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**Star 3**



# **THEORY**

# **BASS CLEF**

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# Introduction

In this booklet, you'll learn all that you need to know to pass the Croydon Music and Arts star 3 award theory aspects. We are going to cover 7 subjects: Rhythm, Time Signatures, Musical terms and Symbols, Scales, Key Signatures, Chords and Intervals and Simple Melodic Structures.

## Getting Started

Each section will introduce all you need to know and then some activities to test what you've learnt.

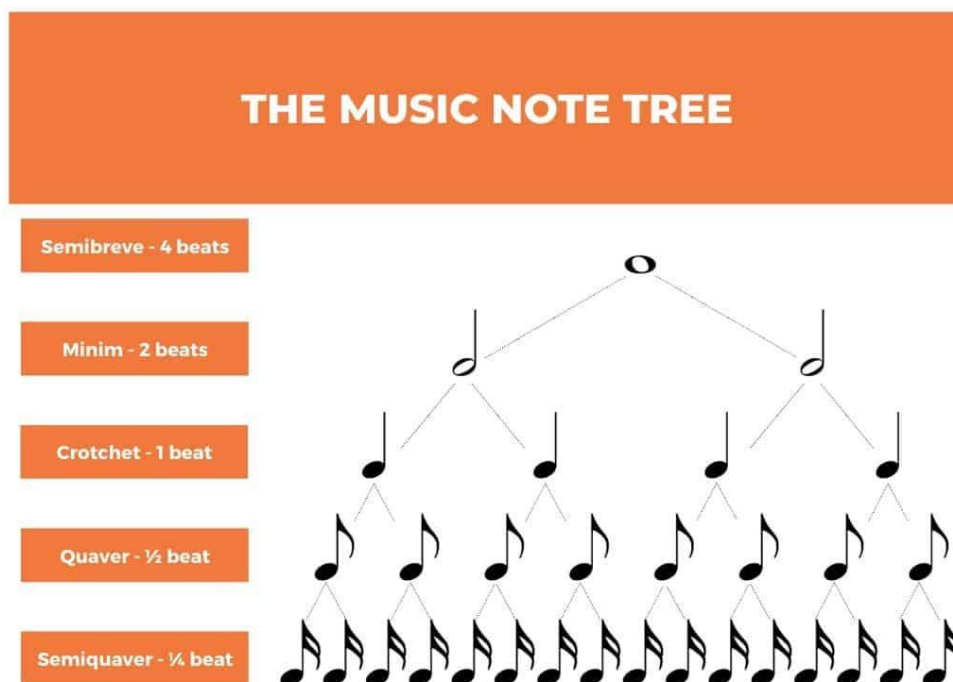
# Rhythm

## *What is Rhythm?*

Rhythm is the placement of sounds in time. In short, rhythm is how long and short notes are organised. There are lots of different notes that we can use to create rhythm. Rhythm is complicated to describe as it can be affected by lots of other musical features like tempo, metre and accents, but for this we're thinking of rhythm as made by the notes we use in music.

## Rhythm Tree

Below is a Rhythm Tree. These are really helpful to see how each note is related to each other. At the top of our tree is a semibreve, semibreves are four beat notes. Sometimes, you might hear semibreves referred to as whole notes. Underneath semibreves are minims. A minim is an uncoloured in note head, but it's different from the semibreve as it has a stem coming from it. A minim is two beats long and can sometimes be called half notes. Underneath minims are crotchets. These are coloured in note heads with a stem and are one beat long. Sometimes, crotchets can be called quarter notes. Underneath crotchets are quavers. Quavers have a little tail coming from their stem and can be joined together in pairs (to create one beat), groups of three (for quaver time signatures) or groups of four (to create two beats). Each quaver is  $\frac{1}{2}$  a beat long and can sometimes be called eighth notes. Under quavers are semiquavers. These have two tails off of their stems and are half the length of a quaver, so a  $\frac{1}{4}$  of a beat long. They are usually grouped in fours and can sometimes be called sixteenth notes.






## Musical Maths

When we create rhythms, we usually want each rhythm to add up to one whole beat so knowing how many notes you can fit into each other is important. Try answering the questions below using the rhythm tree above and then come up with your own question and answer it:

- 1) How many minims fit into a semibreve? .....
- 2) How many quavers fit into a minim? .....
- 3) How long is one semiquaver? .....
- 4) How many semiquavers fit into a crotchet? .....
- 5) How many crotchets fit into a semibreve? .....
- 6) .....? .....

