The Key to Diatonic Harmony

What is a chord and how do chords and scales go together? This question has baffled many a burgeoning musician. So let's start at the beginning. Three different pitches are necessary to have a complete chord. We call these basic chords **triads**. Power chords are not real chords. They only hint at the triad they represent. I will explain the reason for this later. Tertiary Harmony is the name given to our system of chord construction because it is based on the concept of stacking major third (4 fret) and minor third (3 fret) intervals on top of each other until we have at least a three note triad. Extended harmony is a continuation of the stacking process creating chords with four, five, six, and even seven notes. Odd numbers are used to label the pitches in a chord. The triad's pitches are labeled one or root, third, and fifth. Extended harmony continues this labeling scheme with sevenths (4 note chord), ninths (5 note chord), elevenths (6 note chord), and thirteenths (7 note chord). We will limit this discussion to the basic triads and their relationship to the major scale.

If we put these two concepts together—we need three pitches separated by either 4 frets or 3 frets—there are only four possible combinations.

List of Basic Triads

Name	Major	Minor	Diminished	Augmented
Labels	R + 3rd + 5th	R + ♭3rd + 5th	R + ♭3rd + ♭5th	R + 3rd + ♯5th
Frets	R + 4fr + 3fr	R + 3fr + 4fr	R + 3fr + 3fr	R + 4fr + 4fr
Steps	R + 2 + 1½	R + 1½ + 2	R + 1½ + 1½	R + 2 + 2
Symbol *C = Root*	*C*	*Cm*	*C dim*	*C aug or C+*

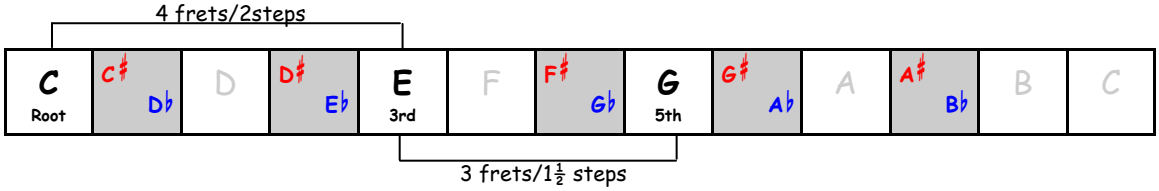
Major triads are so prevalent that the word major is understood and left off the symbol.

The Chromatic Scale

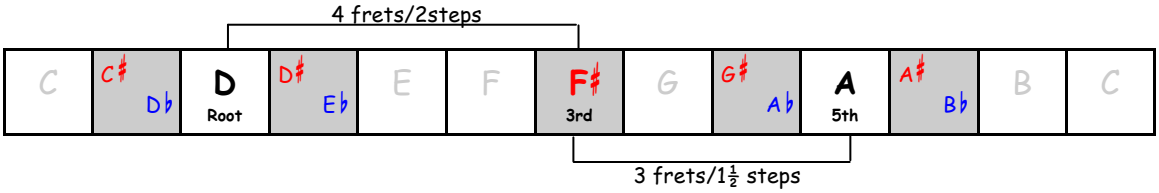
C	C♯ D♭	D	D♯ E♭	E	F	F♯ G♭	G	G♯ A♭	A	A♯ B♭	B	C

Applying the formulas and using the chromatic scale as our place to count distances we can now find the pitches that make up any Triad. The spelling rule when encountering sharps and flats is: **Use every other letter of the alphabet**—C E G - B D F - E G B - A C E etc.

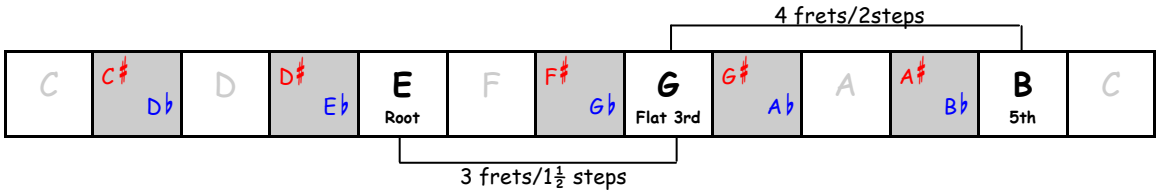
Example 1 - *C* major: Start with ***C*** and count over four boxes (2 steps or 4 frets) on the chromatic scale. This will land you on the pitch **E**. Now count over three boxes and you will land on ***G***.



