

MUSIC THEORY

STUDENT WORKBOOK



↑ LEVEL 3 ↓



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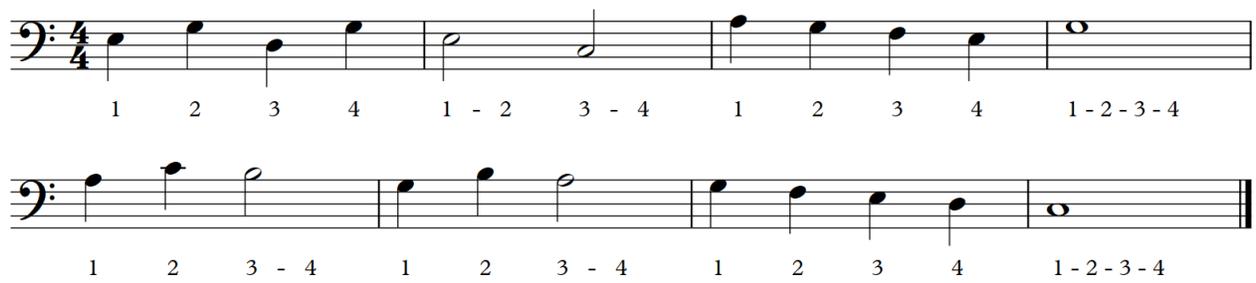
Review of Level 2

 (whole note) = 4 beats
  (half note) = 2 beats
  (quarter note) = 1 beat

Time signature and bar lines:

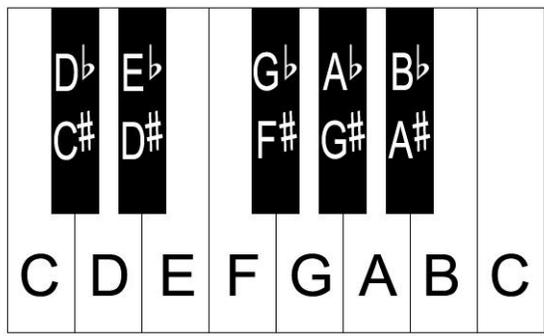


How to write counts on a piece of music in 4/4 time:



 (whole rest) = 4 beats
  (half rest) = 2 beats
  (quarter rest) = 1 beat

The piano keyboard:



 (sharp) – raises a note by a semitone
 (flat) – lowers a note by a semitone
 (natural) – cancels a sharp or flat

Lesson 3.1 - The Major Scale

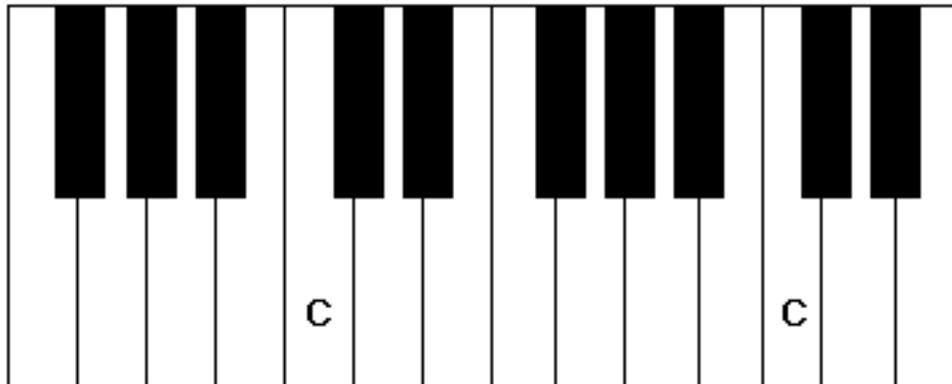
A major scale is formed by notes in a specific order, covering an octave. Remember, an octave is the shortest distance between two notes of the same letter name (i.e. C to C, G to G).

A major scale can go up (ascending), down (descending) or both, and is formed using tones (T) and semitones (S). In particular, the ascending scale is built on the following pattern of tones and semitones:

T T S T T T S

EXERCISE

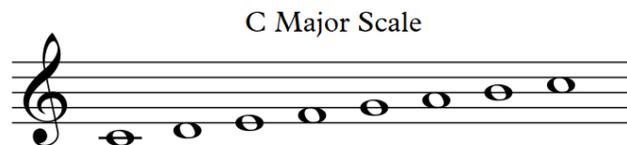
Use the pattern above to write in the missing notes of the C major scale, from C to C. Also show where the tones and semitones are.



