

Name: _____

Unit: _____

Cadet Music Theory Workbook

Level One

Updated 7 Oct 2019

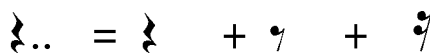
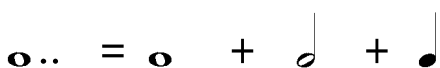
Level One

Dotted Notes and Rests

1. In Level Basic you studied the values of notes and rests.
2. There exists another sign of value. It is the dot placed right after the note and adds to the time value. The dot adds one half of the length of the note that it is attached to.








3. A second dot can be added. This second dot will also add to the time value of one half to the length of the first dot. For example:



A) What role does the dot play when it is attached to a note or a rest?

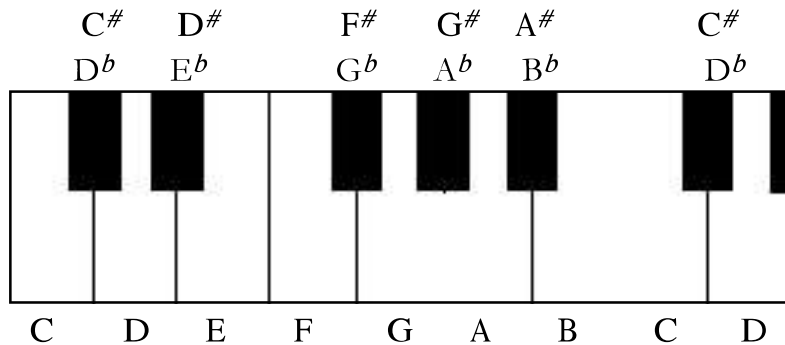
B) Complete the following examples by using notes or rests.

- | | | | | | |
|----|-----------------------------------------------------------------------------------|---------|----|-----------------------------------------------------------------------------------|---------|
| 1) |  | = _____ | 4) |  | = _____ |
| 2) |  | = _____ | 5) |  | = _____ |
| 3) |  | = _____ | 6) |  | = _____ |

C) Is it true to state that the second dot adds to the time-value of one-half the length of the first dot?

Tones and Semitones

4. To clearly understand certain theory notions, it is important to know all the notes that we find on the keyboard.



5. Always remember that the C is always found on a white key before 2 black keys. This memory aide will help you locate the other notes. The F is always found on a white key before 3 black keys.
6. A SEMITONE or HALF STEP is the smallest distance between any two adjacent keys on the keyboard whether it is black and white or white and white.

e.g. E and F, B and C, D and D#, etc. are all semitones apart

7. A WHOLE TONE or WHOLE STEP is made up of two semitones. On the keyboard, a whole tone is any two keys with one key, white or black, in between.

e.g. There is a tone between C and D, F# and G# and G#, E and F#, B^b and C



Note: It is important to note that between the adjacent degrees (i.e., semitones), there are no white or black keys. For example, the distance between C and D is not a semitone because there is a black key that separates the two keys.

A) Find all the semitones that we find on the keyboard.

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

between _____ and _____

B) Is it true to say that the shortest distance between two adjacent degrees is 1 tone?

C) How many tones or semitones exist between:

1) E and F[#] = _____

5) G^b and A^b = _____

2) E and G[#] = _____

6) C and E^b = _____

3) B^b and C = _____

7) A and C[#] = _____

4) B and C[#] = _____

8) C and G = _____

Understanding Accidentals

8. Accidentals are signs or symbols placed to the left side of a note to indicate that the pitch is to be altered.

The sharp (#) raises the pitch of the note by a semitone.

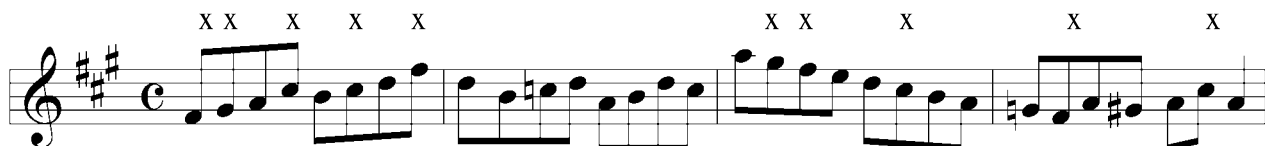
The flat (*b*) lowers the pitch of a note by a semitone.

The natural (♮) cancels the effects of either the sharp or the flat.