## Other Rhythms











When using rhythms, we may not always use all the same notes. We can mix and match notes as long as they add up to 1 beat. Below you'll see some rhythms using a mixture, including a dotted quaver. Dots after a note add half the value of a note. A dot after a quaver means adding a semiquaver to a quaver ( $\frac{1}{4} + \frac{1}{2}$ ) so a dotted quaver equals  $\frac{3}{4}$  of a beat so it needs an extra semiquaver to add up to one.

|   |                            |   |
|---|----------------------------|---|
|  | Dotted Quaver + Semiquaver | 1 |
|  | Quaver + Two Semiquavers   | 1 |
|  | Two Semiquavers + Quaver   | 1 |

## Rests

Just like notes, rests are really important for creating rhythms. Rests can be used to add something called syncopation (that's when music is off the beat and sounds funky) and can be used when we need to take a break from playing, especially if we're playing with others or being accompanied. Rests correspond to the notes we've just learnt.

# Notes and Rests

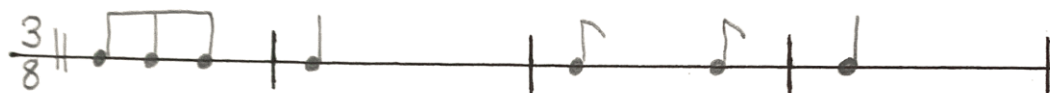
| Note Name  | Note symbol   | Rest symbol   | Number of crotchet beats |
|------------|---|---|--------------------------|
| Semibreve  |    |    | 4                        |
| Minim      |    |    | 2                        |
| Crotchet   |   |   | 1                        |
| Quaver     |  |  | $\frac{1}{2}$            |
| Semiquaver |  |  | $\frac{1}{4}$            |

# Rhythm Exercises

Add the beaming to the notes below to correctly fill the bar.



Add rests and dots to bars below to correctly fill the bar.





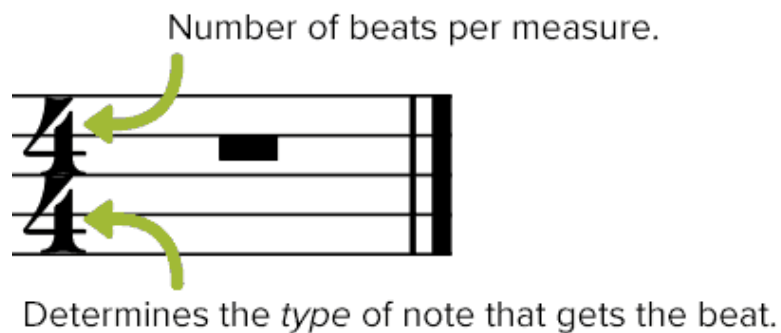
# Time Signatures

## What are Time Signatures?

Time signatures, also called metre, are used to show us how many beats are in a bar and what those beats are. You'll find them at the beginning of a piece of music, after your clef, and these help us know how many main beats we have in a bar.

## Time Signatures - Explained.

When you see a time signature, you'll notice 2 numbers on top of each other. The top number tells you how many beats in a bar, and the bottom number tells you what kind of



beats they are.

The time signature above is one of the most common time signatures, and it means there are 4 crotchet beats per bar.

In order to understand time signatures, you need to think about the other terms given to notes.

| English Term | American Term  | Bottom Number for Time Signature |
|--------------|----------------|----------------------------------|
| Semibreve    | Whole Note     |                                  |
| Minim        | Half Note      | 2                                |
| Crotchet     | Quarter Note   | 4                                |
| Quaver       | Eighth Note    | 8                                |
| Semiquaver   | Sixteenth Note | 16                               |

Simply put, if you see a 4 on the bottom of the time signature, we're thinking of crotchets. If it's an 8, we're thinking of quavers.

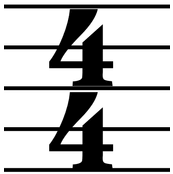



## Common Time Signatures

Above you'll see some common time signatures. C can also be used to symbolise 4 crotchet beats per bar and the C with a line through it can be used to symbolise 2 minim beats per bar. When we're thinking in quaver time signature, these are called compound time signatures as the quavers are grouped in threes and the top number can be divided by three. All other time signatures are duple time signatures as the quavers are grouped in pairs and can be divided by 2.

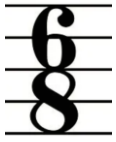
## Time Signature Exercises

Below are some Time Signatures. Write what they mean on the line next to them.

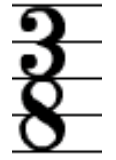
 ..... beats per bar

 ..... beats per bar

 ..... beats per bar



..... beats per bar



..... beats per bar



..... beats per bar

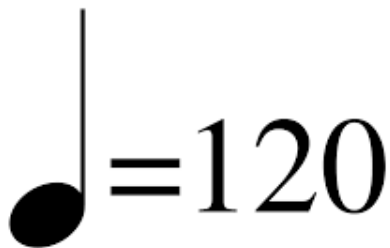
Add the Time Signature and complete the bars below.



# Musical Symbols

## Metronome Marks

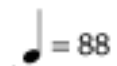
When we are thinking of the heart beat of music, we are referring to the pulse. This affects the tempo. We can play music that is at a fast tempo or a slow tempo. So the tempo is the speed of the music. In order to practise the tempo, we use something called a metronome mark.



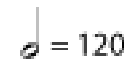
This metronome mark means there are 120 crotchet beats per minute. Just like our own pulse, we measure music's pulse in beats per minute. The note and the number can change depending on the time signature and speed of the music.

## Metronome Mark Exercises

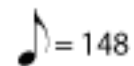
Match the Metronome Marks with the correct definition.



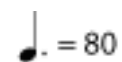
120 Minim Beats per Minute



80 Dotted Crotchet Beats per Minute



88 Crotchet Beats per Minute



148 Quaver Beats per Minute

## Musical Terms

Sometimes, a piece of music might not have a metronome mark but will instead have an Italian term. These tell us how a piece of music should be played in terms of tempo and also character. There are lots of Italian terms that you will come across in music, and even some German terms, but below is a table to show you some of the most common, what they mean and roughly what tempo the piece should be played at.

| Word        | Common Abbreviations | English Definition and Description                | Recommended beats per minute (bpm) |
|-------------|----------------------|---|------------------------------------|
| Accelerando | Accel.               | Gradually getting faster                          |                                    |
| Adagio      |                      | At ease.Slowly                                    | 66 - 76                            |
| Allargando  |                      | Broaden. A slower version of rallentando          |                                    |
| Allegretto  |                      | Moderately fast                                   | 100                                |
| Allegro     |                      | Lively and fast                                   | 120 - 140                          |
| Andante     |                      | At an easy walking pace                           | 56 - 88                            |
| Andantino   |                      | Between adagio and andante                        |                                    |
| A tempo     |                      | Return to the former speed                        |                                    |
| Largo       |                      | Broadly; Slowly                                   | 40 - 60                            |
| Larghetto   |                      | Less slowly than largo                            | 60 - 66                            |
| Larghissimo |                      | Very, very slow                                   | <20                                |
| Lento       | Lent                 | Slowly  | 40 - 60                            |
| Moderato    |                      | Moderately  | 100 - 120                          |
| Mosso       |                      | Movement. Slightly more lively                    |                                    |
| Prestissimo |                      | As fast as possible                               | >200                               |
| Presto      |                      | Very fast   | 150 - 200                          |
| Rallentando | Rall.                | Gradually slower                                  |                                    |
| Ritardando  | Rit/ Ritard          | Gradually slower (but not as slow as rallentando) |                                    |
| Ritenuto    | Riten                | Holding back                                      |                                    |
| Stretto     |                      | Quickening  |                                    |
| Stringendo  |                      | Tightening. Gradually faster                      |                                    |
| Vivace      |                      | Lively. Faster than allegro                       | 140                                |
| Vivo        |                      | Lively  |                                    |

## Musical Term Exercises.

Match the following terms with their definition.

Adagio

Broadly

Largo

At a Walking Pace

Vivace

At Ease/Slowly

Presto

Lively. Faster than Allegro

Andante

Very Fast

Moderato

Broadening

Allargando

Moderately

## Symbols

There are lots of other symbols that you will come across in music. Some may be dynamic markings, others on how you play notes, and some on repeats.

### *Dynamics*

Below is a chart to help you remember your dynamics. Remember that all dynamics are related to you and your instrument; your forte might not be as loud as your teachers, and that's okay. Just make sure there's a big enough difference between your forte and your piano so that your dynamics are clear - especially if you're taking an exam.

| Term               | Symbol:    | Effect:          |
|--------------------|------------|------------------|
| <b>pianissimo</b>  | <i>pp</i>  | very soft        |
| <b>piano</b>       | <i>p</i>   | soft             |
| <b>mezzo piano</b> | <i>mp</i>  | moderately soft  |
| <b>mezzo forte</b> | <i>mf</i>  | slightly loud    |
| <b>forte</b>       | <i>f</i>   | loud             |
| <b>fortissimo</b>  | <i>ff</i>  | very loud        |
| <b>fortepiano</b>  | <i>fp</i>  | loud then soft   |
| <b>sforzando</b>   | <i>sfz</i> | sudden accent    |
| <b>crescendo</b>   | $\lessdot$ | gradually louder |
| <b>diminuendo</b>  | $\gtrdot$  | gradually softer |