You should have discovered a couple of things:

- The C major scale uses only **white** notes on the keyboard.
- The **ascending C major scale** is made up of the notes:

C D E F G A B C



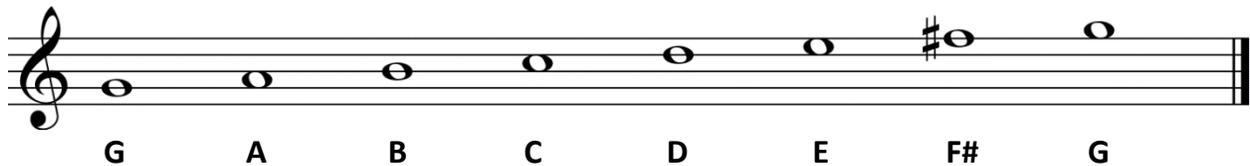
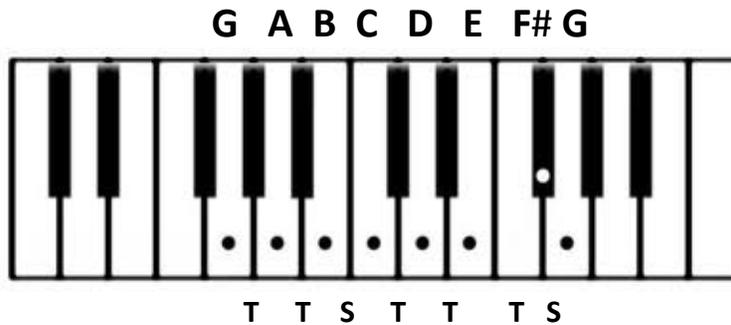
The **C major scale** is called as such because it starts and ends on **C**. But what about other major scales?

Other Major Scales

Let's take the major scale starting on **G** (the **G major scale**). By following the same pattern of tones and semitones as before (T T S T T T S), we can figure out the other notes in the scale.

- Starting on **G** we have a tone above that which is **A**.
- Then another tone above that is **B**.
- **A** semitone above that leads us to **C**, and then a tone above that is **D**.
- Another tone up from that gives us **E** and then another tone up gives us **F#** - not **F** natural.
- Finally we move up a semitone from **F#** to get back to **G** again.

So the notes of the G major scale are:



EXERCISE

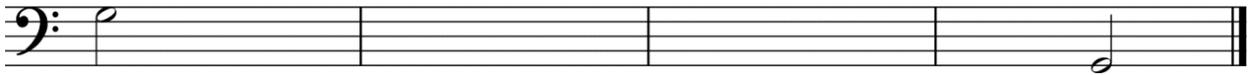
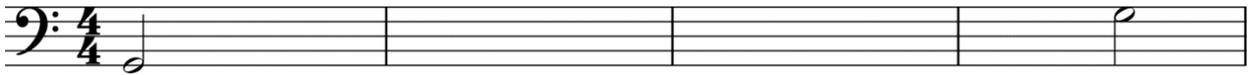
Write major scales in half notes, starting on the given notes, ascending and descending.

- Remember the pattern T T S T T T S
- Make sure note stems are in the right direction!
- Add accidentals where necessary.
- Repeat the top note.
- You may use a keyboard to help you determine the tones and semitones.

(a) F major



(b) G major

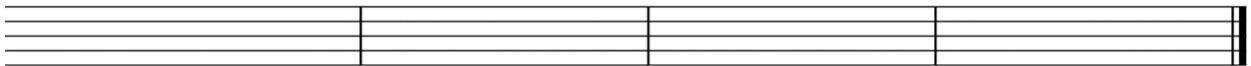
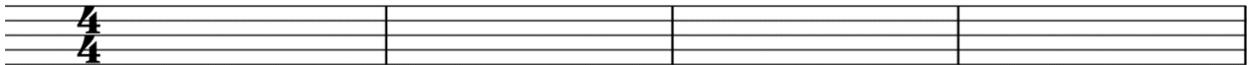


(c) C major

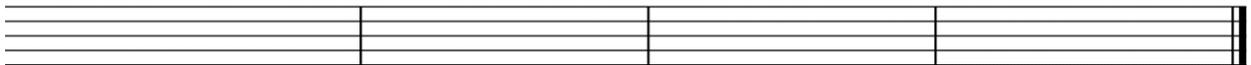
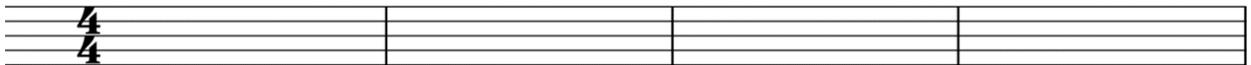


2. Write the following major scales in half notes, ascending and descending (as above).

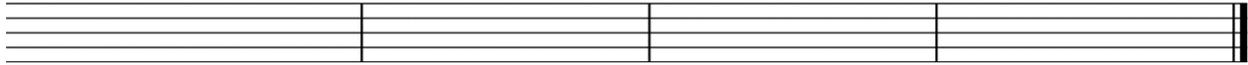
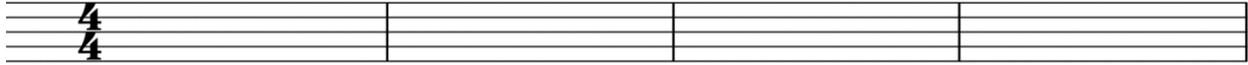
(a) G major in Treble Clef



(b) C major in Treble Clef



(C) F major in Bass Clef



If an instrument is available, listen to each of the major scales you have written (C, G, F).