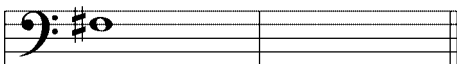

The double sharp (x) raises a note already sharpened by another semitone.

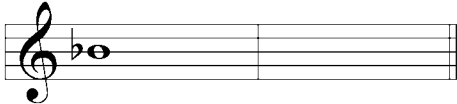
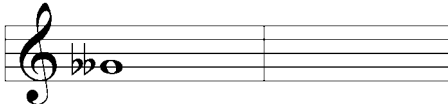
The double flat (*bb*) lowers a note already flattened by another semitone.

9. The KEY SIGNATURE is composed by the number of sharps or flats placed immediately after the clef, right before the time signature. The key signature can be altered within a musical piece.
10. The effect of an accidental symbol ceases at the termination of the bar in which it appears. However, within the measure, this symbol affects the note in whichever octave. Once the measure is passed, the accidental is no longer valid, returning the state of the notes in concurrence with the key signature. By observing the example below, the first C in the second measure is natural and so is the second C because they both belong in the same measure.





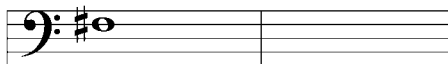
A) Raise the following notes by a semitone: (write your answer in the empty measure)

1)  3) 

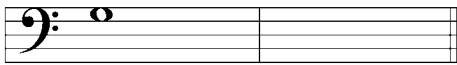
2)  4) 

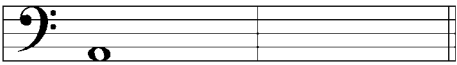

B) Lower the following notes by a semitone:

1)  3) 

4) 

C) Lower the following notes by one tone:

1) 

2)  4) 

D) Raise the following notes by one tone:

1)  2) 

E) What are the accidental alterations placed on the staff?

F) What does an accidental do to a note?

Simple Time Signatures

- 11.** As mentioned in Level Basic, a measure can be subdivided in two, three, or four beats.
- 12.** The measure of music into beats is called **TIME**. Therefore a sign called a **TIME SIGNATURE** is necessary to indicate two things: (1) to indicate the number of beats in a bar, and (2) to indicate the note which is equal to one beat. A time signature is placed at the beginning of a piece of music right after the key signature. You will not see the time for the rest of the piece except if there is a change in time and a new time signature would appear. In Simple time, the upper number tells you how many beats there will be in each bar, and the lower number tells you what kind of note is equal to one beat. For simple time the lower number can be 1, 2, 4, 8 or 16. For example:

1 represents	whole note	rarely used as a lower number
2 represents	half note	most often used
4 represents	quarter note	most commonly used
8 represents	eighth note	commonly used
16 represents	sixteenth note	less commonly used

- 13.** Therefore, if the lower number of the time signature is 4, the quality of the note expressing the beat is the quarter note. If the lower number is 2, the quality of the note expressing the beat is the half note.

Note: *A simple time can occur in the following forms of meter, however the most common are 2 (duple), 3 (triple) and 4 (quadruple). There are others but these are the most common.*

14. The upper number of the time signature determines the number of beats contained in each bar (generally 2, 3, or 4).

e.g.

The image shows three musical staves in treble clef. The first staff is in 2/2 time, showing two measures: the first contains a quarter note, a quarter note, and a quarter rest; the second contains a half note and a quarter note. Vertical lines are placed under the notes and rests to show two beats per measure. The second staff is in 3/4 time, showing two measures: the first contains a quarter note, a quarter note, and an eighth note beamed with another eighth note; the second contains a half note and a quarter note. Vertical lines show three beats per measure. The third staff is in common time (C), showing two measures: the first contains a quarter note, a quarter note, and an eighth note beamed with another eighth note; the second contains a half note and a quarter note. Vertical lines show four beats per measure.

15. The lines found under the notes indicate the beats in each measure. One can also see that the number of beats found in each measure is equal to the upper number of the time signature.

In a measure of 2 beats, the first is strong and the second is weak.

1 2
strong weak

18. At this time, it is important to introduce simple duple time: 2/2. The upper number of the time signature is always 2. This means that there are two beats in each measure. The lower number indicates which note receives the beat and, in this time signature, it is the half note.

Another symbol that represents 2/2 is . It is called cut common time or, in Italian, it is known as *alla breve*.



A) Explain the role of the upper number in the time signature.

B) Explain the role of the lower number in the time signature.

C) Place the bar lines where necessary according to the time signature.

