

# MUSIC THEORY

STUDENT WORKBOOK



↑ LEVEL 7 ↓



## Table of Contents

<u>Lesson</u>	<u>Page</u>	<u>Material</u>
	1	Review of Level 6
7.1	3	Augmented and Diminished Triads
7.2	6	Triads in Inversion Open and Closed Triads
7.3	10	Basic Transposition by Interval
7.4	14	Concert Pitch
7.5	23	Time Signatures (3/2, 4/2, 6/4, 9/4, etc.) Musical Terms

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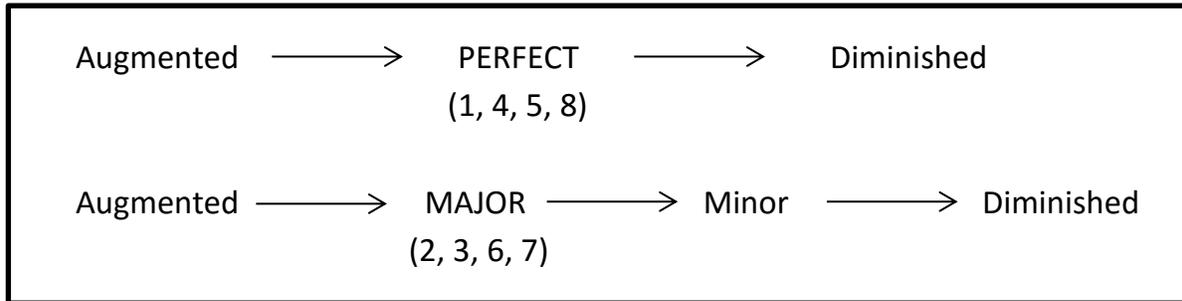
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## Review of Level 6

**Augmented** intervals are major or perfect intervals that are made larger by a semitone.

**Diminished** intervals are minor or perfect intervals that are made smaller by a semitone.



3 Types of minor scales:

**Natural** is formed by taking the third, sixth, and seventh notes of the major scale and lowering them by a semitone.

**Harmonic** is formed by raising the seventh note of the natural minor scale by a semitone.

**Melodic** is formed by raising the sixth and seventh notes by a semitone on the way up, then lowering them (to form a natural minor scale) on the way down.

To find the relative minor key of a major key, move down *three* semitones.

The order of sharps: **F**ather **C**harles **G**oes **D**own **A**nd **E**nds **B**attle

The order of flats: **B**attle **E**nds **A**nd **D**own **G**oes **C**harles' **F**ather



## Lesson 7.1 – Augmented and Diminished Triads

Recall that a triad consists of a root, a 3<sup>rd</sup> (above the root) and a 5<sup>th</sup> (above the root).

A **major** triad is built with a **major 3<sup>rd</sup>** and a **perfect 5<sup>th</sup>** above the root. A **minor** triad is built with a **minor 3<sup>rd</sup>** and a **perfect 5<sup>th</sup>** above the root.

Two additional types of triads are the **augmented** triad and the **diminished** triad.

An **augmented triad** consists of a **major 3<sup>rd</sup>** and an **augmented 5<sup>th</sup> above the root**. We use the abbreviation **aug** for augmented triads.

Study each example carefully:



NOTE: You can also think of the augmented triad as having two major thirds, built one on top of another.

A **diminished triad** consists of a **minor 3<sup>rd</sup>** and a **diminished 5<sup>th</sup> above the root**. We use the abbreviation **dim** for diminished triads.

Study each example carefully:

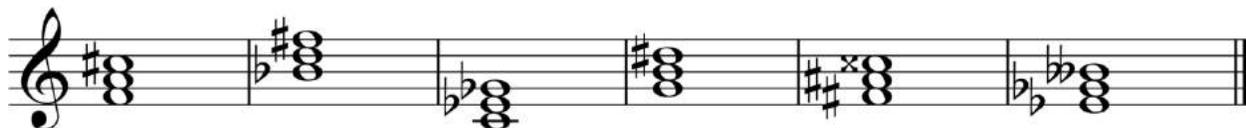


NOTE: You can also think of the diminished triad as having two minor thirds, built one on top of another.

