG (5) La Do, Re, Me, Sol, La (yu) ACDEGA What is most popular – Yu? Gong? Other?	Japan (Scales are played modally on other notes) (6) Do, Re, Me, Sol, Le, Do (Hirajoshi) CDEbGAbC <small>P&K start on Do, Burrows starts on Le transposed to C. Sachs and Slominsky start on Re transposed to C</small> (7) Sol, La, Do, Re, Mi, Sol (yo (like zhi)) GACDEG Other Whole Tone WWWWWW CDEF#G#A#C Octatonic: WHWHWHWH (CDEbFF#G#ABC) or HWHWHWHW Pitch Class Set: (any collection of notes to be used as a scale) Chromatic Scale (All notes – Used especially in serial Music)

Keywords

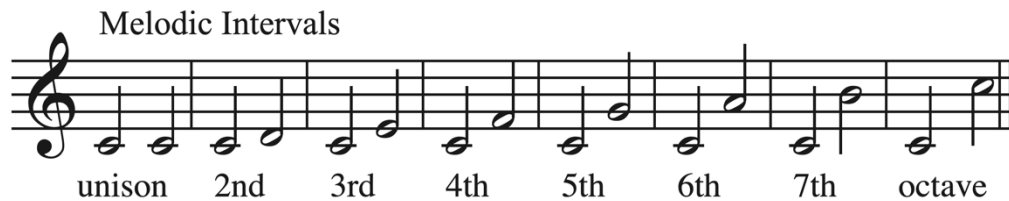
Minor Modes: Aeolian, Dorian, Phrygian; Major Modes: Ionian, Lydian, Mixolydian; Other Modes: Locrian; Other Scales: Pentatonic, Whole Tone, Octatonic, Pitch Class Set, Chromatic

Music Theory Minute Videos: Modes: <https://youtu.be/kyQMeq2i9tc>

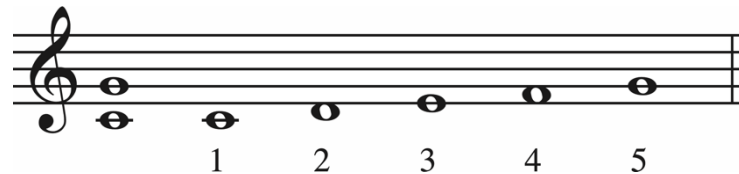
Intervals

As composers combined notes to harmonize their melodies, they found some combinations of notes to be pleasing (consonant), some to be displeasing (dissonant), and some to be hollow (neutral). This section will provide vocabulary for better classifying these intervals. The vocabulary of this section will also enable quicker analyzing and building of chords. So far, scales and key signatures have been built using the intervals of whole and half steps, and occasionally a step and a half.

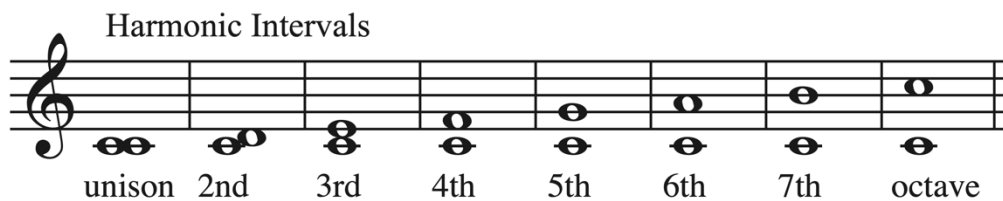
Alternating the first note with the other notes of a scale shows the increasing distances between them and suggests a system for describing these distances. These distances (intervals) are labeled below.



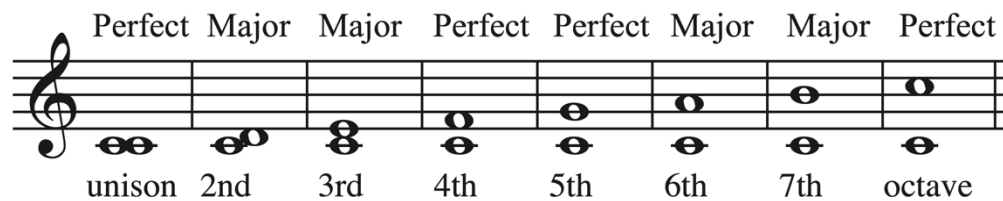
To determine the distance of an interval, count one on the lowest note, then count each line or space between them until the upper note is reached. C to G is a 5th, C to F a 4th, C to E is a 3rd, etc.



Intervals may be presented melodically where the notes follow one another as shown above, or harmonically where the notes sound at the same time as shown below.

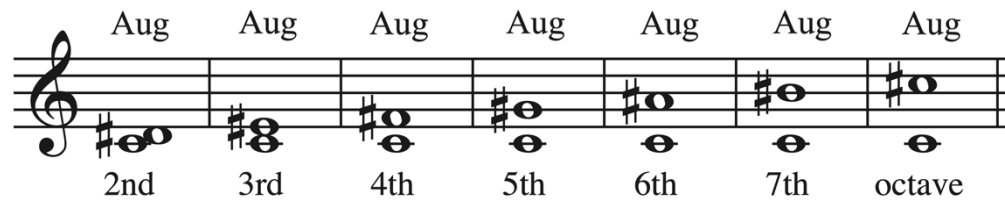


When the upper note of the interval is in the major scale of the lower note, the interval is said to be perfect or major as indicated on this chart.

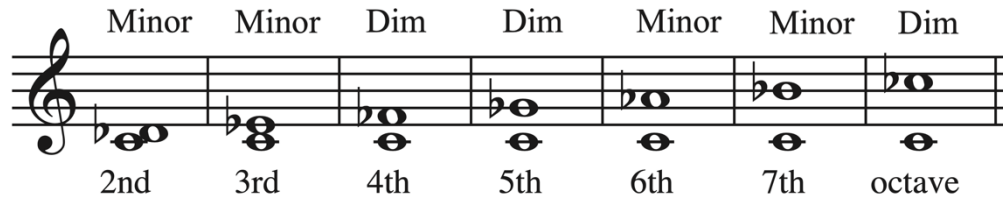


Unisons, fourths, fifths, and octaves are *perfect*. Intervals of a 2nd, 3rd, 6th, or 7th are major. It seems unusual to have two different labels for these notes, but the reasons have to do (1) with the simple mathematical ratios used to generate the frequencies of unisons (1 to 1), octaves (2 to 1) and fifths (3 to 2), and (2) with the inversion of intervals (more later), and (3) with the harmonies that were acceptable historically. In the history of music, unisons, fourths, fifths, and octaves were used to harmonize music before intervals of a 2nd, 3rd, 6th, or 7th.

Any perfect or major interval may be made **larger** (*augmented*) by raising the top note by a half step or lowering the bottom note by a half step.



Any perfect or major interval may be made **smaller** by lowering the top note by a half step or raising the bottom note by a half step. *Major* intervals become *minor* and *perfect* intervals become *diminished*.



This chart summarizes the quality of intervals when made larger or smaller, and their common abbreviations.

	2nds, 3rds, 6ths, 7ths	Abbrev	unisons, 4ths, 5ths octaves	Abbrev
Intervals made a whole step larger	Doubly Augmented	++	Double Augmented	++
Intervals made a half step larger	Augmented	+	Augmented	+
Intervals where the top note appears in the scale of the bottom note.	Major	M	Perfect	P
Intervals made a half step smaller	Minor	m	Diminished	◦
Intervals made a whole step smaller	Diminished	◦	Doubly Diminished	dd

Listening to Intervals

It is impossible to tell the difference between enharmonically spelled intervals by listening. For example, the +2 and the m3 sound identical. The notes on a staff would need to be seen to tell the difference. Consequently, when listening to music, people identify the most commonly used interval. The most used intervals are the P1, m2, M2, m3, M3, P4, TT, P5, m6, M6, m7, M7, and P8. The TT is an abbreviation for tri-tone, which is a dissonant interval produced by either the enharmonically equivalent $\circ 5$ or +4.

