

Longy School of Music

Music Theory for young students

designed for use in Creative Music Theory classes
in the Preparatory Division

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Teen Theory I and II

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Introduction

Dear student!

You are about to start learning music theory. Music theory is a study of music; it helps to understand how music works. It will teach you to read, write, and compose music.

What is music? It is something that can change your mood, make you move faster or slower, it can even change your heartbeat! Music can make you imagine things, sometime nice and sometimes scary, and when it gets stuck in your head, it simply won't leave! It is everywhere – on the radio, in a concert hall, in church or temple, in school – but it only lives while it sounds. You need a composer to make music, a performer to play it, and a listener to enjoy it.

To students, parents, and private instructors:

This portion of the theory text, where we explain and demonstrate basic concepts of music theory, is the same in Levels 1, 2, and 3 of the text for Creative Music Theory classes at Longy. As such, it will go further than a student in Level 1 will progress during a year. It will allow those starting their study of music theory at Level 2 or 3 to have all the background information they will need for a solid start in theory.

One will surmise from the text that we are most interested in developing solid, eventually automatic, mastery of the basic skills of music. The focus is definitely not on the accumulation of knowledge *per se*. Communication with one's theory teacher about such issues is highly recommended. Studio teachers should feel free to bring new concepts into lessons before those are introduced in theory, but we recommend introducing the application of theory in everyday musical activities.

Included is a section of suggestions for parents which we hope will be of value in helping students get the most out of music theory study. A glossary is provided to assist in that process. Homework sometimes provides tips that are not part of the text, when practical execution is the issue rather than conceptual development or exposition.

We welcome your input regarding the theory text, the writing of which is a multi-year effort. Throughout the year, the theory faculty will meet and collect ideas for improving what we've done so far, and we will forge an updated version for use in classes next year. Obviously, feedback from those who use the text will be extremely helpful as we craft the next version.

Suggestions for parents

General

Come back to this list on a regular basis and read it again. Chances are, you'll find something valuable you didn't notice the last time.

Daily work on theory, even in very small amounts, is more valuable than large spans of time on an irregular basis. Three or four short sessions per week is also an acceptable arrangement.

Help your child develop a habit of using a portion of practice time on a daily basis for doing theory. Suggestions include using the work as a warm-up before practice, as a break during practice, or between practice on different instruments.

Be involved with your child's work in aural skills and ear training: progress is the aim, not perfection, but the work needs to matter to the child. It is less important to be involved in the written work, but parents should at least be sure a child is actually doing the work.

Learn solfège and rhythmic syllables with your child.

Listen to music together, talk about it. Talk about the music your child is playing. Some recommendations:

What instruments are involved?

How does it make you feel? Why?

What was interesting? Why?

What mode is the music in (major or minor)?

What is the meter (2/4, 3/4, 4/4, etc.)?

How many parts are involved in the piece (how many players)?

How many sections does the music have?

Is it old or modern?

What register is the music in? What register does your child's instrument play in?

On a regular basis, play a pitch on the piano and ask your child to name it.

Come to your child's theory class and observe the learning, learn for yourself. This is most applicable for younger children and early class levels.

Play a series of pitches, have your child sing it back. Gradually increase the length of the series.

Switch roles: Have your child play a series of pitches and have the parent sing the series back for child. (Apply to rhythm clapping as well.) (Do the same with melodic or harmonic intervals.)

Improvise with your child: even something as basic as playing a single note or chord in a rhythmic way can provide a starting point. Have fun! There is no right or wrong in the absence of a style one has to fit into. Improvising which incorporates the piano or your

child's instrument, and uses concepts from theory to limit choices and free the mind, is especially beneficial.

Encourage your child to play all concepts from theory on the piano. We can't do enough of this in class, so it will be great to do at home!

Have your child play for you the compositions produced for the creative portions of homework. Stay in touch, ask what the creative portion was on a weekly basis.

Solfège

Sing passages from music practiced for one's instrument in solfège.

If a family has no piano, students should play solfège examples on their instrument.

If daily work is done on solfège (highly recommended), the work can be spread in stages. For instance, a child might simply sing an example on "la" one day, while conducting and on "la" the next, and with solfège syllables on the third day. Another intervening step might be to simply speak the solfège syllables in rhythm. It is important to reach the step of naming the notes as sung.

For melodies to memorize, a gradual approach is best. After multiple days of singing, a melody will be easy to memorize. Doing the entire process the last night before class will lead to a stressful, sometimes seemingly impossible situation.

Help your child keep in mind that he/she is *making music*: always aim to sing expressively, not mechanically.

Encourage your child to sing without stopping. In early stages on a solfège example, one will need to go slowly enough to manage the notes and rhythms without stopping: speed will come with familiarity. If mistakes are made, keep going, don't lose the pulse: *go back after finishing* to fix mistakes.

Activities

And if that's not enough, some activities you and your child can share:

- have your child tell you what they learned (or did) this week having to do with rhythm
- have your child tell you what they learned (or did) this week having to do with pitch
- have the child demonstrate a pitch or rhythm concept
- ask if something was done well
- look over any materials covered in class, ask what various things mean
- sing together (anything!)
- have your child apply something from theory class to his/her instrument (play a rhythm, melodic pattern, interval, etc.)
- try to figure out melodies you hear (i.e., name the pitches and rhythms as if you were to write them down)

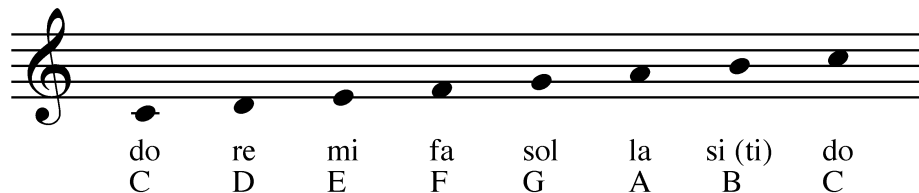
Activities to integrate into practicing:

- play scales, intervals, rhythms on one's instrument
- sing the melodies one plays on an instrument for lessons
- sing the scales one plays on one's instrument
- find and name the chords one plays for lessons
- create a free-form, improvisatory portion of your child's practice time
- start every practice session with no-rules free jam

Notation

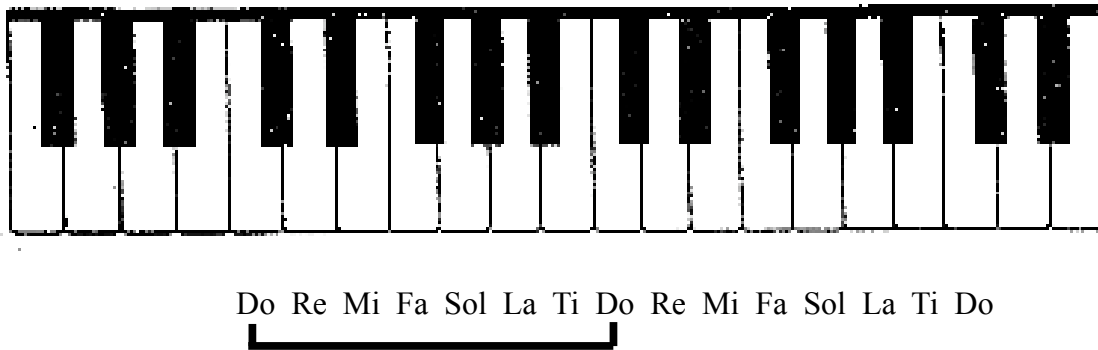
Pitch identification in solfège and in writing

Music is made of musical sounds. We hear many sounds, but not all of them are called musical. What makes a musical sound special? It has a definite pitch. A pitch is something we can recognize and, sometimes, imitate. Our ear can only recognize sounds that are not very-very low, and not very-very high. Long ago people invented syllables for naming musical pitches called notes. The names of music notes are: Do, Re, Mi, Fa, Sol, La, Ti or Si. This way of naming musical sounds is called solfège, or solfeggio. It was invented by a monk from an Italian town of Arezzo in the 11th century. Syllables used in solfège were convenient for singing, and each symbol had a fixed pitch attached to it.



Keyboard, note location

Look at the keyboard below. You see black and white keys. Black keys are arranged in groups of 2 and 3. A white note in front of two black keys is Do, and notes to the right from Do are Re, Mi, Fa, Sol, La, Ti. After Ti the notes repeat, and go from Do to Do again. The distance between one Do and a neighboring Do (or between any two neighboring notes with the same name) is called an octave, from the Latin numeral 8.



Octaves

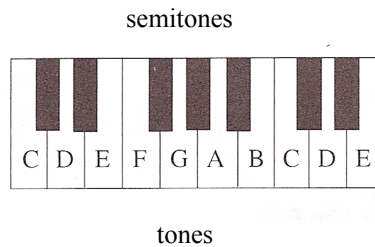
Notes that are an octave apart sound in very much alike. An octave from *Do* to *Do* is marked above. Find more octaves marked on the diagram of octave names on page 28. How many notes are in the sub-contra octave? Does your piano have some notes in the fifth octave? We can sing comfortably within the first octave, and some of us can reach notes in the second octave. Male voices are lower, and men usually sing in the small and sometimes the great octave. Match your singing voice to the piano. What octave feels good for you?

Registers

Piano has three registers: low, middle, and high. Other instruments play only in one or two registers. What are the registers for your instrument?

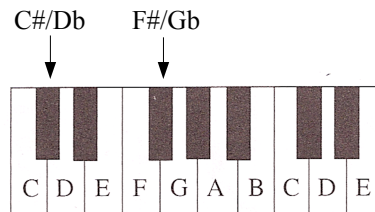
Distance in music: tones, semitones

The distance between a black and a white key or between two white keys without a separating black key is the smallest on the keyboard. It is a semitone or half step. The distance between two white keys (with a black key in between) is a tone or whole step. Semitone is the smallest measuring unit of distance between notes. It is interesting that you can trace the semitones along the back of the keys, where they go behind the wood of a piano (or the top edge of the picture below), and the tones are those that reach the edge (toward the player on a piano, or the bottom edge of the picture below).



Sharps and flats

Black keys get their names from neighboring white keys. A black key on the right from a note is called a sharp, and a black key on the left is a flat. All black keys can have double names. We call notes with different names but the same sound *enharmonic equivalents*. Two are named below. Can you name some that are not marked?



Writing musical sounds (notation)

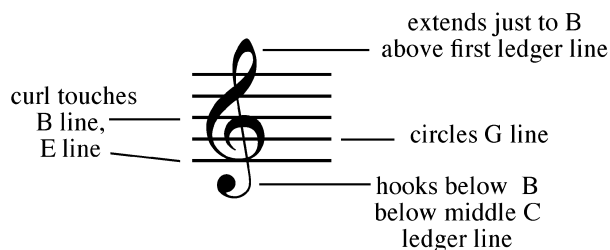
Music notes as we know them today are little circles or ovals placed on or between lines of the staff (five lines counted from the bottom up; we also count the spaces from bottom up). Sometimes, when notes are too high or too low, they are written on ledger lines above or below the staff. Higher notes appear higher on the grand staff. Reading music is like deciphering a secret message that only musicians can understand. Any secret code has a key, and music is not an exception. The key in music is called a clef (a French word for a key), and it is placed on the left side of the staff. We read music from left to right, the same way we read English. Music notes mean different pitches in different clefs. There are three commonly used clefs: treble (for high notes), bass (for low notes), and alto (for notes in the middle register).

For piano and other keyboard music, a grand staff is used. The grand staff combines bass and treble clefs into a single unit by using a bracket at the left end, and by extending barlines all the way through both staves. (For an example of a grand staff, see the example on the next page that shows sharps, flats, and naturals.)

What instruments play music in a high register? What clef will be used for these instruments? Do you know any instruments that can play only in the low register? Why do we use treble and bass clefs for writing piano music?

Treble clef

Let's begin reading music in treble clef. It is called the G or Sol clef, because it indicates the location of G of the first octave. The treble clef ends or begins – depending on the way you write it – on the second line of the grand staff. This is a line for Sol. Now write the rest of the octave. You need ledger lines for Do of the first octave, and for notes lower than Do. Usually notes in treble clef don't go lower than Sol of the small octave and higher than Fa of the third octave.



Octave signs

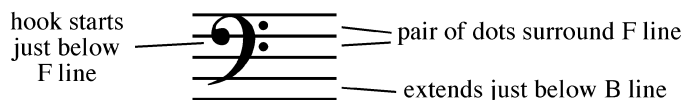
The 8^{va} sign indicates that notes have to be played one octave higher than they are written. If this sign is placed below a staff, the notes should be played one octave lower than they are written. For many notes in a row which sound in a different octave, the sign is extended with dashed lines. (When notes are *really* high or low, we use the 15^{ma} sign, raising pitches two octaves.)

8^{va} - - - - -

15^{ma} - - - - -

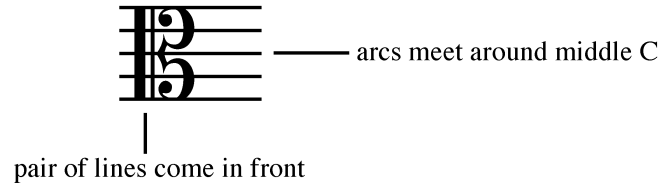
Bass clef

Bass clef is called F or Fa clef, and it indicates the location of Fa of the small octave. Bass clef can be used for notes as high as sol of the first octave or as low as Sol of the contra-octave.



Alto clef

Alto clef is one of four C clefs. They all indicate the position of middle C. Alto clef places C on the third line. Do you know what instruments play music written in alto clef?



Writing sharps, flats, and naturals

A sharp sign indicates a note with a pitch a half step higher. A flat sign indicates a note with a pitch a half step lower. A natural sign cancels a previous sharp or flat. In the example below, notice how the line is visible through each accidental type when placed before a note on a line, and how the space is clearly defined when placed before a note on a space.



When an accidental (sharp or flat) is placed in a measure, all notes of the same pitch should be altered by it, unless it is canceled by a natural sign. In other words, accidentals carry throughout the measure they appear in. Could you name all the notes in the example above?