Additional note: In some instances, you will see **X** or **+** written to identify **augmented** triads, and **D** or **o** written to identify **diminished** triads. While either is acceptable, they are used sparingly when writing chords in lead sheets (introduced in Level 8).

**EXERCISE**

1. Name the following triads. The first one is done for you.



Faug



2. Write the triad above the given note. The first one is done for you.



C#dim

A

Em

Baug

Faug

Gm



Db

Bbdim

Am

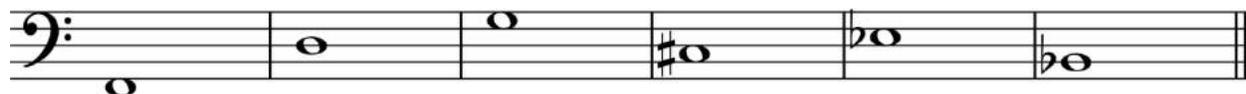
F#

Ddim

Caug



G#m      Aaug      Cm      Ab      Bdim      Edim



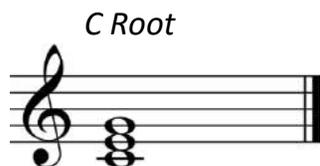
Fm      Daug      Gdim      C#      Ebaug      Bb

## SUMMARY

- ✓ An augmented triad consists of a major 3<sup>rd</sup> and an augmented 5<sup>th</sup> above the root.
- ✓ An augmented triad is labelled **aug**.
- ✓ A diminished triad consists of a minor 3<sup>rd</sup> and a diminished 5<sup>th</sup> above the root.
- ✓ A diminished triad is labelled **dim**.

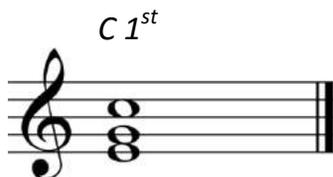
## Lesson 7.2 – Triads in Inversion

When we play triads, they can have similar sounds, even if the notes are in a different order than the original (e.g., some of the notes switch octaves). When a triad is in its “original” position with the root note on the bottom of the triad, we call this **root position**. See the example below:

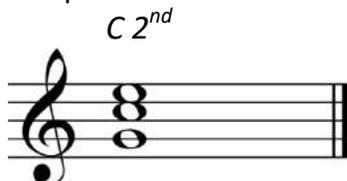


When we switch the order of the notes, the triad is said to be in **inversion**.

If we move the root up an octave, the 3<sup>rd</sup> is now on the bottom of the triad. This is called **1<sup>st</sup> inversion**. Study the example below:

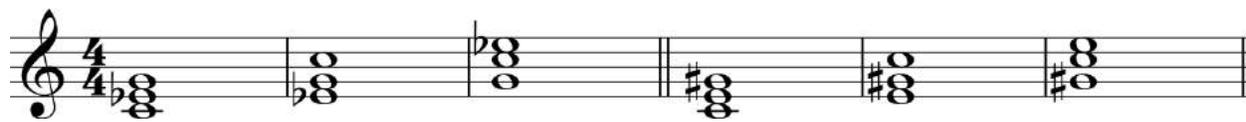


If we move the root and the 3<sup>rd</sup> up an octave, the 5<sup>th</sup> is on the bottom of the triad. This is called **2<sup>nd</sup> inversion**. Study the example below:



When we play a triad in inversion, it does not change the root or type (maj, min, aug, dim) of the chord. The name of the triad is still based on the root note.

The same principles about inversions apply to **all types** of triads.



Cm root      Cm 1st inversion      Cm 2nd inversion      Caug root      Caug 1st      Caug 2nd

Sometimes on piano and guitar it is useful to **not** play in root position all the time because it makes transitions between different notes much easier. It means there are not as many large jumps between different triads.

**EXERCISE**

1. Label the position of the following chords (Root, 1<sup>st</sup>, 2<sup>nd</sup>). The first one is done for you.

\_\_\_\_\_ 1st \_\_\_\_\_

2. Name the following triads. Include the type of triad and its position (Root, 1<sup>st</sup>, 2<sup>nd</sup>). The first one is done for you.

*Remember:* You must think about the triad in root position first, *then* change the order of the notes.

\_\_\_\_\_ Em 1st \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Write the following triads. Label the root, 3<sup>rd</sup>, and 5<sup>th</sup>. The first one is done for you.