Example 2 - D major: Start with **D** and count over four boxes (2 steps or 4 frets) on the chromatic scale. This will land you on the pitch **F sharp** (remember spelling rule-**D** E **F** G **A**). Now count over three boxes and you will land on **A**.



Example 3 - E minor: Start with **E** and count over three boxes (1½ steps or 3 frets) on the chromatic scale. This will land you on the pitch **G**. Now count over four boxes and you will land on **B**.



Now it is your turn to spell chords:

Table of Basic Triads

Major			Minor			Diminished			Augmented		
Root + 4fr + 3fr			Root + 3fr + 4fr			Root + 3fr + 3fr			Root + 4fr + 4fr		
R	3rd	5th	R	♭3rd	5th	R	♭3rd	♭5th	R	3rd	♯5th
C	E	G	C	E♭	G	C	E♭	G♭	C	E	G♯
G			G			G			G		
D			D			D			D		
A			A			A			A		
E			E			E			E		
B			B			B			B		
F			F			F			F		
G♭			G♭			G♭			G♭		
D♭			D♭			D♭			D♭		
A♭			A♭			A♭			A♭		
E♭			E♭			E♭			E♭		
B♭			B♭			B♭			B♭		
F♯			F♯			F♯			F♯		

The Key to Diatonic Harmony

The Chromatic Scale

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

Diatonic Major Scale Formula

Root	+	2 fret	+	2 fret	+	1 fret	+	2 fret	+	2 fret	+	2 fret	+	1 fret
C		D		E		F		G		A		B		C

Since our triads need either four fret or three fret distances and the major scale is built in 2 fret and 1 fret distances we must skip every other note of the scale when building triads (chords). The three pitches of the chord built off of the **first** pitch of the scale (**C**) will be **C E G**. The three pitches of the chord built off of the **second** pitch of the scale (**D**) will be **D F A**. The three pitches of the chord built off of the **third** pitch of the scale (**E**) will be **E G B**. This process will continue until every pitch of the scale has a triad built off of it.

The next step is to count the distances between the pitches of each triad to find out what kind of chord it is (major, minor, diminished, or augmented). Here is a table showing this information for the key of C major:

Diatonic Triads

I Major	ii Minor	iii Minor	IV Major	V Major	vi Minor	vii Diminished
C	D	E	F	G	A	B
+ 4 frets	+ 3 frets	+ 3 frets	+ 4 frets	+ 4 frets	+ 3 frets	+ 3 frets
E	F	G	A	B	C	D
+ 3 frets	+ 4 frets	+ 4 frets	+ 3 frets	+ 3 frets	+ 4 frets	+ 3 frets
G	A	B	C	D	E	F

R + 2 + 2 + 1 + 2 + 2 + 2 + 1

All Diatonic Major Scales are built with the same formula of fret distances. So whatever we discover about the types of chords built off each step of the key of C major is true about every major scale. The first chord in every key is major, the second chord in every key is minor, the third chord in every key is minor, and so on just like our example the key of C major.

The Key to Diatonic Harmony

We can now create a table that gives us all seven chords for every major scale.

Table of Diatonic Harmony

Major Key	I Major	ii Minor	iii Minor	IV Major	V Major	vi Minor	vii Dim
C	C	Dm	Em	F	G	Am	Bdim
G	G	Am	Bm	C	D	Em	F♯dim
D	D	Em	F♯m	G	A	Bm	C♯dim
A	A	Bm	C♯m	D	E	F♯m	G♯dim
E	E	F♯m	G♯m	A	B	C♯m	D♯dim
B	B	C♯m	D♯m	E	F♯	G♯m	A♯dim
F♯	F♯	G♯m	A♯m	B	C♯	D♯m	E♯dim
G♭	G♭	A♭m	B♭m	C♭	D♭	E♭m	Fdim
D♭	D♭	E♭m	Fm	G♭	A♭	B♭m	Cdim
A♭	A♭	B♭m	Cm	D♭	E♭	Fm	Gdim
E♭	E♭	Fm	Gm	A♭	B♭	Cm	Ddim
B♭	B♭	Cm	Dm	E♭	F	Gm	Adim
F	F	Gm	Am	B♭	C	Dm	Edim