- Do they sound alike?*
- What is different about each one?*
- What is the same?*
- What is the most important note in each scale?*

All major scales have the same basic sound; they just start on different notes. Some are higher and some are lower.

SUMMARY

- ✓ An octave is the shortest distance between two notes of the same letter name.
- ✓ The ascending (up) major scale is formed by the following pattern of tones and semitones: T T S T T T S
- ✓ The C major scale is the simplest of all major scales and uses only white notes on the piano keyboard.
- ✓ All major scales have the same basic sound, they just start on different notes.

Key Signatures: C, F & G

Notes of any scale can be used to form a melody.

When the notes of a particular scale are used, we notice a special unity in the music.

Our ear senses this unity and we can tell that the music has a “centre of gravity” about which everything revolves, such as the note C in a C major scale.

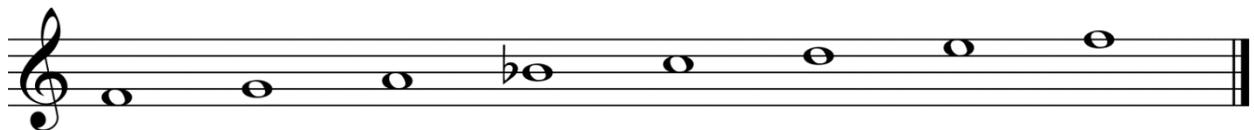
*When a song is built around a certain major scale (built on a certain note) we say that it is in the **Key** of this particular note.*



For example, if a song is built using the notes of the C major scale, we say that this song is in the Key of C major.



If a song uses the notes of the F major scale, we say that this song is in the Key of F major.



In the same way, if a song uses the notes of the G major scale, we say that this song is in the Key of G major.



Note: Often, a piece of music will start and end on the note of the key the piece is written in. For example, a song in the Key of G major will often start and end on the note G!

EXERCISE

What scale do you think these 3 melodies are based on?

(a) Key: _____



In order to make the music easier to read (and write), we can use a **key signature**.

A **key signature** occurs at the beginning of a piece of music. It tells us which notes have to be played as sharps or flats. If the key signature looks like this...



... then we know there is one flat in the piece: B \flat . This means that any time we see the note **B** in a piece, we must play a **B \flat** , not **B** natural. The key where **B** is always flat is the key of **F** major.

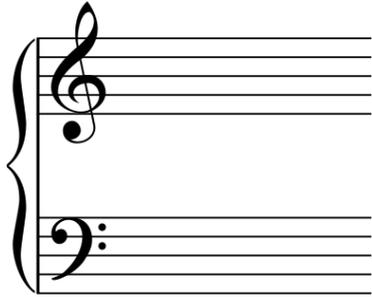
If the key signature looks like this...



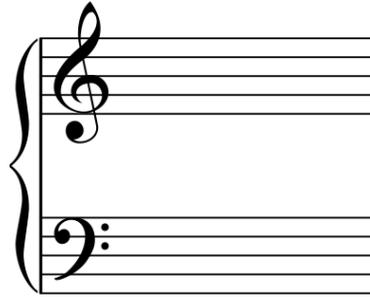
...then it tells us that there is one sharp in the piece: F \sharp . This means that any time we see the note **F** in a piece, we must play **F \sharp** . The key where **F** is always sharp is the key of **G** major.

EXERCISE

Practice drawing these 2 key signatures in both the Treble and Bass clefs:



F Major



G Major

The key signature for the Key of C major has no flats or sharps!

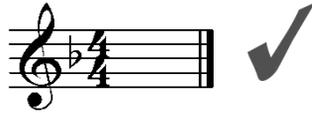


Writing time signatures with key signatures



Key signatures are to appear to the **RIGHT** of the clef sign and to the **LEFT** of time signature.

THIS



NOT THIS



THIS



NOT THIS



Which do I write first?

Here's a hint:

They come in ALPHABETICAL ORDER!

In other words, since **K** comes before **T** in the alphabet, the **Key Signature** is written **BEFORE** the **Time Signature**!

When music is written using more than one line, the clef and key signature are repeated on each line but the time signature is not. For example:

Moderato

mp

f *mp*

SUMMARY

- ✓ Songs can be written using the notes of a particular major scale. If the song uses the notes of the G major scale, for example, we say that the song is in the **key of G major**.
- ✓ In order to make the music easier to read, **key signatures** are often used at the beginning of the music to indicate which notes are always to be played sharp or flat.
- ✓ The key of **C major** has no flats or sharps
- ✓ The key of **G major** has one sharp—**F#**
- ✓ The key of **F major** has one flat—**Bb**
- ✓ Key signatures appear to the right of the clef sign and to the left of the time signature. Correct order: clef, key signature, time signature.



Lesson 3.2 - Eighth Notes and Sixteenth notes

Music is made up of sounds of various lengths. Some notes are long and some are short. Each note value has a specific length. In level 2, you learned that a:

- Whole note = 4 beats
- Half note = 2 beats (2 half notes = 1 whole note)
- Quarter note = 1 beat (4 quarter notes = 1 whole note)

There are also notes called **eighth notes** and **sixteenth notes**.

- An eighth note = $\frac{1}{2}$ beat (8 eighths = 1 whole note)
- A sixteenth note = $\frac{1}{4}$ beat (16 sixteenths = 1 whole note)

Number of beats for each type of note:

Whole	4															
Half	2								2							
Quarter	1				1				1				1			
Eighth	1/2		1/2		1/2		1/2		1/2		1/2		1/2		1/2	
Sixteenth	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4

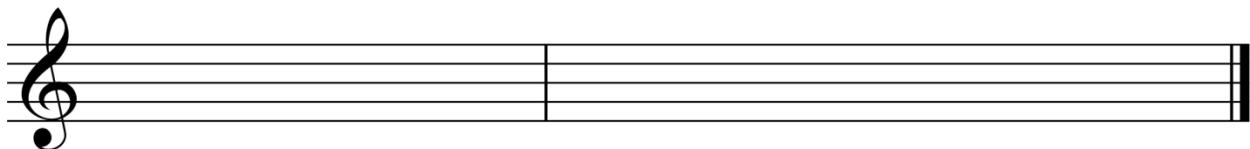
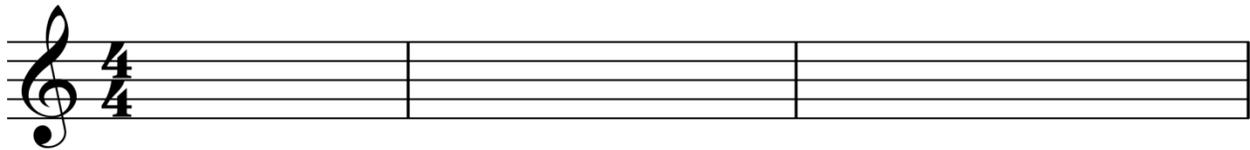
Sixteenth notes are half the length of **eighth notes**, which are half the length of **quarter notes**, which are half the length of **half notes**, which are half the length of **whole notes**.

Here is a chart that shows the number of half, quarter, eighth and sixteenth notes in a whole note:

1 Whole note																
2 Half Notes																
4 Quarter Notes																
8 Eighth Notes																
16 Sixteenth Notes																

EXERCISE

On the staff below, practice writing one bar of 4/4 time using each type of note. In other words, write one whole note in bar 1, two half notes in bar 2, four quarter notes in bar 3, eight eighth notes in bar 4, and sixteen sixteenth notes in bar 5. Choose any pitch. Remember stem direction.



Beams

Writing many eighth or sixteenth notes in a row can be difficult to read.

Here is an example of a piece with many eighth notes and sixteenth notes:



Now here is the same melody written slightly differently:



Which example is easier to read? Why?

For this reason, when we write eighth and sixteenth notes, we can join them with a beam instead of individual tails if there is more than one in a row.

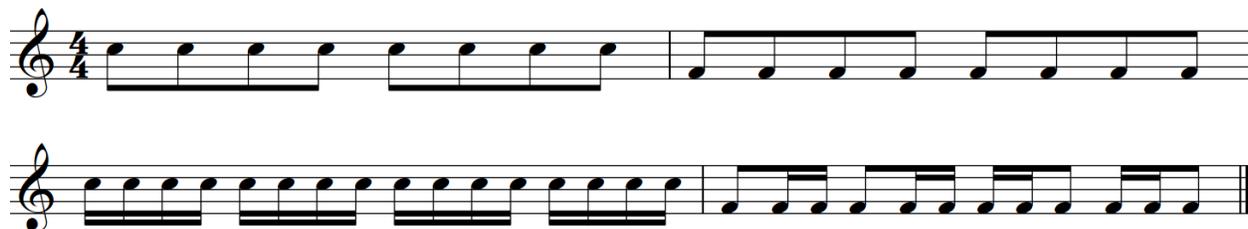
One **beam** is used for eighth notes.



Two **beams** are used for sixteenth notes.