Playing musical sounds: articulation and dynamics

Legato

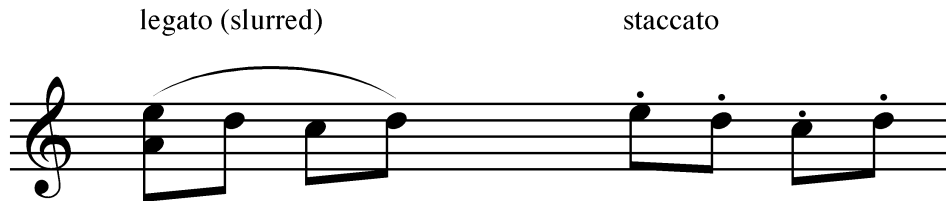
Sometimes musical sounds are played connected and smooth – legato.
Legato is marked with a curved line – a slur.

Staccato

Sometimes musical sounds are played sharp, jumping – staccato.
Staccato is marked with a dot above the note.

Non-legato

Sometimes sounds are not connected, and they are not jumping.
This is non-legato. Non-legato could be marked with staccato dots and accent marks on top.



Dynamics

Musical sound can be played with different volume. Different volumes in music are marked with dynamics:

- f* – forte, loud
- p* – piano, soft
- mf* – mezzo-forte, medium loud
- mp* – mezzo-piano, medium soft
- ff* – fortissimo, very loud
- pp* – pianissimo, very soft

Changes in volume are marked with the following signs:

- cresc.* - *crescendo*: gradually increase sound, sometimes marked with this sign: <
- dim.* - *diminuendo*: gradually decrease sound, sometimes marked with this sign: >

How would the example below sound? Can you execute it?



Sound duration, note values

Sounds not only differ in pitch and volume, they also differ in duration. Notes that last different times have different note values. The longest note we usually deal with in modern notation is called a whole note.

The note that lasts half as long as a whole note is called a half note.

(It takes two halves to make a whole.)

The note that lasts half as long as a half note is a quarter note.

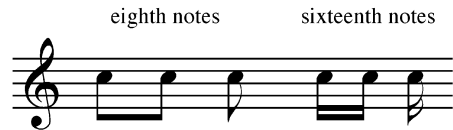
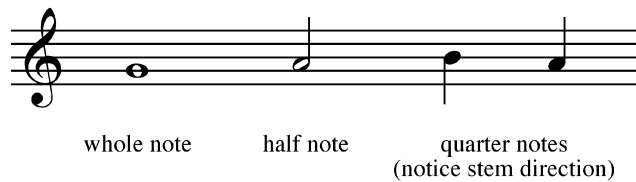
(It takes two quarters to make a half, or four quarters to make a whole.)

The note that lasts half as long as a quarter note is an eighth note.

(It takes two eighths to make a quarter, or eight eighths to make a whole.)

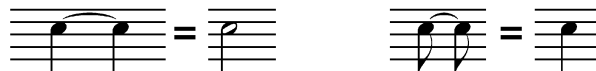
The note that lasts half as long as an eighth is a sixteenth note.

(It takes two sixteenths to make an eighth, or sixteen sixteenths to make a whole.)



Tie

A tie is a curved line connecting two notes of the same pitch. It ties two sounds together creating a longer note value.



Fermata

Fermata indicates that the note is extended indefinitely.



Dotted note

A dot on the right of a note indicates lengthening of the note by half the note's value. (An example is on the next page.)



Stems

All note values except for the whole note have stems.

Stems are attached on the right side facing up for notes below the middle line (Ti in treble clef, Re in bass clef). Notes above the middle line have stems attached on the left side facing down. Stem length is ordinarily one octave. (See the example above.)

Flags

Eighth and sixteenth notes also have flags, little curved lines attached to stems. Eighth notes have singular flags, and sixteenth notes have double flags. (See example on previous page.)

Beams

Sometimes eighth or sixteenth notes are grouped, usually to indicate one beat. Lines that are used for connecting them are called beams. Eighth notes have singular beams, and sixteenth notes have double beams, like sixteenth flags. A beam is much thicker than a stem. (See example on previous page.)

Rests

Rests in music are silent moments, but they also have note values. Here is the table of rests with corresponding note values.

		Note that position of rests is important! Most rests concentrate or begin on the third space.
		Whole rest hangs into that space.
		Half rest sits on the line below and extends into that space.
		Quarter rest begins there and squiggles down.
		Eighth rest has a hook that is in that space.
		Sixteenth rest has the same top hook as the eighth rest, and the next one begins in the space below.

Rhythm

A sequence of different note values is rhythm. We use a method of speaking rhythms at Longy which helps develop the ability to read music on sight very accurately. The method is described later in the text, in Appendix 3, pages 47-48.

Tempo

Speed of playing music is a tempo. Tempos could be:

slow: Largo, Andante, Adagio, Lento,
 medium: Moderato, Andantino,
 fast: Allegro, Vivace, Presto

Changing tempos

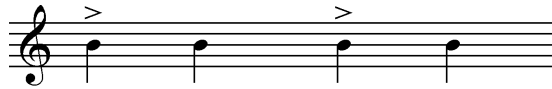
Sometimes a tempo changes as the music unfolds. It is indicated by the following signs:

Accelerando – accelerate
 Ritardando – slow down
 Ritenuto – slow down
 A tempo – back to initial tempo

Meter

Musical pulse is called meter. Meter is regular alternation (taking turns) of strong (accented) and weak (unaccented) beats. Meters could be:

Duple or binary (a strong beat comes every second beat):



Triple or ternary (a strong beat comes every third beat):

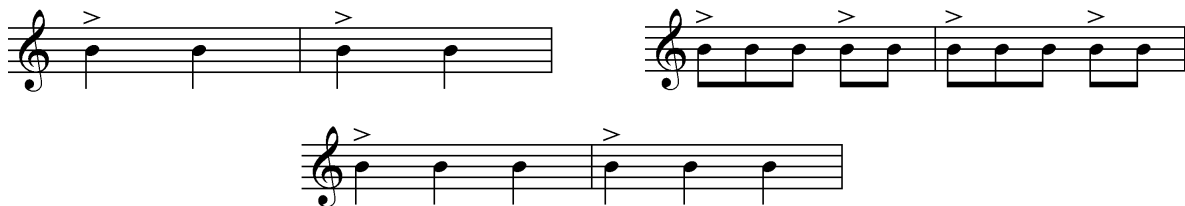


Asymmetrical (irregular, odd) meters have groups of two and three (a strong beat comes sometimes two, sometimes three beats apart):



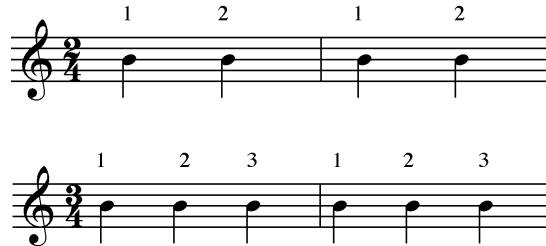
Measure (bar), barlines

The meter is ordinarily a repeated pattern of beats that goes on for some time before changing. A measure line or barline is put before the strongest beat. It indicates the beginning of a measure. The area between two barlines is a measure or bar. Here are the examples from above with barlines:



Time signature

A time signature is two numbers placed on the left of the staff. It only appears at the beginning of a piece, or when changed during a piece. It indicates a number of beats or beat divisions in a measure (top number), and length (note value) of each beat or beat division (bottom number). A time signature is not a fraction, it does not have a line separating top and bottom numbers.



Beat division

Within the measure, beats can be divided into smaller units. When the division is into two parts, we call that simple division. When the beat divides into three parts, the division is called compound. For simple meters, the time signature shows the number of beats and what value gets the beat, but for compound meters, the time signature shows beat divisions and what the value of the division is. The examples below each have two beats. One uses simple division, the other uses compound division. Notice that the beaming of the beat divisions makes it obvious where the beat is.



Triplets (or tuplets)

Sometimes a beat that is ordinarily divided into two parts is divided into three parts. We would call this division a triplet, which is a specific kind of "tuplet". One may always think of the tuplet as being a number of divisions "in the time of" the ordinary division of the beat or part of beat affected. For instance, triplets are "3 divisions in the time of 2". The numeral above or below the beam tells us the division is unusual. When there are no beams, a bracket is used, as shown below.



Pitch materials in music

Western classical music uses the scale as the building block for both melody and harmony. After explaining a little about scales, we will explore the melodic aspect and then the harmonic aspect of our tradition.

Scales

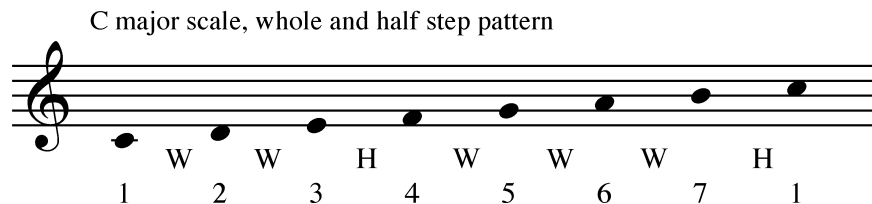
Scales are ascending or descending consecutive pitches held together by their attraction to tonic. Notes in a scale sometimes are called steps, or scale degrees, and they are marked with Arabic numerals.

Major and minor scales

The most commonly used scales in tonal music are major and minor scales. They have eight consecutive sounds arranged in separate patterns for major and minor.

Major scale

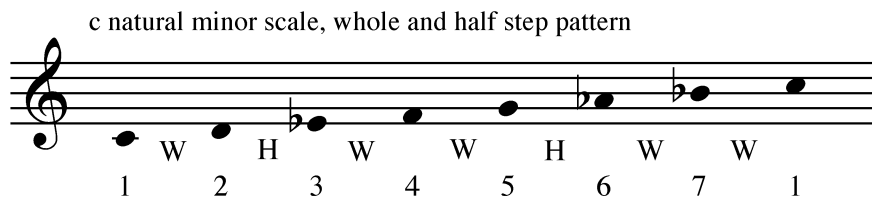
Major scale is generally described as sounding happy. It is structured the following way, with W standing for whole step, and H standing for half step: W-W-H-W-W-W-H. The half steps in a major scale are located between steps 3 & 4, 7 & 1.



Minor scale

Minor scale is generally described as sounding sad. It is structured the following way, with W standing for whole step, and H standing for half step: W-H-W-W-H-W-W. The half steps in a natural minor scale are located between steps 2 & 3, 5 & 6.

A minor scale with this structure is called natural minor. There are two other versions of the minor, harmonic minor and melodic minor, which will be explained when discussing melody, below.



Major and minor compared (parallel major and minor)

If we construct the major scale on C using the pattern just described, and then construct a minor scale on C using its pattern of whole and half steps, as we just did, we find a good way to think about the two. Compare the C major scale and the C natural minor scale on the previous page. Notice that scale degrees 3, 6, and 7 are lowered in the minor version compared to the major. Speaking of major and minor this way, with both on the same tonic, is to speak of *parallel* major and minor.

Modes and pitch sets

If one constructs a major scale, a certain group of pitches is the result, something we call a pitch set. Starting on different pitches, but always using the same set of pitches, will produce different patterns of whole and half steps. We call each pattern a mode. The major scale is also a mode (*ionian*, scale degree 1 to 1, just the same as major) and the natural minor is as well (*aeolian*, scale degrees 6 to 6 in a major pitch set). See Appendix 5, page 33, for a table of modes.

Study the examples below to see that the pattern of whole and half steps is the same in each *aeolian* mode, and that each uses the same set of pitches as the major scale it is said to come from.

C major pitch set, *ionian* mode, whole and half step pattern:

1 W 2 W 3 H 4 W 5 W 6 W 7 H 1

C major pitch set, *aeolian* mode, whole and half step pattern:

1 W 2 H 3 W 4 W 5 H 6 W 7 W 1

E major pitch set, *ionian* mode, whole and half step pattern:

1 W 2 W 3 H 4 W 5 W 6 W 7 H 1

E major pitch set, *aeolian* mode, whole and half step pattern:

1 W 2 H 3 W 4 W 5 H 6 W 7 W 1

Key

When we transpose a scale (that is, when we take the pattern of whole and half steps to a new starting place) we create a new key. A key gets its name from its first note. For example, if we have a major scale starting on E, the key will be E major. Most often a piece of music begins and ends in the same key.

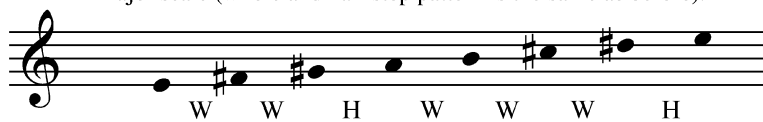
The key of this song is C (do) major; it begins and ends on C, the tonic.



Key signature

A key needs sharps or flats to preserve its structure (the pattern of whole and half steps). These are written right after a clef sign. They are particular to the key and called a key signature. The key signature will appear on every staff system in a piece. It helps us not have to write so many accidentals, but we have to keep it in our head if we are to play the right notes. Compare the C major scale on page 10, paying attention to the whole- and half-step pattern, with the E major scale below.

E major scale (whole and half step pattern is the same as before):



E major scale written with key signature:



Relative keys

Major and minor keys that share the same key signature are called relative keys. A relative minor key is located a minor third down from its major, which takes you to scale degree 6. Natural minor results from singing the octave from scale degree 6 to 6 of the major pitch set.

Relative Major and minor

C major:

A musical staff in treble clef showing a C major scale starting on C4. The notes are: C4, D4, E4, F4, G4, A4, B4, C5. Below the staff, the scale degrees are numbered: 1, 2, 3, 4, 5, 6, 7, 1, 2, 3, 4, 5, 6.

a natural minor:

A musical staff in treble clef showing a C natural minor scale starting on C4. The notes are: C4, D4, E4, F4, G4, A4, Bb4, C5. Below the staff, the scale degrees are numbered: 1, 2, 3, 4, 5, 6, 7, 1.

Scale degrees

In tonal music each step in a scale has a name:

- scale degree 1 is *tonic*
- scale degree 2 is *supertonic*
- scale degree 3 is *mediant*
- scale degree 4 is *subdominant*
- scale degree 5 is *dominant*
- scale degree 6 is *submediant*
- scale degree 7 is *leading tone*

Tonic

The first and the last note of a major or a minor scale is tonic, the most important note in a scale. Tonic gives a name to a scale, and works as a magnet for other notes. Generally speaking, the closer a note is to tonic, the stronger the pull to move to tonic.

F major scale, tonic marked with "T".



Dominant

The dominant pitch is the second-most important note in a scale after tonic. Many times, it will be the last note heard before tonic, and has a very strong tendency to return to tonic. Music phrases ending on dominant often sound like a question because we sense that something has to come along and settle unfinished business.

C major scale, dominant marked with "D".