The following chart lists intervals from most consonant to most dissonant.

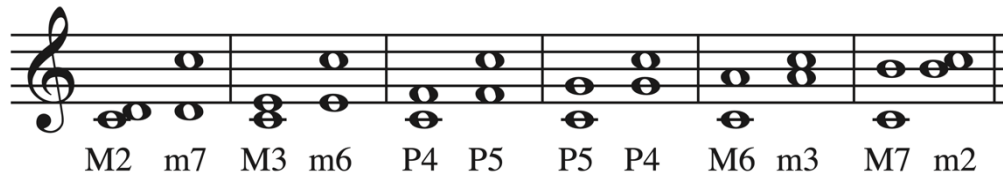
Consonant	M3, m6, m3, M6
Neutral	P1, P8, P5, P4
Dissonant	M2, m7, m2, M7, TT

Again, the vocabulary for describing intervals explained in this section will be essential to understanding chords and future topics in music theory.

Inverting Intervals

The process of inverting intervals is simply that of taking the bottom note up an octave. The note that was previously on the bottom is on the top and vice versa.

While there are few reasons to invert intervals, this process will become more important when chords are studied.



Here are a few quick observations about inverted intervals.

- (1) The intervals and its inverted interval always total 9. In the measures above $2+7=9$, $3+6=9$, etc.
- (2) Major intervals invert to minor intervals
- (3) Perfect intervals invert to perfect intervals (that is one reason why they are perfect!).
- (4) Although there are no examples in the chart above, augmented intervals invert to diminished and diminished to augmented.

Keywords

Consonant Intervals, Dissonant Intervals, Neutral Intervals, Melodic Intervals, Harmonic Intervals, Unison, 2nd, 3rd, 4th, 5th, 6th, 7th, Octave, Qualities of Interval: Major, Minor, Perfect, Diminished, Augmented, Doubly Diminished, Doubly Augmented, Listening to Intervals, Enharmonically Equivalent Intervals, Most Consonant, Neutral, and Dissonant Intervals, Inverting Intervals, Identifying Intervals, Constructing Intervals

Music Theory Minute Videos: Intervals: https://youtu.be/LOyAuo_EWVA,

Music Theory Minute Videos: Inverting Intervals - <https://youtu.be/L4uo40WGuUQ>

Practice Activities for Intervals

(Intervals – No Quality)	Major and Perfect Intervals	Maj, Min, Dim, Aug
Identify 15	Identify 15	Identify 15
Construct 10	Construct 10 Staff	Construct 10 Staff
	Identify 10 Keyboard	Identify 10 Keyboard
	Listen and identify 10 Staff	Listen and identify 10 Staff

Scale Degree Names

A vocabulary for identifying notes in the scale has come into common use. Memorize these. They will be used more later.

- 1 = tonic (the most used tone, the note on which scales and melodies are built)
- 2 = supertonic (a note above the tonic)
- 3 = mediant (a note halfway between the tonic and the dominant.)
- 4 = sub dominant (a note a fifth below the tonic)
- 5 = dominant (a note a fifth above the dominant with a strong tendency to go to tonic)
- 6 = sub mediant (a note halfway between the tonic and the subdominant)
- 7 = leading tone (the note a half step below the tonic with a strong tendency to go to tonic)
- 7 = sub tonic (the note a whole step below the tonic, found mostly in minor keys)

Keywords

Tonic, Supertonic, Mediant, Sub Dominant, Dominant, Submediant, Leading Tone, Sub Tonic

Music Theory Minute Videos: Scale Degree Names: https://youtu.be/G_IXORG4fLU

Triads

As composers began to write more complex harmony, the triad or three-note chord became a standard. Triads are most easily constructed using every other note of a scale as shown below. Notice that when triads are stacked like this, they are said to be in root position, meaning the name of the chord is the lowest note (more about that later). If a root-position triad begins on a line note, every note in the triad is a line note. If it begins on a space note, every note in the triad is on a space.

1 C 2 Dm 3 Em 4 F 5 G 6 Am 7 B° 8 C

There are four types of triads in common use: major (M), minor (m), diminished (°), and augmented (+).

Major Minor Diminished Augmented

Major triads consist of a major third on the bottom (C to E) and a minor third on top (E to G). Major triads may sometimes (rarely) be called a Mm triad. When describing chords there is a strong tradition to spell them from the bottom up (CEG), or to refer to the intervals from the bottom up (Mm).

This chart shows the construction of the commonly used triads.

	Bottom then top third
Major	Mm
Minor	mM
Diminished	mm
Augmented	MM

In a major key signature, the major, minor, and diminished chords occur naturally. Memorize the labels and their patterns on each scale degree below. Upper and lower-case Roman numerals indicate the quality of the chord on each scale degree (major = upper case, minor = lower case, diminished = lower case with °, augmented = upper case with +).

1 Major I 2 Minor ii 3 Minor iii 4 Major IV 5 Major V 6 Minor vi 7 Diminished vii° 8 Major I

In minor key signatures, the major, minor, diminished, and augmented chords occur naturally when using the harmonic form of the minor scales. See and memorize the labels and their pattern below.

1 Min i 2 Dim ii° 3 Aug III+ 4 Min iv 5 Maj V 6 Maj VI 7 Dim vii° 8 Min i

No other form of the minor scale does a better job than harmonic when building the most commonly used minor chords, but there is one notable concern. The augmented chord on the third scale degree is objectionable to most listeners. That chord, if used, is usually modified to conform to the key signature resulting in a major III chord (Eb, G, Bb for the example above).


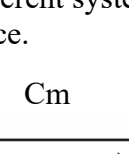

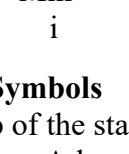
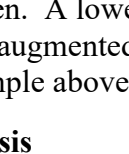
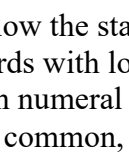
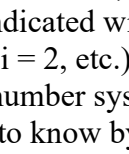
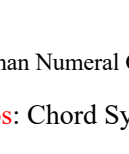
Keywords

Major (Mm), Minor (mM), Diminished (mm), Augmented (MM), Arrangement on Scale Steps in Major Keys, Arrangement on Scale Steps in Minor Keys, Identifying Triads, Spelling Triads

Music Theory Minute Videos: Triads: <https://youtu.be/ICEdD9w7A4s>

Chord Symbols for Triads

Over the years many different systems of chord symbols have come into use. The two shown below have achieved prominence.

	Cm	D dim	E aug	F	G	Am	B dim	C
								
	1	2	3	4	5	6	7	8
	Min	Dim	Aug	Min	Maj	Maj	Dim	Min
	i	ii°	III+	iv	V	VI	vii°	i

Popular Music Chord Symbols

The chords above the top of the staff are commonly used in popular music. If a chord is major, only the name of the chord is given. A lower case “m” is added for minor chords. Some form of abbreviation is used for diminished and augmented chords. In the example above D dim is used, but it could as easily be D- or D°. In the example above E aug is used, but it could as easily have been B+.

Roman Numeral Analysis

The Roman numerals below the staff indicate major or augmented chords with upper case letters and minor or diminished chords with lower case letters. Major chords are quite common, so they are indicated with the Roman numeral alone (V, for example). Augmented chords are indicated with a “+” (III+). Minor chords are common, so likewise, they are represented with the Roman numeral alone (i). Diminished chords are indicated with a “°” (vii°). Roman numerals also indicate on which scale degree the chord is built (I = 1, ii = 2, etc.). A variation of the Roman numeral system is in use today and is known as the Nashville number system which indicates the scale degree (but not chord quality which performers are expected to know by listening or through knowledge of the specific song).