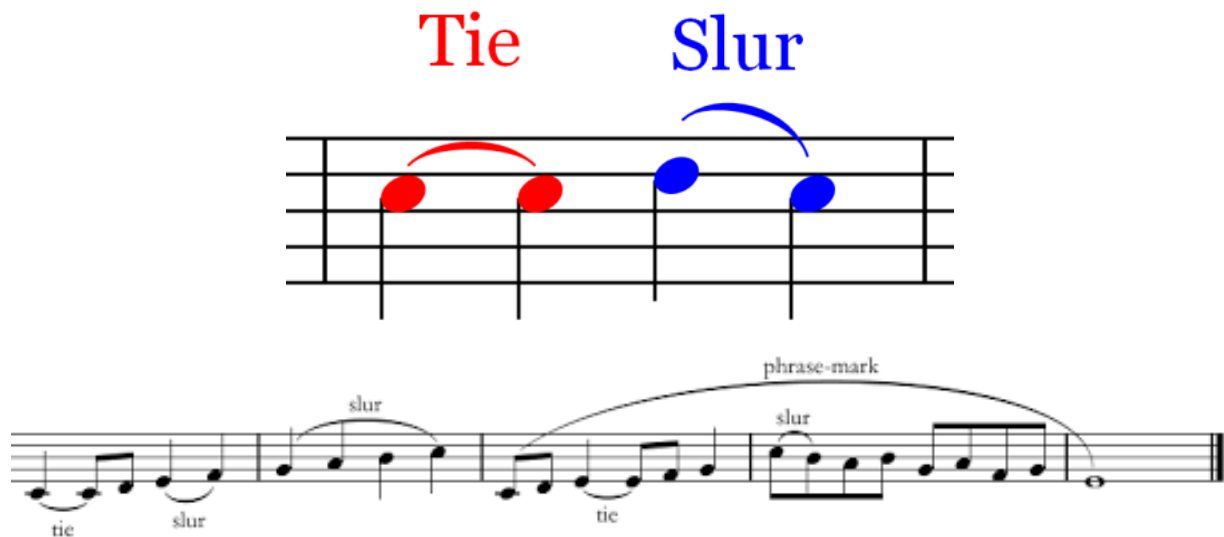
### *Legato, Staccato and Tenuto*

The above terms are how we play notes in a phrase. Legato means to play notes smoothly, Staccato means to play notes short and detached and Tenuto means to give a note its full value. Legato notes are joined together by phrase marks whereas staccato and tenuto notes all have their own symbol which you can see below.



## Ties and Slurs

Ties and slurs look very similar to each other but should not be confused. Ties add notes together so when you have a crotchet tied to another crotchet, you're creating a two beat note. A slur is where the two notes slurred together should be played without a gap between.



## Musical Symbol Exercises

Answer the following questions about musical symbols.

- 1) What does Fortissimo mean? .....
- 2) What would Fp mean in music? .....
- 3) What does Crescendo mean? .....
- 4) Now draw a Diminuendo. ....
- 5) What word do we use for detached playing? .....
- 6) If I want to add two notes together, what would I need to add? .....
- 7) What does Tenuto mean? .....
- 8) What does mf mean? .....
- 9) What does pp mean? .....
- 10) What does Sforzando mean? .....

4

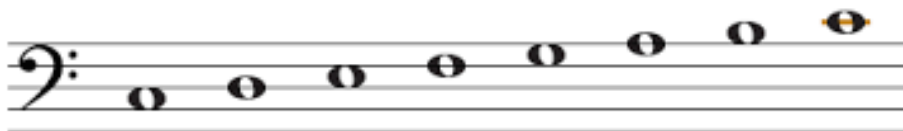
# Scales

## Major Scales

We should now know what every note looks like the stave, but the below picture will help you remember.



### *C Major*

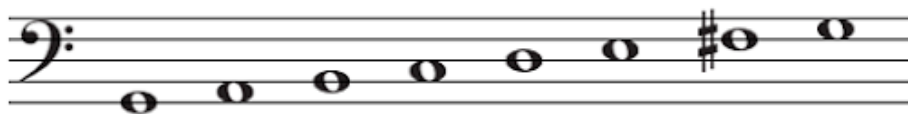


C D E F G A B C

C Major has no sharps and no flats.