The first phrase of this song ends on dominant.



Tonal music

Music that is based on attraction of notes to other notes and all to tonic is called tonal music. There are a few notes that lead strongly to tonic, but the main note with that tendency is the dominant, which will be more fully discussed below.

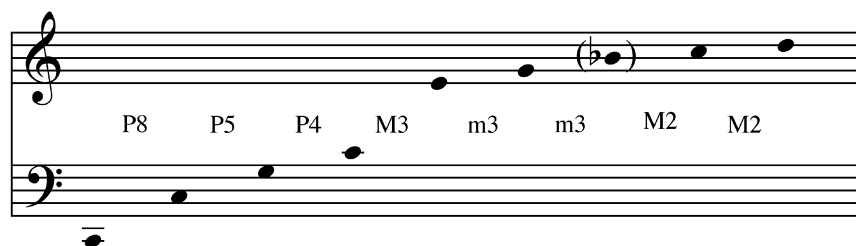
Intervals

The distance between two notes is called an interval. Since intervals are important both "horizontally" (as music unfolds in time, in a melody) and "vertically" (when notes sound at the same time, as in harmony) we will discuss and use them as a means of discussing those two most important musical characteristics. First, a general introduction is in order.



Overtone series

When we produce a musical sound, we hear not just one, but many pitches contained inside. If you play C of the great octave, and listen carefully, you will hear all the notes in the example below (and in fact, many more)! This group of notes is known as the overtone series. Of most importance for us is the fact that the lower three intervals formed are what we call "perfect" intervals, and that those we call major or minor appear higher in the series.

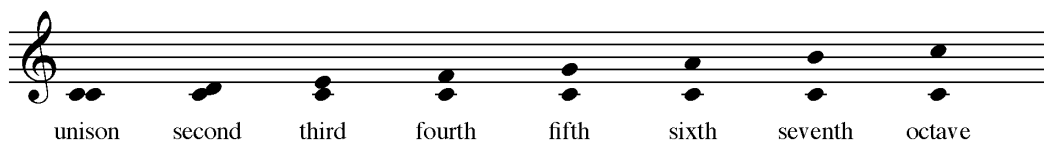


Measuring intervals

Intervals are measured in whole steps and half steps. A table of intervals measured in half steps is on page 17.

Naming intervals

Intervals get their names from numerals expressing a distance between a bottom and a top note. The counting developed out of scales, so we count by scale steps, counting "one" as the bottom note. We speak the number in the same manner, as if to say the top note in an interval on the fifth scale degree above it is "the fifth" we have reached after starting our count with the first, or bottom note. Finding the numerical part of an interval name is the same as counting lines and spaces.



Quality of intervals

Intervals also differ by quality: perfect (P), minor (m), major (M), diminished (D or °) and augmented (A or +).

Perfect, diminished and augmented intervals

Intervals 1, 4, 5, and 8 are "perfect" in sound when they appear above or below the tonic (see below) in a major or minor scale. When altered they become diminished (made smaller) or augmented (made larger).

The image shows three musical staves illustrating interval qualities. Each staff starts with a treble clef and a C-clef on the first line (C4).

- Staff 1 (Perfect intervals):** Shows perfect unison (C4-C4), perfect fourth (C4-F4), perfect fifth (C4-G4), and perfect octave (C4-C5).
- Staff 2 (Augmented intervals):** Shows augmented unison (C4-C4 with a sharp on the second C), augmented fourth (C4-F4 with a sharp on the F), augmented fifth (C4-G4 with a sharp on the G), and augmented octave (C4-C5 with a sharp on the second C).
- Staff 3 (Diminished intervals):** Shows augmented unison (C4-C4 with a flat on the second C), diminished fourth (C4-F4 with a flat on the F), diminished fifth (C4-G4 with a flat on the G), and diminished octave (C4-C5 with a flat on the second C).

Major and minor intervals

Intervals 2, 3, 6, and 7 could be minor (smaller) or major (larger). When these intervals appear above tonic in a major scale, they are all in the major (larger) form. Making them smaller by half step (raising the bottom note or lowering the top one) makes them minor.

Intervals above tonic in a major scale

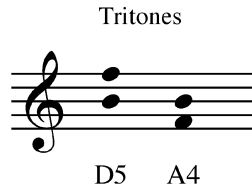
A musical staff with a treble clef and a C-clef on the first line (C4) showing intervals above the tonic. The notes are: C4, D4, E4, F4, G4, A4, B4, C5. The intervals are labeled below the staff: P1, M2, M3, P4, P5, M6, M7, P8.

Making major intervals into minor
(Here, accidentals only apply to the note directly following.)

A musical staff with a treble clef and a C-clef on the first line (C4) showing major intervals converted to minor. The notes are: C4, D4, E4, F4, G4, A4, B4, C5. The intervals are labeled below the staff: M2, m2, m2, M3, m3, m3, M6, m6, m6, M7, m7, m7. Accidentals (flats and sharps) are placed on the notes immediately following the tonic to create the minor quality.

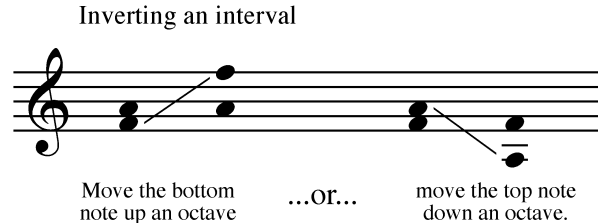
Tritones

Diminished 5th and augmented 4th intervals contain three whole steps and could be called tritones. Technically, the diminished fifth contains two whole steps and two half steps, but it comes out sounding the same. In tonal music these intervals occur only in one place in the major scale, between scale degrees 4 and 7. (In addition to this location, a tritone shows up in minor in one more place, between scale degrees 2 and 6.)



Inversions of intervals

Changing places between bottom and top sounds of intervals is called an inversion.

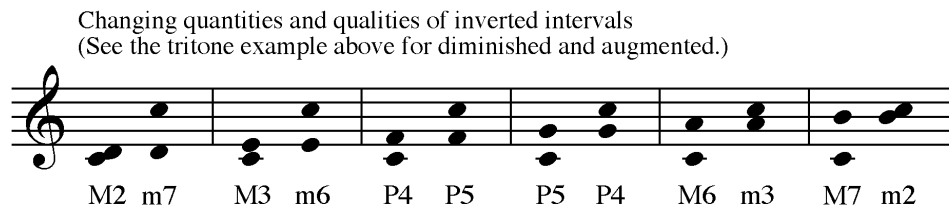


Changing quantity of an inverted interval

Unisons invert into octaves, seconds into sevenths, thirds into sixths, fourths into fifths. Sixths invert into thirds, sevenths invert into seconds, octaves into unisons.

Changing quality of an inverted interval

Perfect intervals invert into perfect, major into minor, minor into major. Augmented intervals invert into diminished, and diminished intervals invert into augmented.




Consonances and dissonances

Consonances are intervals whose vibrations combine easily, sounding smoother and more solid. Dissonances are intervals whose vibrations produce more lack of agreement, sounding edgy and more unstable. The concept of consonance and dissonance has varied with historical periods, but during the period we base most of our study on, the so-called "common-practice" period from about 1650 to 1900, consonances include P8, P5, M3, m3, M6, and m6. Dissonance has historically been a source of instability in music, causing the music to move ahead to get rid of, or "resolve", the dissonance. This basic driving force creates waves of tension and release, and

while it is most easily heard when notes sound together (harmonically), it is a generating force in melody as well.

Table of intervals

The table below provides a list of common intervals up to the octave. Under each notated interval is the common name for the interval, and below that is the number of half-steps that interval contains. The number of half-steps is a useful way to identify intervals, and it is known as the *interval-class number (IC number)* of the interval. Accidentals in the table apply only to the note immediately following.



P1	m2	M2	m3	M3	P4	A4	D5	P5	m6	M6	m7	M7	P8
0	1	2	3	4	5	6	6	7	8	9	10	11	12

It is also useful to think of the intervals in terms of whole and half steps, which is like thinking of where they are in a scale. Try converting some intervals from counting half steps to counting scale degree steps, as in the examples below.

A major third is: four half steps, or... two whole steps.



A perfect fourth is: five half steps, or... two whole steps and one half step.



Horizontal organization of sounds

Melodic intervals

Two notes sounding one after another create a melodic interval. They are called melodic because they are building blocks of a melody. Intervals could be ascending or descending, narrow (notes close to each other, by step) or wide (notes further apart, by leap or skip).

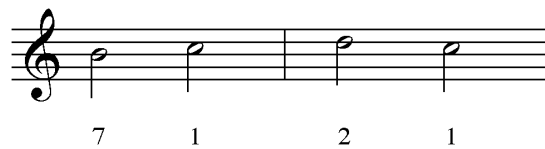
Melody

Melody is a consecutive (one by one) sequence of pitches. Melody could be short or long, memorable (catchy) or not, smooth or jagged. Some melodies have a central note, tonic, a point of attraction for other notes. Melodies have a *contour*, or shape of rising and falling to emphasize high points and low points. Notice the contour of the melody below, and imagine if you drew a line connecting all the note heads.



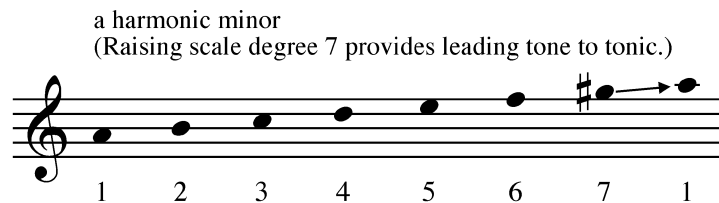
Unstable (leading) tones

Two notes surrounding tonic lead (resolve) to it; one is called the leading tone (scale degree 7), the other (scale degree 2) is not always referred to that way, but some musical thinkers do. In the major scale the distance between tonic and step 7 is a half step.



Harmonic minor

In natural minor, the distance between step 7 and tonic is a whole tone, and the attraction to tonic is not so strong. Harmonic minor has a raised 7 step, to keep the leading tone closer to tonic and provide the strong pull upwards that characterizes it. (Take note of the unusual interval which now exists between scale degrees 6 and 7. It is an A2, or a major second increased by half-step.)



Melodic minor

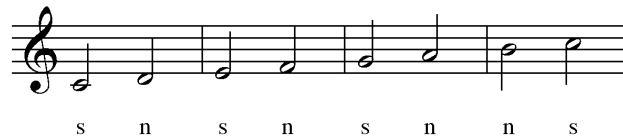
Melodic minor has raised 6 and 7 scale degrees in ascending motion. (This prevents us from having to sing that awkward interval in harmonic minor, the one between scale degrees 6 and 7). In descending motion it lowers steps 7 and 6, bringing it to a natural minor.



Stable and non-stable notes in a scale

Some notes of a major or minor scale sound more stable than others. A stable note could be used at the end of a melody. The only truly stable note in a scale is tonic. Three other notes that sound somewhat stable are steps 2, 3 and 5. Steps 4, 6 and 7 are non-stable and cannot be used for finishing melody. Scale degree 2 is a special case, being an unstable tone that can bring a melody to a partial finish, but that melody would need to be followed by another phrase which ends on a tonic note.

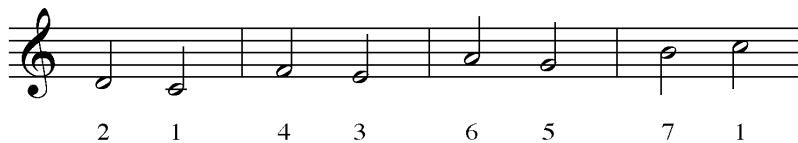
Stable (s) and non-stable (n) steps in the scale:



Resolution and non-stable tones

The whole idea of resolution is one that will apply to many things in theory, including single notes, intervals, dissonances, chords, register, duration, and just about anything one can imagine. If something stands out as unusual, or not fully restful, it creates tension that must be "resolved". Non-stable tones resolve to stable tones located next to them. The two most important non-stable tones we will deal with in theory are scale degrees 2 and 7, both of which resolve to tonic.

Resolution of non-stable tones:



Resolution of tritones

Tritones consist of two tones, scale degrees 4 and 7. They form a fifth or a fourth which is not perfect, a troubling situation for composers in ancient times, and have developed a long history of how they have to be resolved.

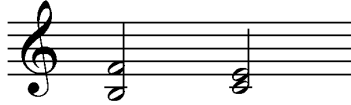
Resolution of tritone:



Diminished 5th

The tritone above the seventh step is a diminished 5th (D5). One will notice that a perfect fifth would be a half step larger, and that the fifth has thus "become smaller". It continues to become smaller (contracts) with resolution, which is typically to a third, either major or minor.

Resolution of diminished fifth:



Augmented 4th

The tritone on the fourth step is an augmented 4th (A4). One will notice that a perfect fourth would be a half step smaller, and that the fourth has "become larger". It continues to become larger (expands) with resolution, which is typically to a sixth, either major or minor.

Resolution of augmented fourth:



Phrase

A phrase is a somewhat complete musical thought that has a beginning, middle, and end. It is similar to a sentence in many ways. A piece of music usually contains many phrases. Relationships between notes create phrases, and relationships between phrases create larger musical structures.

A phrase:



Slur

Slur is a curved line sometimes used to indicate a musical phrase. Sometimes it means to use legato articulation.

Cadence (melodic)

Cadence is a momentary pause, something that creates a sense of repose. It is a very important part of a melody, because it creates the end of a musical phrase.

Two phrases:



Full cadence

A melodic cadence is called full when it ends a phrase on tonic. An example is on the previous page.

Half cadence

A cadence is called half when it ends a phrase on dominant or supertonic, and sometimes the leading tone (all of which belong to the dominant triad, which will be dealt with a little later). An example is on the previous page.

Period

A number of (frequently just two) phrases linked together with the greatest degree of finality at the end is called a period. The pair of phrases in the last example would form a period.

Form in music

Music is organized: notes are organized into phrases, and phrases (often) into periods. Musical structure is called form.

Binary form

One of the most commonly used forms is a binary form.

Binary form has two parts. They could be basically the same: AA' (pronounced A, A-prime); or different: AB.

Binary form (this one is also a period):

**Ternary form**

Ternary form has three parts. Part three repeats or reminds of part one: ABA or ABA'. The basic principle of ternary is departure and return.