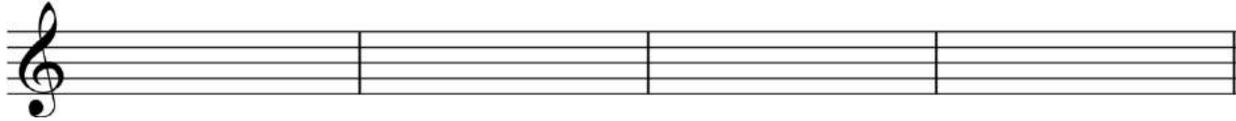


Ab 1st

Ddim Root

Bbm 2nd

G 1st



E Root

F#m 2nd

Caug 1st

G#m 2nd



Ebm 1st

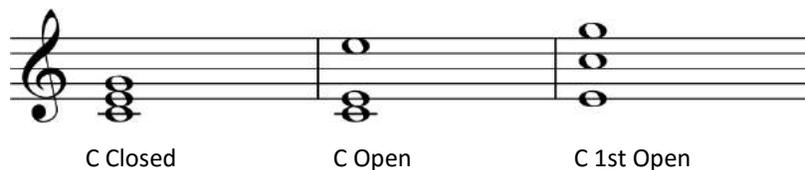
Bdim 2nd

C# 2nd

Bbm Root

### **Open and Closed Triads**

The notes of a triad can either be as close together as possible (as we have looked at so far) OR they can be spread out. If they are as close together as possible, the triad is said to be in **closed position**. If they are more spread out, the triad is said to be in **open position**.



C Closed

C Open

C 1st Open

NOTE: The total span of a closed triad is a 5th or a 6th. The total span of an open triad is usually a 10th or an 11th (greater than an octave).

## EXERCISE

Label the following triads by type, position (open or closed) and label the notes of each triad (Root, 3rd and 5th). The first one is done for you.



E Open



## SUMMARY

- ✓ Triads can be in **root position** (root is the bottom note), 1st inversion (3rd is the bottom note) or 2nd inversion (5th is the bottom note).
- ✓ Triads can be in **closed position** (notes as close together as possible) or **open position** (more spread out).

## Lesson 7.3 – Basic Transposition by Interval

It often happens that we need to change a piece of music from being in one key to being in another key. When we do this, it is called **transposition**. When we **transpose** a piece of music, we move **all of the notes** up or down by a certain interval so that the piece is now in a **new key**.

Let's see a simple example of how transposition works.

In Christ Alone *in C major*



In Christ a-lone my hope is found, He is my light, my strength, my song.

In Christ Alone *in G major*



In Christ a-lone my hope is found, He is my light, my strength, my song.

Since we are transposing from C major **down** to G major, we notice that the interval from **C** down to **G** is a Perfect 4th. Therefore, we transpose **every note** from the first key (*C major*) **down a Perfect 4th** so it is now in *G major*. Then, add the key signature of G major.

Follow these steps:

1. Identify the old key you are transposing from and the new key you are transposing to.
2. Find the interval between the two keys.
3. Transpose every note from the old key up or down the same interval as is between the keys.



3) Sometimes we may need to transpose by intervals that are further apart. This may require the changing of clefs. In real life, this situation could happen on a Sunday morning at your church. Let's say a male singer doesn't know how to read Treble Clef and needs to have his music written in Bass Clef at the right pitch for him. He needs this piece re-written **one octave lower** and therefore changed from Treble Clef to Bass Clef. Can you do it?

The first staff contains four measures of music: a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5; a half note G4, a half note B4; a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5; a half note G4, a half note B4. The second staff contains four measures: a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5; a half note G4, a half note B4; a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5; a half note G4, a half note B4.

Two sets of empty musical staves, each consisting of five lines, provided for the student to transcribe the piece into bass clef.

4) This morning in church, your friend is singing a solo. She says that the music is too high for her to sing! She wants it transposed from Bb major down to G major. What do you do?

The first staff contains five measures of music: a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, a quarter note G4; a half note G4, a half note B4; a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, a quarter note G4; a half note G4, a half note B4. The second staff contains five measures: a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, a quarter note G4; a half note G4, a half note B4; a quarter note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, a quarter note G4; a half note G4, a half note B4.