Keywords

Popular Music Conventions, Roman Numeral Conventions

Music Theory Minute Videos: Chord Symbols: <https://youtu.be/6VbycYPiiDE>

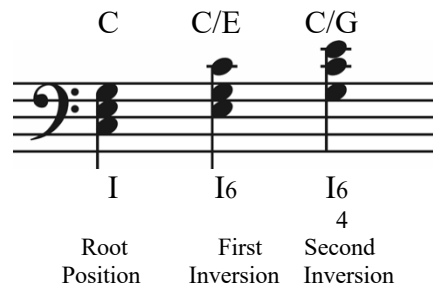
Triad Inversion

Triads consist of three notes as shown. When the note naming the chord (C in this case) is the lowest note the chord is in root position. The chord consists of two other members the third (E) and the fifth (G).



Any one of those notes may be played by the bass instrument resulting in inverted triads. In the example below, the C chord is shown with the bass note playing each member of the chord: C then E

then G. Each of these “voicings” of this chord produces a drastically different sound, so these are indicated in the chord symbols as shown below. Like with intervals, inverting a triad is just taking the lowest note up an octave.



The popular music symbols are easy to understand, they just identify the chord used, and the lowest note played. From this musical shorthand, the performers improvise their parts. The Roman numerals are more complex.

Like the popular music system, the I of the Roman numeral identifies the chord used (in this case the chord built on the first scale degree of the key, or C). The Arabic numerals which indicate inversions are easy to memorize and simply memorizing them is recommended.

MEMORIZE

For chords with the **root** (the chord name) **in the bass**, there is **no inversion symbol**.

For chords with the **3rd** above the root in the bass, the inversion symbol is **6**.

For chords with the **5th** above the root in the bass, the inversion symbol is **64**.

Why? Cool Kids, Read This

For those who need to know why, . . . the Arabic numerals describe the intervals used to construct the inverted chords.

Look at the third chord. There is a 6th and a 4th above the lowest note. These intervals give the 6 and 4 used in the inversion symbol.

Look at the second chord. There is a 6th and 3rd above the lowest note. The symbols 63 are used to indicate this inversion, but over time it has come to be abbreviated with just a 6.

Look at the first chord, there is a 5th and a 3rd above the lowest note. The symbols 53 are used to indicate a root position chord, but root position chords are the most common, so the 53 is assumed if no inversion symbol is given.

The reason the Roman numeral inversion system developed in this way was that it was common for the keyboard player to be given the notes of the bass line, and even if they did not know the chords, they could just construct the intervals above that note, and could create a suitable harmony using this musical shorthand. The system became widely used over centuries. Understanding it is essential to understanding much that is written about music. One specific advantage of this system is that accidentals could be used with these numbers to change the chord qualities, again using only a knowledge of intervals and without being able to spell specific chords. For example, in a major key, bVI#6b53 would spell a German augmented sixth chord (G+6), even if one does not yet know it.

Keywords

Root Position – Bass Note: Root, First Inversion (6) Bass Note: Third, Second Inversion (64) Bass Note: Fifth

Music Theory Minute Videos: Triad Inversions: <https://youtu.be/awKbEh3HWbU>

Practice Activities for Triads

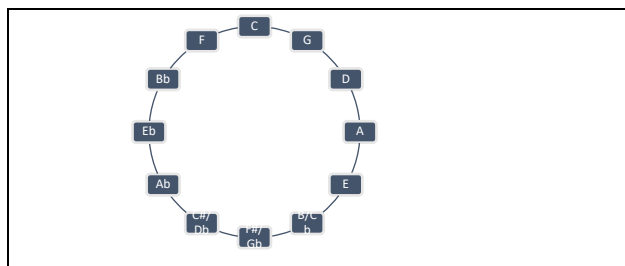
[Identify 10 Chords Mm^{o+} with inversions](#)

[Listen and Identify 10 Mm^{o+} with inversions](#)

[Build 10 Chords Mm^{o+} with inversions](#)

Harmonic Progressions

Chords do not occur in music in random order. Songs typically start and end on a I chord. Between, they tend to move around the circle of fifths. Any Beethoven or Mozart symphony in the key of C, would include a good number of G and C chords repeated toward the end. This dominant (G) to tonic (C) movement is a driving force in music.



In the key of C, a common chord progression is from Em (iii) to Am (vi) to Dm (ii) to G (V) to C (I).

iii	vi	ii	V	I
-----	----	----	---	---

Memorize this progression: iii vi ii V I. Starting on any note and proceeding counterclockwise around the clock, reveals this and many other common chord progressions. Circle of fifth progressions are not used all the time, but they are common.

Notice that proceeding around the circle of fifths clockwise provides the names of each of the sharp keys in order of increasing numbers of sharps. Proceeding around the circle of fifths counterclockwise reveals the names of the flat keys in order of increasing flats. The circle of fifths provides tremendous insights into key signatures and harmonic progressions.

Keywords

Dominant to Tonic Movement, Circle of Fifths, . . . iii, vi, ii, V I . . .

Music Theory Minute Videos: Chord Progressions: <https://youtu.be/bkgaSMS7J20>

Chord Substitutions

Study this list of chords from the key of C. How many chords have two or more notes in common?

C:	CEG
Dm:	DFA
Em:	EGB
F:	FAC
G:	GBD
Am:	ACE
B dim:	BDF

Look at some of these that have notes in common.

- C (I) has two notes in common with Am (vi) (C and E).
- F (IV) has two notes in common with Dm (ii) (F and A).
- G (V) has two notes in common with B dim (vii^o) (B and D).

Although several other chords have two or more notes in common, these are the ones that most often substitute for one another (vi and I, IV and ii, V and vii^o).

Keywords

Chords with Shared Notes, Common Chord Substitutions

Music Theory Minute Videos: Chord Substitutions: <https://youtu.be/MSV4B8jjCVQ>

More about Chord Progressions

The chord progression memorized above (iii, vi, ii, V, I) may be expanded to include the substitution chords.

Specifically, the IV chord may be used in place of the ii, the vii^o in place of the V, and the vi chord in place of the I, as shown in this chart.

iii	vi	ii IV	V vii ^o	I vi
-----	----	----------	-----------------------	---------

When V or vii^o progress to vi, the harmonic motion tends to jump back to the point where vi is on the chart then resumes. The V vi or vii^o vi progression is a good way to extend the length of a song. The I chord may be followed by any chord.

In minor keys, the same progressions are used, but the chord qualities change. In minor keys, there is often a sub-tonic VII chord which can comfortably precede III or i. The leading tone vii° precedes i as in the chart above. The iv, vii°, and VI commonly substitute as in major. The I chord may be followed by any chord.

VII	III	VI	ii° iv	V vii°	I VI
-----	-----	----	-----------	-----------	---------

The I64 chord has the root of the dominant, and often precedes or substitute for the dominant. When I64 and V are used together and are followed by I or vi, they form an exceedingly popular cadential 64 progression (more about cadences later).

Keywords

Chord Substitutions in Major and Minor Keys, I64 as a dominant substitution, Cadential 64 Progressions

Music Theory Minute Videos: More Chord Progressions: <https://youtu.be/0Of2aPthHe0>

■ Writing Music

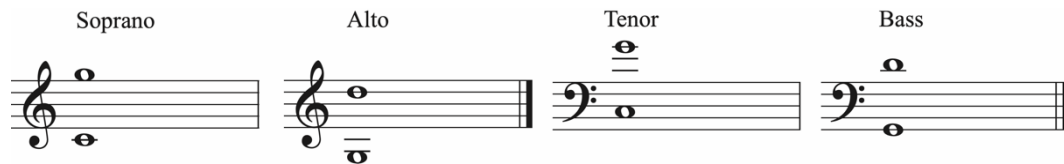
Writing Rhythms.

Rhythm should create a driving force that propels the music forward.

Also, see the information on form as it pertains to rhythm below (phrases, repetition/contrast, consecutive rhythms, etc.).

