

## Introduction

I've been telling my students for many years that there are two things to remember when playing guitar; keep it simple and relax. It is a truism that these ideas fit practically all aspects of life. When learning something new, try to keep the knowledge simple to understand. There is a reason why great guitarists "make it look simple". It is because it is simple for them when they perform. They have developed the technique to play in a way that feels natural and simple to them. What one great guitarist plays in a simple manner, another great guitarist might find initially difficult. This is because **everyone learns everything differently**. This is also the reason for the joke; "*How many guitarists does it take to change a light bulb? Five. One to change the bulb and four to say they can do it better*". It's not that they can all do it better, but that they all have a different view on the same objective. For years I played the Traffic tune "John Barleycorn Must Die" with a terrible fingering. I played it that way because when I was young and learned the song from an album I had at the time by ear. Years later I was sitting down thinking, "They can't possibly be playing this tune with this difficult fingering". After trying the notes in other places on the guitar I was stunned to find that there was a ridiculously simple fingering I could have been using all along. This is the main reason I write this book. I have seen and bought one poorly explained book after another. Most of which I could not figure out until I already understood music theory. After teaching this same information for over twenty years, I decided it was time for me to try my hand at explaining music in a simple to grasp way. This is not your Great Grandfathers music theory and is not a complete comprehensive book on music theory. It does not contain "rules for 4 part music writing" or "concepts for aural dictation" or "keyboard harmony". This is a short book of **practical music theory** as it pertains to daily use for the common guitarist. I spent considerable time trying to give you **simple, easy to understand tools** that will carry you through problems you may encounter. Learn the tools well, including "The Circle", scales, and soloing.

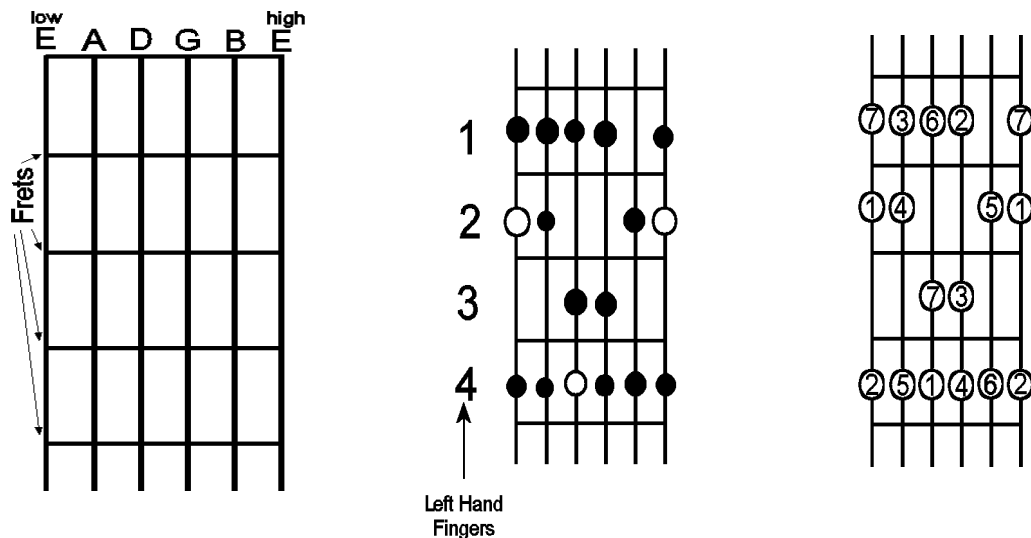
As I mentioned, the two rules to remember are to keep it simple and relax. To relax is to think without anxiety and to allow yourself to learn in your own time. If you feel yourself getting frustrated with any aspect of learning, walk away and come back later with a fresh open mind. It took me years to realize there was an easier way to play a simple tune; you can allow yourself the time to understand all that you want to learn.

Mike Duffey

## How to use this book

I have carefully laid out this book so that if you start at the beginning and move page by page through the book, you will have a grasp of concepts that are important to every guitarist. Many of you will feel a need to turn directly to the chapters that you think will be of most use to you. Avoid this thought. For the most part, **each section builds on information found in previous sections**. I have purposely written this book to be a short read, so that you can quickly get to information that concerns you most. Pay particular attention to “numbered scales” and “the circle”. These tools will serve you well when deciphering this book and music theory in general.

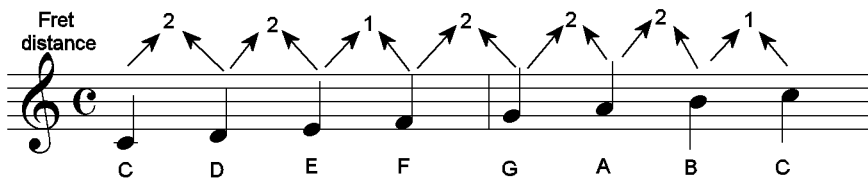
Every example in this book has been written out in two different ways, notation for the music reader, and tablature or block scale forms for the non-reader. I have done this to make this information as accessible as possible for everyone. The block scale forms are written out just like a chord form would be read. The vertical lines represent the strings from the 6<sup>th</sup> string (low E) on the left to the 1<sup>st</sup> string (high E) on the right. The forms look like your guitar neck with the guitar standing on its endpin facing you. These forms are written with either dots or numbers representing where your fingers are placed. In the dotted block forms, the circles represent the root note (key tone) of the scale. The dots are all the other notes of the scale. In the numbered block form, the numbers represent which note of the scale is represented by the dot. In this form, the number 1 is the root note because the 1 represents the first note (root note) of the scale. More on this concept will be explained in the section on numbered scales.



