

# Circle of Fifths

## About the Circle of Fifths

The term *fifth* refers to an interval between notes. Consider all the notes in the key of C, namely C D E F G A B C. Now number the notes going up the scale and you get C=1, D=2, E=3, F=4, G=5, A=6, B=7 C=8. The term up a fifth just means the note numbered 5, or G. Up a fourth just means the note numbered 4, or F, etc.

If we think about the key of G major scale instead of C major, the notes are 1=G, 2=A, 3=B, 4=C, 5=D, 6=E, 7=F#, 8=G. Up a fifth from G is the note numbered 5 in the G scale, which is D; up a fourth is the note numbered 4, or C.

This is really simple—there's nothing mysterious about it. These terms like a fifth, fourth, third, seventh, etc. just talking about where the note falls in the scale if you number starting at the root note in the scale.

Now if we number the notes going down the C scale we have C=1, B=2, A=3, G=4, F=5, E=6, D=7, C=8. If we pick the note down a fourth from C we get the note numbered 4, in this case G. Notice that up a fifth yields a G, and down a fourth also yields a G. This is a general principle: up a fifth is the same as down a fourth. Well, what about vice versa? Up a

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forth in C major is an F, and down a fifth is also an F. Yep, it's another general principle: up a forth is the same as down a fifth.

We've seen that up a fifth in C is G, and in G is D. What if we keep going? The major scale for the key of D is D=1, E=2, F#=3, G=4, A=5, B=6, C#=7, D=8, so up a fifth is the note numbered 5, which is A. For the key of A we get E, for E we get B, for B we get F#, which is the same note at Gb. Traditionally we go to flat names at this point, up a fifth from Gb is Db, then Ab, Eb, Bb, F, and C. We're back at C, and we've covered all 12 notes in the scale. This is great! We don't get back too early—before all the notes have been used—and each note appears one time in the circle of fifths—there are no duplicates.

This is where the idea of the circle of fifths comes from.. the mathematical relationship that allows us to go up in fifths and get each note exactly once before we get back to the beginning. Of course, we can also go up in fourths and have the same relationship, since up a forth is the same as down a fifth—the notes just come out in reversed order. This circle of key names is symmetrical, and really only a circle of fifths if you go clockwise. It's a circle of 4ths if you go counterclockwise. But by convention and tradition, the circle of key names is called the circle of fifths.

An interesting thing about the circle of fifths is that as you

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step clockwise, the number of sharps in the key signature increases by one. Since the circle is symmetrical, as you step counterclockwise the number of flats in the key signature increases by one.


And, for diatonic harmonica players the circle of fifths is great for figuring out positions, harp keys, and the key of the music.

- When playing first position, you are playing in the key of the harp.
- If you want to play a particular key in 2nd position, pick the harp key 1 step counterclockwise from the music key.
- If you are playing in 2nd position, just look one step clockwise from the key of the harp to determine the key of the music.

This technique works regardless of what position or key you are playing in. To play in a key using third position, pick the harp key that is 2 steps counterclockwise. If you want to know what key you are playing in when you're playing 3rd position, just look 2 steps clockwise from the key of the harp.

Given the key of the harp, each step clockwise on the circle of fifths is the key of the music for the next higher position.

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Given the key of the music, each step counterclockwise on the circle of fifths is the key of the harp to use for the next higher position.

To figure the music key and position for any diatonic harmonica key, just number the harp key as 1, and consecutively number the other keys stepping clockwise around the circle. You don't need a big table. Just the Circle of 5ths.

We often play I, IV, V chord progressions in blues, country, rock, pop, and classical music. If you pick a key/root chord from the circle, the chord *one step clockwise is the 5th*, the chord *one step counterclockwise is the 4th*. So, it's easy to figure out I IV V by looking at the circle.

Most western music uses chord progressions from the Circle of 5ths, and mostly the chords are in the range from tonic plus 1 step (i.e. clockwise: the 5th) to the tonic minus 4 steps (i.e. counterclockwise). And, most often songs resolve by stepping directly clockwise back to the tonic. Examples help. Let's pick the key of C as the root, or tonic. Looking at the circle, the chords from C - 4 to C + 1 are Eb, Bb, F, C, and G. You want to find a good sounding chord progression? Well, try some of these, which just follow the above 2 rules: stay in that range, and step clockwise back to the tonic.

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Examples: C, F, C, G, F, C


Well, that's cheating. It's "just" a blues progression. The blues form is the most basic progression that follows the rule!

Okay, lets extend it: C, F, C, G, Bb F C or how about C Eb Bb F C G C etc.

For improvisation, thorough familiarity with the Circle of Fifths is almost indispensable.

By the way, I never have to dig through a box to find the harp key I want. I keep my harps arranged according to the circle of fifths. I think this is a really good idea—extremely useful when jamming to music and trying to find the right key and position. Changing position is just a matter of picking the harp to the right or left.. you don't have to think about it. If the harp you try isn't right in any position you're comfortable with, it's easy to skip 2 or 3 to the right or left and get a harp where none of the keys in your comfortable positions overlap. This way, I usually find the right key within 3 or 4 tries at most. And, with your harps arranged this way the circle of fifths becomes well ingrained, second nature, and it's much easier to pick a particular key harp than when I had them arranged in "sequential" order (C, D, E..).

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## Chord Substitution

A common technique found in a lot of different kinds of music is to substitute the relative minor chord for the major chord found in the circle of fifths. The relative minor chords are a (minor) 3rd lower than their relative majors, and the relative minor circle of fifths is rotated 4 steps counterclockwise from the major keys. Consider the IV V I chord progression. It's a very common, ordinary "pop" sounding progression. Now, substitute the relative minor of the major IV chord in place of the IV chord. The 4 (IV) chord's relative minor is a (minor) 3rd less than major chord, or  $4-3=1$  note higher than the root I chord, which is the minor ii chord. The resulting chord progression is ii V I. (Minor chords are written as lower case roman numerals instead of upper case as for major chords.) The ii V I progression is the most common chord progression found in jazz!


Think about the triads built on the notes of the major scale, for example the key of C. The first 3 triads are C E G, D F A, and E G B, which are the C major, D minor, and E minor chords. Look at the circle of fifths for minor keys and find the relative major keys for Dm and Em, the ii and iii chords in the key of C. The relative major for the ii chord is the IV chord, and for the iii chord is the V chord. The I IV V progression is just the first three chords of the scale with the relative major chords substituted for the minor chords!

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Familiarity with the circle of fifths and chord substitutions will greatly enhance your understanding of music and your ability to improvise and write music. *The more you dig into it, the more sense it will make!* The great thing is, if you understand just a few basic concepts, everything falls into place and much of the confusion about music theory is demystified.

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