Writing Melodies

When writing melodies, observe the comfortable range of the performers. This chart provides suggested ranges for vocals. Instrumental ranges will be covered later, but writing for voices will help develop an understanding of principles that apply to instruments also. S:C4G5,AG3D5,TC3G4,BG2D4



Melodies should set the mood for the piece and should be consistent with the composer's intentions. Most melodies are stepwise with only occasional leaps.

When leaps occur, they often spell chords.

Half-steps in the scale establish tendency tones. In major keys, 4 to 3 and 7 to 8 are common.

Also, see the information on form as it pertains to melody below. (phrases, repetition/contrast, consecutive rhythms, etc.)

Writing Harmonies.

Harmonies should provide a sense of motion and direction.

Harmonies should define the desired depth and texture for the music.

A solo line creates a very different feel from a duet, trio, or quartet.

Harmonies should appropriately use consonance and dissonance to create a sense of tension and resolution.

Textures in Music

There are three commonly used textures in music:

Monophonic: Melody only

Polyphonic: Multiple melodies at the same time, as in a round (canon), invention, or fugue.

Homophonic: Melody with mostly non-melodic accompaniment.

Writing Formal Structures

Music should have a sense of organization that contributes to the listener's enjoyment and understanding of the music.

Melodies and rhythms should be organized into phrases, like a poem.

Consecutive melodies and rhythms are often related to one another.

Melodies and rhythms may be based on repeated figures, but repetition should not be overdone.

One phrase may pose a musical question, and the one following it may answer.

Keywords

Rhythms, Melodies, Harmonies, Texture, Form

Music Theory Minute Videos: Writing Music: <https://youtu.be/WPc-dwnN9rM>

Creating Harmonies

Harmonizing for Two Voices

Normally when writing for two voices, one part performs the melody which is fixed and the other voice performs a countermelody or a supporting harmonic part. When possible, the root and 3rd of the chord should be covered, and that would be true especially of accented beats. Even so, other intervals (3rds and 6ths) must often be used to provide harmonic interest. Songs usually start and end with the tonic note in the bass. The use of unisons and octaves in both voices provides no harmony so they are generally avoided. The use of *consecutive perfect fifths* in two voices (also called *parallel fifths*) also provide a hollow or neutral sound very similar to unisons and octaves, so they are likewise avoided. Harmonies work well in two voices when they are within an octave of one another, although this is not a firm rule for two voice writing.

Harmonizing for Three Voices

When writing harmony for three voices, it seems logical that each voice would take a member of the chord (Root, 3rd, or 5th). In practice, however, often the melody (again a fixed part) dictates whether that is possible. The most important consideration in writing for three voices is not what to include, but what to leave out. Include the root and 3rd when possible. Omit the 5th if necessary. Two roots and a third provide a nice harmony. As with two voice writing, parallel unisons, octaves, and fifths are avoided. As above, the spacing of the notes impacts how well they blend. Keep the upper two voices within an octave of one another. Voice three may have additional liberty with spacing.

Harmonizing for Four Voices

When writing 3 note chords for four voices, it is necessary to double one member of the chord (R, 3, 5). As a rule, double the root when possible. Doubling the 5th is the next preference. Doubling the 3rd is the last preference. Doubling the root gives the chord the greatest stability. The 3rd and 5th are more active harmonically and give a sense of instability. Again, when working around the other voices, it is sometimes necessary to omit a voice. Again, omit the fifth when possible. In those cases, the best voicing would be three roots and one third. A single third is harmonically active and blends well with three roots. The same principles of spacing apply. The soprano (highest voice) should not be more than an octave from the alto (next lowest voice). The alto should not be more than an octave from the tenor (third lowest voice). The bass (lowest voice) may be spaced further apart if needed.

Music Theory Minute Videos: Two, three, and four voice harmony: <https://youtu.be/BPxU7irxXiA>

Voice Leading Rules

- (1) Include all chord members (R, 3, 5) when possible
- (2) When something must be doubled, double the root if possible, the 5th as the next preference, and the 3rd as the last preference. NOTE: With diminished chords, there is an important exception. The preferred doubling is the 3rd!
- (3) When something must be omitted, omit the fifth and triple the root rather than doubling the third.
- (4) Avoid objectionable parallel motion such as parallel unisons, octaves, and 5ths.
- (5) Keep upper voices within an octave of adjacent voices. Permit the bass to use wider intervals.
- (6) Generally, avoid cross voicing (having the tenor sing higher than the altos, etc.).
- (7) The melody should usually be in the highest voice, although some exceptions to this are permitted, especially in Barbershop, men's choir, and arrangements for low instruments.
- (8) Harmonies sound different in lower and higher registers. Use your ear to determine what sounds good in each register. Larger intervals should be used in lower registers.
- (9) When placing the 3rd or 5th in the bass, give the bass space for the best blend.
- (10) Observe tendency tones (7 to 8, 4 to 3, 3 to 4) but especially do so in outer voices (SB).
- (11) Move from one chord to the next with as many voices moving by step or same as possible.
- (12) Write interesting parts for all voices when possible! No one wants to sing long passages that use just a few notes.

Music Theory Minute Videos: Voice Leading: <https://youtu.be/-SJrq9Kppns>

Resolving specific chords

To create smooth harmonic progressions, move from one chord to the next with as many voices moving by step or same as possible while avoiding objectionable parallel motion (unisons, 5ths, octaves).

Adjacent Chords

The most difficult chords to resolve without errors will be chords where the root is a step away from the next chord (I to ii, or IV to V, V to vi, for example). The reason is, that every note including the perfect fifths and octaves in the chord have a note of resolution a step away. The problem is, resolving this way guarantees parallel fifths and octaves.

Incorrect Correct

Parallel 8ve

Parallel 5th

vii° ii I ii

Chords with Tendency Tones

The next most difficult chords to resolve without errors are chords that contain a tendency tone such as the leading tone or the 4th scale degree. Of these chords, the V to I chord is most used. When resolving this progression, the most important thing is to resolve the leading tone up by a step. The leading tone of the key happens to be the 3rd of this chord.

Incorrect Correct Correct Correct

LT

3rd

5th

R

R

V I V I V6 I V6₄ I

The third should resolve up regardless of the inversion of the chord. If the leading tone is in an outer voice (soprano or bass), this is especially important. Occasionally in an inner voice, the leading tone may resolve down, especially if the intent is to build a full chord with all members included.

The next most common chord with a leading tone is vii°. The vii° chord has two tendency tones (the root which is the leading tone in the key, and the fifth which is the 4th scale degree in the key). The root resolves up and the 5th resolves down for good voice leading. Note in the vii° chords below, the 3rd is doubled because if either other note were doubled, the resolution of the tendency tones would produce parallel octaves.

Correct Correct Correct

3rd

5th

3rd

R

LT

vii° I vii°6 I vii°6₄ I

Keywords

Two Voices, Three Voices, Four Voices, Voice Leading Rules, Resolving Adjacent Chords, Resolving Chords with Tendency Tones

Music Theory Minute Videos: Resolving Chords: <https://youtu.be/6aMlbPo72bQ>

Non-Chord Tones

As composers write music, they do not use only notes that are chord members. In the melody and accompanying parts, they use a variety of non-chord tones. See the examples in parentheses below.

The image shows two systems of musical notation in 4/4 time. The first system illustrates four types of non-chord tones: PT (Passing Tone), NT (Neighboring Tone), App (Appoggiatura), and Esc (Escape Tone). The second system illustrates three types: Ant (Anticipation), Sus (Suspension), and Ret (Retardation), along with Ped (Pedal). Chord symbols (I, IV, V) are placed below the bass line, and non-chord tones are labeled above the treble line.

Non-chord tones are marked as shown above.

(PT) Passing tone: a note passing by step between chord tones a third or more away.

(NT) Neighboring tone: a note a step above or below two repeated chord tones.