### *G Major*

G Major has one sharp - F#.

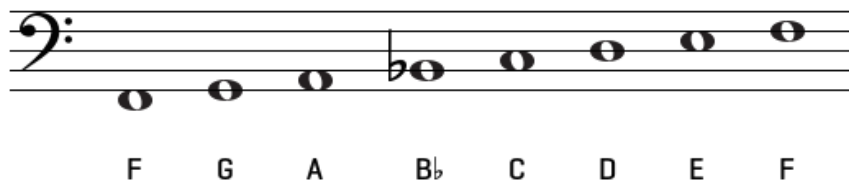


G A B C D E F# G



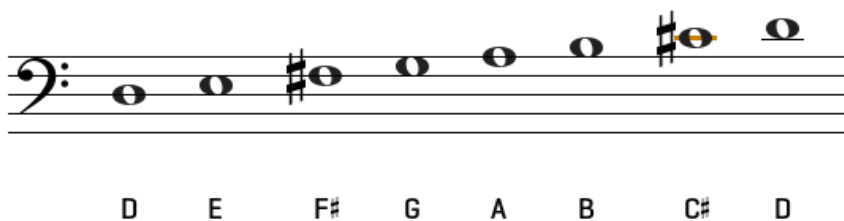
## F Major

F Major has one flat - Bb.



## D Major

D Major has two sharps - F# and C#.



## Bb Major

Bb Major has two flats - Bb and Eb.



*Try playing through each one of the major scales on your instrument now.*

## Minor Scales

Each major scale has a relative minor. The easiest way to work out the relative minor from the major is to go down a minor third (a tone and a semitone down). There are three different types of minor scale: natural minor, melodic minor and harmonic minor. The natural minor is when you play the notes in the key signature but isn't commonly used outside of jazz and you probably won't find this scale in your exam syllabus. The melodic minor is when you raise the 6th and 7th degree of the scale on the way up, and then lower them on the way down - this scale doesn't usually come up in exam syllabuses until grade 5. The harmonic minor is when you raise the 7th degree of the scale on the way up and down and this is the most common minor scale you'll find. Below is a table showing the relative minor of all the major scales you've just learnt.

| Major Scale | Relative Minor Scale |
|-------------|----------------------|
| C           | A                    |
| G           | E                    |
| F           | D                    |
| D           | B                    |
| Bb          | G                    |

### *A Harmonic Minor*

The 7th note of the scale is G so as we need to raise it, it becomes G#.



### *A Melodic Minor*

The 6th and 7th note of the scale are F and G so we need to raise them to F# and G# when ascending and natural them when we descend.



## Scale Exercises

Following the above rules, write out which sharps or flats you would have in the table below for the rest of the scales.

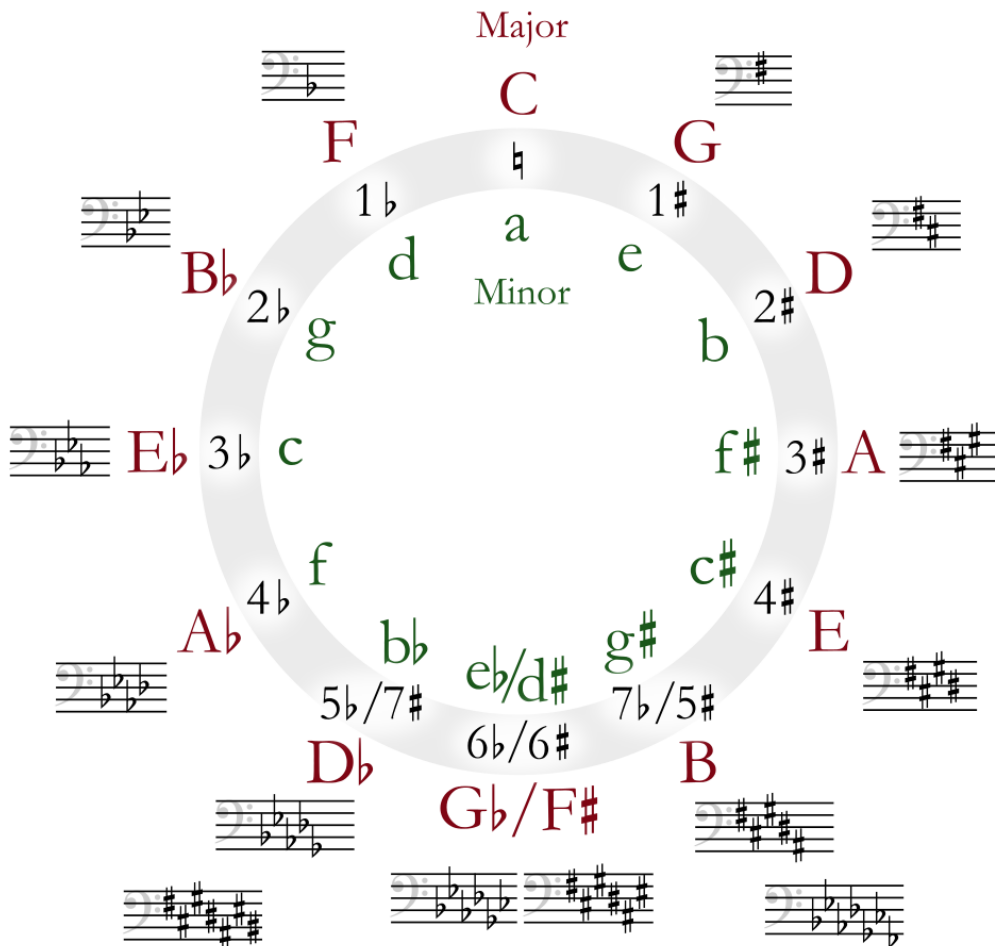
| Major    | Relative Minor | Harmonic Minor | Melodic Minor (ascending only) |
|----------|----------------|----------------|--------------------------------|
| C Major  | A Minor        | G#             | F#, G#                         |
| G Major  | E Minor        |                |                                |
| F Major  | D Minor        |                |                                |
| D Major  | B Minor        |                |                                |
| Bb Major | G Minor        |                |                                |