## Notes on the guitar

Knowing the notes on the guitar is very important. The notes show where chords and scales are placed on the fingerboard and allow the guitarist to converse in a language common to all musicians. Many guitarists fear this knowledge since learning notes can be a tedious process. I have devised a quick, simple way to learn all the notes on the guitar in a matter of a few minutes. I will not spend time showing you how to sight-read nor will I show you how to write music; this is information for another book. I will show you how to find any note anywhere on your guitar quickly so that you may find scales and chords anywhere on the fingerboard.

To find notes on your guitar, you first need to know the names of the strings. They are as seen above, E, A, D, G, B and E. Next you will need to know the distance between each note in a C major scale. The reason I use the C major scale, is that it is a scale without any sharps and flats. We will learn sharps and flats later. We will look at the distances between each note in frets, since the guitar is covered in frets.



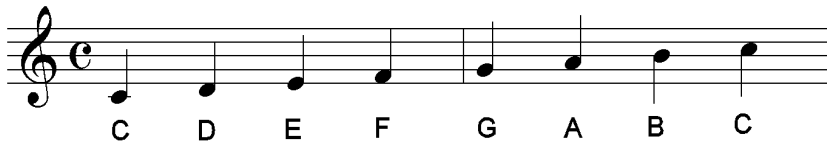
Notice that all of the fret distances equal 2. The exception to this is B to C and E to F equaling 1 fret. This is what you need to remember; **“B to C and E to F equal 1 fret, everything else is 2 frets”**. Say this quoted section a few times till it is memorized. With this knowledge memorized, you can easily go up each string and name all the notes. Try starting on the low E and naming all the notes on the string. E is open, then up 1 fret to F, then 2 frets to G, then 2 frets to A and so on. Do this to each string till you feel you have the concept.

Now let's deal with sharps (#) and flats (b). A sharp (#) raises a note (toward the bridge) 1 fret. A flat (b) lowers a note (toward the tuners) one fret. On the low E string, find the note A#. Now on the same string find the note Bb. You will find that both these notes are played on the 6<sup>th</sup> fret of the 6<sup>th</sup> string. These notes are known as being “enharmonically” the same. This term means two notes that sound the same but are spelled differently.

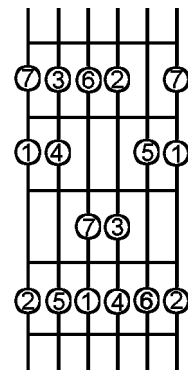
E						
F						
G						
A						
B						
C						
D						
E						

## Numbered scales

In using this book and in deciphering music theory, it is wise to invent a simple way to understand the relationship between scales, chords and their usage. The modern, easy way to do this is to apply numbers to notes within scales that **define their position**. To accomplish this we number the first note of the scale as one (1) the second note as two (2) and so on. Here is a C major scale first with the notes as letters and second with the notes as numbers.