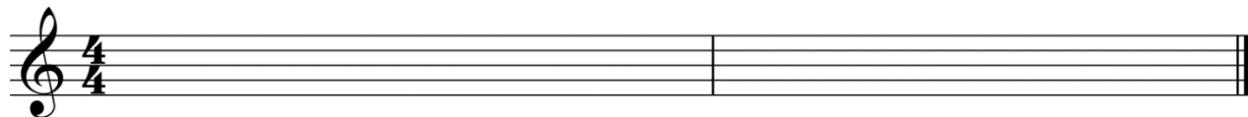
In 4/4 time, there are four beats in each bar and the quarter note is one beat. One beam usually covers a whole beat, so in 4/4 time, one beam covers two eighth notes or four sixteenth notes. Sometimes, however, a beam can cover four eighth notes (two beats):



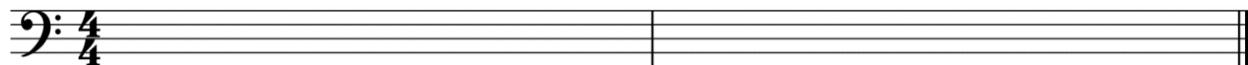
EXERCISE

Rewrite the following notes using beams.

a)



b)



Ties

A **tie** in music is a small curved line which joins together two notes of the **same pitch**. When this happens, the sound is held for the total value of all notes tied together.

Notice that the **tie** (the line itself) is always placed opposite the direction of the stem of the note.



Slurs

A **slur** in music is a small curved line which joins together two (or more) notes of a **different pitch**. When playing or singing notes joined by a slur, we move **smoothly** from one note to the next.

As with ties, the line is placed opposite the stem direction.



It is also possible to join many notes together with one long slur as in the following example:



SUMMARY

- ✓ Whole notes, half notes and quarter notes can be split up even further into **eighth notes** and **sixteenth notes**.
- ✓ Individual **eighth notes** are written by adding a **tail** to the stem, and **sixteenth notes** by adding **two tails** to the stem.
- ✓ To make music easier to read, when writing groups of eighth and sixteenth notes, **beams** can be used to group them together over the span of one beat. **One beam** is used for **eighth notes** while **two beams** are used for **sixteenth notes**.
- ✓ A **tie** in music is a small curved line that joins together two notes of the **same pitch**. When this happens, the sound is held for the total value of all notes tied together.
- ✓ A **slur** in music is a small curved line that joins together two or more notes of a **different pitch**. When this happens, we play or sing the notes **smoothly**.
- ✓ For both **ties** and **slurs**, the line is placed in the **opposite** direction of the stem.



Lesson 3.3 - Counting

When playing or singing music, it is very important to **always count the beats**.



Counting whole, half and quarter notes or rests is straightforward. However, when counting eighth and sixteenth notes and rests, it is necessary to **subdivide**.

If beat 1 has two eighth notes, we will say “1 and.” We can write this as “1 +” where the “and” (+) represents the second eighth note (the second half of beat 1).



1 +

If the beat is divided into sixteenth notes, we say “1 ee and ah.” We write this as “1 e + a” where “e” represents the second sixteenth note of the beat and “a” represents the last sixteenth note.



1 e + a

Here is an example of a piece of music with the counts written underneath the notes.



EXERCISE

Write the counts underneath the notes.

BONUS: Clap each rhythm while counting out loud!

(a)

Exercise (a) consists of two staves of music in 4/4 time. The first staff contains two measures: the first measure has a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5; the second measure has a quarter note D5, a quarter note E5, a quarter note F5, and a quarter note G5. The second staff contains two measures: the first measure has a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5; the second measure has a quarter note D5, a quarter note E5, a quarter note F5, and a quarter note G5. The piece ends with a double bar line.

(b)

Exercise (b) consists of two staves of music in 4/4 time. The first staff contains two measures: the first measure has a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5; the second measure has a quarter note D5, a quarter note E5, a quarter note F5, and a quarter note G5. The second staff contains two measures: the first measure has a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5; the second measure has a quarter note D5, a quarter note E5, a quarter note F5, and a quarter note G5. The piece ends with a double bar line.

Dotted Notes

We saw earlier that we can make a note longer by using a tie. For example, if you tie a half note to a quarter note, you get 3 beats. Another way to make a note longer is to use a dotted note (by placing a dot in the space after the note).

For example:



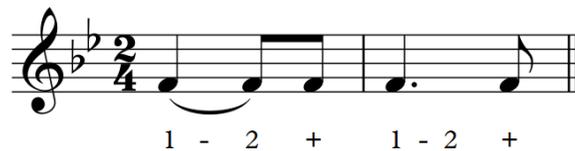
In the first measure, a half note is tied to a quarter note. In the second measure, there is a dotted half note. Although they look different, they are the same length (3 beats)!



Have you figured out the pattern yet? When you put a dot after a note, you add half the length of the original note. For example, for a dotted half note, you add half of a half note (i.e. a quarter note), which equals 3 beats total.