1)



2)

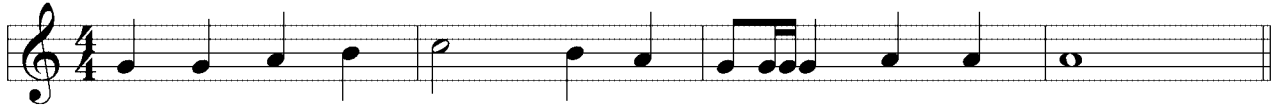


3)



D) Find and indicate the strong beats and the weak beats. (S=strong, W=weak)

1)



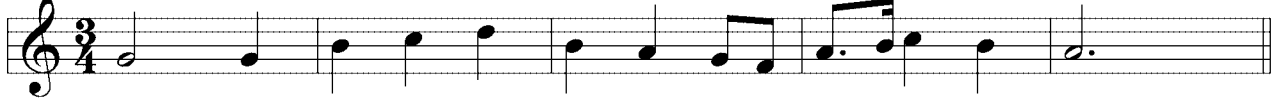
2)



3)



4)



E) Explain why 2/4 is different from 2/2 (number of beats per measure and the quality of the note).

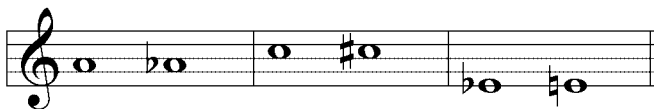
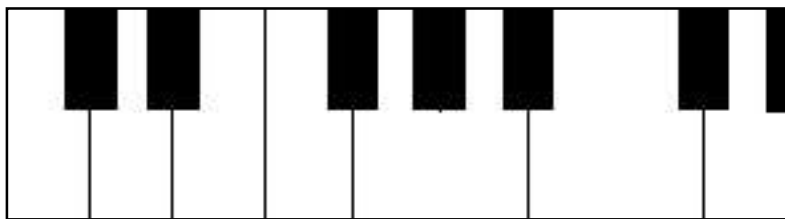
Chromatic Semitones and Diatonic Semitones

19. There are two kinds of semitones: the chromatic and the diatonic semitone.

20. A diatonic semitone is composed of two sounds following each other and not bearing the same name. Example: E to F, C# to D, B to C, etc.



21. A chromatic semitone is composed of two notes with the same letter name with one being altered by an accidental. Example E to E#, B to B^b.





A) Identify the different types of semitones (diatonic or chromatic).

1) E - F = _____

5) B - C = _____

2) G[#] - A = _____

6) B^b - B = _____

3) F[#] - G = _____

7) D[#] - E = _____

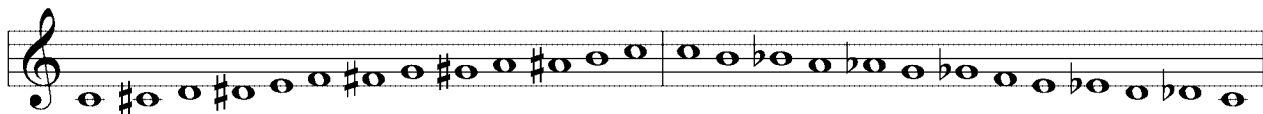
4) A - A[#] = _____

8) F - F[#] = _____

Different Kinds of Scales

22. A scale is composed of a series of sounds succeeded by adjoining degrees. The scales most used are the diatonic scale and the chromatic scale.

23. A chromatic scale is composed of 12 notes each having an interval of a semitone starting from any note up to the octave (which is an interval composed of eight degrees, e.g. middle C to high C). The chromatic scale employs sharps as it ascends and flats as it descends.

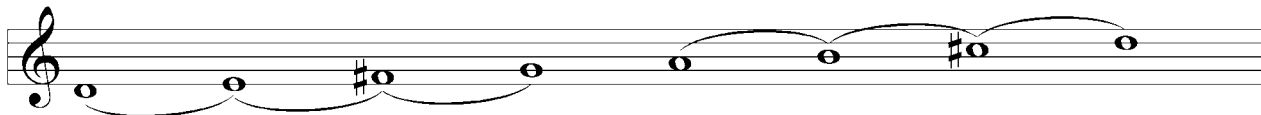


24. When in a chromatic scale, never use the name of a note twice. Example: Ab, A#, and A natural. Do not change the name of the tonic either. Example: if C is the tonic, do not use B#.