The next step is to understand how these seven chords relate to each other in the hierarchy of chord progressions. Music gains its ability to move people from the dynamic polarity of expand and contract. Expansion means certain chords in the key move the listener away from the key center (home). These are called **Dominant preparation** chords and begin to build tension by moving away (expanding) from the Tonic (home/rest). Contraction means certain chords in the key drive the listener back to the key center (home). These are called **Dominant** chords and maximize the tension which is released by returning to any of the **Tonic** functioning chords.

Each of these three groups of chords have at least two levels of strength—primary (strongest) and secondary (weaker). The chord built off the sixth step of the scale can function as either Tonic or Dominant Preparation. This chord is also the tonic of the relative minor scale—a major and relative minor scale share the exact same seven pitches and are a simple rotation of each other.

C major - C D E F G A B C - Relative to - A minor - A B C D E F G A

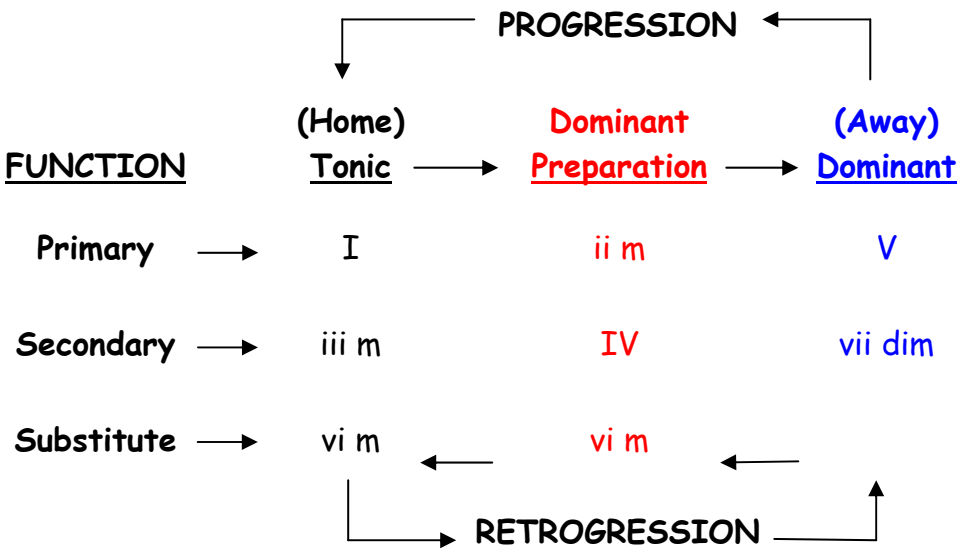
The Key to Diatonic Harmony

Here is a chart which shows the three functions, their primary and secondary chords, and multi-functioning six minor chord. There are two directions through this chart:

The Path of Progression—This path has always been considered the proper direction by classical theorists because of its progressive feeling of tension/climax/release.

The Path of Retrogression—This path is relatively new and was ushered in by the 20 century. It seems to speak of the decaying of the evolutionary process. Retrogression has been considered a no-no by classical theorists because of its feeling of leaking tension. It is a main-stay of the basic 12 bar blues progression and can be found in much of pop culture's music.

The human condition is a complex and ever changing ocean of feelings and situations lending to the use of both paths depending on the composer's need to communicate a particular point of view.



A **Progression** is created by moving from the I chord to any other chord and back to the I chord. The is because of the complete feeling of rest the I chord creates.

A **Deceptive Cadence** is created by moving from a Dominant functioning chord to the vi minor chord because of its resolution of the tri-tone (4th and 7th steps of the major scale—the two naturally occurring half steps).