Ternary form:

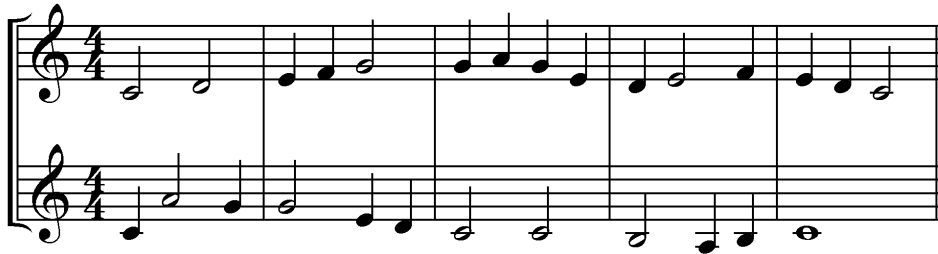


Vertical organization of music

Polyphony

Two or more melodies performed at the same time create polyphony. For several centuries, polyphonic music dominated the musical style of Western Europe. Polyphony gave birth to harmony: chords as we know them first appeared as a result of melodic lines sounding at the same time.

Polyphony:



Harmony

When two or more sounds are played together, they create harmony.

Harmonic interval

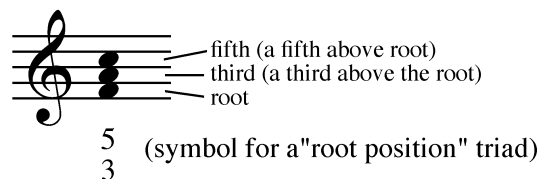
Two pitches sounding together make a harmonic interval. As intervals have been described above, they have usually been presented in their harmonic form, directly above or below each other.

Chord

Three or more pitches sounding together make a chord.

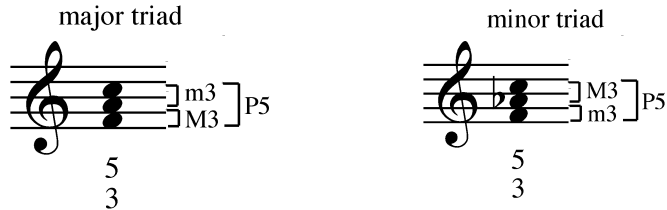
Triad

A triad is a chord of three notes. The distances between the notes are thirds. The distance between the bottom and top notes is a fifth. We refer to the members of a triad as root, third, and fifth. When stacked above the root, one after the other, we use the symbol 53 (also known as a figured bass symbol) for a triad, which simply counts the intervals above the bottom note, or root. We call this "root position", because the root is the lowest-sounding member of the triad.



Major triad

A major triad is a chord with major third above the root, and a minor third on top. The fifth from root to fifth will always be perfect in the major triad. A symbol for a major triad is M53.

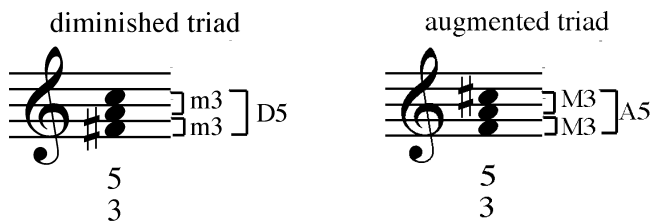


Minor triad

A minor triad is a chord with minor third above the root, and a major third on top. The fifth from root to fifth will always be perfect in the minor triad. One can create a minor triad by lowering the third of a major triad. A symbol for a minor triad is m53.

Diminished triad

A diminished triad is a chord made of two minor thirds. It gets its name from the quality of the fifth, which is diminished. A symbol for a diminished triad is dim.53, or °53. The diminished triad occurs on scale degree 7 in major, and in minor when scale degree 7 is raised (as in harmonic minor). It shares *dominant function* (see below) as a chord with a strong need to resolve to tonic. Also in minor, a diminished triad occurs on scale degree 2.

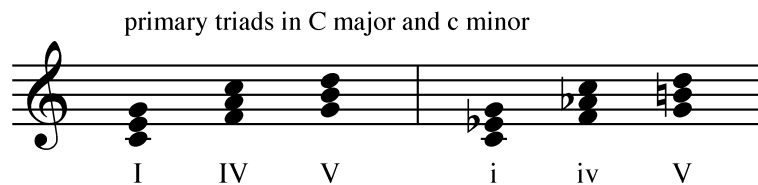


Augmented triad

An augmented triad is a triad made of two major thirds. It gets its name from the quality of the fifth, which is augmented. A symbol for an augmented triad is aug. 53, or +53.

Primary triads

Triads constructed on tonic (T), subdominant (S), and dominant (D) are the most important in a key. They are called primary triads. We use Roman numerals to indicate triads, and indicate quality of triad by using upper-case numerals for major and lower-case numerals to minor. In a major key, the primary triads are then I, IV, and V. In a minor key, the primary triads are i, iv, and V. Take special note that the dominant chord is major in both modes, major and minor, and that this will require one to use the harmonic minor to get the quality of the dominant to come out that way.



Tonic triad

Just as the tonic note is the most important note in a scale, the tonic triad is the most important chord in a key. Pieces end there, and most often begin there. All three of its pitches (1, 3, 5) are considered at least somewhat stable.

Dominant triad

The dominant pitch is the second-most important note in a scale after tonic, and it is the most important chord after tonic. All three of its pitches (5, 7, and 2) have strong tendencies to resolve to tonic, as encountered earlier. It is therefore a very important chord in cadences.

Subdominant triad

The subdominant pitch is not nearly so important on its own as the chord built upon it. As a pitch, it wants to move to the third scale degree, but as the building-block of a chord, it has a tendency to move to the chord built on the dominant pitch.

Cadence (harmonic)


Cadence is important in creating phrases, as mentioned in discussing melody. In harmony, there are specific patterns which support those mentioned earlier. We will refer to the chord sequences which create cadences as cadential progressions.

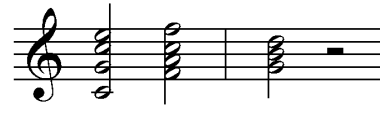
Authentic cadence

Authentic cadences end on tonic, with a dominant chord just before, so we could abbreviate an authentic cadence as V-I in major. The most stable of all authentic cadences will have the tonic note in the melody, or top voice.

Full cadence

A full cadence is one which could be used at the end of a composition. The one referred to above as most stable (authentic, with tonic in melody) is a full cadence.

Full cadence: 

Half cadence: 

Half cadence

A half cadence brings a phrase to an end on the dominant triad. It doesn't matter what chord came before, at least in terms of what we call it.

Triad names

Triad names are the same as scale degree names. Thus we speak of tonic triad or scale degree, supertonic triad or scale degree, and so forth. See page 13 for the list of names.

Using Roman numerals for writing chord symbols

While steps in a scale are marked with Arabic numerals, Roman numerals are reserved for writing chord symbols.

Harmonic rhythm

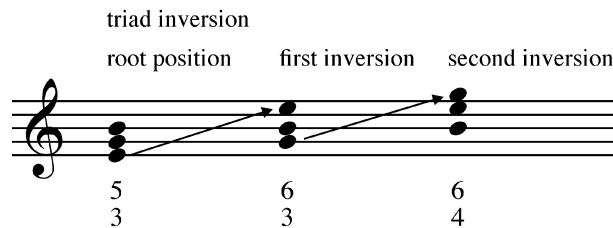
The pace at which chords change is called harmonic rhythm.

Triad inversions

Triads can be inverted, like intervals. Bringing the bottom note of a chord one octave up is called an inversion.

First inversion of a triad

When the bottom note of a triad moves an octave up, it changes the distance between sounds. The third of the chord is now the lowest-sounding pitch, and as in interval inversion, creates the interval of a sixth with the root which moved above it. This inversion is therefore called a sixth chord. First-inversion primary triads are thus I^6 , IV^6 , and V^6 . (If we check the other interval above the lowest note, we would find a third, and therefore the complete name of the first inversion chord is "six-three".)

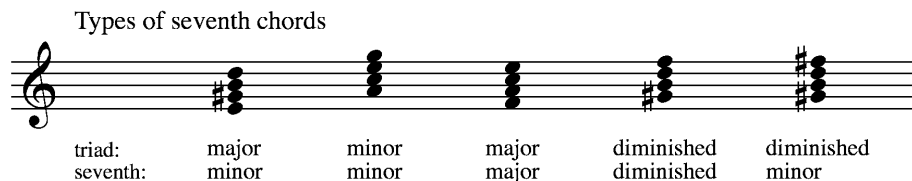


Second inversion of a triad

Second inversion may be thought of as doing the inversion process a second time. When the bottom pitch of a sixth chord moves one octave up, the distance between the sounds changes again. The fifth of the triad is now the lowest-sounding note, and as in interval inversion, the interval note just moved is again a sixth. If we referred to the chord this way, we would have the same name as the first inversion, so we need to use a name that accounts for the other interval in the chord. That interval will be found to be a fourth, or the distance from the now-lowest note to the root. This inversion is called a six-four chord. Second inversions of primary triads in a major key would be I^6_4 , IV^6_4 , and V^6_4 .

Seventh chords

Seventh chords may be constructed on any note in a scale by way of adding another third on top of a triad. The official name of each seventh chord comes from this concept of building: one names the seventh chord by the quality of its triad and the quality of its seventh.



Depending on their location in a key they have different structure and function.

Dominant seventh chords

The most common seventh chord is the dominant seventh – an extension of the dominant triad. This chord is constructed with a major triad plus a minor seventh above the root.

Its official name is major-minor seventh chord, but the name most generally used is dominant seventh. This is because only one major-minor seventh chord normally occurs in either major or minor, and it is on the dominant scale degree.

Dominant sevenths

C: V⁷ a: V⁷ d: V⁷

Inversions of seventh chords

Seventh chords are inverted the same way intervals are inverted, by bringing a bottom sound of a chord one octave up and putting it on top of a chord. The example below includes the numerals which show intervals above the bottom note.

Inversion of seventh chords

root position first inversion second inversion third inversion

7 6 6 6
5 5 4 4
3 3 3 2

Naming inversions

Inversion names include the official name of the root or triad (dominant or V, supertonic or ii, etc.) with arabic numerals giving the location of chord members above the note that is in the bass. The example below provides the commonly-used symbols for dominant seventh inversions.

Inversion of dominant sevenths

V⁷ V₅⁶ V₃⁴ V₂⁴

Resolution of seventh chords

Seventh chords combine stable and non-stable tones. The number of non-stable tones included in chord influences its character and intensity. When seventh chords are resolved, non-stable tones are brought to stable tones. Resolution of the dominant seventh and its inversions demonstrates how this happens. (Every tone in the dominant seventh has a strong tendency to go to a specific place. A root-position one will resolve to a tonic with three roots and one third. Note how the inversions are able to resolve to complete tonic triads by keeping scale degree 5 as a common tone.)

Dominant sevenths and inversions resolved

The image shows a musical score in C major on a grand staff. It illustrates the resolution of four dominant seventh chords and their inversions to the tonic triad (C major). The chords are: V⁷ (root position), I (tonic), V₅⁶ (first inversion), I (tonic), V₃⁴ (second inversion), I (tonic), V₂⁴ (third inversion), and I⁶ (first inversion of the tonic). The resolution is shown by moving the non-stable tones (3rd, 7th, and 9th) to their respective stable tones (2nd, 4th, and 6th) while keeping the 5th as a common tone.

C: V⁷ I V₅⁶ I V₃⁴ I V₂⁴ I⁶

Diminished seventh chord

Another non-stable chord is vii^o7 in harmonic minor. This chord has a diminished triad and a diminished 7th above its root. Officially, it is called a diminished-diminished seventh chord, but diminished seventh is a widely-used name for it.

Diminished seventh chord in g minor

The image shows the diminished seventh chord in G minor on a treble clef staff. The chord consists of the notes G, Bb, D, and Fb. Below the staff is the label vii^o₇.

vii^o₇

Resolution of diminished seventh chord

A diminished seventh chord consists of two diminished fifths. Resolving each of the diminished fifths correctly brings us to a modification of a tonic triad, which has a doubled third.

Diminished seventh resolved

The image shows the resolution of the diminished seventh chord in G minor to the tonic triad in G minor on a grand staff. The diminished seventh chord (G, Bb, D, Fb) resolves to the tonic triad (G, Bb, D). The resolution is shown by moving the Bb to B and the Fb to F, while the G and D remain the same.

g: vii i

Other seventh chords

A seventh chord on the second scale degree in minor or on the leading tone in major has a diminished triad and a minor seventh above its root. It is generally known as a half-diminished seventh chord, though the official name is diminished-minor seventh.

Half-diminished seventh chords

G: vii_7^b e: ii_7^b

A seventh chord on scale degree 1 or 4 in major or on scale degree 3 or 6 in minor has a major triad and a major seventh above its root. Its official name is major-major seventh, but major seventh chord is its common name.

Major seventh chords

F: I^7 IV^7 d: III^7 VI^7

A seventh chord on scale degree 1 in minor has a minor triad and a minor seventh above its root. Officially, it is a minor-minor seventh, but minor seventh chord is its common name. There are minor sevenths to be found elsewhere in major and minor keys. Try to figure all possible combination of triads and seventh intervals to make all seventh chords.

Minor seventh chord

$f\#$: i^7

The most commonly used seventh chords are dominant seventh, diminished seventh, and half-diminished seventh chords.

Resolving or connecting seventh chords requires knowledge of four-part harmony. In four-part harmony all chords, even triads, have to have four notes. Before going further into writing in four parts, we will get a little background into the issue of texture and style.

Texture, Style, and Counterpoint

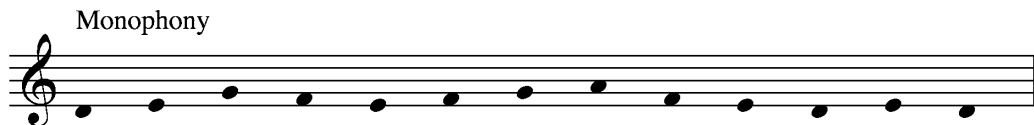
Style in music.

You've heard the word "style" many times in your encounters with music. It could be a style of a certain epoch, or a style of a specific composer, or a style of a performance.

Sometimes the word style is referred to a specific texture of music: polyphonic style or homophonic style. We have discussed these terms in book 1, but back then we referred to them as texture. It is indeed a texture of music that was preferred in a certain time period; therefore the same words apply to texture and style.