(App) Appoggiatura: A note a leap away from the original note and a step away from the resolution

(Esc) Escape tone: A note a step away from the original and a leap away from the resolution.

(Ant) Anticipation: A note in one voice moving early to the next chord early.

(Sus) Suspension: A note from the previous chord held into the next then resolved down.

(Ret) Retardation: A note from the previous chord held into the next then resolved up.

(Ped) Pedal: A bass note which is held or repeats while other voices play other chords. Ped may be in another voice.

Any non-chord tone may be accented or unaccented. Accented means the non-chord tone occurs (is articulated) on the beat or chord change. Unaccented means they occur between the beats or chords.

Suspensions are labeled according to quality based on the interval between the suspension and the bass note, and the note of resolution and the bass note. In the example above, the suspension is a 43. For bass suspensions, the intervals between the bass and most dissonant note are used.

Keywords

Passing Tone, Neighboring Tone, Appoggiaturas, Escape Tones, Anticipations, Suspensions, Retardations, Pedal Tones, Suspension Numbers, Identifying, Constructing

Music Theory Minute Videos: Non-Chord Tones: <https://youtu.be/FdQAjzlWvuI>

Cadences

Music is organized into phrases, much as poetry is. At the end of each phrase, the performer usually needs to take a breath. A harmonic punctuation or cadence is also usually included at that point. These are the commonly used cadences.

Cadence	Abbrev	Chords	Description	Strength
Authentic Cadence	AC	V to I or vii° to I	A cadence found at the end of a song or group of phrases	Strong
• Perfect AC	PAC		V and I chords in root position, and with the root in the soprano and the bass in the last I chord.	Strongest
• Imperfect AC	IAC		All other authentic cadences	Next strongest
Plagal Cadence	PC	IV to I	This is also known as the amen cadence.	Moderate
Half Cadence	HC	Any to V	Anything to V – usually ii to V, IV to V or I to V.	Not final (weak)
Deceptive Cadence	DC	V to vi or vii° to vi	This sounds like it will be an authentic cadence, but surprise!	Not final (weak)

The IV to V half cadence is the foundation for a host of chords to be learned later. The IV in major or iv chord in minor is often called the pre-dominant chord. Additional predominant chord substitutions to be covered later will include the Neapolitan 6 chord and the Augmented 6th chords.

Keywords

Function of Cadences, Types of Cadences: Authentic Cadences, Perfect Authentic Cadences, Imperfect Authentic Cadences, Plagal Cadences, Half Cadences, Deceptive Cadences; Strength of Cadences,

Music Theory Minute Videos: Cadences: <https://youtu.be/zjSr4hHKlwk>

Period and Phrase Construction

Since the Classical period, music has had a strong emphasis on four and eight measure *phrases* (or some multiple thereof, for example 16 or 32 measures).

Phrases are often used in pairs with a weak cadence after the first phrase and a strong cadence after the second. A two-phrase combination in music is called a *period*. When this happens, the *phrases* are said to have an *antecedent* (question) and consequent (answer) relationship.

The two phrases may be completely independent melodically, rhythmically and harmonically, or they may have some repetition from the 1st phrase in the 2nd phrase, usually with a different ending. These phrases are said to be parallel.

Two periods may likewise be combined to create a double-period. Double periods likewise can be parallel or not, and usually contain a weak cadence toward the middle and a stronger cadence at the end.

This type of organization is especially evident in the works of Mozart and Haydn, although it has been used by composers of all ages.

Keywords

Phrases, Periods, Double Periods, Antecedent, Consequent, Parallel Construction

Music Theory Minute Videos: Phrases and Periods: https://youtu.be/DNOo1zr_Kg4

Theory II

Seventh Chords

As time progressed, composers began to use four note chords or seventh chords for greater richness. Seventh chords are most easily constructed using every other note of a scale as shown below. In root position, the name of the chord is the lowest note. As with triads, if a root-position seventh chord begins on a line note, every note is a line note, and the same is true of spaces.

1 2 3 4 5 6 7 8
 CM7 Dm7 Em7 F7 G7 Am7 B[°]7 C7

There are five types of seventh chords in common use: major (M7), major-minor (Mm7), minor (m7), half diminished ([°]7), and fully diminished (^o7). The bottom row of the chart shows the construction of the commonly used seventh chords (in chord 1, C to E = M3, E to G = m3, G to B = M3 or MmM).

Major 7 M7 MmM
 Major-Minor 7 Mm7 (Dominant 7) Mmm
 Minor 7 m7 mMm
 Half Diminished 7 [°]7 mmM
 Fully Diminished 7 ^o7 mmm

In a major key signature, the major 7, major-minor 7, minor 7, and half-diminished chords occur naturally. Memorize the labels and their patterns on each scale degree below. Note the conventions for displaying the various types of seventh chords using Roman numerals.

CM7 Dm7 Em7 FM7 G7 Am7 B[°]7 CM7
 1 IM7 2 ii7 3 iii7 4 IVM7 5 V7 6 vi7 7 vii[°]7 8 IM7

Note, in popular music, the B[°]7 is often notated as Bm7b5.

In minor key signatures, these chords are arranged differently, plus the fully diminished 7 chord is added. Memorize the labels and their pattern below.

Cm7 D[°]7 EbM7 Fm7 GMm7 AbM7 B[°]7 Cm7
 1 i7 2 ii[°]7 3 IIIM7 4 iv7 5 V7 6 VIM7 7 vii[°]7 8 i7

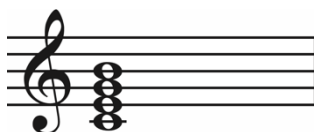
Keywords

M7 (MmM), Mm7 (Mmm), m7 (mMm), [°]7 (mmM), ^o7 (mmm), Writing Quality with Popular and Roman Numeral Systems

Music Theory Minute Videos: Seventh Chords: <https://youtu.be/5WGoLrhAZGg>

Seventh Chord Inversion

Seventh chords consist of four notes as shown below. The chord has a root (in this case C), a third (E), the fifth (G), and the seventh (B).



Any one of those notes may be played by the bass. In the example below, the C chord is shown in each inversion: with C in the bass, then E then G then B. Each of these “voicings” of this chord produces a different sound, so these are indicated in the chord symbols as shown below.

CM7 CM7/E CM7/G CM7/B

IM7	IM6	IM4	IM4
	5	3	2
Root	First	Second	Third
Position	Inversion	Inversion	Inversion

MEMORIZE

For chords with the **root** (the chord name) **in the bass**, the inversion symbol is **7**.

For chords with the **3rd** above the root in the bass, the inversion symbol is **65**

For chords with the **5th** above the root in the bass, the inversion symbol is **43**.

For chords with the **7th** above the root in the bass, the inversion symbol is **42** or **2**.

Memory tip: Note the count-down from 7 to 2 in this chart!

Why? Cool Kids, Read This

For those who need to know why, . . . the Arabic numerals describe the intervals used to construct the inverted chords.

Look at the first chord. There is a 7th, 5th and 3rd above the lowest note. The symbols 753 are used to indicate a root position seventh chord, but root position chords are the most common, so to save time, the 753 is abbreviated with only 7.

The second chord has a 6th, 5th, and 3rd above the lowest note. Logically this would be 653, but over time it has come to be abbreviated 65.

The third chord has a 6th, 4th and 3rd above the lowest note. Over time, 643 has come to be abbreviated 43.

The fourth chord has a 6th, 4th, and 2nd. Over time, 642 has come to be 42, or sometimes just 2.

