

Scales II - Key Signatures and the Circle of Fifths

The key signature is the set of sharps or flats that you put at the beginning of each musical staff. I'll show the key signature for B \flat major below. It means "every B note that follows is really a B \flat , and every E note is really E \flat ."



You can learn to write out scales quickly and easily by memorizing key signatures. Let's imagine that you've constructed a B \flat major scale using the WWHWWWH pattern, and you write it in letter names like so:

B \flat C D E \flat F G A B \flat

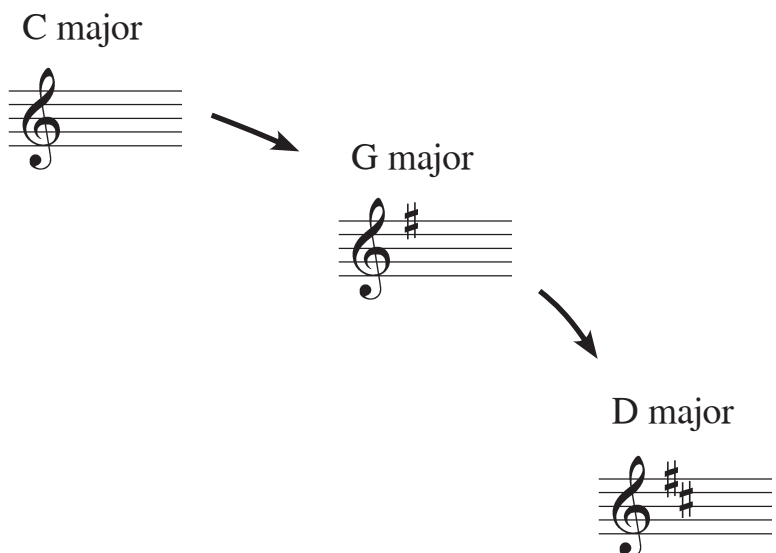
You can use your knowledge of the B \flat major signature to double-check your work. You'd say "I know the scale should have B \flat and E \flat in it, so that looks correct!"

The Circle of Fifths

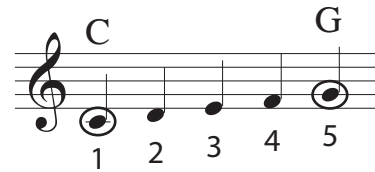
People learn their key signatures by memorizing the circle of fifths. This is a map of all possible keys, organized in a clock-like circle with twelve positions. We'll just start the top part of it on this page.

At the twelve o'clock position, you put C major. It has no sharps or flats.

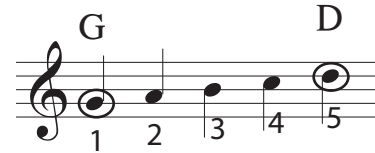
As we travel clockwise, we'll add sharps to each key. The first key gets one sharp, the next one gets two, and so on. (I'll explain exactly which sharps we are adding in a second.)



Each new key is a perfect fifth higher than the previous one. That means that if you start in C major and count up the first five steps, you'll arrive in G major, which is the next stop in the circle.



Then, if you start in G major and count up five steps, you'll get to D.



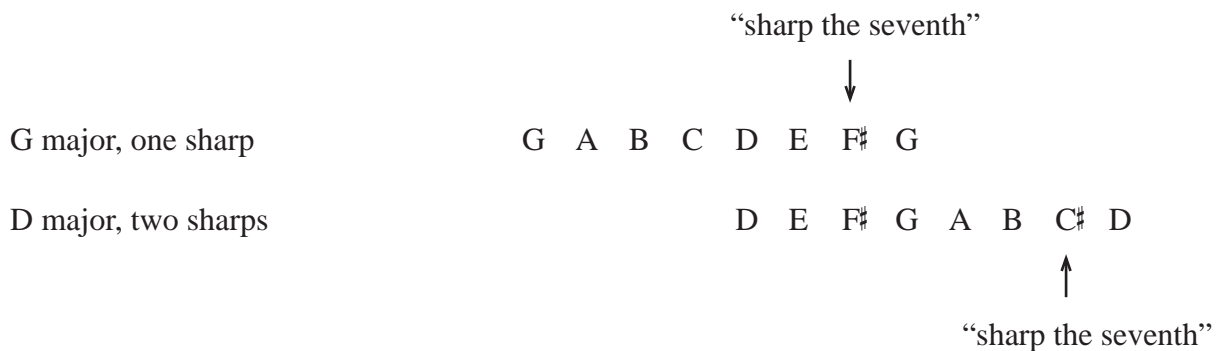
And so on! I don't think you should worry too much about counting up in fifths - most people just memorize the order of the circle with the understanding that the keys are all the same distance apart.

Adding Sharps

So, which sharps are we adding? What's the pattern?