25. A diatonic scale is a succession of eight adjacent notes of diatonic tones and semitones. Example: C, D, E, F, G, A, B, C. In this type of scale, each note has a different name. There are two kinds of diatonic scales: major and minor.

e.g. Major scale
Natural minor scale

28. The major scale of C is used as a model for all the other major scales. Therefore, to always obtain a distance of a whole tone or semitone, a sharp or flat may have to be added. For example, in the major scale of D, we will find F# and C# so that it respects the model. (inferior tetrachord + tone + superior tetrachord).

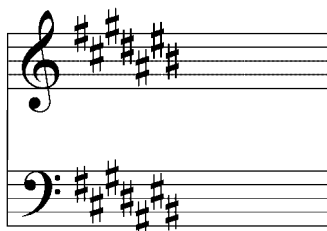


The Order of Sharps and Flats and their Placement on the Staff

29. Sharps

F#, C#, G#, D#, A#, E#, B#
 (Father Charles Goes Down And Ends Battle)

Placement on the staff:



The sharps follow the pattern of:

UP ↑ DOWN ↓ UP ↑ DOWN ↓ DOWN ↓ UP ↑ DOWN ↓

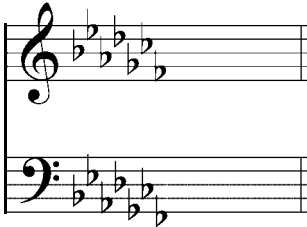
When a sharp sign is attached to a line note, the sharp is centred on the line as in the example above. When a sharp sign is to be placed on a space, the sharp is centred in the space as in the example above.

30. Flats

B^b , E^b , A^b , D^b , G^b , C^b , F^b

(Battle Ends And Down Goes Charles' Father)

Placement on the staff:



The flats follow the pattern of:

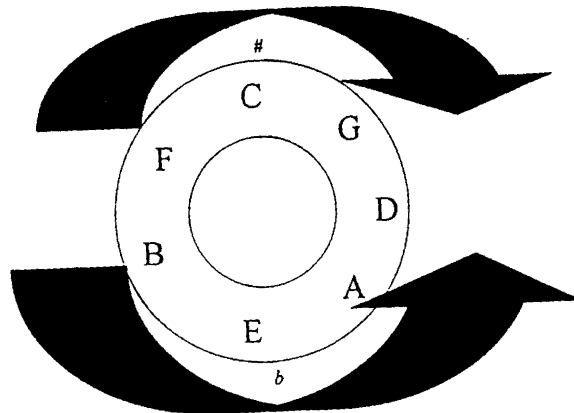
DOWN ↓ UP ↑ DOWN ↓ UP ↑ DOWN ↓ UP ↑ DOWN ↓

When a flat sign is to be placed on a line note, the flat is centred on the line as in the example above. When a flat sign is to be placed on a space, the flat is centred in the space as in the example above.

31. Circle of Fifths

The circle of fifths is useful in understanding scales and key signatures. It shows the relationship of one key to another by the number of sharps or flats in the key signature and the order in which they occur.

Let's start with a circle divided in twelve sections, i.e., like a clock.



Sharp Keys: start with C and move to the right in a clockwise direction.

Flat Keys: start with C and move to the left in a counter-clockwise direction.

Sharp Scales: the sharp keys ascend by 5ths

Flat Scales: the flat keys descend by 5ths

- 32.** Enharmonic notes are two notes that sound the same but are written differently. Three pairs of keys share the same space on the circle:

$D^b/C\#$, $G^b/F\#$, C^b/B

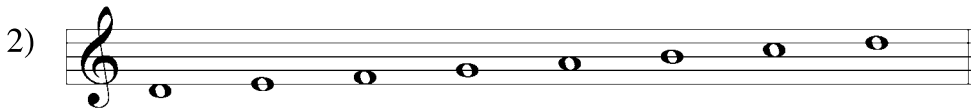
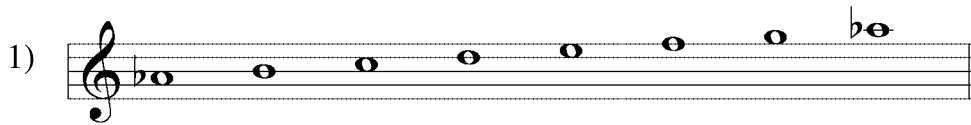
These pairs of keys are enharmonics – they all have the same pitch but the notes are named differently.

- C)** Indicate the intervals between each of the notes in the scale below (tones and semitones)

E Major



- D)** Find the alterations of this major scale by indicating the tones and semitones.



- E)** Identify the composition for each scale (flats and sharps).