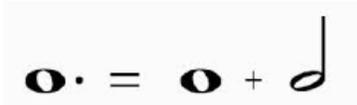
Here's another example of how a dotted note can be used:



The dotted quarter note in the second bar is equal to a quarter note plus half a quarter note (an eighth note). In total, it equals three eighth notes or a quarter note plus an eighth note.



This works for any type of note. For example:

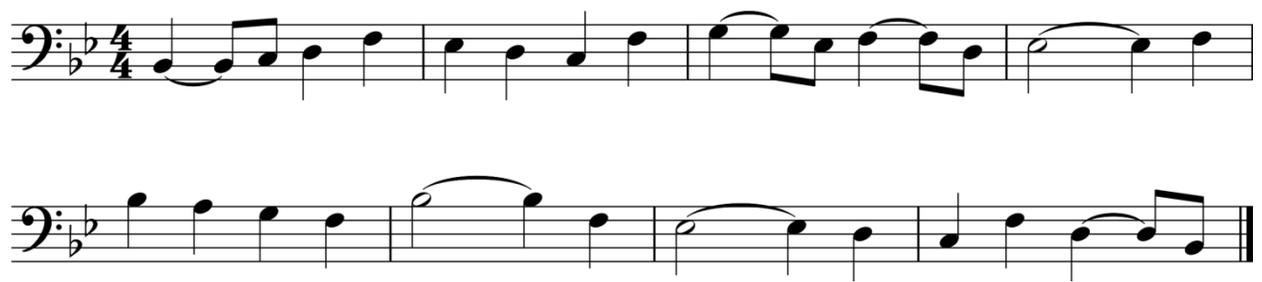


Note: Dotted notes help us avoid writing too many ties in music. However, there are cases where you must use ties instead of dotted notes. One example is when you want a note to be held across a bar line, such as from bar 1 to 2 below:

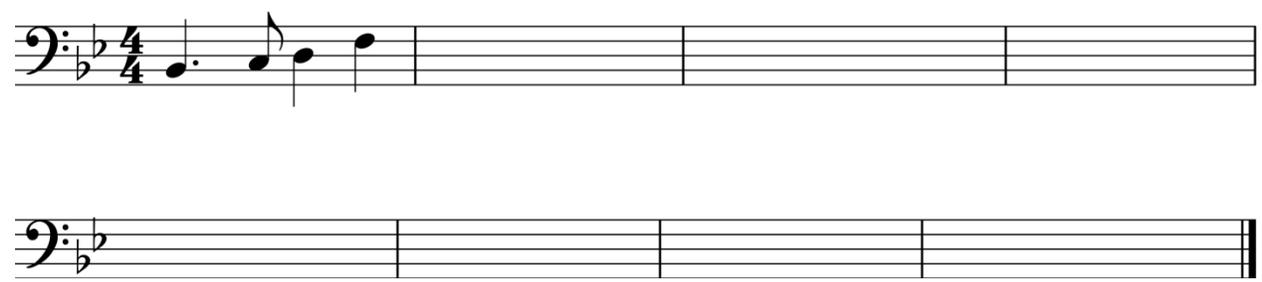


EXERCISE

Here is an example of a melody written using tied notes.



Rewrite the same melody using dotted notes instead of ties (the first bar is done for you).



Eighth Rests and Sixteenth Rests

Just as there are whole, half and quarter rests, there are also eighth and sixteenth rests.

Whole rest 

Half rest 

Quarter rest 

Eighth rest 

Sixteenth rest 

Eighth rests and sixteenth rests are written in the third space.

Sixteenth rests are written the same way but have two hooks.



EXERCISE

Practice writing a full bar of eighth rests, then a full bar of sixteenth rests in 2/4 time. See the example above for help.



In the exercise just completed, you had to write a lot of rests in bar 2! This was mainly for practice in writing rests. In music, we often group rests together when it is possible. For example, it is possible to write a whole rest instead of 4 quarter rests:



We can also write a quarter rest instead of two eighth rests or four sixteenth rests:



EXERCISE

Write the counts for the following pieces. Then practice counting out loud while clapping the rhythm.

(a)



(b)



(c)



(d)



SUMMARY

- ✓ It is important to **always count** when playing or singing music.
- ✓ When we count eighth notes in a beat, we say “1 and” and write “1 +.”
When we count sixteenth notes in a beat, we say “1 ee and ah” and write “1 e + a.”
- ✓ When you put a **dot** after a note, you add **half the length of the note**.
- ✓ Eighth and sixteenth rests are written in the third space (between line 3 and 4). An eighth note has one hook and a sixteenth rest has two.
- ✓ Smaller value rests can sometimes be grouped together into one larger value rest.



Lesson 3.4 - Articulation

Another way that music is made expressive is through articulation.

Articulation involves the way the notes are played.