Now try playing through all your minor scales using the table above to help you remember the accidentals.

# Key Signatures

What are key signatures?

Key signatures help us identify what key our music is in - whether that's major or minor. Their main purpose is to tell us what sharps or flats are in the piece of music as that determines the key. Key signatures save composers time as they don't have to write in all the accidentals, and it makes the music less busy to read. They come just after our clef and before our time signature. Below is a diagram of the circle of fifths. The circle of fifths shows how the 12 notes of the chromatic scale relate to each other. Major and minor keys that are related, share the same key signatures as you will see.



The outer letters (in red) show your major scales and the inner letters (in green) show your related minor scales. The numbers in the middle tell you how many sharps or flats

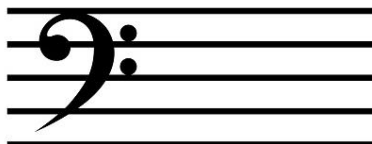
each scale has and on the outside is the notated key signature. This will be a good thing to keep and refer back to as you progress.

## Key Signature Exercise

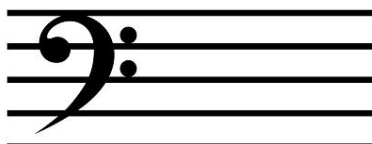
Without looking at the circle of fifths, fill in the table below with the number of sharps or flat each major and minor scale has and name them. I've done one for you.

| Major | Minor | Number of Sharps or Flats | Which Sharps or Flats |
|-------|-------|---------------------------|-----------------------|
| C     | A     | 0                         | 0                     |
| G     | E     | 1                         | F#                    |
| F     |       |                           |                       |
| D     |       |                           |                       |
| Bb    |       |                           |                       |

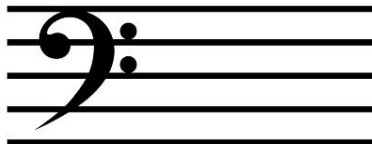
Using your completed table below, try drawing the key signatures for those scales on the staves below.



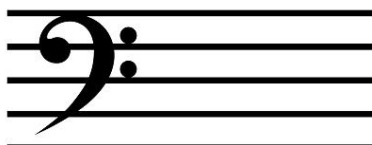
G Major/E Minor



F Major/D Minor



D Major/B Minor



Bb Major/G Minor

# Intervals, Triads and Chords

## Intervals

An interval in music theory is the difference in pitch between two notes. There are many different types of intervals, but you will mostly need to know major, minor and perfect. The most important things to remember is that intervals work on semitone steps and that 4ths, 5ths and octaves are called perfect.