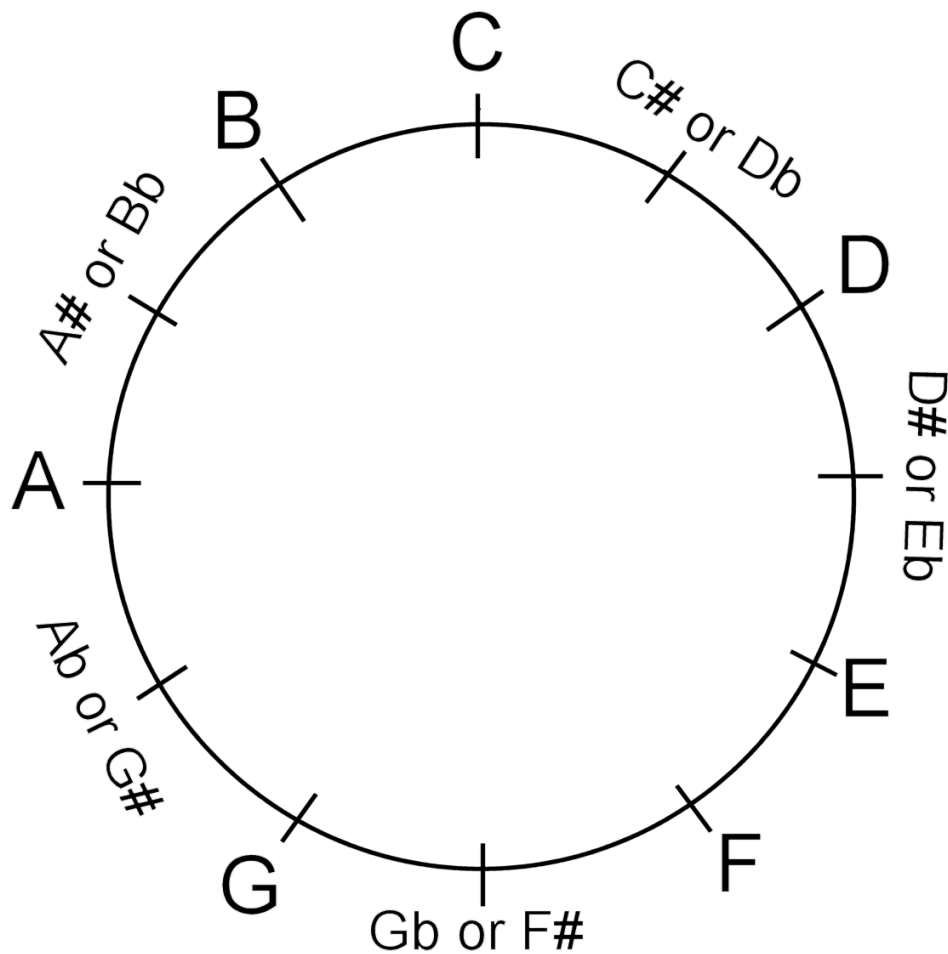


Since we can apply these 7 numbers to any diatonic major or minor scale in any key, the scales ultimately become easy to work with and understand. Notice that when the note C is reached, the numbers repeat back to one (1) just as the letters repeat back to C. It is important to note that this is a movable concept. In the key of G major, the note G would be one (1). Whatever key you are in, the key tone becomes one (1) and the scale numbers start from there. These numbers can also be used in block scale forms to define where each note of the scale is in that block. In the C major scale block form shown, the number one on the sixth string would be played on the 8<sup>th</sup> fret of the sixth string.



## The Circle

It is imperative that we learn how scales and chords are formed in order to learn how to use them. The most precise way I know to easily figure out various scales is to use a tool I call a **transposing circle**. A transposing circle is a circle divided by 12 lines. The distance from one line to the next represents 1 half step or one fret on the guitar, the smallest interval (distance between notes) in music. Since music notes are just a recurring cycle of A, B, C, D, E, F, G, A, B, C, etc. then a circle represents this process precisely. Notice that between the C, and D are the notes C# and Db. These two notes sound the same but are named differently and are called enharmonically the same. This circle is very useful in finding notes to various scales quickly.



## Transposing

The transposing circle has many uses and the transposing circle gets its name from one of them; transposing. Transposing is the act of moving a song into a different key than originally written. There are various reasons you might do this;

- The song is either too high or too low to sing.
- The chords of the song are excessively hard to play.
- The song would lay better for fingering in a different key.
- The song would sound better on the guitar played in a different key.

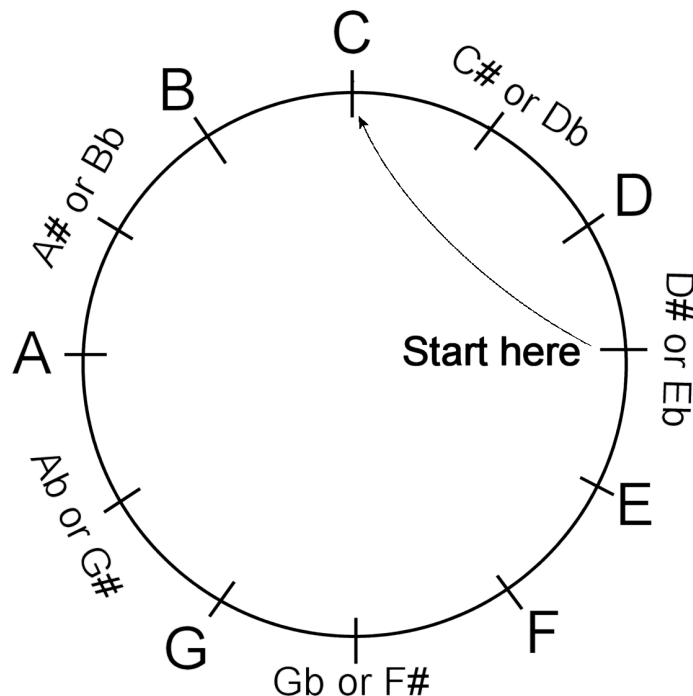
Guitarists often use a capo to change the key of a song. This isn't always necessary, nor is it the best way to play in a different key to solve the problems of a bad key.

### How to Transpose

We will start by learning how to change the chords of a song to a different key. Lets suppose that we found a song in the key of Eb major that had the following chords in it:

Eb Ab Fm Bb7 Cm7

These chords are not particularly difficult to play, but they do not lie in open chord positions for the beginning guitarist. Let's try and transpose these chords into C major. To start, we will need to find Eb on the transposing circle and then determine the distance from Eb (original key) to C (new key).



You can see that the distance from Eb to C is three (3) half steps moving counterclockwise. Now you need to apply this same movement to each of the other chords of the song. For instance the chord Eb becomes C. The chord Ab moves counterclockwise three half steps and becomes the chord F. The rest of the chords would be as follows:

Eb moves counterclockwise 3 half steps to become C

Ab moves counterclockwise 3 half steps to become F

Fm moves counterclockwise 3 half steps to become Dm

Bb7 moves counterclockwise 3 half steps to become G7

Cm7 moves counterclockwise 3 half steps to become Am7

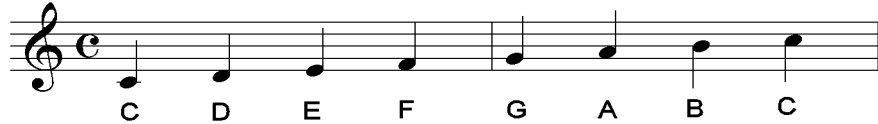
It is important to remember that the quality of the chord (the chord description that follows the letter designation) must stay the same when moving to the new key. Minor chords stay minor, 7 chords remain 7 chords etc. Here are the steps in using this concept:

1. Identify the original key of the song to be transposed.
2. Determine what key you would like to move to.
3. Find the distance between the keys in half steps.
4. Apply the distance and direction around the transposing circle to each of the chords of the key.
5. Be sure to apply the same letter distance to each of the chords.
  - a. The letter distance refers to the number of letters required to reach the new key. In the case of moving from Eb to C, the distance is 2 letters; E>D>C. When presented with two choices i.e. A# or Bb, the right choice will be the one that is the correct letter distance from the original chord.
6. Be sure to keep the quality of the transposed chord the same as the original chord. Everything that follows the letter designation of the chord must be transferred to the new (transposed) chord i.e. m7, 6/9, 13, 7 b5 etc.

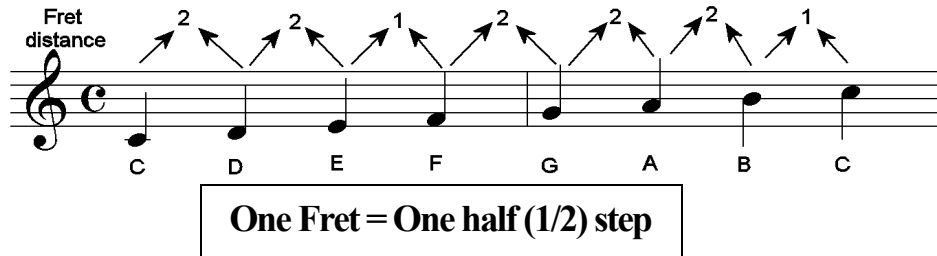
For guitarists, the best keys to transpose into to avoid excessive bar chords or awkward fingerings are C major, G major, D major, A major, E major and their relative minor keys. For more on relative major and relative minor scales and keys, read the section on the minor (Aeolian) scale.

## The Major (Ionian) Scale

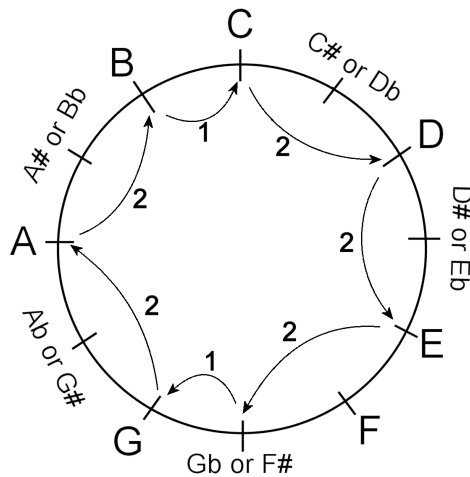
The major scale is probably the most widely recognized scale in music of the western hemisphere. It is the scale we all learned as a child and is sung as “Do, Re, Mi, Fa, So, La, Ti, Do”. To keep things simple, I will write out the major scale in the key of C. As you can see, the scale contains no sharps (#) or flats (b); so it is easy to read. We will be using the C major scale as an example regularly throughout this text.



It would be easy to assume that those letters are what make the scale sound major but that would only be partially right. The real reason that the scale sounds major is the distances between each of the notes of the scale (intervals) are in the proper order for a major scale. Lets look more closely.

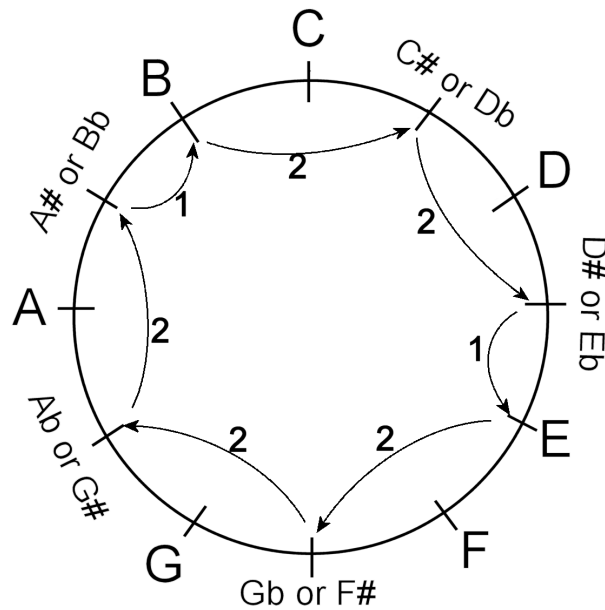


So we can see that it is the intervals in half steps (or fret distance) of 2,2,1,2,2,2,1 that define a major scale. Now lets go back to the transposing circle and try writing the G major scale using these intervals.





Start on the letter G and move clockwise around the circle 2 half steps. You should now be at the letter A. Move 2 more half steps and mark down the letter. Now finish the above formula by going 1 half step then, 2, 2, 2 and finally 1. **Make sure to use each letter name *only once*.** You should now be back at G. If you wrote down all the notes you stopped at you should have the letters G, A, B, C, D, E, F#, G. If you used the Gb instead of F#, you did not follow the rule that each letter name can be used only once. Did you get it right? Let's try and write out the notes for B major. This time start on the note B and follow around the circle clockwise 2,2,1,2,2,2,1.



You should get the notes B, C#, D#, E, F#, G#, A#, B. These are the notes in the Key of B Major. Try one more just to be sure you got it. Build a Major scale in the Key of Eb. You should have the notes Eb, F, G, Ab, Bb, C, D, Eb. If you made a mistake, it was probably because you forgot one of the following;

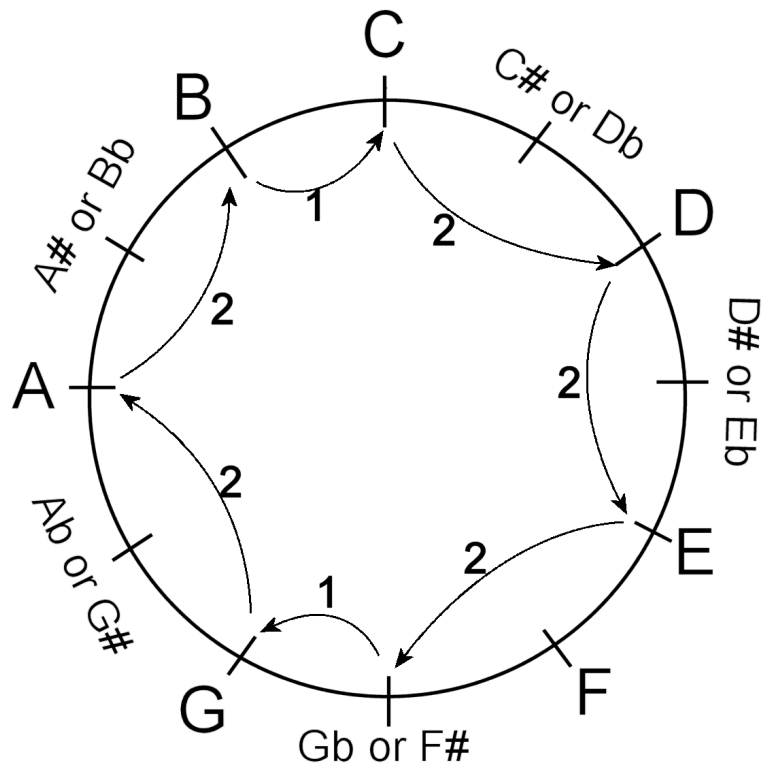
1. Use each letter name only once.
2. The intervals that make up a major scale are 2, 2, 1, 2, 2, 2, 1.
3. You must move clockwise around the transposing circle when writing scales.

## The Minor (Aeolian) Scale

The most common minor scale in music is the Aeolian scale also known as the Natural minor scale. This scale occurs naturally as part of the major scale starting on the 6<sup>th</sup> note (6<sup>th</sup> degree) of the major scale. In other words, C Major is the “relative major” to A natural minor. As you can see they both contain the same letters. It is the fact that the two scales contain the exact same notes that defines them as relative major and relative minor scales.

The image displays the A Aeolian (Natural Minor) scale in 4/4 time. The top staff shows the scale starting on A (purple) and ending on A (purple). The bottom staff shows the scale starting on C (red) and ending on C (red). The notes are A, B, C, D, E, F, G, A. The bottom staff also includes fret numbers: 0, 2, 3, 0, 1, 3, 5.

Is it the letter names that make it sound like a minor scale? No. As we found out earlier, it is the order of the intervals between the notes that determine the natural minor scale. A major scale is determined by the half step intervals 2, 2, 1, 2, 2, 2, 1. So a natural minor scale is determined by the intervals 2, 1, 2, 2, 1, 2, 2. Let's try spelling an E minor scale. Start on E and move clockwise 2 half steps. Write down the letter name, and use each letter name only once. Follow the intervals till you reach E again.



You should have the letters E, F#, G, A, B, C, D, E. This is an E natural minor scale. Compare these letters with the letters you wrote for a G major scale. They are the same. These 2 scales are called relative major and minor scales since they include the same notes. Try writing out one more natural minor scale. Write out the notes for a B natural minor scale. You should have the notes B, C#, D, E, F#, G, A, B. If you ended up with something different, check to make sure you followed these rules;

1. Use each letter name only once.
2. Natural minor intervals are 2, 1, 2, 2, 1, 2, 2.
3. Move clockwise around the circle.

## Key signatures



Key signatures are the markings at the beginning of music that tell in which key the composer wrote the music. The key signature is marked with sharps (#) or flats (b). When I was young, I was taught to memorize all the key signatures. I found that difficult, since I learn things better when I understand why. Look back at the notes you wrote for the G major scale. You will see that the notes are G, A, B, C, D, E, F#, G. How many accidentals (sharps or flats) are in this key; one, F#. So the key signature for G major would be written with one # and that sharp would be F#.

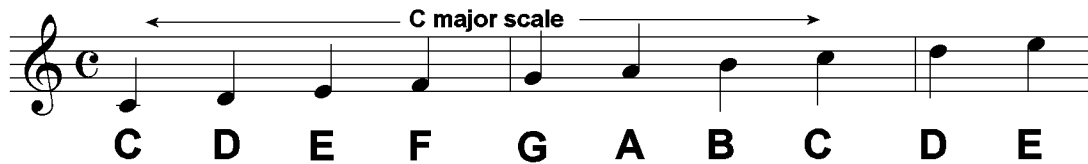


Be aware that the key of E natural minor also has just one # and that sharp is F#. When you see a key signature written with an F# only, you could be in the key of G major or E natural minor. To properly determine whether you were in the key of G major or E minor, you would then need to look at the chord structure of the tune. Generally speaking, the first and last chord of a tune will give away the key of the song. If the song has one F# in the key signature and the first and last chord is an E minor, it's a good bet you are playing in E minor. You have now learned how to determine how many and which notes are sharped or flatted in any major or minor key. The problem now is that you need to work out all this information and memorize it so that you can recognize what key you are playing in when you see a key signature. Here's a little easier way. Just like when I was a kid you are going to have to memorize this information. The difference is that you know why each key has this many flats or that many sharps.

