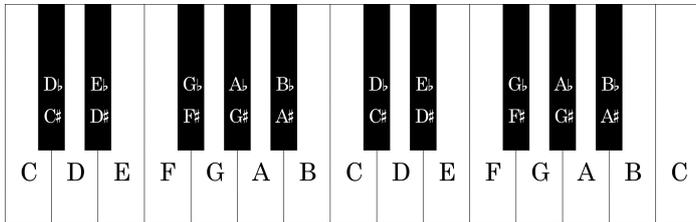


Harmony and Tonality

Most of our music is made up of only 12 notes.



If you look at a guitar or piano the pattern repeats again after 12 notes (or twelve frets on the guitar):

In fact, most music is made of even fewer than this: most music will be made of a set of only seven notes taken from the twelve. This set of notes is called a key.

In most music, there are two types of key: Major and Minor.

Major keys sound happy and Minor sounds sad (or angry).

The same pattern of notes is used for nearly all music in a Major key.

Another pattern covers nearly all music in a Minor key.

Nearly all music uses one of these two patterns! If you learn these two patterns and how they work, you will know nearly everything you need to know about harmony and tonality.

Basic Intervals

Before we learn what these two patterns are, we need to know about **intervals**.

In music, an interval describes the distance between notes. For now, there are two basic intervals to know:

A **semitone** is the smallest interval. It is the difference between any two neighbouring notes. Look at the keyboard above: The distance between B & C is one semitone. The distance between G and G# is one semitone.

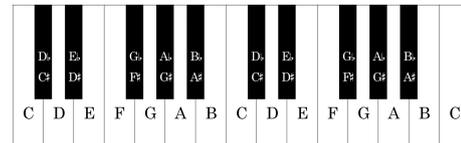
A **tone** is the same as two semi-tones ("semi" means half). The distance between E and F# is one tone. The distance between C# and D# is one tone.

Major Keys

Now we know what **semitones** and **tones** are, we can look at the pattern that makes up the major key. Let's look at the key of C Major. It doesn't have any black notes, so it's easy to see the pattern.

The notes in C Major are:

C, D, E, F, G, A, B, C...



This is also called the **scale** of C Major (A scale is just the notes of a key played one after another). If we

use our keyboard diagram again we can see that the distance between the first two notes (C and D) is one **tone**. The distance between the second and third notes (D and E) is also one **tone**. The distance between the third and fourth notes (E and F) is one **semi-tone**.

If we do this for all the notes, we get the following pattern:

	Tone	Tone	Semitone	Tone	Tone	Tone	Semitone	
C	D	E	F	G	A	B	C	

This pattern (T, T, S, T, T, T, S) makes up nearly all Major music.

If we know this pattern, we can work out the notes in any other major key. For instance, if we wanted to know the notes in D Major, we could start on D, then count up a tone to get E. To get the third note, we would go up another tone (F#). Next we would go up a semitone (G) and so on.

	Tone	Tone	Semitone	Tone	Tone	Tone	Semitone	
D	E	F#	G	A	B	C	D	

Work out the notes for the following Major keys:

	Tone	Tone	Semitone	Tone	Tone	Tone	Semitone	
G	A	B					G	
	Tone	Tone	Semitone	Tone	Tone	Tone	Semitone	
F#	G#							

Minor Keys

For music in a minor key, we have a slightly different pattern.

Tone	Semitone	Tone	Tone	Semitone	Tone	Tone
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Just like we had a Major key with no sharps or flats (C Major), we also have a Minor key with no sharps or flats (A Minor). Using the piano diagram again, we can see that the notes and intervals in the key of A minor are:

	Tone	Semitone	Tone	Tone	Semitone	Tone	Tone	
A	B	C	D	E	F	G	A	

Work out the notes that belong in the following Minor Keys:

	Tone	Semitone	Tone	Tone	Semitone	Tone	Tone	
A	B	C	D	E	F	G	A	

	Tone	Semitone	Tone	Tone	Semitone	Tone	Tone	
G	A	Bflat					G	

	Tone	Semitone	Tone	Tone	Semitone	Tone	Tone	
D								

This pattern (T,S,T,T,S,T,T) will always give us the correct notes for any given minor key. The scale that this pattern gives is called the **Natural Minor Scale**.