Practice Activities for Seventh Chords

Identify 10 Seventh Chords , with inversions	Listen and Identify 10 , with inversions Only M7, Mm7, m7 Only ^ø7, ^o7	Build 10 Chords , with inversions
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Music Theory Minute Videos: Seventh Chord Inversions: https://youtu.be/YG-IWE1a_oY

Harmonic progressions learned previously going around the circle of fifths are not impacted by the addition of a seventh to the chord. The chords function the same whether they are triads or seventh chords. This is true in major and minor keys.

iii7	vi7	ii7	V7	IM7
------	-----	-----	----	-----

- About chord substitutions, seventh chords freely substitute for triads on the same root.
- About doubling notes, when writing seventh chords for four voices, it is great to include all notes, but the 5th is the preferred note to omit. The 3rd may occasionally be omitted.
- About resolving Mm 7th chords, . . . 7th down a step, 3rd up.
- About resolving ^o7 or ^o7 chords, . . . root up, 5th and 7th down.

Taller chords are often used in jazz (9th 11th 13th). The just add another third above. In four voices, R, 3, 7 and top note are often used.

Keywords

Root Position (7), First Inversion (65), Second Inversion (43), Third Inversion (42), Popular and Roman Numeral Conventions, Seventh Chord Progressions, Substitutions, Doubling, Resolving, Identifying, Construction, Using 9th, 11th, and 13th Chords.

Secondary Dominants

The harmony studied to this point has been diatonic, meaning the chords conform to a major or minor scale. Composers effectively used chromatics in music to provide a more interesting harmonic background for the music. The most commonly used chromatic chords are secondary dominants which work like this.

In the key of C, there is, of course a CM chord, but there are five other major and minor chords (Dm, Em, F, G, and Am). It is permissible to use **the dominant chord of any of those keys** in the key of C major, **so long as it is immediately followed by that chord.**

The dominants of these chords are shown in the third column below.

		Secondary Dominants in the Key of C	
Mm chords in C Letter name	Mm chord in C: Roman numerals	The dominant of (ii, iii, IV, V, vi) is	Analysis
Dm	ii	A – spelled AC#E	V/ii
Em	iii	B – spelled BD#F#	V/iii
F	IV	C – Spelled CEG	V/IV
G	V	D – Spelled DF#A	V/V
A	vi	E – Spelled EG#B	V/vi

Circle of Fifths

Chords built on A, B, C, D and E already exist in the key of C major, but for the most part they are not major. In the key of C, when a major chord (or Mm7 chord) is encountered where it normally would not be, assume it is most likely a secondary dominant.

Arranging these chords according to the circle of fifths reveals interesting relationships.

	iii	vi	ii	V	I	IV
B is the V of iii (E)	E is the V of vi (A)	A is the V of ii (D)	D is the V of V (G)	G is the V of I (C)	C is the V of IV	F

To summarize, in a major key or minor key, a major chord or Mm7 chord where it normally does not appear is most likely a secondary dominant. In major keys . . .

A VII or VII7 chord is the V/iii or V7/iii.

A III or III7 chord is the V/vi or V7/vi

A VI or VI7 chord is the V/ii of V7/ii

A II of II7 chord is the V/V or V7/V

A V or V7 chord is normal in major keys. It is the V.

A I chord is normal in major keys, BUT if its I7 (Mm7) that is the V7/IV.

In minor keys, it is the same, except the chord qualities change.

About resolution, secondary dominants are Mm7 chords and resolve the same (3rd up, 7th down).

Keywords

Concept, Purpose, Circle of Fifths, Major and Minor Keys, Identification, Construction, Resolution

Music Theory Minute Videos: Secondary Dominants: <https://youtu.be/AunDTXoNjjI>

Secondary Seventh Chords

The vii° , $vii^{\circ 7}$ and $vii^{\circ 7}$ substitute for the V chord, so the seventh chord of any key may serve as a secondary seventh, replacing the secondary dominant.

Keywords

Concept, Purpose, Identification, Construction, Resolution

Theory III

Modulations

A secondary dominant is a quick visit to another key, but then the music immediately returns to the original key. In many cases, songs modulate to new key centers for short periods, or sometimes for the remainder of the song.

There are three primary kinds of modulations: Pivot chords, common tones, and direct modulations.

Pivot Chord Modulations (also called common chord modulations)

The most common kind of modulation is a pivot chord modulation. The composer identifies a common chord between two keys then uses that as a pivot point from one key to the other.

Here is a modulation map of [Bach's Invention #1 in C Major](#).

mm 1	mm4	mm8	mm10	mm11	mm16	mm18	mm20
CM	GM	CM	Dm	Am	CM	FM	CM

In each of the new key centers, Bach begins to use the accidentals from the new key, although the key signature stays the same. If a composer is going to stay in the new key, it is common to change the key signature. If the composer is just exploring a new key center temporarily, they use many accidentals.

In each of the modulations in Bach's Invention #1, a common chord connects the various keys. Measure 4 and 5 use the following chords. The C: I chord on beat 1 of measure 4 changes function to that of a IV chord in G Major. That C chord is the pivot chord between the two keys.

Measure 3 Beat 4	Measure 4 Beat 1	Beat 2-3-4	Measure 5 Beat 1	Beat 3
Am B dim	C	F#dim	D7	G
C: vi vii [°]	I G: IV	vii [°]	V7	I

Common Tone Modulations

Common tone modulations use a single tone as a means of pivoting to a new key. In the example below, the first modulation is from C to Bb. Both C and Bb have an F natural in the scale. At the end of this line, the common tone appears again. It could modulate back to C major, or it could modulate to any key with an F in its scale (C, Cm, Db, Dm, Eb, Ebm, F, Fm, Gb, Gbm, Gm, Ab, Am, Bb, Bbm, and more if considering E#). The common tone permits modulation to more distantly related keys than the pivot chord modulation. **NOTE: Closely related major or minor keys have one more sharp or flat. Distant keys have more.**

Common Tone Modulation

Common Tone Modulation

C: I IV6 I V6 I IV Bb: I IV6 I IV6 I V

Direct Modulations

The common chord and common tone modulations give some preparation for the new key and smooth the transition by using musical elements from both keys. In direct modulations, there is no such warning or preparation for the key change, and so they may not be as smooth. In fact, abrupt would be a better word to describe them.

C: I IV6 I V6 I IV I Db: I IV6 I V6 I IV I

Keywords

Pivot Chords, Common Tones, Direct Modulations

Music Theory Minute Videos: Modulations: <https://youtu.be/xTckcIeXZvw>

Borrowed Chords

In major and minor keys, the following chords are most common.

Scale degree	1	2	3	4	5	6	7
Major	C I	Dm ii	Em iii	F IV	G V	Am vi	B dim vii°
Minor	Cm i	D dim ii°	Eb III	Fm iv	G V	Ab VI	B dim vii°
Other possibilities in minor		Dm ii	Eb+ III+	F IV	Gm v	vi°	Bb VII

In major keys, it is ok to substitute any chord from the minor key (including the other possibilities) into the major key. This broadens the harmonic palette significantly. Chord progressions using borrowed chords such as these are relatively common in major keys:

$$\boxed{I \ ii^\circ \ iv \ V \ I} \quad \boxed{I \ bVI \ bVII \ I}$$

Note the flat signs before the VI and VII chords in the progressions in the chart. In the key of C, the vi chord is Am, but in Cm, the VI chord is Ab. With borrowed chords, the flat before the Roman numeral for III, VI, and VII is necessary to avoid confusion about which root to use. Besides the V chord, minor keys do not usually borrow chords from major keys.

Music Theory Minute Videos: Borrowed Chords - <https://youtu.be/kMHkTfqrFto>

Predominant Chords

A number of chords precede the dominant in common chord progressions, but most often ii and IV in major and ii° and iv in minor. This section will examine additional pre-dominant chords, again to broaden the harmonic palette.

The chords listed here will resolve to the V chord most commonly, but any one of them **may resolve to any chord which substitutes for the V chord (usually the vii° or the I64)**.

Neapolitan 6 Chord

The Neapolitan 6 (N6) chord is a bII chord, in first inversion with the 3rd doubled. Its nickname, the N6, is used for any analysis of this chord.