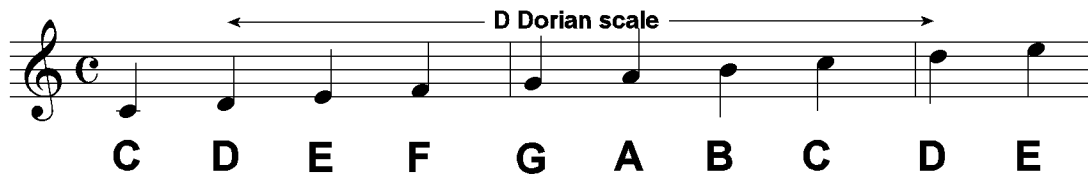
Major	Minor	Sharps	Flats
C	A	0	0
G	E	1	
D	B	2	
A	F#	3	
E	C#	4	
B	G#	5	
F#	D#	6	
C#	A#	7	
F	D		1
Bb	G		2
Eb	C		3
Ab	F		4
Db	Bb		5
Gb	Eb		6
Cb	Ab		7

## Other Diatonic Scales

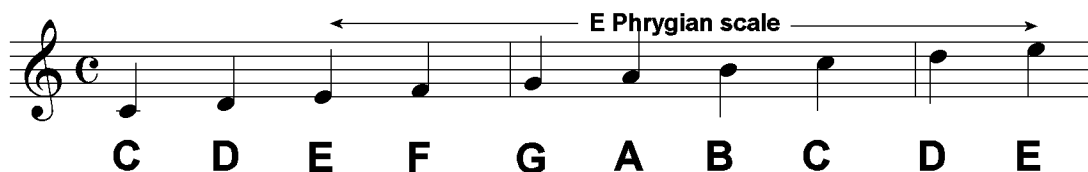
As we have seen, the major (Ionian) and the natural minor (Aeolian) scales are closely related. There are other diatonic (seven note) scales that are also closely related to the Major scale. If we write out a C major scale, it would look like this;



Now lets start on the second note (D) of the C major scale and move through the same notes up one octave to a D. These notes spell a Dorian Minor scale.



If we start on E of the C major scale and travel through the scale up an octave we then spell the Phrygian scale.

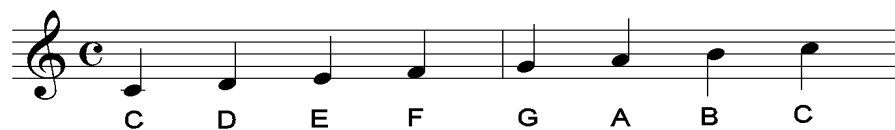


The reason the quality or sound of the scale changes as we start and end on a different degree or place in the scale is that we are changing the order of the intervals between the notes of the scale. Remember that a major scale sounds major because of the order of the intervals 2, 2, 1, 2, 2, 2, 1. If we change that interval to start on the second note and end up an octave on the second note, the intervals look like this; 2, 1, 2, 2, 2, 1, 2. It is these intervals in this order that describe a Dorian minor scale. If we were to lay out all the diatonic scales in order, they would look like this;

**C (Ionian) Major scale**

2, 2, 1, 2, 2, 2, 1

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

**D Dorian (minor) scale**

2, 1, 2, 2, 2, 1, 2

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

**E Phrygian (minor) scale**

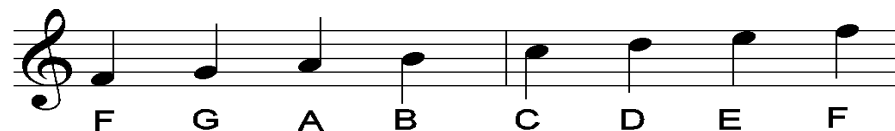
1, 2, 2, 2, 1, 2, 2

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

**F Lydian (major) scale**

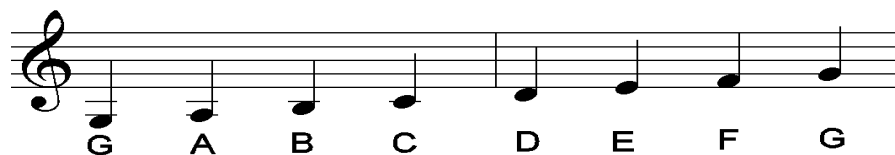
2, 2, 2, 1, 2, 2, 1

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

**G Mixolydian (major) scale**

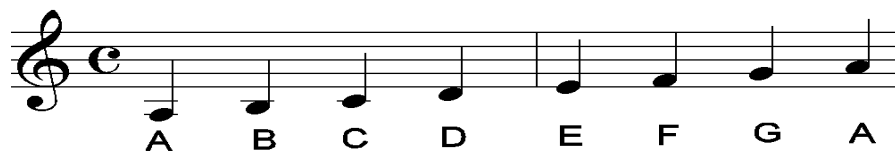
2, 2, 1, 2, 2, 1, 2

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

**A (Aeolian) (Natural Minor) scale**

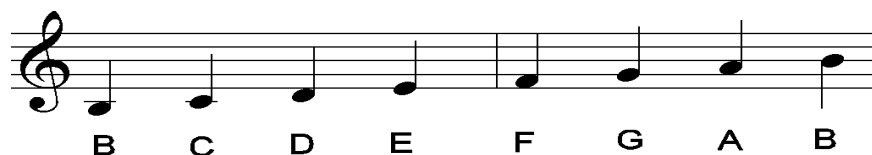
2, 1, 2, 2, 1, 2, 2

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

**B Locrian (diminished) scale**

1, 2, 2, 1, 2, 2, 2

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



Notice that **all the scales are formed using the same notes**. This is very important to remember. All the modes (diatonic scales) are related. When we learn how each mode is used and which chords are related to each mode, we will have the core of information that describes the basics for music theory and its use.