Two sets of empty musical staves, each consisting of five lines, provided for the student to transcribe the piece into a new key signature.

5) Another friend says this music is too low and wants it transposed up a Perfect 4th.

The image shows three staves of musical notation. The first staff is in G major (one sharp) and 3/4 time. The melody consists of the following notes: G4, A4, B4, C5, D5, E5, F#5, G5, A5, B5, C6, D6, E6, F#6, G6. The second staff shows the melody transposed up a perfect fourth to C major (no sharps or flats). The notes are: C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6. The third staff shows the melody transposed up a perfect fourth to F major (two sharps: F# and C#). The notes are: F4, G4, A4, B4, C5, D5, E5, F#5, G5, A5, B5, C#6, D6, E6, F#6.

Three empty musical staves, each consisting of five horizontal lines, provided for practice.

## SUMMARY

- ✓ **Transposing** a piece of music means changing it from being in one key to another key.
- ✓ Transposing is done by finding the interval between the two keys, and then transposing **every note** by that same interval.
- ✓ Transposition is useful in cases where the notes are too high or low for somebody to sing or play in, or if they can't read in either Treble or Bass Clef.

## Lesson 7.4 – Concert Pitch

Various instruments will sound pitches that are different from the notes written on the staff.

**Concert pitch** is a universal standard of pitch used for various instruments.

When an instrument is in concert pitch, we say that it is “in C”. The piano is an instrument in C.

**C instruments** will sound a pitch that matches the pitch on a piano when playing the notes written on a staff.

This means a C instrument plays in **concert pitch**.

For example,

**When we say that an instrument is “in\_” that means that when that instrument plays their note C, in concert pitch it is a \_\_\_\_\_.**

Instruments such as piano, guitar, stringed instruments and even the voice are in concert pitch. They are C instruments.

When you play a Bb on the piano and a C instrument (i.e. violin) plays a Bb, they sound the same.

Most of the instruments used in a Salvation Army brass band are called transposing instruments. This means that they play in a different key than concert pitch.

Brass instruments outside The Salvation Army, such as trumpets, trombones and tubas, are in concert pitch. The particular instruments The Salvation Army uses in brass bands are not in concert pitch. This does not mean that non-Salvation Army trombones are different than Salvation Army ones, but rather the **music they read is different**.

In the typical Salvation Army brass band, we have the following instruments:

Soprano Cornet in Eb  
Cornets in Bb  
Flugel Horn in Bb  
Tenor Horns in Eb  
Baritones in Bb  
Trombones in Bb  
Bass Trombone in C\*  
Euphoniums in Bb  
Basses (Tubas) in Eb  
Basses (Tubas) in Bb  
Percussion

*\*The only instrument in concert pitch  
and the only instrument in Salvation Army  
bands written in Bass Clef.*

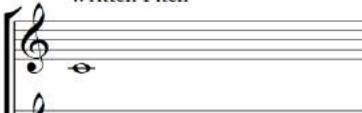
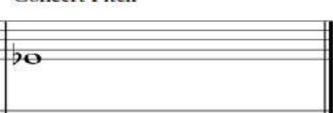
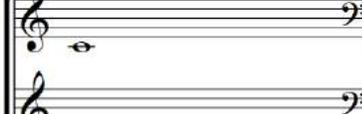
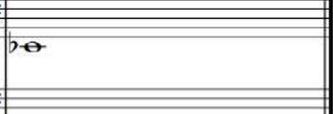
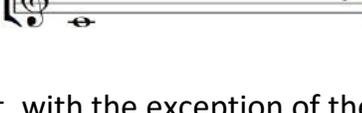
Remember, a concert pitch instrument is in C! When they play the note C, it is also a C in concert pitch.

A cornet in Bb (or a Bb cornet) is different. When a Bb cornet plays a C, it is actually a Bb in concert pitch. It is sounding a Bb! Therefore, if you play a C on a Bb cornet, you would have to play a Bb on the piano in order to match that exact pitch.

Similarly, if you play a C on an Eb horn, you would have to play an Eb on the piano in order to match pitch. You are sounding an Eb!

Each transposing instrument in a Salvation Army brass band has their written C at a certain octave in concert pitch. When you are writing for these transposing instruments, remember not only which note they are playing, but in which octave.