- | | |
|---------------------------------|---------------------------------|
| 1) D major = _____ | 6) A major = _____ |
| 2) E ^b major = _____ | 7) E major = _____ |
| 3) F# major = _____ | 8) G major = _____ |
| 4) F major = _____ | 9) C ^b major = _____ |
| 5) B ^b major = _____ | 10) C major = _____ |

The Major Scale with Sharps

- 33.** The tonic of the major scale with sharps in the key signature is always found a diatonic semitone above the 7th note of the major scale in the last sharp.
- 34.** Therefore, if you are looking for the number of sharps in the G major scale, just move one semitone lower from G, i.e. move down to F#, and count the number of sharps.

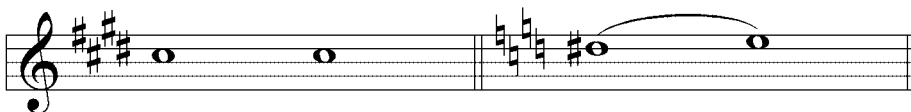


Note: Do not forget the order of the sharps: F#, C#, G#, D#, A#, E#, B#
(Father Charles Goes Down And Ends Battle)

- 35.** For a better understanding, here is another example – scale of B major. If you lower one diatonic semitone from B, you get A# as the answer, therefore, making it the last sharp. By following the order of sharps, the scale of B major consists of 5 sharps.




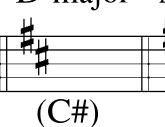

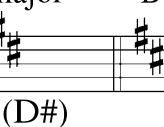
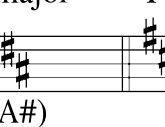


- 36.** Now, if you have the order of sharps but are missing the key of the major scale, you will proceed backwards. Take the last sharp and raise it by one semitone therefore finding the key of the scale. For example, you have these sharps: F#, C#, G#, D#. By raising the D# by one semitone, we find the note of E; therefore, the key is E major.



(Notes of the scale of E major: E, F#, G#, A, B, C#, D#, E)

37. You can now find all the key signatures of the major scales by using this method. You have to remember that the last sharp at the key signature is always the 7th degree of the scale, which is a diatonic semitone lower than the tonic.

38. Below is a listing of all the major scales with their sharps (with the last sharp in brackets).

G major	D major	A major	E major	B major	F# major	C# major
						
(F#)	(C#)	(G#)	(D#)	(A#)	(E#)	(B#)

A) Once you know the number of sharps of a major scale, how do we find its tonic?

B) Find the name of the following major scales as well as the names of the sharps found.

Name of the scale	Name of the sharps
1) 4 sharps = _____	_____
2) 2 sharps = _____	_____
3) 1 sharp = _____	_____
4) 5 sharps = _____	_____
5) 7 sharps = _____	_____



Note: Do not forget to place the sharps in their proper order.

C) If you know the key of the major scale with sharps, how do you find its key signature?

D) Find the number and the name of the sharps found at the key signature of the following major scales.

1) G major = _____

2) F# major = _____

3) A major = _____

4) E major = _____

5) B major = _____

The Major Scale with Flats

39. To find the number of flats at the key signature from the tonic of the scale, or to find the key of the scale from the number of flats, there is one simple rule to follow: The name of the tonic of the major flat scale is always the second to last flat at the key signature.
40. Therefore, if you are looking for the number of flats in the major scale of D^b , you would, for example, consult your circle of fifths and find all the flats leading to D^b which is the tonic and adding the next flat to follow. All these flats belong to the major scale of D^b .



D^b major scale: B^b, E^b, A^b, D^b, G^b

41. If you have a number of flats and you are looking for the tonic, you proceed in the complete opposite direction. For example, you have three flats at the key signature



B^b, E^b, A^b

Note: Do not forget the order of the flats: $B^b, E^b, A^b, D^b, G^b, C^b, F^b$
(*Battle Ends And Down Goes Charles' Father*)

42. In remembering that the tonic is always the second to last flat, the tonic therefore would be E^b major. (Notes of the scale: $E^b, F, G, A^b, B^b, C, D^b, E^b$)

43. To find the composition of all the other major scales with flats, you always use the same model.
44. However, you have already mentioned that the scale of F major is the exception. Its key signature has only one flat, so how can you use the model? You cannot use the model for this scale, you just have to know that the scale of F major has only one flat, B^b.