Sometimes notes are played:

- with a harsh attack
- very smoothly and connected together
- in a short style

The **slur**, which we learned earlier, is an articulation marking. It tells you to connect two notes together without re-articulating the second one. If you were singing or saying the two notes, it would be “ta-ah” as opposed to “ta-ta.”

Legato & Marcato

If the term **legato** is in a piece of music, it means that the notes should be played in a smooth, connected style. An example of a piece in this style would be a slow, beautiful ballad.

In contrast to this, you might see the articulation marking **marcato**. This means “in a marked style.” Each note is emphasized and usually played detached (not legato).

These terms are always placed underneath the staff.

Allegro ♩ = 120
f marcato

Moderato ♩ = 92
mp legato

Articulation Symbols

Words can be used to represent articulation styles and at other times, symbols are used.

1. Accent

- An **accent** is a note that needs to be brought out more than the other notes. It is louder than the other notes, particularly at the start of the note.

- The symbol for an accent is >



2. Staccato

- A **staccato** note is played short (shorter than normal).

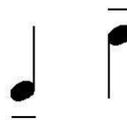


- Staccato notes are marked by a dot above or below the note.

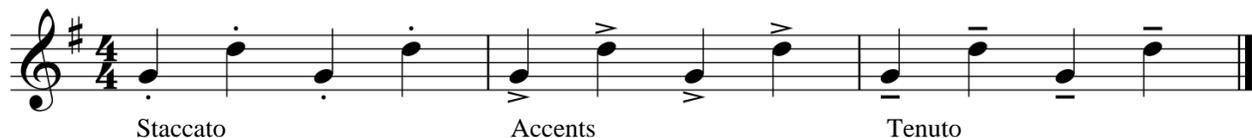
3. Tenuto

- A **tenuto** means two things. First, it means to hold the note for its full value. It also means to give a slight emphasis to the note – many musicians say to play it with a little more ‘weight’.

- The tenuto symbol is a small dash.



All of the **accent**, **staccato** and **tenuto** symbols go either above or below the note head, in the opposite direction of the stem.





EXERCISE

Add your own articulation markings to the following pieces. Include at least one slur, accented notes, staccato notes and tenuto notes. Also include an overall style indication (legato or marcato).

(a)

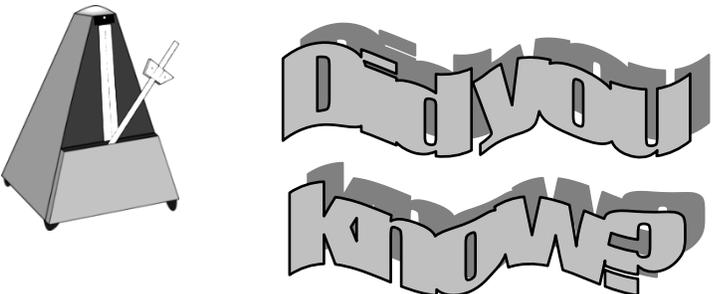
Allegro moderato ♩ = 112

(b)

Moderato ♩ = 88

The Metronome

In addition to tempo terms we have learned about in previous levels, sometimes composers use **metronome markings** to indicate the speed of the music.



A **metronome** is a mechanical or electronic device that produces regular, metrical ticks (beats, clicks). The numbers on a metronome are the number of beats per minute.

Invented in the 19th century, the metronome is used by some musicians for practice in maintaining a consistent tempo with steady beats. Composers often use it to specify the tempo of the piece.

Metronome marking

↓

Adagio ♩ = 60



A metronome marking is in the form of 'a note' = 'a number.'

The 'note' is usually the same as the beat as shown in the time signature. For 4/4, 3/4 and 2/4, this is always a quarter note.

The 'number' represents how many beats there are per minute.

SUMMARY

- ✓ **Articulation markings** tell us how to play the notes in a piece or the style. Terms such as **legato** or **marcato** can be used as well as symbols such as **staccato**, **tenuto**, or **accented**.
- ✓ **Metronome markings** tell us how fast to play based on the number of beats per minute.
- ✓ Tempo and metronome markings are written above the staff.
- ✓ Articulation and dynamic markings are written below the staff.



Lesson 3.5 – Compound Time

In level 2, you learned about Time Signatures:

- The top number tells us how many beats are in a measure.
- The bottom number tells us what note value gets one beat.



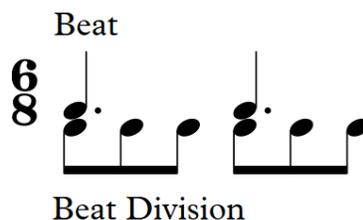
For example, a 4/4 time signature tells us that we have four beats in a bar (or measure) and that each quarter note gets one beat.