See the diagram on the next page for how a written middle C actually sounds when played on various Bb and Eb instruments.

	Written Pitch	Concert Pitch
Soprano Cornet Eb		
Cornet Bb		
Flugel Horn Bb		
Horn Eb		
Baritone Bb		
Trombone Bb		
Bass Trombone		
Euphonium Bb		
Bass Eb		
Bass Bb		

NOTE: For each instrument, with the exception of the *soprano cornet* and *bass trombone*, the concert pitch is always LOWER than the note that is written.

Knowing this information allows us to **transpose** between different instruments other than just those in concert pitch.

For example, you have a cornet player playing a solo in the Sunday morning service and he has music for piano. He needs you to transpose the melody line for cornet in Bb. To do this, you must take the piano melody line and transpose it **up (NOT DOWN)** by a **tone (a major 2nd)**.

Just because you are transposing from an instrument in C to an instrument in Bb doesn't mean you should transpose down because Bb is lower than C. Rather, think about it logically and see that when a trumpet in C plays a C, the Bb cornet must play a D, not a Bb.



3) Now imagine that an Eb tuba player is trying to read off a bass guitar part written in bass clef. How would you transpose it in order to help him?

Bass Guitar

The image shows two staves of musical notation for a Bass Guitar part. The notation is in bass clef, 3/4 time, and the key signature has two flats (Bb). The first staff contains four measures of music: a quarter rest followed by a quarter note, a quarter rest followed by a quarter note, a quarter rest followed by a quarter note, and a quarter rest followed by a quarter note. The second staff contains four measures of music: a quarter rest followed by a quarter note, a quarter rest followed by a quarter note, a quarter rest followed by a quarter note, and a quarter rest followed by a quarter note. The piece ends with a double bar line.

Bass Eb

The image shows four empty musical staves, each consisting of five horizontal lines, intended for the student to transcribe the Bass Guitar part for a Bass Eb instrument.



5) Re-write this four-part arrangement of the hymn tune *Ascalon*, associated with the words "Fairest Lord Jesus," for Bb Cornet, Eb Tenor Horn, Bb Euphonium and Eb Bass.

In other words, take each of the four parts in this piano arrangement and transpose it for the instrument to which it belongs.

The image shows three systems of piano music for the hymn tune "Ascalon". Each system consists of a grand staff with a treble clef and a bass clef, joined by a brace on the left. The key signature is B-flat major (two flats) and the time signature is 4/4. The first system has six measures. The second system has five measures, with a whole rest in the treble clef of the second measure. The third system has four measures, ending with a double bar line.

NOTE: The above music is written on what we call the **Grand Staff**, typically used for piano music. It includes both the Treble and Bass Clefs, joined by what we call a brace, or brace, on the left side.