Monophony

Early Western music (music written down using music notation) was monophonic – a single melody sung solo or in unison. It was used for chanting holy texts, and was called a plainchant, plainsong, or Gregorian chant. Plainchant was not metered, and it was constructed using small intervals, convenient for singing.



Polyphony

Many centuries later musicians started to experiment with adding other melodic lines to it, which eventually forged the development of polyphony. Polyphony is a texture where independent melodic lines are combined, but at the beginning they were not independent at all. The earliest polyphony in Western music was strictly regulated. Rules and regulations of polyphony were compiled in the book *Gradus ad Parnassum* by Austrian composer and theoretician Josef Fux in 1725. In this book he presented the rules for species counterpoint – a teaching tool still used by musicians to study counterpoint.

Counterpoint

Counterpoint literally means note against note. The base melody used for writing a counterpoint is called *cantus firmus*, a fixed melody. *Cantus firmus* is a plainchant, usually written in alto clef for tenor part. *Cantus firmus* has to be sung, therefore the contour and register of a melody has to be convenient for singing. Appendix 2 contains guidelines for writing a *cantus firmus*.

Counterpoints vary in their complexity. First species counterpoint is note against note, second species is two against one, third is four against one, and fourth is written in syncopated notes. Fifth species counterpoint is a combination of all four.

See **Appendix 6** for a full description of the rules for species counterpoint.

Early music used a variety of modes, not only the major and minor modes that we mostly use in music of the "common practice period" (1600 – 1900).

Modes

Modes are sometimes called Greek, because they were described in Greek treatises on music; they are also called church or medieval modes, because they were used in religious and secular music in medieval times; sometimes they are called diatonic modes, because they can be constructed by starting on different degrees of the major scale.

There are seven modes. You will find both descriptions and examples of each in **Appendix 5**.

A very important aspect of counterpoint is the smooth movement of voices. Composers of common practice period were all trained in counterpoint. Eventually it brought the formation of chords and the development of homophonic style, or homophony.

Homophony

Homophony is a texture (and a style) where a leading voice (homo- one, phon – voice) is supported by accompaniment (harmony). Chorale texture (all voices move together as block chords emphasizing the top voice as melody) is also homophonic texture.

Homophony:



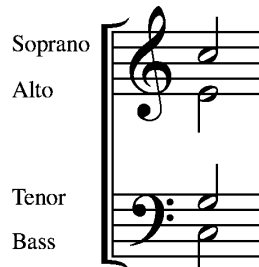
Four part harmony

In polyphony voices have independent contours and rhythm, in homophonic style they move together in the same rhythm. Because homophony is a product of polyphony, the smooth connection between chords or voice leading is very important, and the aim of every line created is to be musically interesting.

Voice leading

The movement of each voice from one chord to the next is called voice leading. There are four parts in traditional harmony. They got their names from voices in chorus: soprano, alto, tenor, bass. Notice how the stems of voices which share a staff go in opposite directions.

Four-part voice names



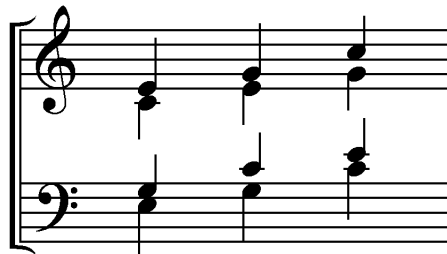
Earlier we used three part chords, now one member of the chord (frequently the bass) is present twice in a chord, or doubled, to make a fourth part. Knowing which triad member to double is important. In general, doubling the tonal scale degrees (1, 4, 5, and sometimes 2: those scale degrees which do not change according to mode) will almost always work well. Achieving good melodic lines in voice leading is sometimes more important than doubling the “correct” triad member. Find and identify the chord member that is doubled in the example above.

Chords may be in close or open position, which alters the sound to some degree but doesn't change the chord quality.

Close chord position

When notes in a chord are spaced as closely as possible it is called close chord position. The chord could have a root, third, or fifth in the soprano part, it doesn't matter.

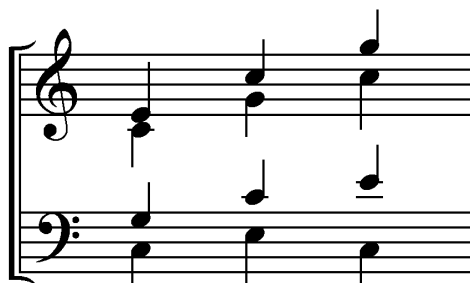
Closely-voiced triads



Open chord position

When the notes of a chord are more spread out (again, having root, third, or fifth on top) it is an open chord position.

Triads in open voicing



Rules of voice leading

For a complete description of movement types and voice-leading, see **Appendix 7**.

Real music rarely exists in the form of four part harmony. Usually melodic line has notes that do not belong to a harmony, and they are called non-harmonic tones, or non-chord tones.

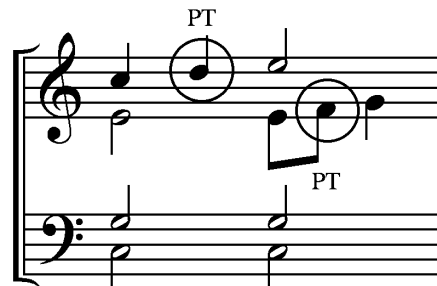
Non-harmonic tones (non-chord tones)

We will classify non-harmonic tones by their location in a measure. Non-harmonic tones are notes that do not belong to the triad or seventh chord active at the time. Non-harmonic tones are strictly governed according to how they are introduced (prepared) and how they move to chord tones (i.e., how they are resolved).

Weak beat non-harmonic tones

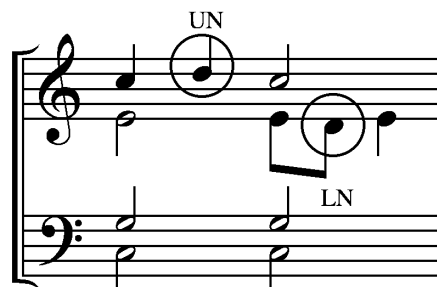
Passing tone (PT): a non-chord tone between two different harmonic tones. Passing tones must resolve by step in the same direction they are introduced.

Passing tones (circled and labelled)



Neighbor tone – upper neighbor (UN) or lower neighbor (LN): a note step higher or lower between the same repeating harmonic tone.

Neighbor tones (circled and labelled)



Anticipation (ANT): when a tone of the next chord sounds before the chord which contains it. Note that anticipations generally require a change of harmony.

Anticipation (circled and labelled)



Strong beat non-harmonic tones

Accented passing tone (PT):
passing tone on a strong beat, or
the strong part (first part) of a
beat.

Accented passing tones

Suspension (SUS): a tied or
repeated note from previous
chord. The non-chord tone is
prepared by belonging to the
previous chord, and is held while
the chord changes. When the tone
does not belong to the new chord,
it is a dissonance, and must
resolve down by step. Note that
the arabic numeral below the bass
shows the interval movement of
the dissonance and its resolution.

Suspension

Appoggiatura (APP): non-
harmonic tone appears as a leap in
the melody. Typically, the leap is
up, and the non-chord tone will
resolve down by step.

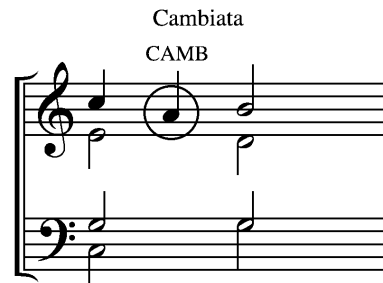
Appoggiatura

Other non-harmonic tones

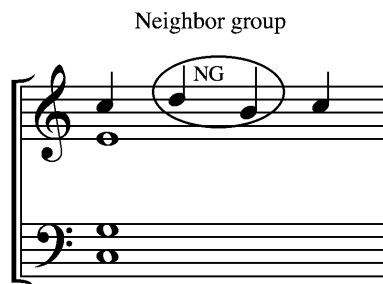
There is also an escape tone (ET),
a weak beat non-harmonic tone
between two consonances that are
a step apart, that skip by a third
into resolution. One may describe
this action as approaching the
dissonance (non-chord tone) by
step, left by leap in the opposite
direction.

Escape tone

Cambiata, CAMB, a weak beat non-harmonic tone connecting two consonances that are a step apart. The dissonance is approached by leap and left by step in the opposite direction.



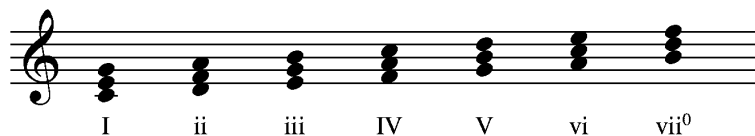
A neighbor group (NG), or double neighbor tone (DN), which is sometimes referred to as a changing tone, is a combination of upper and lower neighbor tones. Note that in the example below, the chord tone is not sounded between the two non-chord tones. Some people would call this an incomplete neighbor group.



Diatonic chords and functional progressions

In medieval and renaissance music, the interaction of lines and intervals is most important, and any chord could follow any other. In common-practice period, some chords (T, S, D) acquired special significance, especially in providing a sense of forward movement. Tonic is beginning and end, dominant leads to tonic, and subdominant leads to dominant. The three chords stand for their functions in harmonic progression, which are tonic, dominant, and pre-dominant. When chords function in this way, we say it has *functional harmony*.

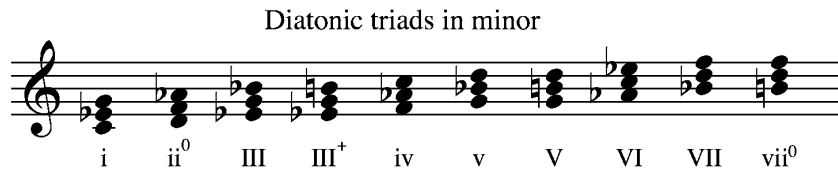
Diatonic triads in major



Tonic function chords include I (or i) and on occasion the chords which share two notes with tonic, iii (III) or vi (VI). Returning to tonic is the eventual goal of all common-practice period music. (Chords in parentheses come from the minor mode.)

Dominant function chords include V, V⁷, and vii⁰. (Notice that these chords are the same in major and minor. The *functional* dominant in minor is spelled using harmonic minor.)

Pre-dominant chords include IV (iv), ii (ii⁰), and seventh chords built upon them.



Supertonic triad

A triad constructed on scale degree 2, the supertonic leads most frequently to the dominant triad, and therefore has pre-dominant function. The chord is minor (ii) in a major key, and diminished (ii⁰) in a minor key.

Mediant triad

A triad constructed on the third scale degree combines sounds belonging to the tonic triad and the dominant triad, and can occasionally stand in their place. It is called mediant, because it is equally removed from T and D. The mediant is minor (iii) in the major keys, and can be either major (III) or augmented (III⁺) in a minor key. The augmented quality comes from a raised leading tone, which explains its occasional use as a dominant-function triad.

Submediant triad

A triad constructed on the sixth scale degree combines sounds of S and T triad, and can therefore sometimes take on either function, tonic or subdominant. It is called submediant, because it is equally removed from S and T.

Leading tone triad

In major and in harmonic minor a triad on the seventh scale degree is diminished (vii⁰); as mentioned above, it is a chord of dominant function.

Subtonic triad

The triad constructed on the seventh scale degree in natural minor is major (VII, often referred to as bVII). In minor keys, it is the relative major of dominant minor, and the dominant of the relative major.

Primary and secondary chords


Triads constructed on first, fourth, and fifth degrees or, T, S, and D are called primary triads. All other triads are secondary. Notice that in major mode primary triads are major, and secondary triads are minor. In minor mode primary triads are minor (when spelled using the natural minor), and secondary triads are major.

Using primary and secondary triads creates unexpected harmonic combinations, enriches music with more colors.

Relationships between primary and secondary chords

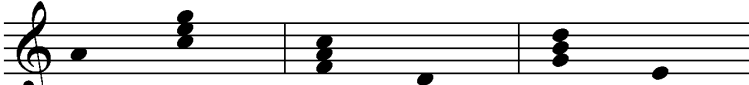
Primary and secondary chords are closely related. In major mode, the submediant is the relative minor of tonic, while the mediant is the relative minor of dominant, and supertonic is the relative minor of subdominant.

Relative minors of primary triads in major

(tonic)	(relative minor)	(relative minor)	(tonic)	(relative minor)	(tonic)
					
C:	vi	C: iii = vi of G (V)		C: ii = vi of F (IV)	

In minor mode, the mediant is the relative major of tonic, submediant is the relative major of subdominant, and subtonic is the relative major of dominant minor.

Relative majors of primary triads in minor

(tonic)	(relative major)	(relative major)	(tonic)	(relative major)	(tonic)
					
a:	III	VI = III of d (iv)		VII = III of e (v)	

Secondary and primary triads in harmonization

The ambivalent character of secondary chords allows for their wide use in harmonization. Primary triads are used in structurally significant places: in the beginning of a piece for establishing a key, and in cadences.

Types of cadences

In levels 1 – 3 we discussed melodic cadences, now we are going to focus on cadences expressed in harmony. Cadences function like punctuation, they shape musical phrasing.

There are four basic cadence types:

Authentic (full) cadence (AC): usually at the end of a phrase.

An authentic cadence is called perfect if the soprano carries scale degree 1 in the tonic chord, and both dominant and tonic are in root position. We abbreviate the label as **PAC**. An authentic cadence is imperfect when it has 3 or 5 in the tonic chord, one of the chords is inverted, or the leading-tone chord is used instead of dominant. We abbreviate the label as **IAC**.

Authentic cadences

V I V I V⁶ I vii⁰₆ I

Half cadence (HC): cadence on dominant, creates a need for answering in full cadence.

Plagal cadence (PC): S-T, usually at the end of a phrase, most frequently after a full cadence.

Deceptive cadence (DC): D – VI, prolongs music, calls for a full cadence.

More cadences

IV V IV I V vi

In addition to bringing pieces or sections to close in the home key, cadences are places that make a change of key more firm, a process known as modulation.

Modulation and chromaticism

Modulation is a change of key confirmed by cadence. Key change occurs very often in music, especially in longer pieces. Sometimes a change of key is just hinted before returning to an initial key. This is called tonicization.

Tonicization

Sometimes a tone in a key assumes the potential of a new tonic. It happens with help of a new leading tone which points to that tonic. A leading tone lies a half-step below its tonic, which often leads to the presence of a note that does not belong to the original key of the piece. It is the aural strength of the accidental that creates the feeling of a new potential tonic.