F major B^b major E^b major A^b major D^b major G^b major C^b major

The image shows a single staff of music in treble clef with a key signature of one flat (Bb). The staff is divided into seven measures, each containing the first note of a major scale with a specific key signature. The notes are: F (F major), Bb (Bb major), Eb (Eb major), Ab (Ab major), Db (Db major), Gb (Gb major), and Cb (Cb major). Each note is written as a quarter note.

Note: You are encouraged to learn the key signature for the flat keys by memory. However, if you have any difficulty just refer to the method described above.

A) Write the flats in proper order.

B) Which flat do you use to find the tonic of a major scale with flats?

C) List the flats found in the following major scales.

1) G^b major = _____

4) F major = _____

2) D^b major = _____

5) A^b major = _____

3) B^b major = _____

6) C^b major = _____

Note: Do not forget to place the flats in their proper order.

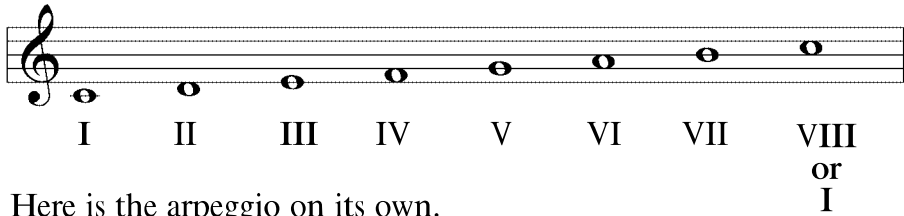
D) Name the key of the following major scales with flats.



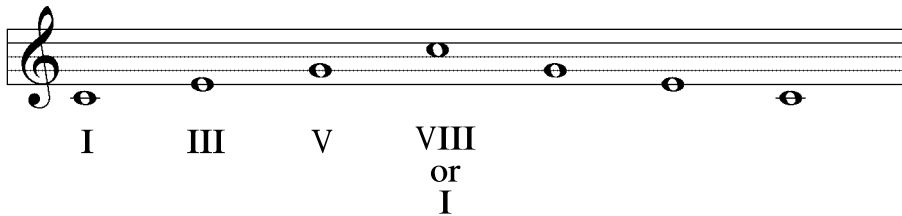
The Arpeggio

56. An arpeggio is always composed with three degrees from the scale: I, III, V, and adding the VIII or I at the octave.

Here are the degrees associated with an arpeggio of a scale (C Major)



Here is the arpeggio on its own.

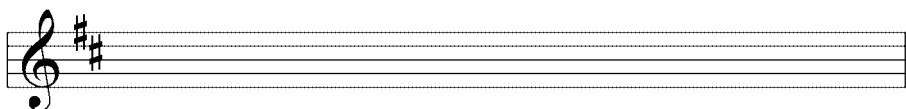


57. You can do the same thing to find the arpeggios of all the major and minor scales.

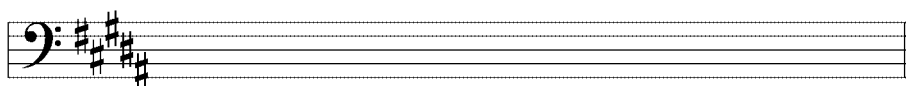
A) What degrees do you use to build an arpeggio?

B) Place the notes of the arpeggio on the staff that belong to the following scales:

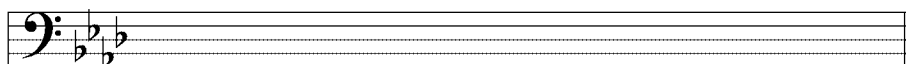
1) D Major



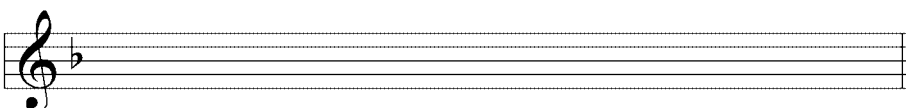
2) B Major



3) A^b Major

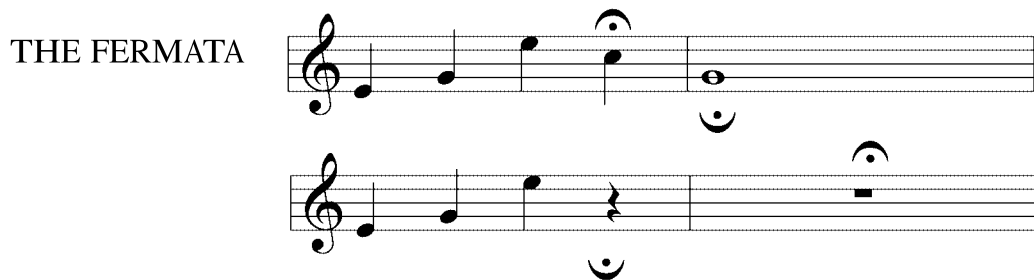


4) D Minor



The Fermata

- 58.** The fermata indicates a pause. The note or rest is to be held longer than its normal value. The symbol is placed above or below the note or rest. The pause is at the discretion of the conductor as long as it suits the style and period of the music. The pause is illustrated by the following sign:



Words that Refer to Tempo and Variation in Tempo

- 59.** Throughout your musical training, you will have to recognize and understand Italian terms that you will frequently find in your musical pieces. These terms are the composer's way of expressing the interpretation of the musical piece. Certain words correspond to tempo, variations in tempo, dynamics, direction, etc.
- 60.** Tempo is an Italian word meaning "rate of speed". Tempo marks let us know how fast or slow a piece should be played. Tempo marks are written in Italian.

Italian	English
Largo	very slow
Moderato	moderately
Allegro	lively, cheerfully


61. Moderato may be combined with other words:

Allegro moderato – slightly slower than allegro, but quicker than moderato

A gradual change in Tempo

Italian	Term	English
ritardando	rit. or ritard.	gradually getting slower, holding back of tempo
accelerando	accel.	accelerating, getting quicker
a tempo	a tempo	resume original speed/tempo

62. To reduce the amount of music required for a piece of music, several Italian terms and symbols are used to give direction to the players. Much like repeat signs or first and second endings, these are alternate ways to indicate repeats.

Italian	Sign	English
Da capo	D.C.	repeat from the beginning
Dal Segno	D.S.	repeat from the sign 
Fine	fine	the end
Coda*	P	an added ending

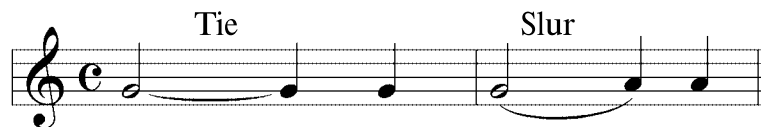
* *When the coda sign appears in music, it means to skip directly to the coda, which is an added ending usually marked with the same word.*

Articulations

- 63.** There are various ways to articulate the notes you find in a musical piece. It is very important to understand and know each articulation because through them, the composer's thoughts are expressed. Below are the articulations you should be familiar with:

Tie joins two notes of the same pitch

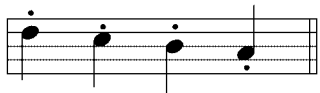
Slur joins two or more notes of different pitch. The notes within the slur all belong to one phrase and are played in legato style. Only the first note is articulated.



Legato the notes are played smoothly; usually a slur joins the notes so there is no pause between notes.



Staccato short, detached, method of playing a note. Indicated by a dot over a note, so that it is shortened and thus detached from the previous notes by being held for less than its full value.



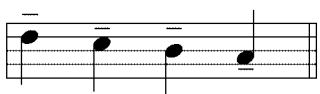
Accent to give notes more emphasis, held for its full value



Marcato a strong accent but short; each note is emphasized



Tenuto the note is sustained with a light accent to its full value.



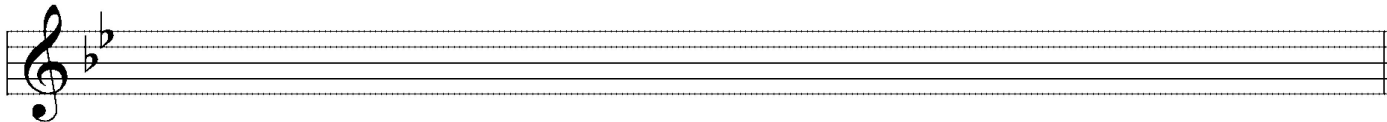


A) Match the word to the meaning.

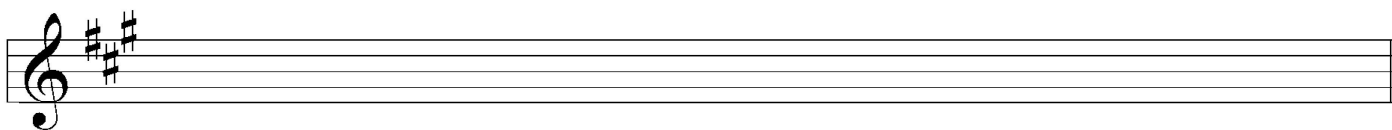
Tie	Joins two or more notes of different pitch. The notes within the slur all belong to one phrase and are played in legato style. The first note of the slur is the only one articulated
Tenuto	A strong accent but short.
Marcato	Begins with a strong accent and diminishes. It is held for its full time value.
Legato	The note is sustained with a light accent. The same intensity applies for the full value of the note.
Staccato	Short, detached. The note is usually held for about half its value.
Accent	Joins two notes of the same pitch and prolongs it.