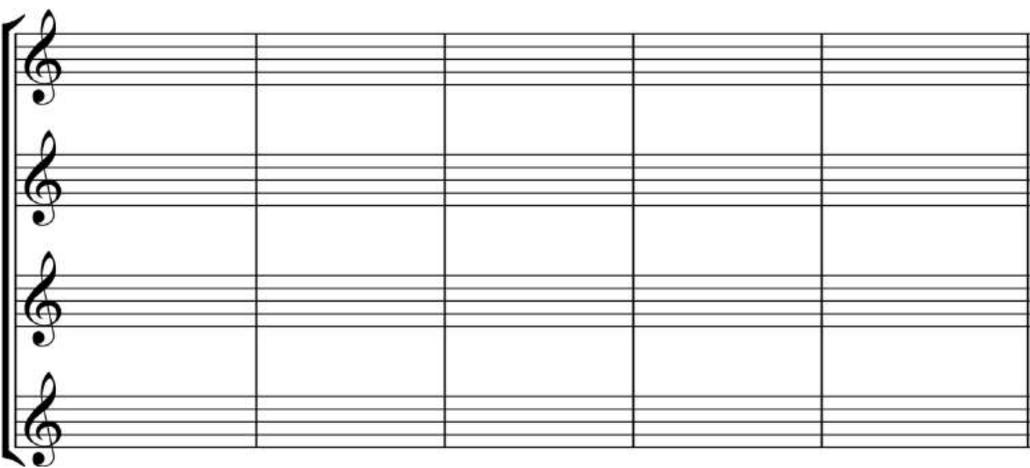


B♭ Cornet

E♭ Tenor Horn

B♭ Euphonium

E♭ Bass

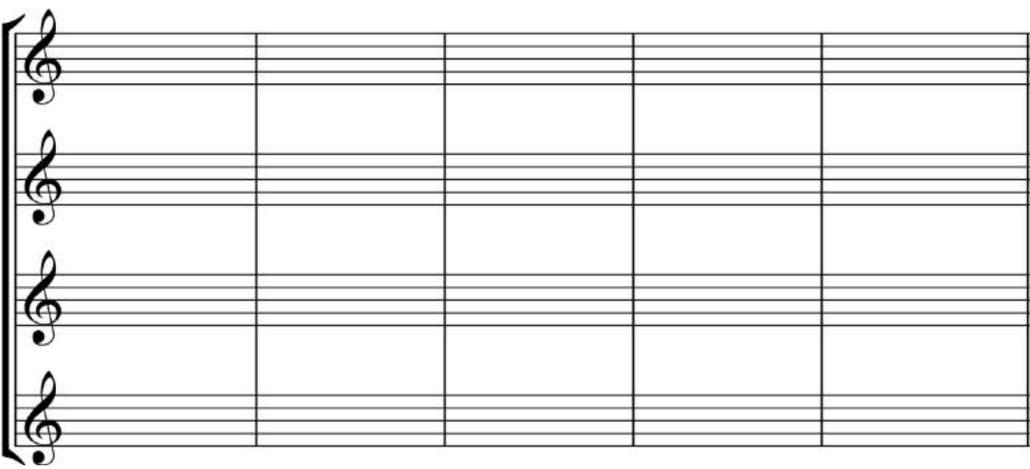


B♭ Cornet

E♭ Tenor Horn

B♭ Euphonium

E♭ Bass

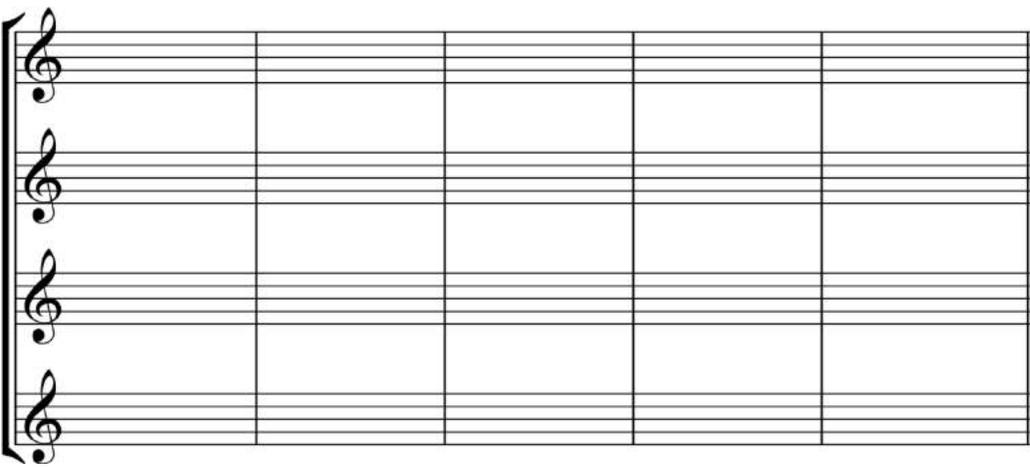


B♭ Cornet

E♭ Tenor Horn

B♭ Euphonium

E♭ Bass



## SUMMARY

- ✓ Instruments are either in **concert pitch** (such as guitar, piano, voice etc.) or they are a **transposing instrument**.
- ✓ Most of the instruments used in a typical Salvation Army brass band are **transposing instruments**.
- ✓ Being able to transpose for various instruments is extremely helpful in a lot of situations.

## Lesson 7.5 – Time Signatures

So far, we have learned about the **time signatures** in the chart below.

Some of these are **simple time signatures**. The number on top always tells you how many beats are in a measure.

Some are **compound time signatures**. The number on top tells you how many **simple beats** there are, *but* the number of simple beats can also be **divided by three**, in order to give you a number of **compound beats**.