There is a one to one relationship between each diatonic mode and the chord it represents in the scale.

When you build a chord (triad) on the first note of a major scale, you get a major chord. If you build a chord on the first note of a Dorian minor scale (or the second note of a major scale), you get a minor chord.

It is the same with all the other diatonic scales. Each has its own chord it functions with. This may sound confusing, but it explains where each chord comes from and how to use the scales to play over each chord within a scale framework.

Keep in mind that it is the order of half steps (or frets) that determine the quality (sound) of the scale being played. Each of these scales has a purpose in music. Some are used more than others for melody writing, chord forming and soloing. In this book we will spend the most time looking at the more commonly used scales; the Major (Ionian) scale, the Dorian minor scale, The Mixolydian scale and the Natural minor (Aeolian) scale.

## Diatonic Scales And Their Use

All of the Diatonic scales have their use. For our purposes, we will focus first on the Major, Dorian, Mixolydian and Natural minor scales. Notice that each of the fingerings I have included (block scale forms) start with the root note (Key tone) on the 6<sup>th</sup> string for easy identification. Practice the fingerings exactly as I have them written out. Pay particular attention to the position of the root notes for each of the scales and their position within the block scale forms. I have written out these block forms for a reason. When you have learned each of the forms, you will be able to combine all of them to form all of the scales covering the entire fingerboard. This is a tremendous amount of knowledge with very little memorization involved. Take advantage of this information exactly as I have provided it to you. I have taken the guesswork out of learning Diatonic scales and laid out the quickest way to memorize them.

### Using the Diatonic scales with the CD

Once you have learned each scale, you should immediately put your newfound knowledge to use. I have recorded common chord progressions on the CD for you to practice your scales over. I cannot stress enough how important it is to ***use your scales as much as possible***. If you just learn the block forms and do not practice them, you will find it impossible to use them when you need to solo or improvise. Knowledge that is not used is not truly knowledge; it is an unfamiliar acquaintance. Practice playing your scales with the jams on the CD until you are absolutely bored and then practice them more. You will find that when you are tired of playing “the same old things” you will have to become creative with your scales to keep interest in practicing. It is during this process that you will make the most growth.

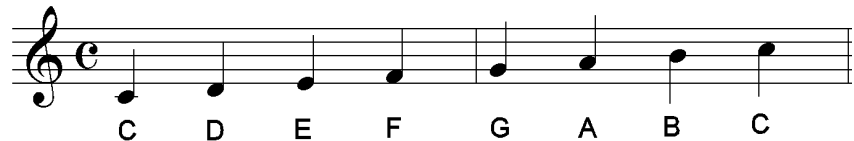
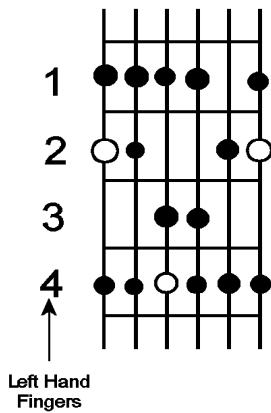


## The Major Scale (Ionian)

The major scale is the most common scale in the western hemisphere. It is from this scale that all other scales are built and compared. For example, when we talk about a Dorian minor scale, we say that the Dorian scale has a flatted 3<sup>rd</sup> and 7<sup>th</sup> degree of the scale as compared to the Major scale. Often the last part of that sentence would be left out and the Dorian scale would be described as having a flatted 3<sup>rd</sup> and 7<sup>th</sup>. It is assumed that you are comparing the Dorian with the Major scale. So you can see that the Major scale is widely used as a reference point when describing other scales. Below is the Major scale written in the key of C. I have also included a box fingering for the guitarist to learn. It is important to learn this fingering even if you know another fingering for the C major scale. The reason for this will become apparent very soon.

### Major scale uses:

- Soloing or melody writing over Major chord progressions. A Major chord progression is a set of chords that stay in one key and that key is a major key.
- Soloing or melody writing over most Major chord forms including; Major, Major 7<sup>th</sup>, Major 6<sup>th</sup>, Major 9<sup>th</sup>, Major (add 9), Major 6/9, sus2, sus4

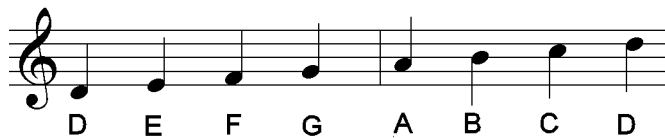
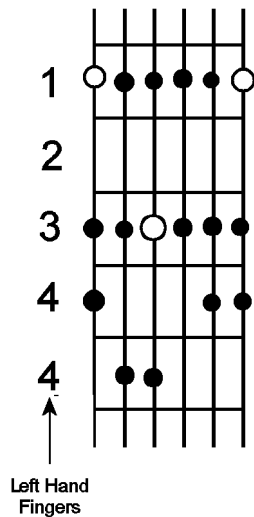


## The Dorian Minor Scale

The Dorian scale has many uses in melody writing, soloing and in chord forming. The scale is widely used in Rock, Jazz, Classical, and Pop music. I have included a fingering of the Dorian scale below for guitarists. Memorize the scale as it is laid out. Again, the reason for this will become apparent very soon.