Secondary dominant

Any chord in a scale may be preceded by its own dominant. We know that a dominant chord is major, and that its third is the leading tone of a key. The dominant may be a dominant seventh chord as well, which occurs only one place in a scale, and which might bring additional accidentals. This new dominant has different names – secondary, applied, or transient dominant.

Notice in the example below that we label secondary dominants as “of” the chord whose root has the new leading tone. We will soon see that a composer might change the key for a while to the new tonic, and it will be either major or minor based upon whether the chord built on it is major or minor.

Secondary dominants

The image shows a musical score with two staves (treble and bass clef) illustrating secondary dominants. The first measure is in a minor, showing a dominant seventh chord (V⁷/iv) resolving to the iv chord. The second measure is in a major, showing a dominant seventh chord (V⁷/III) resolving to the III chord. The third measure is in C major, showing a dominant seventh chord (V⁷/vi) resolving to the vi chord. The notes are: a: V⁷/iv iv, a: V⁷/III III, C: V⁷/vi vi.

Chromaticism

There are 12 notes in a chromatic scale, it is constructed by using all semitones in an octave. One way to think of the chromatic scale is as a succession of diatonic notes in a scale with leading tones to each diatonic note. Any time a note appears that is not contained in the key of a piece, we call that chromaticism. Some chromaticism simply ornaments a note. When chromaticism functions as part of new key being established through tonicization or modulation, it will be supported harmonically. (See the example on the next page.)

Chromaticism

a: i V⁷/iv iv V

The circled notes are NCTs, as labelled.

The first G# is a melodic ornament.

The C# on the second beat is *functional*, providing a leading tone for the secondary dominant of the subdominant.

Tonicization and modulation

When after tonicization a new key is confirmed (by a cadence in the new key), modulation occurs. In the example below, the previous example has been extended, but rather than come to rest on a half-cadence in the original key of *a minor*, the succeeding chords belong to the new key, *d minor*.

Modulation

a: i V⁷/iv iv = i iv V i
d: _____

Role of modulation

Changing keys makes music more dynamic; it creates boundaries between different parts in larger musical pieces. It allows a composer to use melodies and motives in many ways without our growing weary of them.

Making modulation

Modulation is usually made through using a common note in a melody or a common chord (or series of chords) in a harmony that assumes a new identity in a new key. In the example above, notice how the d minor chord on beat three of the first measure can belong to both *a minor* and *d minor*. It is therefore a common chord, or pivot.

A common chord is called pivot chord. After a pivot chord, cadence confirming a new key completes a modulation.

Types of modulations

Modulations could be smooth, using one or a few pivot chords. This type is known as **common-chord modulation**.

It could be an **abrupt modulation**, introducing different keys without any preparation (starting a different part in a different key). When abrupt modulation occurs between two phrases, some call it a **phrase modulation**.

A composer might reduce the texture to a single note, such as scale degree 2, and move ahead in a key that treated that note as tonic. This would be an example of **common-tone modulation**.

A modulation could lead to a key that shares all notes with the original key (as in modulation to the relative major or minor), or to a key that has no common notes with the original key.

Closely related keys

Keys are related according to the number of notes they have in common. The more notes a pair of keys have in common, the more chords they will have in common. Consider G major and C major. Only one note is different, but it shifts the tonic and all harmonic relations. The example below shows the chords the two keys have in common.

Common chords, G major and C major

C: I	ii	iii	IV	V	vi	vii ⁰	I	ii	iii	iv			
							G: I	ii	iii	IV	V	vi	vii ⁰

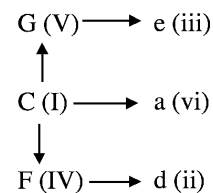
Relative major and minor are the closest, they share all notes.

Keys are considered closely related if they are one accidental away in the circle of fifths. The example above is of two chords a fifth apart in the circle of fifths.

Therefore, closely related keys will be keys of primary chords and their relative keys. This produces a set of closely-related keys which includes all the major or minor chords in a key (i.e. not including diminished triads.)

Notice that in the chart to the right, all the scale steps of C major (except the leading tone, which would carry a diminished triad) are either one step away in the circle of fifths, or are relative minors of a key that is one step away. All of the chords (= keys) diatonic to a major key are quite closely related.

Chart of closely-related keys



Tonal plan

Different sections of music begin are often in different keys. A tonal plan shows the changing keys within a piece.

Tonal counterpoint

Tonal counterpoint is eighteenth-century or Baroque style counterpoint. It is driven by harmony, and therefore combines understanding of harmonic relationship on a larger scale, and some rules of species counterpoint. Tonal counterpoint is a technique of composing specific genres of polyphonic music: invention, round, fugue. It is also technique of polyphonic development used by later composers for creating parts of classical forms.

Form, genre, and style in music

The previous sections of the book explained ways of presenting and developing musical ideas and images; this section explains how music is structured and classified. Music is the most ephemeral of arts; it only exists at the time of performing. Why does it have to be structured, and what does structure in music mean?

Structure in music

Music, like literature, or film, is a form of art that develops in time. Music listeners and performers have to be able to comprehend music while it sounds. Structuring musical ideas in time is the function of music form. Form in music is a way of organizing multiple musical components to make it easier for our brain to recognize, retain, and process musical ideas.

Graphic expression of music form

Musical form is not a visible structure, but it could be expressed through graphics. Let's try to present "Twinkle, twinkle, little star" using graphical symbols.

There are three phrases in a song, the first and the last have the same words, and appear with the same music. In a graphic scheme it can be presented with the same symbol, in this case, with the letter A.

The middle part, "Up above the world so high, like a diamond in the sky", has a different melody, and is presented with a different letter B.

The graphic scheme for this song is ABA. The song has three sections, and is written in ternary (three-part) form.

Some characteristics of musical form

Most musical forms are sectional, with the exception of forms that cannot be divided.

Sectional forms are often named by the number of sections they present: binary, ternary, rounded binary.

Sections in music are used at micro- and macro-levels. Twinkle, twinkle, and a three-movement symphony are both composed in ternary form.

Some forms emphasize development of musical ideas more than other forms; these are developmental forms. Sonata allegro is an example of a developmental form.

Some forms focus more on improvisation; these are improvisational forms. Rhapsody is an example of improvisational form.

A A1 A2 A3, etc.

Rondo is composed of alternation of refrain and different episodes ABACADA.

One of the most complex forms of classical music is the form of sonata allegro.

It is a sectional form ABA', where B is a development of the musical ideas from part A.

There are usually two contrasting musical themes in part A, as well as a theme connecting them, and a theme concluding the exposition (that's how part A is called, as an analogy to a novel, which sonata allegro is often compared with). The themes in sonata allegro are called primary and secondary, and in the exposition the contrast between them is amplified by presenting them in different keys. In the recapitulation section both themes appear in the tonic key.

Sonata allegro is a musical form; it is also a name of a first movement of a multi-movement sonata form – one of the most important forms of classical music.

Multi-movement, or cyclical forms

Multi-movement forms combine several movements that serve as sections of a larger musical creation. Sometimes there is one underlying idea expressed through a theme or a key, which makes the multiple movements create a cycle. Sonata, quartet, concerto, and symphony are examples of multi-movement form.

Sonata, quartet, symphony are also genres of classical music.

Genres in music

Genre is a kind of music. Genre could define the whole area of music – vocal or instrumental; an intended audience – folk, classical; music of specific time – Renaissance, Baroque, modern; social function – religious, court music.

March is a genre of music. Marches have similar musical characteristics: instrumental music, 4/4 meter, dotted rhythm. There are different kinds of march: funeral, wedding, military, etc.

Genres of classical music are types of music established during classical era (1750-1850) in Europe : sonata, quartet, symphony, concerto.

Genres of Romantic music are symphonic poem, song cycle, prelude, nocturne, impromptu, etude, etc.

Terms genre and style are sometimes used interchangeably.

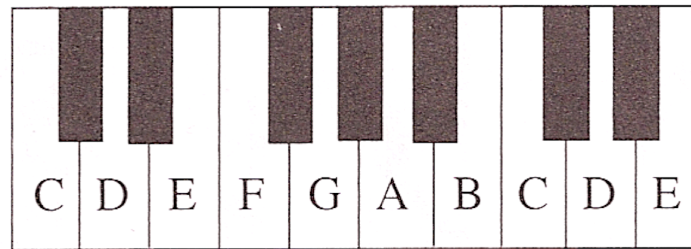
Style in music

Style is a sum of musical means particular to a composer (Beethoven's style), or a specific time period (Baroque style), or to a specific ethnic or regional music (Hungarian folk music, flamenco, salsa). Sometimes, as it has been mentioned before, a style is linked to texture (homophono-harmonic style, polyphonic style).

Knowledge of musical form, genre, and style help musicians and listeners to understand and appreciate music in a cultural context, and provide guidance for interpretation.

Appendix 1

Keyboard Layout and Octave (Register) Names



Because there are so many pitches with the same name, it helps us communicate if we have some agreement about how to refer to the octave one belongs to. The first system, below, is the oldest and most widely accepted. The octaves referred to here as "first", "second", and so forth are often called "first-line", "second-line", and so forth. We write the pitch names to reflect this organization, as indicated in the names below the staff.

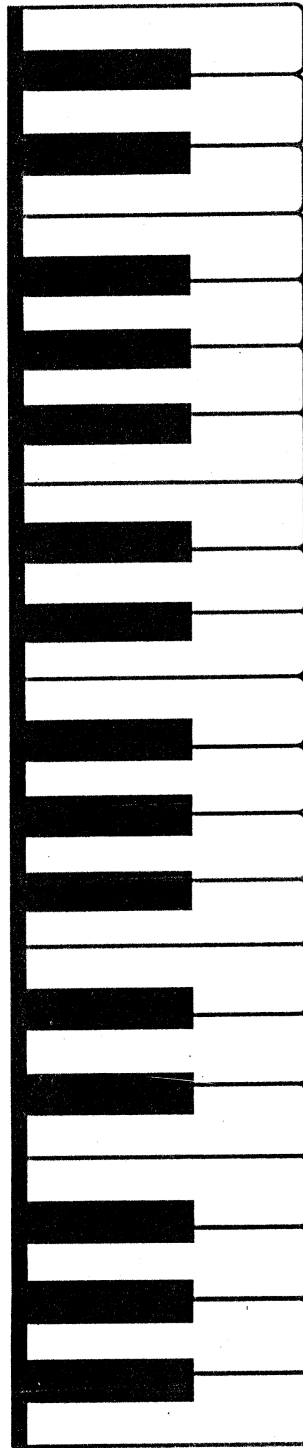
A musical staff showing pitch names and octave identification system of the International Acoustical Society. The staff is divided into five sections: sub-contra, contra, great, small, and first through fifth. The pitch names are: sub-contra (AAA BBB), contra (CC BB), great (C B), small (c b), first (c¹ b¹), second (c² b²), third (c³ b³), fourth (c⁴ b⁴), and fifth (c⁵). The staff is divided into five sections: sub-contra, contra, great, small, and first through fifth. The pitch names are: sub-contra (AAA BBB), contra (CC BB), great (C B), small (c b), first (c¹ b¹), second (c² b²), third (c³ b³), fourth (c⁴ b⁴), and fifth (c⁵).

Octave identification system of the International Acoustical Society.

A musical staff showing pitch names and octave identification system of the International Acoustical Society. The staff is divided into five sections: C⁰ B⁰, C¹ B¹, C² B², C³ B³, and C⁴ B⁴, C⁵ B⁵, C⁶ B⁶, C⁷ B⁷, and C⁸. The staff is divided into five sections: C⁰ B⁰, C¹ B¹, C² B², C³ B³, and C⁴ B⁴, C⁵ B⁵, C⁶ B⁶, C⁷ B⁷, and C⁸.

Appendix 2

Keyboard for use with exercises.



Appendix 3

Longy Rhythm Method Rudimentary Description

Premise: everything is counted by the beat, conducting gives place in measure.


→ all beats therefore start with “one”

Speak the division of the beat.

→ thus even eighths in simple time: “one-two, one-two”, etc.

→ and even eighths in compound time: “one-two-three, one-two-three”, etc.

$\frac{4}{4}$ 
one one one one

$\frac{4}{4}$ 
one two one two one two one two

$\frac{6}{8}$ 
one one

$\frac{6}{8}$ 
one two three one two three

The syllable denoting a division of the beat continues to sound as long as the note is held.

$\frac{4}{4}$ 
one two ——— two one two ———

$\frac{4}{4}$ 
one two ——— two one two ———

Rests are not enunciated *per se* (though they could be), but made clear by stopping the solmization.

one two ————— two

Further divisions of the beat are always “ta”.

- straight sixteenths, simple time: “one-ta-two-ta”
- straight sixteenths, compound time: “one-ta-two-ta-three-ta”

one two one ta two ta one two one ta two ta

one two three one ta two ta three ta

One can go deeper, but for the purposes of our classes, this is about as far as it needs to go.

Some extensions:

- If a beat is divided into tuplets, count the divisions (e.g., quintuplet would be 1-2-3-4-5).
- Generally, the prevalent (standard) subdivision is tapped, with beats conducted.
- For clarity, one could decide to tap a smaller division as if it were a first level division of the beat, and count its subdivisions.

one one two one one two three

Additional information:

- conducting is a necessary component, since it provides location in measure
- tapping subdivisions of beat is critical as well, since it provides an internal “slot” for the divisions that are not enunciated

Appendix 4

Table of Intervals

name	abbreviation	half steps (IC number*)	whole and half steps	ways to think
minor second	m2	1	1H	leading tone to tonic
major second	M2	2	1W	scale degree 1 to 2, major or minor key
minor third	m3	3	1W, 1H	scale degree 1 to 3, minor key
major third	M3	4	2W	scale degree 1 to 3, major key
perfect fourth	P4	5	2W, 1H	in major, perfect 4 everywhere except s.d. 4 to 7
augmented fourth	A4	6	3W	scale degree 4 to 7, major key
diminished fifth	D5	6	2W, 2H	scale degree 7 to 4, major key
perfect fifth	P5	7	3W, 1H	in major, perfect 5 everywhere except s.d. 7 to 4
minor sixth	m6	8	3W, 2H	half-step beyond P5; inversion of M3
major sixth	M6	9	4W, 1H	whole step beyond P5; inversion of m3
minor seventh	m7	10	4W, 2H	m3 beyond P5; inversion of M2
major seventh	M7	11	5W, 1H	M3 beyond P5; inversion of m2
perfect octave	P8	12	5W, 2H	
minor ninth	m9	13		
major ninth	M9	14		
minor tenth	m10	15		
perfect eleventh	P11	16		
augmented eleventh	A11	17		
diminished twelfth	D12	18		
perfect twelfth	P12	19		

Any perfect or minor interval becomes diminished when reduced by a half step.