The image shows a musical staff in bass clef with various intervals between notes. The intervals are labeled as follows:

- Major 2nd
- Perfect 4th
- Major 6th
- Perfect Octave
- Minor 2nd
- Minor 3rd
- Diminished 5th
- Augmented 4th
- Minor 6th
- Minor 7th

| Interval       | Number of Semitones |
|----------------|---------------------|
| Minor Second   | 1                   |
| Major Second   | 2                   |
| Minor Third    | 3                   |
| Major Third    | 4                   |
| Perfect Fourth | 5                   |
| Perfect Fifth  | 7                   |
| Minor Sixth    | 8                   |
| Major Sixth    | 9                   |
| Minor Seventh  | 10                  |
| Major Seventh  | 11                  |
| Perfect Octave | 12                  |

A really good way to remember your intervals, is through songs as they're made up of them. I've put a few of my favourite songs with their intervals in the table below.

| Interval    | Ascending  | Descending  |
|-------------|--|---|
| Minor 2nd   | Jaws Theme tune<br>Dancing Queen (Abba)                              | Fur Elise   |
| Major 2nd   | Rudolf the Red Nosed Reindeer<br>Doe - a Deer (Sound of Music)       | Three Blind Mice  |
| Minor 3rd   | Brahms' Lullaby  | Hey Jude (Beatles)  |
| Major 3rd   | While Shepherds Watched<br>Have Yourself a Merry Little<br>Christmas | Beethoven's 5th Symphony<br>Swing Low, Sweet Chariot                                      |
| Perfect 4th | Star Wars<br>Away in a Manger  | Down Town (Petula Clark)  |
| Perfect 5th | Twinkle Twinkle Little Star<br>Gold Finger (Shirley Bassey)          | Flintstones   |
| Minor 6th   | Close every door to me (Joseph and<br>the Technicolour Dream Coat)   | Nobody Knows  |
| Major 6th   | My Bonny Lies Over the Ocean   | Sweet Caroline (Neil Diamond)   |
| Minor 7th   | Star Trek  | White Christmas - Last line "and<br>may all your Christmases be white"<br>(Bing Crosby)   |
| Major 7th   | Take on Me (a-ha)  | Merry Little Christmas - Last line<br>"and Have yourself a merry little<br>Christmas now. |
| Octave      | Somewhere Over the Rainbow   | No Business like Showbusiness   |

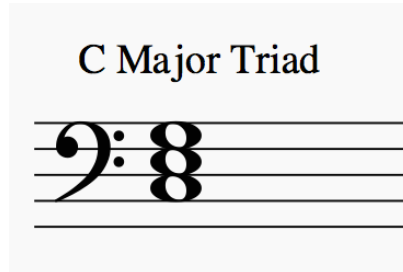
## Interval Exercises.

Answer the following questions about intervals.

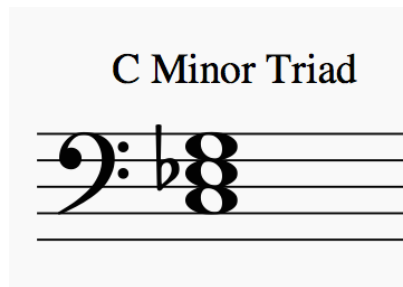
- 1) How many semitones are in a perfect 5th? .....
- 2) How many semitones are in a minor 2nd? .....
- 3) How many semitones are in an octave? .....
- 4) How many semitones are in a major 3rd? .....
- 5) How many semitones are in a major 6th? .....

## Triads

A triad is a set of three notes that can be stacked vertically in thirds. Typically triads consist of the 1st, 3rd and 5th notes of a scale and make up the notes we play when we play arpeggios.

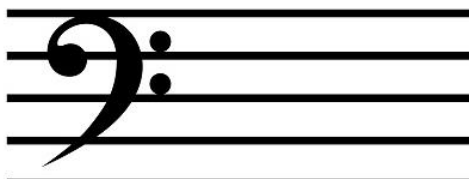


You can have a major triad, pictured above where the first two notes are a major third apart. Or minor triads, like below, where there is a minor third between the bottom two notes.

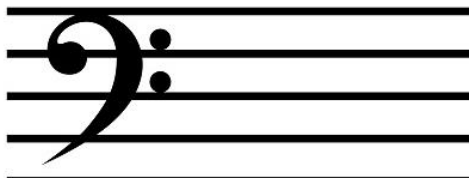


## Triad exercises.

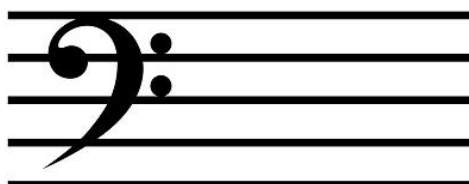
On the stave below, write the major and relative minor triads.