Time Signature	Type	No. Of Simple Beats	No. Of Compound Beats
4/4 (Common Time)	Simple	4	N/A
2/4	Simple	2	N/A
3/4	Simple	3	N/A
6/8	Compound	6	2
9/8	Compound	9	3
12/8	Compound	12	4
2/2 (Cut Time)	Simple	2	N/A

We are going to learn about some new time signatures that expand on the ones we already know.

The first new group of time signatures are a natural extension of cut time. **3/2** and **4/2** are simple time signatures, like 3/4 or 2/4, but because the bottom number is 2, **the half note gets one beat** instead of the quarter note.

The second new group of time signatures are a natural extension of compound time. **6/4**, **9/4** and **12/4** are compound time signatures (like 6/8, 9/8 and 12/8). Since the bottom number is now 4, **each simple beat is a quarter note**. Therefore, **each compound beat is three quarter notes**.

This is summarized in the chart on the following page:

Time Signature	Type	No. Of Simple Beats	No. Of Compound Beats
3/2	Simple	3	N/A
4/2	Simple	4	N/A
6/4	Compound	6	2
9/4	Compound	9	3
12/4	Compound	12	4

Remember that the tempo (speed) of the piece determines whether a compound time signature is counted in simple beats or compound beats. If it is slow, then count in terms of simple beats. If it is fast, then count in terms of compound beats.

These time signatures are counted the same way as in previous time signatures.

Look at the following example. What is the key? \_\_\_\_\_

**Allegretto**

1 + a 2 a 3 (+) a 1 a 2 a 3 a 1 a - 2 + 3 a

1 (+) a 2 + a 3 a 1 a 2 a 3 (+) a 1 - 2 a 3 + a

**NOTE:** The notes and rests are grouped into three's, just as is the typical rule for compound time signatures.



5) Key: \_\_\_\_\_

Moderato ♩ = 60

The musical score for exercise 5 is written in bass clef with a 12/8 time signature and a key signature of two flats (B-flat major). The tempo is marked 'Moderato' with a quarter note equal to 60 beats per minute. The piece consists of four staves of music. The first staff begins with a quarter rest followed by a series of eighth notes and quarter notes, some with slurs. The second and third staves continue the melodic line with similar rhythmic patterns and slurs. The fourth staff concludes the piece with a final note and a double bar line.

6) Key: \_\_\_\_\_

Moderato ♩ = 69

The musical score for exercise 6 is written in bass clef with a 3/2 time signature and a key signature of two sharps (D major). The tempo is marked 'Moderato' with a quarter note equal to 69 beats per minute. The piece consists of four staves of music. The first staff begins with a quarter rest followed by a series of quarter notes and half notes. The second and third staves continue the melodic line with similar rhythmic patterns and slurs. The fourth staff concludes the piece with a final note and a double bar line.

7) Key: \_\_\_\_\_

**Adagio** ♩ = 64



## SUMMARY

- ✓ In **simple time signatures**, the number on top tells you how many beats are in a measure.
- ✓ In **compound time signatures**, the number on top tells you how many **simple beats** there are, but the number of simple beats can also be divided by three, giving you **compound beats**.
- ✓ **3/2** and **4/2** are simple time signatures. The **half note** gets one beat.
- ✓ **6/4**, **9/4** and **12/4** are compound time signatures. Each **simple beat** is a quarter note. Therefore, each **compound beat** is three quarter notes.
- ✓ The speed of a piece determines whether a compound time signature is counted in simple beats or compound beats.

## **Musical Terms**

Along with how fast to play music, composers sometimes tell us the *style*. Below are more style terms that you might see, in addition to the ones we have previously learned:

<b>Italian Term</b>	<b>English Translation</b>
<i>Animato</i>	Animated/with life (more tempo)
<i>Cantabile</i>	In a singing style
<i>Con anima</i>	With life (more tempo)
<i>Con moto</i>	With motion (more tempo)
<i>Con brio</i>	With brightness (brightly)
<i>Con fuoco</i>	With fire (passionate)
<i>Leggiero</i>	Light
<i>Maestoso</i>	Majestically
<i>Rubato</i>	Not strict tempo, one can slow down and speed up expressively with the music
<i>Sostenuto</i>	Sustained/legato

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