Any perfect or major interval becomes augmented when increased by a half step.

*IC number means *interval class number*, which is a way to refer to intervals by number of half steps included.

Appendix 5


The Church Modes

Some of the earliest work in music theory had to do with figuring out the scales used in Gregorian chant. The result is known today as the church modes. Sharps and flat were unknown in such ancient times, which is nice for the ease of using them today. We can use the pitches of C major (the C-major pitch set) and simply begin and end on a particular note, and the pattern of whole- and half-steps changes. This way of remembering the modes also allows you to sing a mode that belongs to a set of pitches from any major scale.

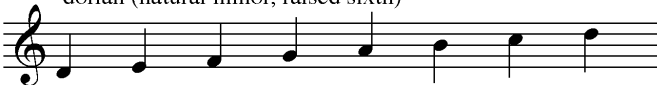
In the table on the right, you'll notice that each mode starts on a different scale degree of C major. The same will be true of any set of notes coming from a particular major key. For example, scale degree 2 to 2 using the pitches of a major key will produce a dorian mode *on* that second scale degree.

Each mode is also described here in terms of how it differs from either a major scale starting on the same note, or a natural minor scale starting on the same note.


ionian (major)




dorian (natural minor, raised sixth)




phrygian (natural minor, lowered second)




lydian (major, raised fourth)




mixolydian (major, lowered seventh)



aeolian (natural minor)



locrian (natural minor, lowered second and fifth)



Appendix 6

Species Counterpoint

Counterpoint - “point against point” The interaction of multiple melodic lines is at the heart of the study of counterpoint. It is not concerned with chords, but it is concerned with the interplay of consonance and dissonance created when two melodies are played at the same time. The study of species counterpoint has a long history. It was developed out of the compositional style of sixteenth-century composers like Palestrina. Species counterpoint has been a traditional part of the study of music theory for the last 300 years. Composers such as Bach, Mozart, and Beethoven studied counterpoint to learn how music is constructed. Many of the techniques demonstrated in species counterpoint can be seen in tonal music from the Baroque period all the way to today.

The exercises in species counterpoint are designed to help understand how melody and harmony interact to create shape and form in music. Species counterpoint gives the basic framework for understanding the structure of all tonal music.

There are two principle components in the study of counterpoint. The first component is a set of rules that govern what is considered a good melody.

Intervallic content

Use primarily stepwise motion.

Leaps can only be consonant intervals.

Leaps cannot be larger than an octave.

After a leap of a P4 or larger, the melody should move by step in the opposite direction.

Melodic structure

A melodic phrase has a beginning, middle, and an end.

1. The beginning introduces the key and always starts on the first, third, or fifth scale degree.
2. The middle of the melody should have an interesting shape and work its way up to a high point. Melodies have only one high point.
3. The end of a melody is the cadence. The cadence signals the end of the phrase.

The second component in the study of counterpoint is the interaction between two (or more) melodies. Every melody will be written against a *cantus firmus*. Composers in the sixteenth century based their compositions on chants (melodies) from the Medieval period. A borrowed chant is called a *cantus firmus*. They wrote new melodies that complemented these older melodies to create their new compositions. The rules that govern the interaction of melodies (counterpoint) are broken into species. Each species becomes progressively more complicated.

Species 1

Rhythm: 1 against 1. Whole note against whole note.

Intervals: Beginning (first interval) – only a third, fifth, or octave.

End – Cadence formula (see page 54)

Only consonant intervals. No dissonant intervals allowed. Parallel fifths and octaves are also forbidden. A parallel fifth or octave is the use of two consecutive perfect fifths or octaves. Composers believed this sound destroyed the sense of two individual melodies.

Species 2

Rhythm: 2 against 1. Half notes against whole note.

Intervals: Beginning – same as first species.

Middle – the first note of measure (strong beat) must be consonant. The second note can be consonant or dissonant. If it is dissonant, it must be a passing tone. A passing tone is a dissonant interval that resolves by step in the same direction. The melodic motion must be by step.

End – same as first species.

Parallel fifths and octaves are still forbidden. In second species, parallel fifths and octaves are not allowed between two consecutive notes. They are also not allowed between consecutive strong beats (beginning of a measure).

Species 3

Rhythm: 4 against 1. Quarter notes against whole note.

Intervals: Beginning – same as first species.

Middle – The first note in the measure must be consonant. The other three notes can be consonant or dissonant. If they are dissonant, they must be a passing tone or a neighbor tone. The rules for passing tones are the same as second species. A neighbor tone is a dissonant interval that moves by step away from a consonant interval and then returns to the previous note. The intervals on both sides of a neighbor tone must be consonant.

End – same as first species.

Species 4

Rhythm: Syncopated half-notes. 2 against 1. The second half-note in the measure is tied to the first half note of the next measure. A half-rest may begin the counterpoint line.

Intervals: Beginning – same as first species.

Middle – Fourth species deals with suspensions. It is a three part procedure. The preparation note (the note on the second half note, the one that is tied) must be consonant. The tied note may be dissonant or consonant. If consonant, you can skip to the next tone (it must be a consonant leap.) When dissonant, a suspension is created, and it must resolve **down by step** to become consonant. The three acceptable intervallic patterns for suspension resolution are 7-6, 4-3, and 9-8. This suspension pattern should be the primary melodic pattern. Occasionally, the suspension pattern can break by including consonant notes for the entire measure. The tied rhythm should remain consistent, but may be broken once per exercise. Breaking the series of ties will produce a second-species measure, so follow those rules in those measures. In counterpoint written below the *cantus firmus*, the only allowable interval pattern is 2-3.(see example)

End – same as first species.

In fourth species, parallel fifths and octaves are not allowed on consecutive weak beats.

Species 5

Rhythm: A combination of species 1-4.

Intervals: Beginning – same as first species.

Middle – Fifth species allows creative combinations of species 1-4. Interval rules for each species must be followed when writing in that species. Do not break any species rules when changing from one to another.

End – same as first species.

Cadences

Each species counterpoint exercise must end in a cadence. Each of the following note patterns is a common melodic cadence based in C. Use one of these cadences to end every species counterpoint exercise. Transpose the pattern as necessary. (Note: leading-tone should be raised in minor modes.)



Appendix 7

Root Position Voice-Leading Guidelines**Types of Motion**

Oblique motion – One voice moves while the other stays the same.

Parallel motion – Both voices move in the same direction keeping the same interval.

Contrary motion – Voices move in the opposite direction.

Similar motion – Both voices move in the same direction arriving on a different interval.

Oblique motion Parallel motion Contrary motion Similar motion

The image shows a single treble clef staff with four pairs of notes. Each pair represents a different type of motion between two voices. 1. Oblique motion: The lower voice stays on a whole note (C4), while the upper voice moves from a whole note (G4) to a whole note (F4). 2. Parallel motion: Both voices move in the same direction by the same interval. The lower voice moves from C4 to D4, and the upper voice moves from G4 to A4. 3. Contrary motion: The voices move in opposite directions. The lower voice moves from C4 to D4, and the upper voice moves from G4 to F4. 4. Similar motion: Both voices move in the same direction but arrive on different intervals. The lower voice moves from C4 to D4, and the upper voice moves from G4 to E4.

All motion types are important. You should not try to avoid a certain type of motion, in fact mixing the types is desirable. You only need to avoid moving by problematic intervals.

Problematic intervals in voice-leading.

Parallel fifths and octaves – parallel motion by fifth or octave between any voice is prohibited. Parallel fifths or octaves destroy the sense of independence between the voices.

Hidden fifths or octaves (direct fifths or octaves) – Hidden fifths occur when the two outer voices move in the same direction (similar motion) and arrive on a perfect fifth or octave. A hidden fifth or octave is acceptable if the upper voice moves by step. In fact, it would be impossible to complete an exercise if you could not move to a fifth or octave by step.

Melodic motion – Voices should not move by augmented or diminished melodic intervals.

Parallel fifths Parallel octaves Direct fifths Melodic interval

The image shows a single treble clef staff with four pairs of notes. 1. Parallel fifths: The lower voice moves from C4 to G4, and the upper voice moves from G4 to D5. 2. Parallel octaves: The lower voice moves from C4 to C5, and the upper voice moves from G4 to G5. 3. Direct fifths: The lower voice moves from C4 to G4, and the upper voice moves from G4 to C5. 4. Melodic interval: The lower voice moves from C4 to D4, and the upper voice moves from G4 to A#4. Below the staff, the text "(augmented second in soprano)" is written.

Voice crossing – Voice crossing occurs when one voice is above or below an adjacent voice. The acceptable place for this to occur is between the alto and tenor. Do not cross soprano or bass lines.

Steps for writing ROOT POSITION VOICE-LEADING exercises.

(These steps apply to root position part writing exercises only. Examples using inversions or harmonizing a melody are based on these rules, but they need more flexibility in their execution.)

- Write the bass notes for each chord.
- Keep the common tones in the same voice between each chord.
- If the roots of the chords are a third or sixth apart, there will be two common tones.
- If the roots of the chords are a fourth or fifth apart, there will be one common tone.
- If the roots of the chords are a second or seventh apart, there will no common tones.
- Move the remaining voices to closest note in the next chord.
 - If there are no common tones (root motion by second or seventh), the upper voices (SAT) should move in contrary motion to the bass. This will avoid any problematic intervals.
 - You should almost always double the root (with some exceptions; some people prefer to simply double the tonal scale degrees, which are 1, 4, and 5), and each chord should be a complete. (No chord tones missing. There are also a few exceptions to this rule. If anything is to be omitted, it is the fifth, not the third.)

Root motion by third Root motion by fourth Root motion by step

two common tones one common tone no common tones

Special Considerations:

V chord – The leading tone of the key (3rd of the V chord) should always resolve to tonic if it is in an outer voice (S or B). If the leading tone is in an inner voice, it may resolve to the fifth of the tonic triad to complete the chord.

Exceptions:

V-vi (deceptive cadence) – This progression has root position by step. The upper voices should move contrary to the bass except the leading tone of the key (3rd of the V chord). This should resolve **UP** to the tonic. The result will be a vi chord with a **DOUBLED THIRD** (note that this is scale degree 1).

VI-V in minor keys – Normal voice-leading rules will create a melodic augmented second. You can avoid this by doubling the third in the VI chord.

ii-V – It is common to treat this progression as if it has no common tones. In this case the upper voices move in contrary motion to the bass. In a major key, you can use either normal rules or move the upper voices in contrary motion. If the progression occurs in root position in a minor key, you must move the upper voices in contrary motion to the bass. (This is a rare occurrence, since the diminished triad almost always uses first inversion.)

Appendix 8

Table of Non-Chord Tones

name (abbreviation)	approached by	left by	comments
passing tone (p)	step	step in same direction	may be on or off beat
neighbor (n)	step	step in opposite direction	
suspension (s)	same tone	down by step	harmony changes to create dissonance, note prepared by belonging to previous harmony
retardation (r)	same tone	up by step	harmony changes to create dissonance, note prepared by belonging to previous harmony
appoggiatura (app)	leap or step	step, typically down	on the beat
escape tone (e)	step	leap in opposite direction	
neighbor group (n. gr)	step	step	an upper and lower neighbor paired
anticipation (ant)	step (typically) or leap	same tone	anticipates coming harmony
pedal point (ped)	same tone	same tone	note sustains while harmony changes

Appendix 9

Glossary of musical terminology

accent	A heavy attack indicated by the symbol, >, placed above or below a note head.
accidental	Natural, sharp, or flat symbol that alters the pitch of a note.
antecedent	A phrase whose ending is in need of a second phrase to complete the musical thought, much like a question.
articulation	The manner in which a note is begun and ended during performance, indicated by symbols placed above or below a note head.
asymmetrical meter	a meter containing unequal beat units, i.e. some beats divide into two parts, some into three
augmented	(literally, "enlarged") A major or perfect interval which has been enlarged by half step. Also applied to a triad (which gets its name from the interval.)
bar	See measure.
barline	The vertical line that begins and ends each measure.
beam	The thicker line that connects the stems of consecutive 8th, 16th, etc. notes; beaming of notes should be according to the beat.
binary	Binary is two-part form. It generally involves little contrast, and features continuity. It can be represented as A-B or A-A'.
cadence	Cadence marks the end of a musical phrase, passage, or larger form. It provides a sense of closure or repose.
canon	An extensive process of imitation. A following voice duplicates exactly what the leading voice has done, at a precise distance 1) above or below in pitch and 2) behind in time.
chord	Any grouping of three or more notes sounding together.
chromaticism	Presence of accidentals outside the key. In melody, it may be purely decorative, or may represent an aspect of functional harmony.
circle of fifths	A chart presenting relationship of keys organized by 5ths.
clef	The musical symbols that determine the pitch names and pitch register of the staff.
composition	Composition is making up and writing down music in non-real-time.
compound division	The division of the beat into three equal parts.

compound interval	Intervals larger than an octave. Interval quality remains the same whether compound or simple, thus a minor tenth is a compound minor third.
consequent	A phrase which provides the needed completion posed by an antecedent, much like an answer does.
consonance	A stable musical sound. Commonly understood as an agreeable combination of musical tones.
counterpoint	The way melodic lines relate to each other; historically, the craft of controlling dissonance and consonance.
D.C. al fine	Abbreviation for "da capo al fine" (literally, "from the head to the end"); usually found below the last printed measure of a piece of music, directing the performer to return to the beginning and perform the music until the "fine" indication is printed in the music.
diatonic scale	Any stepwise arrangement of the seven "natural" pitches. In particular, the major and natural minor scales.
dictation	Dictation is a process of writing down what is heard.
diminished	(literally, "reduced") An interval or triad with a half step removed. Commonly encountered examples include the diminished fifth, the diminished triad and the diminished seventh. A diminished interval is labeled with a lower case "d"; a diminished triad or seventh chord is indicated with the degree sign, "°".
dissonance	An unstable musical sound. Commonly understood as a disagreeable combination of tones.
dominant	1) the fifth degree in a scale, relatively stable, and 2) the chord constructed on it
double flat	The sign used to lower the pitch of a note by a whole step.
double sharp	The sign used to raise the pitch of a note by a whole step.
dynamics	Loudness of performance as expressed by symbols placed in the music.
fermata	A symbol which indicates that the note or chord should be held longer than notated. How much longer it is held depends on a number of factors.
figured bass symbol	(figured bass numerals) A set of numerals arranged vertically from low to high (reading up) which indicate the intervals present above the bass note.
flag	The symbol on a stem that represents divisions of a beat smaller than a quarter note. One flag equals an eighth note. Two flags equals a sixteenth note.
flat	The sign used to lower the pitch of a note by a half step.