A. Write the major scale with the following key signatures. Circle the notes of the arpeggio for each scale.

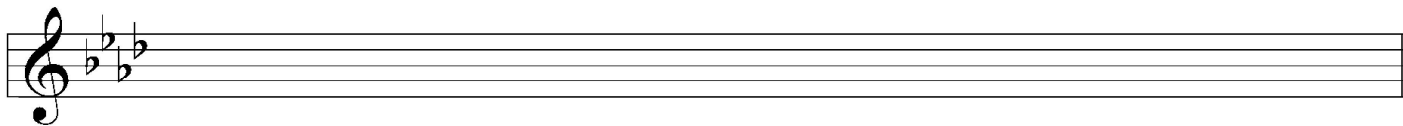
1) Major scale



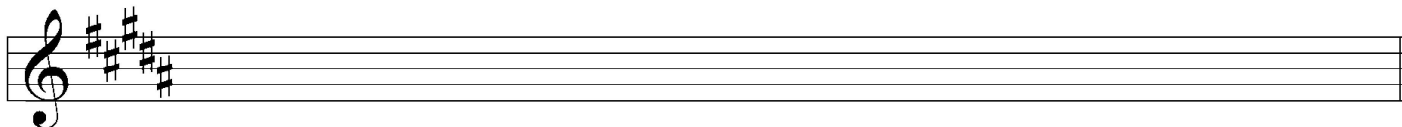
2) Major scale



3) Major scale



4) Major scale





B) Explain the function of the dot added to a note or rest?

C) Complete the following examples by using one note or rest:

1)  +  = _____

3)  +  = _____

2)  +  = _____

4)  +  = _____

D) What you call the smallest distance between two notes? _____

E) How does a sharp modify a note? _____

F) What is the natural sign () used for?

G) How does a flat modify a note? _____

H) Which alteration raises a note by one tone? _____

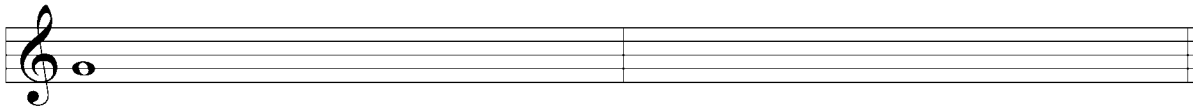
I) What do you call the alteration that appears in the musical piece? _____

J) Identify the different kinds of movements (scale or leap) in the following examples: (s = scale, l = leap)



1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____

K) Write the chromatic scale of G (ascending and descending):



L) Identify the following semitones (diatonic or chromatic):

A musical staff in treble clef showing eight semitone intervals. The notes are: 1) C4 to B3, 2) B3 to A3, 3) A3 to G#3, 4) G#3 to F#3, 5) F#3 to E3, 6) E3 to D#3, 7) D#3 to C#3, 8) C#3 to B2.

1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____

M) Write the major scale of D^b and indicate the tones and semitones

A musical staff in treble clef with a key signature of two flats (B-flat and E-flat). The first two notes are D4 and E-flat4.

N) What is the order of sharps?

O) What is the order of flats?

P) Write the correct key signature of the following major scales:

A musical staff in treble clef divided into five sections by double bar lines. Below each section is a key signature label: E major, B major, G major, F# major, and A major.

E major B major G major F# major A major

Q) What do you do to find the number of flats that belong to a major scale? (Use the circle of fifths.)

R) Find the major key that belong to the following key signatures:

A musical staff in treble clef divided into five sections by double bar lines. Each section contains a key signature: one flat, two flats, three flats, four flats, and five flats.

1) _____ 2) _____ 3) _____ 4) _____ 5) _____

S) Explain the use of the fermata?

T) Write the meaning of the following terms:

A tempo _____

Allegro _____

Lento _____

Moderato _____

Ritardando _____

U) Write the correct term that describes the following articulations:



1) _____ 2) _____ 3) _____ 4) _____ 5) _____