The N6 resolves as follows to avoid voice leading issues. The most important note of resolution is that the root goes down, usually a °3 to the leading tone of the key (3rd of the V chord). After that, the rest is common sense. The 5th of the N6 usually resolves a half step down to the dominant note (the root of the V chord). The two 3rds of the N6 resolve in opposite directions, to avoid parallel octaves. If the awkward °3 must be avoided, insert a I64 before the V.

Neapolitan

N6 V7 I

The German Augmented 6th Chord

The German is the most common of the augmented sixth chords (G+6). It is most often built on a note a m2 above the root of the V chord. This note is the sounding root of the chord (theoretically it will not look like a root – cannot be placed on all lines or all spaces, but when played it will sound like the root). The chord consists of a M3, P5, and +6 above the sounding Root. **It is enharmonically equivalent to a Mm7 chord.**

The G+6 resolves as follows: The interval of the augmented 6th resolves out to an octave. When resolving to a V chord, the rest of the notes are just a half step away from a chord tone. Many composers resolve them by half steps, but this creates parallel 5ths. If parallel fifths must be avoided, then insert the I64 between the G+6 and the V. Another way of avoiding the parallel 5ths is to respell the G+6 chord, most commonly as the Italian and French augmented sixth chords.

The Italian augmented sixth (I+6) is exactly like the German, but it omits the 5th above the sounding root and doubles the 3rd above the sounding root instead, eliminating the possibility of parallel 5ths. The two 3rds do not resolve to the same note to avoid parallel octaves.

The French augmented sixth (F+6) is exactly like the German, but it substitutes an augmented fourth above the sounding root for the 5th, anticipating the resolution to the V chord (no fifth means no possibility of parallel 5ths).

German			Italian			French		
G+6	V	I	I+6	V	I	F+6	V	I

Other augmented sixth chords are possible using only the interval of the augmented sixth chord and any other notes desired.

Augmented sixth chords are occasionally spelled enharmonically.

Like secondary dominants, augmented sixth chords may resolve to other major or minor chords. To do so, the chord is built on a sounding root a m2 above the major or minor destination chord.

Keywords

Neapolitan 6 (N6), Augmented Chords: German (G+6), Italian (I+6), French (F+6), Other +6 Chords, Enharmonic Spelling, Identification, Constructions, Resolution, Secondary Augmented Sixth Chords

Music Theory Minute Videos: Predominant Chords: <https://youtu.be/tzB6eEfACz0>

Theory IV

Late Romantic and Impressionistic Practices

The late Romantic period saw the increased use of more chromatics, non-chord tones, and unusually spelled chords. The music was, however, still primarily functional with chord progressions most often continuing around the circle of fifths.

More substitute chords: any chord with a fifth degree in the bass may serve as a substitute for V. These include V add6, V+, etc.

The common tone diminished seventh chord (ct^o7) serves as a chordal neighboring tone. Example: CEG CEBGb CEG. Familiar Examples: O Little Town of Bethlehem, Old Rugged Cross. Common Tone fully diminished chords are found in classical and Barbershop and many other styles of music.

Parallel chords – Parallel chords, often of the same quality are used in both classical and jazz music. In Jazz they're usually just a couple of chords (Ex: pickup notes F#7, G7). In Classical music, especially in the late romantic and impressionistic period, they may last for several chords, and are sometimes called planing (pronounced plane-ing).

Chromatic Mediants: any sequence of chords where the roots have a relationship of a 3rd with one another. These are found diatonically in progressions such as I vi IV ii . . ., in the key of C that would be C, Am, F, Dm. Chromatic mediant open up other possibilities such as C Ab F D Bb G, several of which are not usually found in the key of C, and which have no close relationship to the surrounding chords. The mediant relationship makes the connection to the previous harmonic content, but the chromatic intervals give great interest.

The late Romantic and Impressionistic period overlapped slightly with Debussy and Ravel being the two greatest known Impressionistic composers. The Impressionistic movement in music ran parallel to the Impressionistic movement in Art which was based in Paris at the turn of the 20th century.

The impressionistic composers tended to use planning as we discussed, but they also used an expanded palette of scales. They explored whole tone scales, octatonic scales, pentatonic scales, modal scales, and modified modal scales. Strong dissonances were made acceptable by Impressionistic composers by playing them softly and lightly and by spreading chords widely.

Keywords

More Substitute Chords, ct°7, Parallel Chords, Planing, Chromatic Mediants, Whole Tone Scales, Octatonic Scales, Pentatonic Scales, Modal Scales, Modified Modal Scales, Making Dissonances Approachable

Music Theory Minute Videos: Late Romantic and Impressionistic Music: https://youtu.be/b0Lx_mNdXRc

■ Twentieth Century and Beyond

The Romantic period focused on the large orchestra and extremes in dynamics and expression. This tradition in the Romantic symphony continues until today.

In the early twentieth century, however, there was a trend among classical musicians toward smaller ensembles and lighter music, at least in terms of size and dynamics. Classical composers were also fascinated with new ideas and embarked on daring experiments with previously unexplored harmonies. Dissonances were embraced and much time was devoted to searching for new systems of harmonization that operated outside the tonality of the common practice period. In the early twentieth century, atonal music flourished. Many of these ideas continue until today, but as with every other period, many others fell by the wayside.

At the same time classical composers were doing these things, the invention and spread of radio in the 1920s propelled a new art form to the forefront, specifically jazz. Also, the invention and spread of television in the 1950s introduced the world to a rapidly evolving popular music scene.

We'll look at each of these topics: Classical Twentieth Century Music, Jazz, and Popular Music

■ Twentieth Century Classical Music

Changing meters – It became common to change meters frequently. 4/4 3/4 4/4 2/4, etc.

Asymmetric Meter – It became common to perform in measures with uneven beats such as 5/8, 7/8, etc.

Bitonality – Two key signatures and/or tonal centers at the same, as when Ives would play songs with two groups in different keys. In classical pieces, occasionally different staves or instruments could be written in different keys. Some of Ives' pieces may have had groups performing at different tempos and in different meters, so these could be considered **bi-rhythmic** or **bi-metric** as well. **Bitonality** is not the same as **extended chords** such as 9ths, 11ths, and 13ths which were often used in jazz and which often did appear to have, let's say a C chord and a Dm chord stacked on top of each other. With extended chords, the chords are a part of a unified sonority.

Polytonality – Multiple tonal centers at the same time.

Tone Clusters – Music written around adjacent diatonic and chromatic scale degrees. Ornstein and Cowell were pioneers. Bartok and Stockhausen used them later.

Secundal Harmony – Music using the interval of a second (instead of the third) as a foundation for harmony. Cowell was the best known for this technique.

Quartal and Quintal Harmony – Music using the interval of a 4th or 5th as the foundation for harmony. Examples are found in Wagner, Ravel, Ives, Copland and many others.

Pandiatonicism – Music using a diatonic scale and triadic harmony but in a manner so as not to produce functional harmony. Slominsky coined the term. Numerous composers used it: Prokofief, Stravinsky, Ravel, Hindemith, Milhaud, Copland, Harris, and others.

Minimalism – Music based on repeating rhythms and phrases with small, nuanced changes through time. Composers are too many to list. Steve Reich is often believed to be a pioneer.

Expressionism – another name for 12-tone serial composition.

Serialism – A technique by Schoenberg in which a melody uses all notes of a chromatic scale and does not reuse any note until the entire scale has been used. Modifications such as transposition, inversion, retrograde and retrograde inversion are permitted to avoid repetition. The establishment of tonal music is to be avoided. Schoenberg, Berg and Webern were the best known Expressionist composers.

Aleatoric Music – Random or chance music. John Cage is especially known for aleatoric music.

Prepared Piano – A technique where a piano is modified so that playing it creates buzzes and clanks. John Cage is especially known for prepared piano pieces.

Musique Concrète – Music created by manipulating tape recordings. The music of Pierre Schaeffer is said to have influenced the Beatles, Frank Zappa, and other contemporary musicians.