C Major/A Minor

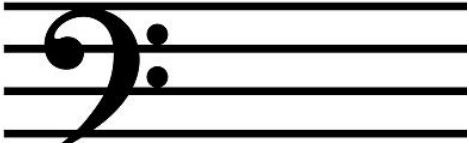


G Major/ E Minor

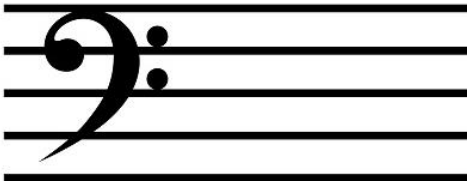


F Major/ D Minor





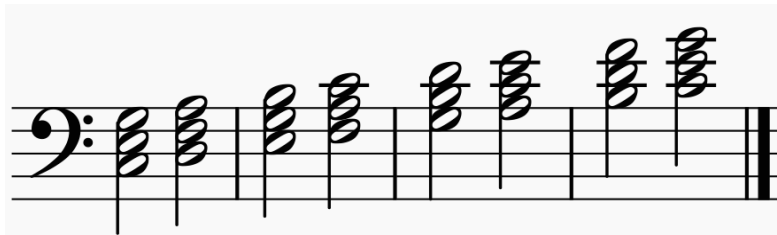
D Major/ B Minor



Bb Major/ G Minor

## Chords

A Chord is defined as any harmonic set of pitches consisting of multiple notes that are heard as if sounding simultaneously. Chords underpin harmony and are responsible for mapping out changes in key and also the endings of music. Each scale has 7 chords that correspond to each degree of the scale. They are made up of the 1st, 3rd, 5th and then the 8th degree of the scale but they can sometimes include the 7th note of the scale in both classical and jazz music.



I ii iii IV V vi vii° I

The chords are numbered with roman numerals and this tells us whether the chord is major and minor. In a major key, chords I, IV and V are major chords and we know this because they have capital roman numerals. Chords ii, iii, vi are minor and we know this because they have lower case roman numerals. Chord vii° is diminished because it's intervals are smaller than a third.

In Minor chords, chords V and VI are major. Chords i and iv are minor. Chords ii and vii are diminished and chord III is augmented as it's intervals are larger than a third.



i ii.dim III+ iv V VI vii.dim i

## Chords Exercises.

Answer the following questions about chords.

- 1) In a minor key, which chords are major? .....
- 2) In a major key, which chords are diminished? .....
- 3) What does diminished mean? .....
- 4) In a Minor key, which chords are augmented? .....
- 5) What does diminished mean? .....
- 6) In roman numerals, how do we know if a chord is major or minor?  
.....

# Melodic Structures

Melodic Structures map out how a melody is presented. This helps with the overall structure of the piece, and different pieces of music has different structures.

## *Binary Form*

Binary form has two sections - AB. It was common in the Baroque era, especially in dances.

- Section A begins in the tonic key and ends in the dominant key. It's usually repeated
- Section B begins in the dominant key and returns to the tonic key.

## *Ternary Form*

Ternary form is made up of three sections - ABA.

## *12 Bar Blues*

| Phase 1         | Phase 2               | Phase 3                                     |
|-----------------|-----------------------|---|
| C (Tonic - 1st) | F (subdominant - 4th) | G (Dominant - 5th)                          |
| C (Tonic - 1st) | F (subdominant - 4th) | F (subdominant - 4th) or G (Dominant - 5th) |
| C (Tonic - 1st) | C (Tonic - 1st)       | C (Tonic - 1st)                             |
| C (Tonic - 1st) | C (Tonic - 1st)       | C (Tonic - 1st)                             |

This form was popular in Rock 'n' Roll and was originally the basis of blues music.

## *Verse-chorus Structure*

This structure became the foundation for 20th century popular music. A chorus was the section that was repeated and had the same music and words. Verses had the same music but different lyrics. Within this structure, songwriters also included intros and outs, the middle 8, instrumental breaks and bridges between verses and choruses.

## *32-Bar Structure*

The 32-bar structure became popular in early 20th century US popular music, and can be found in many of George Gershwin's and Cole Porter's songs. The form is AABA, each section being eight bars long. A great example of this structure is Over the Rainbow by Harold Arlen.

## Structure Exercises.

Answer the questions below about structure

- 1) What key does the A section in binary form modulate to? .....
- 2) How would you describe ternary form using letters? .....
- 3) What type of music used 12-bar blues? .....
- 4) What era of music was binary form used in? .....
- 5) When was Verse-chorus structure used? .....
- 6) Name one composer who used 32-bar structure .....

*Well Done for completing the Star 3 Bass Clef Theory Book. Now try the Treble Clef Book.*