With each key, you keep all the sharps from the previous key. Plus, you raise the seventh scale-degree in the new key.

So, for instance, when you move from G (which has one sharp, F#) to D major (two sharps) you keep that F# and you add the seventh degree, C#. You can keep doing this with every step around the circle until you've accumulated as many sharps as possible. (That would be C# major, which is like C major with all seven notes sharped.)



Here is the entire sharp side of the circle.

C major



G major



D major



A major



E major



C# major



F# major



B major



Building the Flat Side

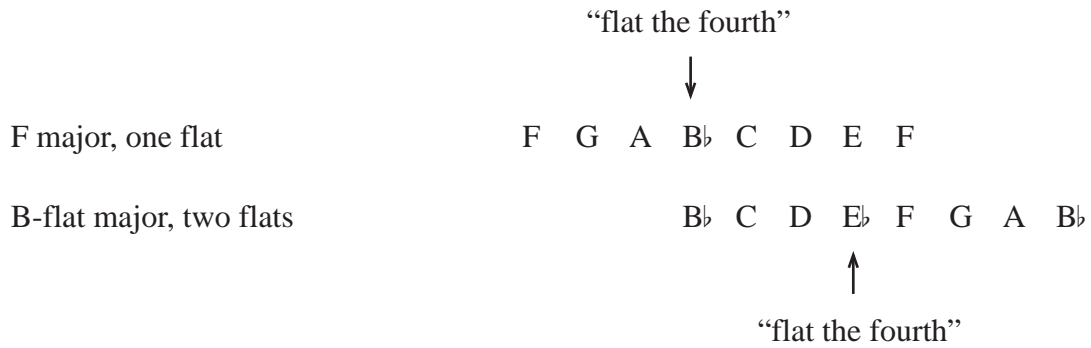
In order to build the flat side we are going to go down in fifths. So first we climb down in C major and get to F.



In F major, we can count down and get to B \flat . Here we see the importance of counting down in the scale that you are leaving from. We need to get to B \flat , not B. But, like I said, you shouldn't worry too much about figuring out the fifths and just memorize the sequence of keys.



With each step in the circle we will add a flat to the fourth scale degree. F major is our first flat key, and its fourth note is B \flat . Then, to make B \flat major, we need a flat on its fourth tone (E \flat).



F major



C major



B \flat major



E \flat major



A \flat major



D \flat major



G \flat major










C \flat major









The “Easy” Keys

In the beginning, I recommend that you memorize the top half of the circle, from three flats to three sharps. You need to know what key is in each position, how many sharps or flats it has, and what those specific accidentals are.

		C major		
	F major		G major	
B♭ major				
			D major	
E♭ major				A major
				

Enharmonically Related Keys

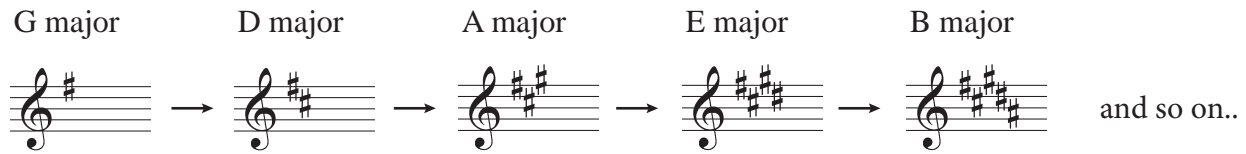
Now, I told you there were 12 positions in the circle, like a clock, and yet you may have noticed that both the sharp side and the flat side curl around past six o'clock. There are a few overlapping keys! These are *enharmonically related*, meaning that they are drawn differently on the staff but played on the same keys of the piano. So, we'll need to make our circle more like an overlapping spiral, and fill in both the sharp version and the flat version of these keys.

	C# major		
		F# major	B major
	/		
D♭ major			\
		G♭ major	C♭ major
			

The Order and Placement of Sharps

When you write a key signature, you are supposed to always list the accidentals in the same order and in the same place on the staff. You can think of the sharps and flats as two long sequences that you have to memorize - each key simply rolls out one more in the series.

The sequence of sharps, for instance, is **F# C# G# D# A# E# B#**. As we go around the circle we roll out this sequence one at a time



If you study the signature for C# major you see that you are supposed to distribute these in a 2-3-2 pattern in both the treble and bass clefs.



The Order and Placement of Flats

The order of flats is **Bb Eb Ab Db Gb Cb Fb**. Some enterprising students have noticed that it is the reverse of the sharps pattern.

The key signature for Cb major shows that the flats are supposed to be placed in a simple zigzag.



Here is the whole circle, for your reference.

C major

F major

G major

B \flat major

D major

E \flat major

A major

A \flat major

C \sharp major

E major

D \flat major

F \sharp major

B major

G \flat major

C \flat major