Electronic Music – broad term encompassing many styles of music, but classically referring to music created with the aid of the computer and other electronics. Edgard Varese and Walter Carlos are early pioneers.

Serial Music

Using the matrix below, answer the following questions.

0	1	7	5	3	9	11	10	2	8	4	6
11	0	6	4	2	8	10	9	1	7	3	5
5	6	0	10	8	2	4	3	7	1	9	11
7	8	2	0	10	4	6	5	9	3	11	1
9	10	4	2	0	6	8	7	11	5	1	3
3	4	10	8	6	0	2	1	5	11	7	9
1	2	8	6	4	10	0	11	3	9	5	7
2	3	9	7	5	11	1	0	4	10	6	8
10	11	5	3	1	7	9	8	0	6	2	4
4	5	11	9	7	1	3	2	6	0	8	10
8	9	3	1	11	5	7	6	10	4	0	2
6	7	1	11	9	3	5	4	8	2	10	0

Write the prime in the top row of cells below then the note names of each number in the cell below. (4 points)

Give the prime (using numbers) starting on G.

Give the retrograde (using numbers starting on G). NOTE: The retrograde, not the prime starts on G.

Give the inversion (using numbers) starting on G. ditto

Give the retrograde inversion (using numbers) starting on G. ditto

Keywords

Meter (Changing Meters, Asymmetric Meters, Bimetric, Polymetric), Tonality (Bitonality, Polytonality), Non-Tertian Harmony (Tone Clusters, Secundal Harmony, Quartal Harmony, Quintal Harmony), Pandiatonic Harmony, Minimalism, Expressionism/Serialism, Aleatoric Music, Prepared Piano, Music Concrete, Electronic Music,

Jazz

The most unique things about jazz:

- (1) Convergence of European tonal traditions (circle of fifths, etc) and African Rhythms.
- (2) Forms – lots of standard 32 bar song form with 8 bars devoted to each section: ABAA, ABAC, etc.
- (3) Vocabulary
 - a. Head (the melody of a piece, or start of a piece)
 - b. Chorus (one time through the entire songs with all chord changes (usually 32 bars).
 - c. Vocabulary is sometimes misused by practitioners . . .
- (4) Melodies –
 - a. Scales - used notes from many scales including
 - i. modal scales
 - ii. blues scales (C, D, Eb, F#, G, A, Bb, C – and similar scales)
 - b. Chromatic notes
 - i. Frequent use of b3, b7 in major keys as color notes.
 - ii. Frequent use of #4 as a passing tone.
 - c. Improvisation was a key element and was expected of soloists (see a and b).
- (5) Rhythm
 - a. syncopated rhythms
 - b. Unique articulations
- (6) Expression
 - a. Numerous unique articulations
 - i. Falls
 - ii. Smears
 - iii. Mutes
 - iv. etc.
- (7) Harmony. See [this book](#).
 - a. Use of chords
 - i. Triads were largely replaced by chords with an added 6th (C6) or minor 7th (C7 or sometimes Cb7).
 - ii. Extended chords were used (9th, 11th 13th).
 - iii. Use of chromatics (see b below)
 - iv. Use of blues progressions: I7, I7, I7, I7, IV7, IV7, I7, I7, V7, IV7, I7, (V7).
 - b. Harmonic vocabulary developed is like popular music notation with a few exceptions for extended chords and advanced harmonies.
 - i. Triads as expected: C = C Major, Dm = Dm, B^o = B^o, G+ = G Augmented
 - ii. Seventh Chords as expected: G7 = Mm7, GM7 = M7*, Gm7 = m7, B^o7 - ^o7 although, Bm7b5 is sometimes used, B^o7 is ^o7. *M7 may be written with a delta triangle.
 - iii. C 9, C11, C13 are with a m7 above C and the 9th and 13th being major, and the 11th being perfect.
 - iv. Numerous accidentals are applied to chords C7b5
 - v. Suspensions are sometimes notated (G7sus4)
- (8) Ensembles:
 - a. Big Band:
 - i. Rhythms section (drums, keys, bass, guitar)
 - ii. 2 altos, 2 tenors, bari – players may double other woodwinds
 - iii. 4 trumpets
 - iv. 4 trombones
 - b. Combo
 - i. One or two Soloists
 - ii. Bass

- iii. Drums
- iv. Keys or Guitar or both

Keywords

Origins, Influences, Vocabularies, Melodies, Rhythms, Expression, Harmony

Pop Music

1950s – Folk, Country (Hank Williams Senior), Early Rock (Elvis)

1960s – Clean Electric Guitar – Beatles, Elvis - Continuation of everything before

1970s – Distorted Guitar – Heavy Metal - Continuation of everything before

1980s – Dance Music – Keyboard Centric - Continuation of everything before

1990s – 2000s – 2010s – 2020s - Boy Bands, Female Superstars - Continuation of everything before

Harmonies – Historically lots of major, in recent years more minor.

Many simple harmonies compared to Classical Music.

Repeated chord progressions make it easy to memorize music.

Modulations are simple compared to Classical Music. Only a handful of songs do more than direct modulations, although shifts from major to relative minor and back sometimes occur.

Forms are simple – IVCVCBCCO is very common. This is changing, however, with pre and post choruses and instrumental features often being added.

Unique timbres with electronic instruments!

Keywords

Decades, Instruments (Folk, Clean Electric, Distorted Electronic, Keyboards, Bass, Drums, Vocals), Harmonies, Memorization, Modulations, Forms, Timbres

Forms

Common Popular Forms: Intro, Verse, Chorus, Verse, Chorus, Bridge, Chorus, Outro

Common Jazz Forms: Most jazz songs are 32 bar form ABAB, AABA, ABAC, etc. Once through the entire song (verse, chorus, possibly bridge) is called a *chorus*. The head is the melody of the piece with accompaniment.

Binary Form: Song in two parts: AB.

Ternary Form: Song in three parts: ABC (sometimes used to describe ABA, which others call rounded binary). It's best to look for other clues as to how the writer is using these terms.

Round/Canon: Song like *Are You Sleeping* or *Row Your Boat* which may be sung by groups beginning at different times.

Invention: Usually a keyboard piece for two voices in a polyphonic style.

Fugue: A piece for keyboard or instruments for three or more voices in a polyphonic style and emphasis on a single theme (subject). Exposition, Development, Subject, Episode

Passacaglia: A dance form in $\frac{3}{4}$ with continuous variation.

Minuet: A binary dance form also in $\frac{3}{4}$ primarily based. The minuet served as the 3rd movement for countless Classical and Romantic symphonies.

Theme and Variations: Piece written with a theme which is repeated with melodic, rhythmic, harmonic and other variations. Haydn's Symphony #94 is among the best known.

Rondo: A large form alternating the A section with contrasting sections. The five and seven-part Rondos are common: Five: ABACA, Seven: ABACABA. The theme for Masterpiece Theater is a well known Rondo. Rondo is often spelled differently in other languages.

Sonata Allegro Form: A large form based on an A (I) and B (V) theme which make up the exposition. The development is a "fantasy" on these themes. The recapitulation repeats the A (I) and B (I) sections. Introduction, Exposition (A, B), Development, Recapitulation, Coda. The Classical period saw the greatest initial use of the form. The Romantic period expanded it greatly.

Tone Poem: A tone poem is a Romantic composition usually describing a story or non-musical idea. Smetana's Moldau which describes events along the Moldau River is a well-known example, but numerous Romantic composers wrote similar music.

Character Pieces: A short piece usually for piano or chamber ensemble which establishes a mood or similar non-musical idea.

Keywords

Binary, Ternary, Round/Canon, Invention, Fugue, Passacaglia, Minuet, Theme and Variation, Rondo, Sonata Allegro, Tone Poem

Other Videos:

Music Theory Minute Videos: Instruments of the Orchestra: <https://youtu.be/QOH0olQUy54>