form	Musical form speaks of common ways of organizing large spans of music. Concepts such as contrast vs. repetition, modulation, departure and return are involved in the study of form.
functional harmony	A system of relations between chords in tonal music.
half step	(also half tone) The smallest musical interval. The distance between two adjacent pitches in the chromatic scale, or the difference between two adjacent keys on the piano. (i.e. The distance between a white and black key on the piano.)
harmonic interval	The distance between two pitches when the pitches are presented simultaneously.
harmonic minor	Version of the minor scale with raised seventh scale degree (compared to natural minor).
harmony	Agreement, concord in Greek. Harmony is music in its vertical aspect; Harmony also means chords supporting melody.
homophony	The most common musical texture, in which a single melody on top is supported by a chord progression.
imitation	When one musical part repeats what another just did, often at a different pitch location (transposition).
improvisation	Improvisation is making up the music as one produces it, usually relying on limited materials or concepts, and drawing heavily on memory.
interval	The distance between two notes, either melodically (sounding sequentially) or harmonically (sounding together).
interval quality	The general sound of an interval; there are several ways to classify quality, with the most common being major, minor, perfect, diminished and augmented intervals.
inversion (triad)	A triad with the third or fifth in the lowest sounding position.
inversion (interval)	Moving a lower note of a simple interval one octave higher, or a top note of an interval one octave lower.
key	Organizing music around one note (the first note of a scale, also called tonic); consists of a set of hierarchical relationships.
key signature	Sharps or flats which maintain the structure (placement of semitones) in a given scale, written immediately after a clef on every staff.
ledger line	An extension of the staff. A line placed above or below the staff to extend its range. Ledger lines are only long enough to make single notes or notes of a chord legible; they never connect with each other.

legato	A smooth and connected performance style.
major second	(M2) See whole step.
major interval	Larger: seconds, thirds, sixths and sevenths each have a larger and smaller version; the major version of each is found above tonic in a major scale.
major scale	The whole- and half-step pattern defined by the white notes on a keyboard from C to c; the pattern when ascending is W-W-H-W-W-W-H, where W is a whole step and H is a half step; the brighter quality of this scale leads to its commonly-described quality as "happy". A scale with semitones between 3rd and 4th, 6th and 7th steps.
major triad	The triad which contains a major third and perfect fifth above its root, commonly described as "happy".
measure	The combination of notes and rests contained between two barlines.
mediant	Scale degree 3 and the chord built upon it.
melodic interval	The distance between two pitches when the pitches are presented one after another.
melodic minor	Version of the minor scale with raised scale degrees 6 and 7 ascending motion (compared to natural minor), descends using the natural minor form (i.e., lower scale degrees 6 and 7 on the way back down).
melody	A series of musical pitches presented sequentially in a given rhythm, a top line of a song.
meter	The pulse in music represented by the time signature.
minor second	(m2) See half step.
minor interval	Smaller: seconds, thirds, sixths and sevenths each have a larger and smaller version; minor intervals are a half-step smaller than major intervals
minor scale	Best understood in relation to the major scale, with a commonly-described quality of "sad"; three versions of minor scales exist, with all sharing the minor third above tonic as a defining characteristic; the three forms of minor include natural minor , harmonic minor , and melodic minor . (See entry for each.)
minor triad	The triad which contains a minor third and perfect fifth above its root, commonly described as "sad".
mode	A seven-note scale made of whole and half steps. The two primary modes are major and minor, others exist as well.
modulation	A change of key confirmed by a cadence.

monophony	The musical texture which features a single line. A texture is monophonic no matter how many individuals take part in executing a single line.
motive	The smallest recognizable musical idea, with characteristic rhythmic and intervallic patterns.
natural	The sign used to cancel a sharp or flat.
natural minor	A scale with semitones between scale degrees 2 & 3, 5 & 6; same as major scale with lowered 3, 6, 7.
notation	The system of symbols which allows music to be written and read.
note value	The rhythmic duration of a note.
overtone series	A set of frequencies made by the vibration of air when the pitch is produced.
parallel keys	Major and minor keys starting on the same tonic.
period	A complete musical thought that takes two or so phrases to express. The two common components of a period are an antecedent phrase and consequent phrase
phrase	A single musical statement marked by coming to a conclusion. Phrase in music is analogous to phrase in writing or speech.
pitch	A musical sound described as high or low, expressed through letter names or solfège.
polyphony	The musical texture marked by independence of melodic line.
predominant	Predominant <i>function</i> refers to a group of chords, each of which might precede the dominant chord in a cadence: II, IV, and others.
register	The location of pitch (high, medium, low).
relative keys	Major and minor keys sharing the same key signature.
repeat signs	Symbols which indicate that the music bounded, or surrounded, by them is to be repeated before going on.
rest	The musical symbols that represent a period of silence.
rhythm	The combination of notes and rests that determine the length of sound and silence in music.
scale	A group of 5 to 12 sequentially arranged pitches.

scale degree	The number of scalar steps above tonic (the "key" note or "home" note); scale degree is expressed with an Arabic numeral with a carat ("^") placed above it.
sequence	Repetition of a melodic or harmonic pattern at successively higher or lower pitch levels.
semitone	See half step.
seventh chord	A four-note chord built in thirds from its lowest note.
sharp	The sign used to raise the pitch of a note by a half step.
simple division	The division of the beat into two equal parts.
slur	A curved line that indicates notes should be played legato.
solfège	Solfège is an ancient system of naming pitches. Longy uses "fixed-do" solfège, in which C = do, D = re, E = mi, F = fa, G = sol, A = la, and B = si or ti.
staccato	A manner of articulation producing a separated, detached style; indicated by a single dot appearing above or below the note head.
staff	A line consisting of five lines and four spaces in which music notation is written.
stem	The line attached to a note head, one octave in length, perpendicular to the line of the staff.
subdominant	Fourth degree in a scale, often preceding dominant in a cadence, and the chord constructed on it.
submediant	Scale degree 6 and the chord built upon it.
subtonic	Whole step below tonic, which is scale degree 7 in a natural minor scale.
supertonic	Scale degree 2 and the chord built upon it.
tempo	Speed of the pulse in music.
tenuto	A manner of articulation wherein a note is to be performed in a sustained manner; indicated by the symbol, -, appearing above or below the note head.
ternary	Ternary is three-part form, built upon statement, departure, and return. It is often denoted simply as A-B-A.
texture	The way musical elements relate to each other, the "broad picture" of what's happening in the music. The degree of independence of lines which create the whole is an important factor. Western Classical music is known for creating and depending upon a sort of polyphony in which

somewhat independent lines combine to function together to create a unified harmonic outcome.

tie	A curved line between notes that indicates continues for the duration of all connected note values.
time signature	The numeric symbol representing the number of beats in a measure and the organization of strong and weak beats.
tonic	The first and the last sound in a scale, the most important note that gives the scale its name. Tonic is most stable note in a scale.
transposition	Moving a music structure (phrase, part of a phrase) to a different pitch location
triad	A three-note chord built in thirds from its lowest note.
triad quality	The sound of a three-note chord resulting from the intervals created between the various notes; the four types include: major triad (major third on the bottom and minor third on top); minor triad (minor third on the bottom and major third on top); augmented triad (major third on the bottom and top); diminished triad (minor third on the bottom and top).
whole step	(also whole tone) The distance between two notes that equals two half steps. (Two white keys with a black key in between.)

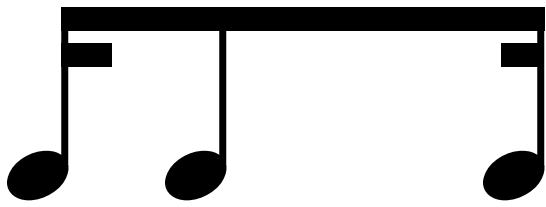
How to use the Rhythm Cards:

- 1) Photocopy the pages with the beat divisions to create 4-5 of each division. Reasonably heavy paper will work best, or you can laminate them.
- 2) Cut along the dotted lines.
- 3) Assemble them in any order on a music stand or piano music rack: pairs make a duple meter (either simple or compound), three make triple meter, etc. (One can even do irregular meters if one is truly adventuresome.)

Make up rhythms to execute using the Longy Rhythm Method, to give a rhythmic pattern for improvisation (using 2 or 3 solfege syllables, an interval, a triad type, etc.), or whatever you can think of that's fun to do.

The image displays four rhythm cards, numbered 1 through 4, arranged in a 2x2 grid. Each card features a five-beat division line at the top, indicated by vertical bar lines and horizontal dashes. Below the line, musical notation is provided for each card:

- Card 1:** Shows a half note on the first beat and a half note on the fifth beat. The number '1' is centered below the line.
- Card 2:** Shows a quarter note on the first beat, followed by three eighth notes on the second, third, and fourth beats. The number '2' is centered below the line.
- Card 3:** Shows a quarter note on the first beat, followed by two eighth notes on the second and third beats. The number '3' is centered below the line.
- Card 4:** Shows a quarter note on the first beat, followed by two eighth notes on the second and third beats. The number '4' is centered below the line.



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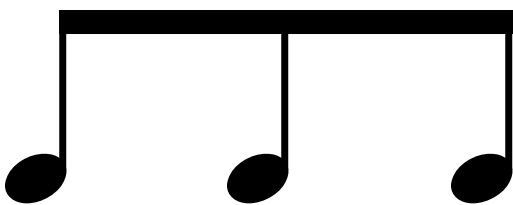
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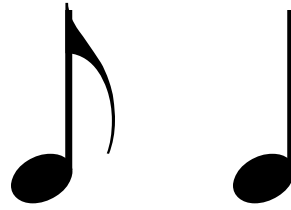
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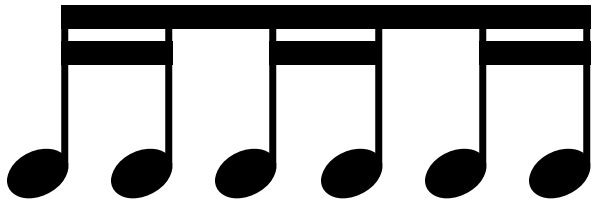
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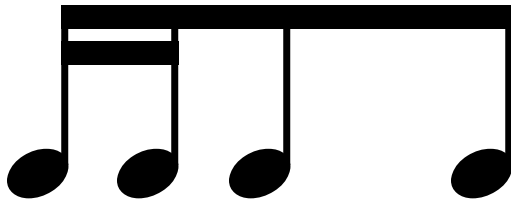
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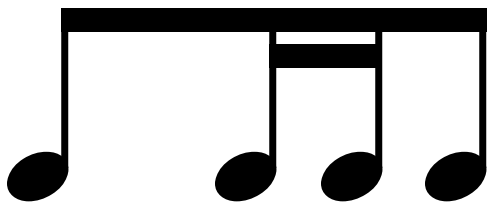
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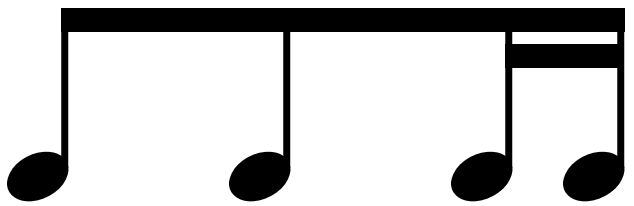
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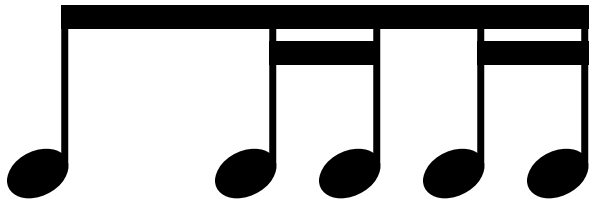
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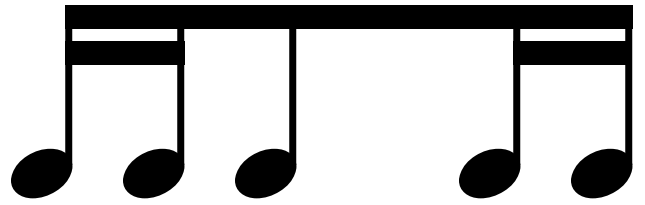
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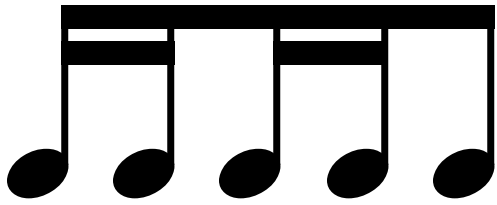
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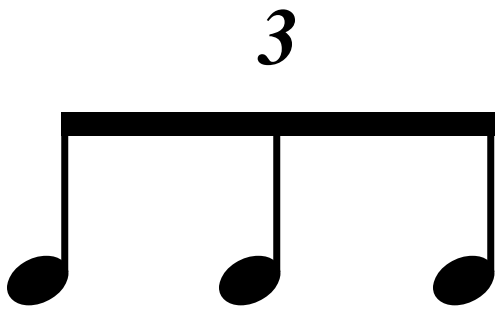
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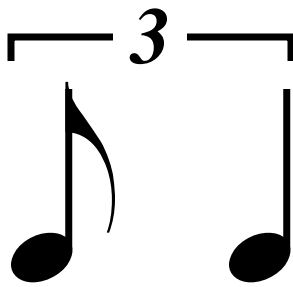
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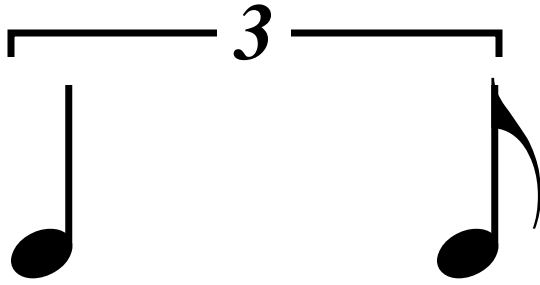
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