We call 4/4, 3/4, and 2/4 *simple* time signatures because the top number tells us how many beats are in a measure. In simple time, the beat can be represented by a single un-dotted note, which can be divided into two parts. For example, the quarter note can be divided into two eighth notes.

In *compound* time signatures, each beat can be divided into *three* parts. A common compound beat is a group of three eighth notes:



The first compound time signature we are going to look at is 6/8. 6/8 time contains six simple beats in a bar (top number) and each eighth note (bottom number) gets one simple beat. At a slow tempo, we can count “1 2 3 4 5 6.” However, at a faster tempo, this might be tricky! If we group the eighth notes into groups of three, we see that there are two *compound* beats per measure:



At a faster tempo, even though the top number says six, we can count 6/8 time “in two” (with two beats per bar).

Here’s an example:

Adagio (slow) **Allegro (fast)**

1 2 3 4 5 6 1 2
(six simple beats) (two compound beats)

To get a better idea of the difference between simple and compound time, let’s compare an example in 3/4 time with an example in 6/8 time:

If you look at measure 2 of each example, you can see that there are six eighth notes in both examples but they are grouped differently. In 3/4 time, they are in groups of two (to make three beats in the bar). In 6/8 time, they are in groups of three (to make two compound beats in the bar).

Counting Compound Time

By looking at the examples above, we know that a compound beat is made up of three groups of three notes. So how do we count compound time?

In slow compound time, we can continue to count “1-2-3-4-5-6.”

Adagio

1 2 3 4 5 6 1 2 3 4 5 6

In faster compound time, we count “1 + a” for the first beat and “2 + a” for the second beat.

One compound
beat

↓

Allegro

A musical staff in treble clef with a key signature of one sharp (F#) and a time signature of 6/8. The tempo marking 'Allegro' is above the staff. The music consists of four measures, each containing three eighth notes. Brackets above the staff group the notes in pairs: the first two notes of each measure are grouped together, and the third note is separate. Below the staff, the counting pattern '1 + a 2 + a 1 + a 2 + a' is written, with vertical lines connecting the notes to their respective counts. An arrow labeled 'One compound beat' points to the first measure.

1 + a 2 + a 1 + a 2 + a

Grouping in Compound Time

A compound beat is made up of three eighth notes that can be notated in different ways:

- Three eighth notes
- One dotted quarter note
- Quarter + eighth

Here's an example:

One compound beat One compound beat One compound beat One compound beat

↓ ↓ ↓ ↓

Allegro

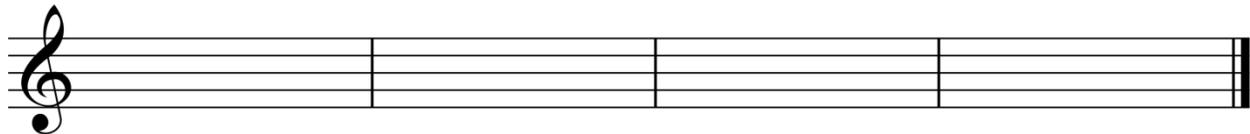
A musical staff in treble clef with a key signature of one sharp (F#) and a time signature of 6/8. The tempo marking 'Allegro' is above the staff. The music consists of four measures. The first measure has a dotted quarter note. The second measure has a quarter note followed by an eighth note. The third and fourth measures each have three eighth notes. Brackets above the staff group the notes in pairs: the first two notes of each measure are grouped together, and the third note is separate. Below the staff, the counting pattern '1 2 (+) a 1 + a 2 + a' is written, with vertical lines connecting the notes to their respective counts. Four arrows labeled 'One compound beat' point to the first measure of each of the four measures.

1 2 (+) a 1 + a 2 + a

EXERCISE

Write your own example of 6/8 time on the note F. Use each of the three groupings shown on page 37. Be creative!

When you are finished, write the counts underneath the notes.



Metronome Markings

If music in 6/8 is slow, you may see a metronome marking that gives the speed of the eighth note (the simple beat). However, when the speed of the music is faster, the metronome marking gives the speed of the compound beat.

For example:



Adagio ♩ = 72

Allegro ♪ = 72

1 2 3 4 5 6 1 + a 2 + a

(d)

Andante ♩ = 96

SUMMARY

- ✓ 4/4, 3/4 and 2/4 are **simple time signatures** because the top number tells you how many beats are in a measure. Each beat can be divided into two eighth notes.
- ✓ 6/8 is a **compound time signature** because each compound beat can be divided into *three* parts (three eighth notes). In 6/8 time, there are two compound beats (two groups of three) in each measure.
- ✓ At a very slow tempo, 6/8 time can be counted as simple time (six simple beats in a bar). Usually, it is more common for 6/8 to be faster, so we count the compound beats: 1 + a, 2 + a.
- ✓ Metronome markings: slow 6/8 gives the simple beat ♩ = _____
faster 6/8 gives the compound beat ♩ = _____

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