There are other minor scales with different patterns. These other minor scales are used for different things, but the **natural minor** is the first and easiest one to learn.

Relative Majors and Minors

We saw above how C Major and A Minor share the same set of notes. This means they are closely related. The relative minor of C Major is A Minor. The relative major of A Minor is C Major. Every key has a relative major or minor key that will share the same set of notes in this way. You could work all of these out, but the easiest way to learn it is by counting your way up the scale. **In a Major key, the relative minor will always be the sixth degree of the scale:**

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	8

This works the other way too. **In a Minor key, the relative major will always be the third degree of the scale:**

A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	8

Work out relative majors/minors of the following keys. You'll need to work out the notes of the your key first. To do this, go back and check the two patterns we used earlier.

G Major:

Relative Minor:

E flat Major:

Relative Minor:

C# Major:

Relative Minor:

D Minor:

Relative Major:

G Minor:

Relative Minor:

F# Minor:

Relative Minor:

More Intervals

We have already seen the two most basic intervals (the **tone** and the **semitone**). Sometimes we need to talk about bigger distances than these. Earlier, when working out our relative majors/minors we used numbers to refer to the degrees of the scale. We will use these again to name the bigger intervals.

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	8

So, we would say that the interval between C and G is a 5th.

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	8

The distance between C and F is a 4th.

We don't need to number our intervals according to our key. We can start counting from wherever we need to. For instance, the interval between E and B is also a 5th.

However, sometimes just the number isn't enough. For instance, if we wanted to describe the interval between C and E, we could call it a 3rd. But the distance between **1** and **3** in a **major scale** is bigger than the distance between **1** and **3** in a **minor scale** (you can go back to the keyboard diagram and count the semitones to double check this). We need to give more detail than just calling this interval a 3rd.

We will use the words **major** and **minor** to add this extra bit of detail.

Major intervals are bigger than minor intervals.

If the interval is the version found in the major scale, then it is the major interval.

If the interval is the version found in the minor scale, then it is the minor interval.

The following table shows the names of each of the intervals and how big they are in terms of semitones.

Interval	Minor 2nd	Major 2nd	Minor 3rd	Major 3rd	Perfect 4th	Diminished 5th	Perfect 5th	Minor 6th	Major 6th	Minor 7th	Major 7th	Octave
No of Semi-tones	1	2	3	4	5	6	7	8	9	10	11	12

There are a few things on this table we need to notice

Earlier we learned about **semitones** and **tones**. We can see from the table that another name for these are **minor 2nds** and **major 2nds**.

All the intervals are named **major** or **minor** except for 4ths and 5ths. These are called **perfect 4th** and **perfect 5ths** and are found in *both* **major** and **minor** keys.

The interval in between a **perfect 4th** and a **perfect 5th** is called a **diminished 5th**. This interval is also called a **tri-tone** (it's made out of 6 semitones, or 3 tones, hence the name **tri-tone**). This interval sounds **dissonant** and is usually used for dramatic effect.

Work out the following intervals. For the first few, count the number of semitones that make up the interval (use the keyboard diagram if you need to) and use the interval table above. Check with a teacher that you have these right!

Once you have tried a few, try to do it without looking at the interval table above. Try to count it in your head using the alphabet. Write out the notes as you count them to help you keep track:

G to B flat:

Interval:

C to A:

Interval:

F to E:

Interval:

D to F

Interval:

G to D flat:

Interval:

C# to D:

Interval:

E to F#:

Interval:

A to C#:

Interval:

As well as counting up the ways, we can also count intervals in the opposite direction

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	8

For instance, if we start on A and work out how big the interval is *downwards* to F, we can see that it is a 3rd. If we count the semitones we find out that it is a **major 3rd** (this makes sense, A would be the major third in an F Major chord).

Work out the following intervals **downwards**:

G to E: Interval:	E to A: Interval:
D to F#: Interval:	C to G: Interval:
B to A: Interval:	D to D#: Interval: