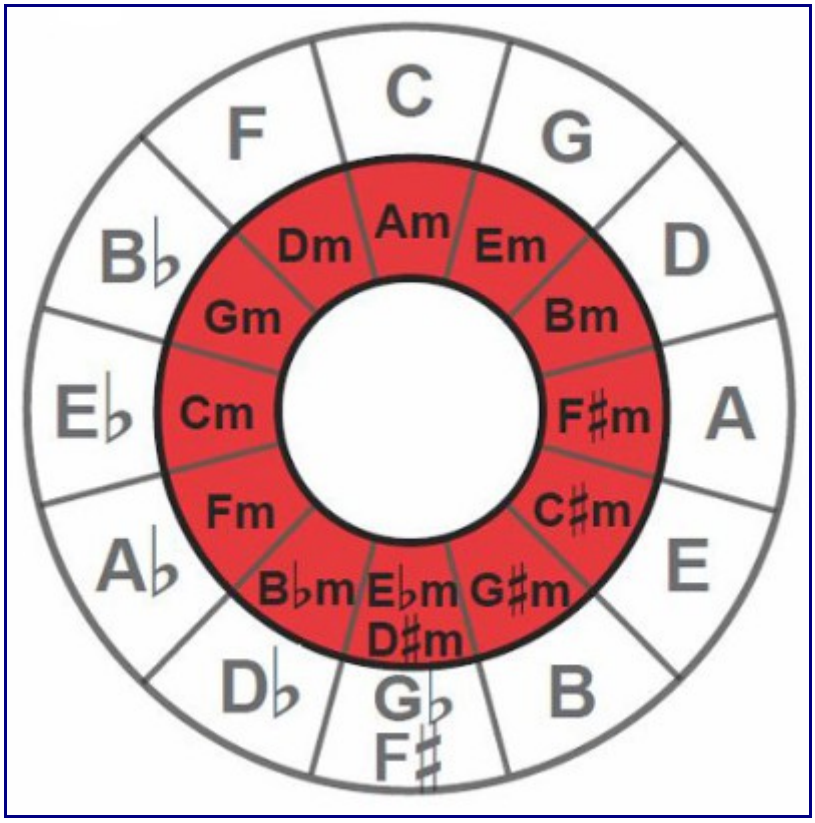
The Circle of Fifths Explained by My Guitar Lessons

Knowing the circle of fifths is the first step in learning theory and greatly increases your ability to understand harmony and chords



Key Signatures and the Circle of Fifths! **It's** a sort of treasure map and decoder ring designed to help you figure out one of the most basic and important elements in music: how keys relate to each other. The circle of fifths neatly shows how key signatures reflect this relationship, and understanding its function is the first step in learning theory. The concept of the circle of fifths is sort of the grand plan that puts all the key signatures in a pattern. It shows you the way harmony works.

Let's start out by defining just what the circle of fifths is. Then we'll step back, take a look at key signatures in detail, and work up to how keys and geometry combine to create a valuable tool for understanding harmony.

The *circle of fifths* is an actual picture: a graphic image of all 12 major and minor keys arranged in the shape of a circle. Since the circle is broken up into 12 sections, one for each pitch in the chromatic scale, it also resembles a clock face. A clock, like a circle, goes around and around continuously, with no beginning and no end, and that's also a helpful concept when dealing with keys.

OF TIME AND COMPASS POINTS

At the top of the circle, or in the 12 o'clock position, is the key of C and A minor. It's the starting point as far as keys, because both C and A minor have no flats or sharps in their key signatures. At the farthest point from 12 o'clock is the 6 o'clock position, and this is the furthest key from C—F# major and D# minor or Gb major and Eb minor. The "6 o'clock keys" have the most sharps and flats of any keys on the circle—six.

Now notice the 3 o'clock and 9 o'clock positions—or think of the East and West compass points—that fall exactly between the up and down or North and South positions. The keys of A major/F# minor and Eb major/C minor each have the same number of sharps and flats: three. Look at Figure 1 to see how the circle is oriented with respect to key placement.

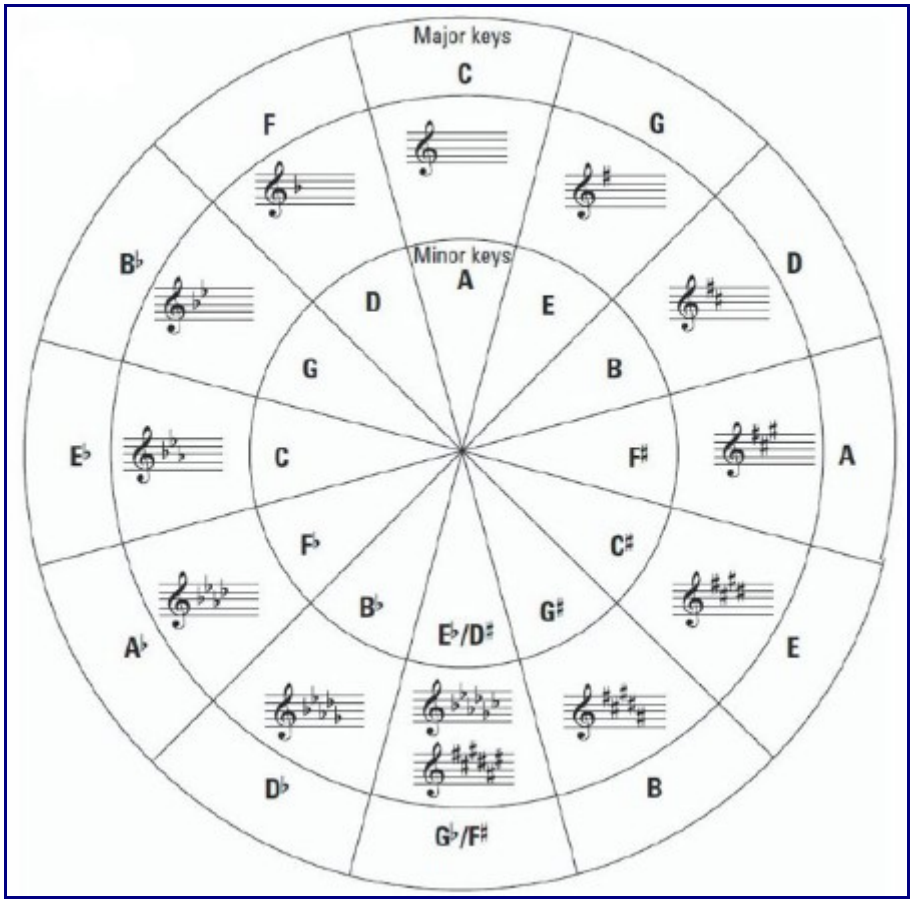


Fig. 1. The Circle of Fifths. The 12 keys arranged in a circle with C major and A minor in the 12 o'clock position.

The keys in the circle progress in order of flats and sharps. If you were to place the keys on a line instead of a circle, you'd see the arrangement in Figure 2.

Note the interesting property of the way flats and sharps accumulate: They always start with the same ones and just keep adding to the end. This makes their order easier to remember, because a four-flat key has the same flats in the same order as a three-flat key, with just an extra flat on the end. It's very easy to see this when they key signatures are laid out in a line.

All you have to do to make these straight lines into a circle is to imagine them as strips of rubber that you will bend into a circle and connect them together at the top and bottom. Once you know what you're looking at, it's time to think about (or re-think) the

whole notion of key signatures. So let's talk about exactly how they work and why they're so useful.

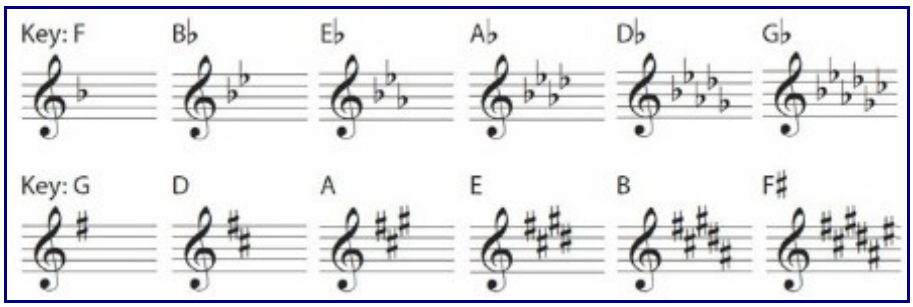


Fig. 2. Flats and Sharps. The circle flattened out into two lines, showing the flat and sharp keys in order of increasing flats and sharps.

KEY TO THE MUSICAL HIGHWAY

Every piece has to be in a key, and the key signature tells what that key is. Actually, a key signature really tells you *two* things: 1) what that key is, and 2) which notes to play.

By knowing the key, you can derive several things:

1. The important tones in the key (the ones that the piece will gravitate to, such as the *tonic*—the name tone of the key).

2. The scales, chords, and modes belonging to that key,

3. The notes that are diatonic to the key, and when a non-diatonic note appears (in the form of an *accidental*—a sharp, flat or natural sign).

In its second function, the key signature serves as sort of a "rule book" that keeps you from playing wrong notes—well, wrong for the key anyway. The collection of sharps and flats that appear at the beginning of a line of music tells you that if you're in the key of G (which has one sharp, F#, in the key signature), anytime you play an F, it should be F#. The key signature is a shorthand device that allows composer to just write a single sharp in the key signature that applies to all F's, in any octave, rather than writing in individual sharps in the music every time an F appears. It's a neat shorthand device.

If you use key signatures just as a guide to playing the correct notes, you'll still be doing everything right, and you don't even have to know what key you're in. But it's much better to know the key too, to know what's going on harmonically. Then you'll not only be performing the notes error-free, you'll understand why.

KEY TRICKS

First, how do you decode the key from the music? There are two quick and easy tricks for determining major keys from the key signature. One is for flats, one is for sharps. For the major keys that contain flats, look to the second-to-last flat that appears in the key signature. That's the key's name. For the sharp keys, the trick is a little bit different: You look at the last-appearing sharp (the right-most one) and go up one step. So in the key of G, which has one sharp (F#), you simply step up from the top line to the space on top of the staff. There's your G. Figure 3 shows how this works.

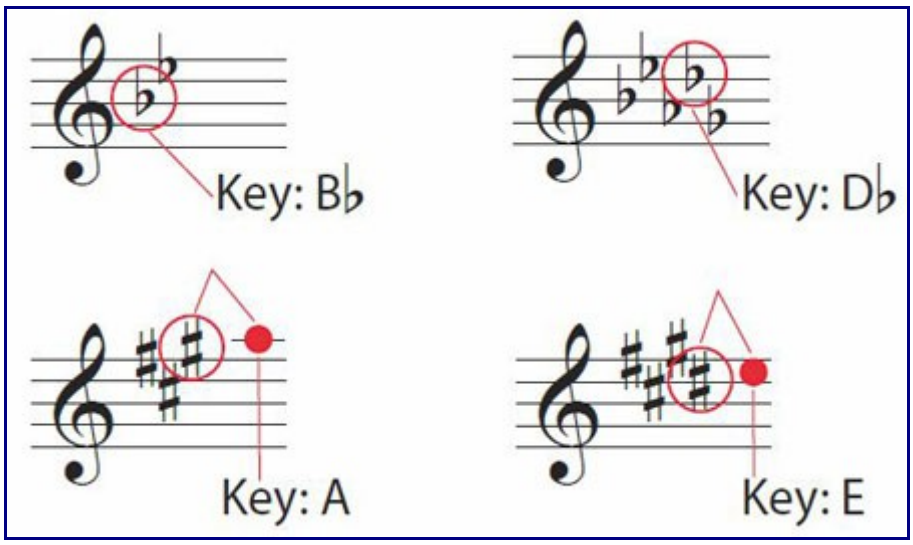


Fig. 3. Find That Key. For flat keys, the second-to-last flat names the major key; for sharp keys, you take the last sharp and go up one step to find the major key.

The flat-rule trick doesn't work for the key of F (one flat, Bb). You just have to memorize that one all by itself. The sharp-rule trick always works anytime there's a sharp in the key signature.

A MINOR ADJUSTMENT

Now that we've done the major keys, let's talk about minor keys. Each key signature actually represents two keys, a major and a minor. The minor key is called the *relative minor*, because it shares the same key signature. For example, A minor is called the relative minor of C. E minor is the relative minor of G. You can flip that relationship around, too, by saying F is the relative major of D minor, and Eb major is the relative major of C minor.

The important thing here is that when you see a key signature, you really should be prepared with two answers: a major and minor. Most people get in the habit of knowing just the major keys. That's why our circle of fifths always shows two keys in each "hour on the clock" or "slice of the pie." A piece of music can only be in one key at a time, but the key signature represents *two* keys, a major and a minor. Be sure to focus on the circle's inner ring (as shown in Figure 4) to know the minor keys. They may share the same key signatures as their relative majors, but they are different keys altogether.

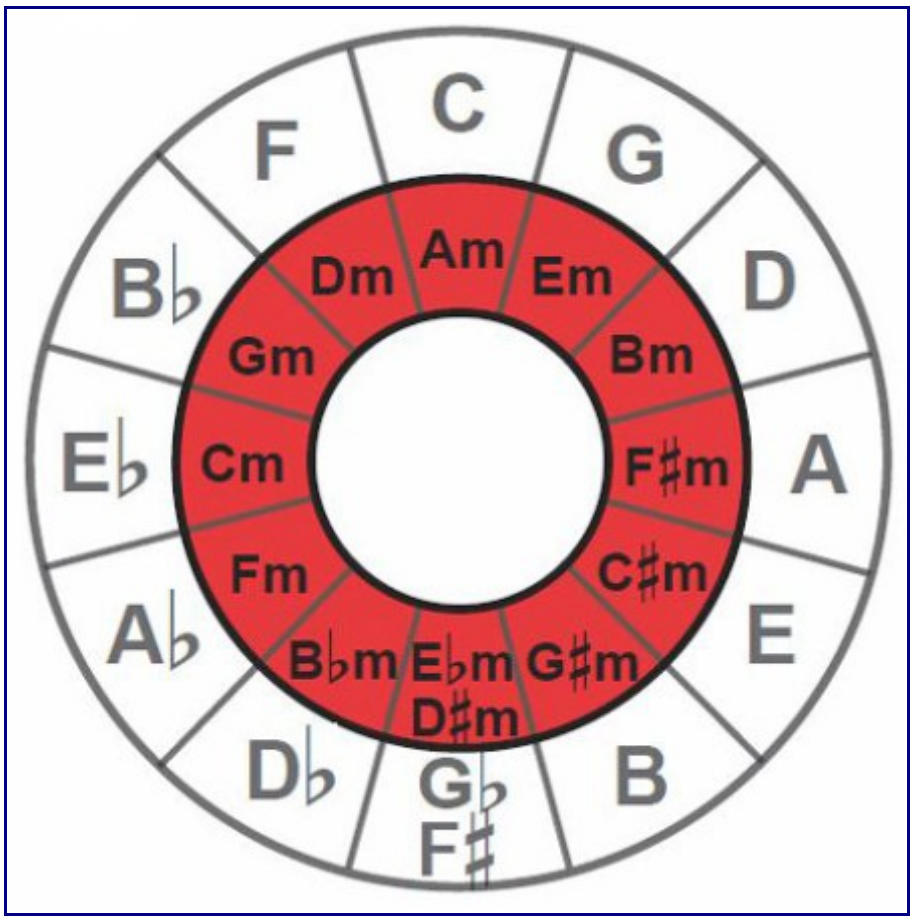


Fig. 4. A Minor Matter. When becoming familiar with the circle of fifths, don't ignore the minor keys. They are part of the circle too.

CIRCLING BACK AROUND (AGAIN)

Once you know your key signatures cold, you can then look back at the circle of fifths with real appreciation (refer to Figure 1 again). At its most basic, the circle organizes keys in order of the number of flats and sharps, with the lower-numbered keys closest to 12 o'clock. Note that since C has nothing in its key signature, it can be considered as having zero flats *or* zero sharps, making it the starting point for both flat keys and sharp keys.

The shape of the circle also helps illustrate which keys are related to each other. Keys are not necessarily closely related just because they are close together on the keyboard. What really relates them is how close their pitch collection is. A key with five flats is more closely related to a key with six flats, because there's only one note difference (C vs. Cb). The key of B (five sharps) is more closely related to E (four sharps) than it is to C (no sharps), even though B and C are only a half step away!

ROUND AND ROUND IN THE CIRCLE GAME

A wheel is a circle, and a wheel is made to go around, just like the keys contained within it. If you move the circle like a wheel you notice that you can go one of two ways: clockwise and counterclockwise. To understand how harmony *moves*, "spin the wheel" in a clockwise direction so that the notes C, F, Bb, Eb, etc., go by you as you stand in the 12 o'clock position. Or if you start at A, then the most useful sequence is A, D, G, C, F, etc. It is much, much more common in music to see bass notes and chords progressing this way than from, say, C to G to D to A. And for the moment, we can ignore

the keys and look just at the notes.

The notes represent the *root movement of chords*, and chords can be *either* major or minor. For example, if you start at A and step through five tones in sequence, you get a common sequence used in classical and pop, A-D-G-C-F. Start at B to create the three-note sequence B-E-A. Figure 5 outlines these two sequences with a red arrow and a blue arrow.

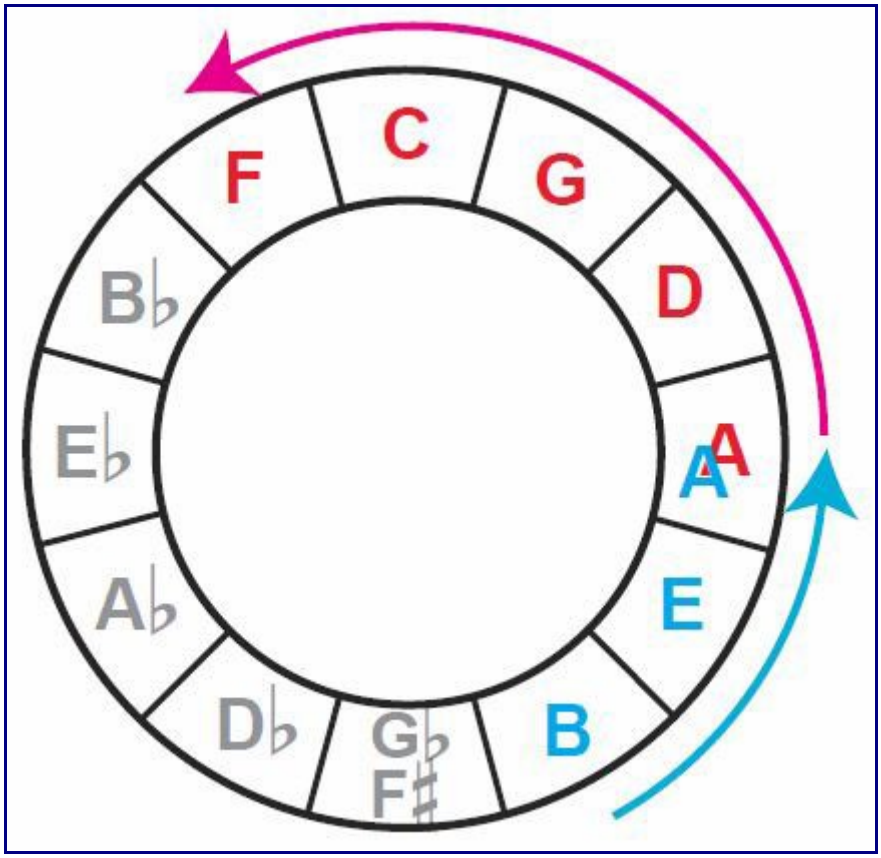
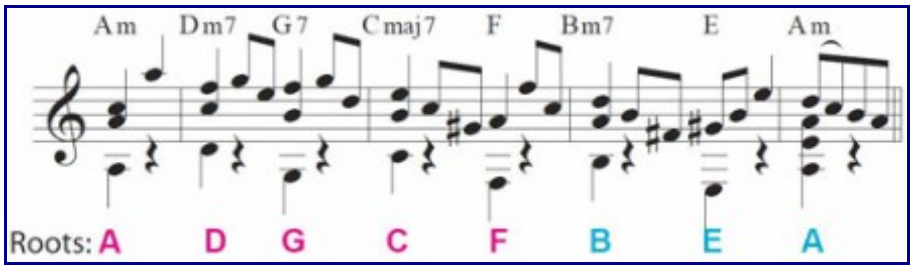


Fig. 5. One Thing After Another. The red arrow shows the one sequence of root movement and the blue arrow shows a second sequence.

Now let's see how the sequences in Figure 5 work in real music. J. S. Bach's "Gavotte in A Minor" and Frank Sinatra's song "Fly Me to the Moon" both use the same two sequences. And there are many, many other songs that use this exact formula! Figures 6 shows the song segments.



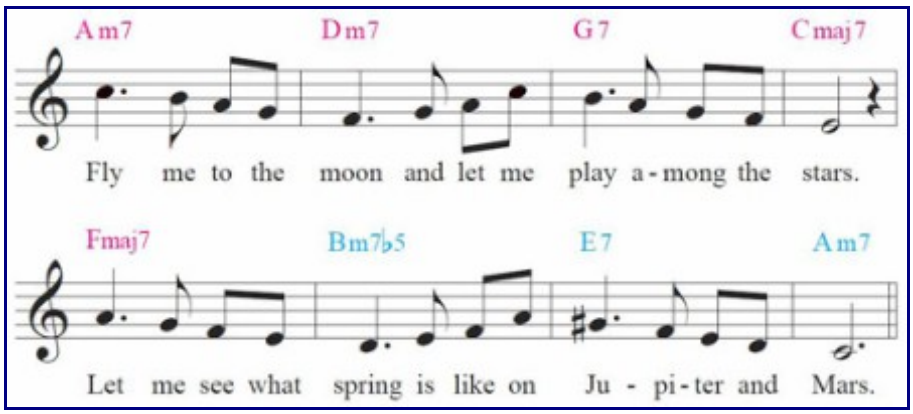


Fig. 6. From Bach to Blue Eyes. An excerpt from Bach's "Gavotte in A minor" and Sinatra's "Fly Me to the Moon" showing the circle-of-fifth movement.

CONCLUSION

The circle of fifths is music's magical device. It does so many things: it provides us an easy way to memorize the keys by the number of flats and sharps; it lets us know which keys are related by their proximity to each other; and it shows us harmonic movement. When you master the circle, you'll find that harmony and chord progressions seem to unfold before your very eyes in ways it hadn't before—quicker, with more logic and purpose. You can look and listen to music in new ways. And the circle is everywhere.