### Dorian scale uses:

- Soloing or melody writing over ii-iii or ii-V chord progressions. The ii-iii refers to the second (ii) chord and the third (iii) chord of a major key. In the key of C Major, the ii chord would be the chord built on the second note of the key, D. Since the roman numerals are written in small case (ii) then you know that the chord will be minor. So a ii-iii chord progression in C major would be the chords D minor followed by E minor. Likewise a ii-V chord progression in C major would be a D minor followed by a G major chord. More on this subject in the section on chords.
- Soloing or melody writing over either Minor 6 or Minor 6/9 chords.

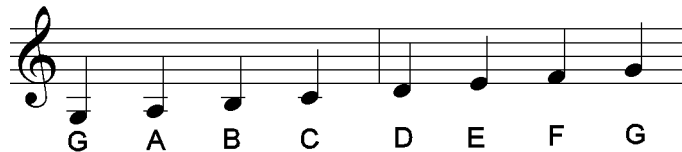
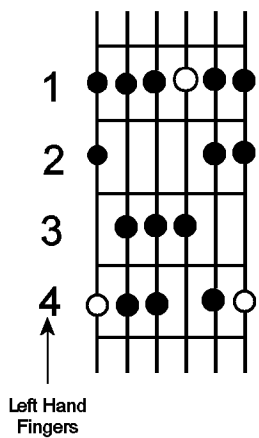


## The Mixolydian Scale

The Mixolydian scale is used primarily in Blues, Jazz, Funk, Pop and Rock music. It is a scale built on the 5<sup>th</sup> degree of the Major scale and as such is used to solo or write melodies over the V chord. The V chord is a chord that is built on the fifth note of a major or minor scale. The function of the V chord is to provide movement and to return (resolve) to the next chord (often the I (one) chord).

### Mixolydian scale uses:

- Soloing or melody writing over V or V7 cycles of chords.
- Soloing or melody writing over any 7, 9, 11, 13 or 7sus4 chord. The scale can be altered to accommodate any altered V chord such as V7 b9 or V9 #5 etc



A Dominant chord is any chord that ends in a 7,9,11,or 13. The chord must not specify that is it Major or Minor.

These chords **ARE** Dominant chords:

C7, Gb9, B13, E11, F7sus4, A7(b5)

These chords **ARE NOT** Dominant chords:

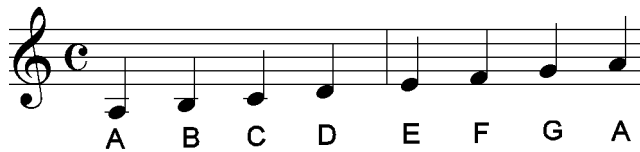
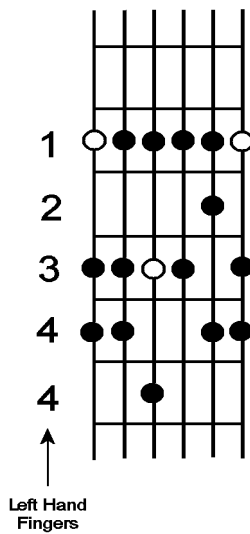
Cmaj7, Gbmin9, Bmaj7(add13)

## The Natural Minor (Aeolian) Scale

There are many different minor scales, yet the natural minor scale is probably most used in contemporary music. It is used in a wide range of styles as a vehicle for soloing and melody writing.

### Natural minor scale uses:

- Soloing or melody writing over most minor chord progressions. A minor chord progression is a set of chords that stays in one key and that key is a minor key.
- Soloing or melody writing over most minor chords including, minor, minor 7, minor 9, minor add9, sus2, and sus4.



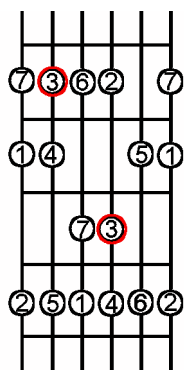
## More Diatonic Scales

As you saw under “Other Diatonic Scales” there are more diatonic scales than the four we just discussed. These scales are the Phrygian, Lydian and the Locrian. Each scale has it’s own sound and place in improvisation and melody creation.

I have not included specific block fingerings for each of the following diatonic scales. Since all of the diatonic scales use the same notes, (see “Other Diatonic scales”) we can use the block form we already know to form these scales. As you have already learned, each of the following scales starts on a different degree (number position) of the major scale. To play the scale you will need to find that number (note) in the major scale block form and start the scale from that position. In other words, the Phrygian scale, which starts and ends on the 3rd note of the major scale, would be played starting and ending on the 3rd note. The 3rd of the major scale (the red circle) in this case would become the root of the Phrygian scale.

### The Phrygian Scale

The Phrygian scale is a minor scale by it construction. The sound of the scale is “Spanish” in nature and lends itself to the creation of such a sound.



#### Phrygian scale uses:

- Soloing or melody writing when a Latin or Spanish sound is desired.
- Can be used as a substitution for any minor scale for a variation in flavor.



## Chords

Chords are basically built from scales. There is a one to one relationship between chords and scales. For each chord there is a scale that was used to develop that chord. The most common chords are built from either major (Ionian), minor (Dorian) or Mixolydian scales. The most common chords are Major, Minor, or Dominant. The function of each chord is as follows;

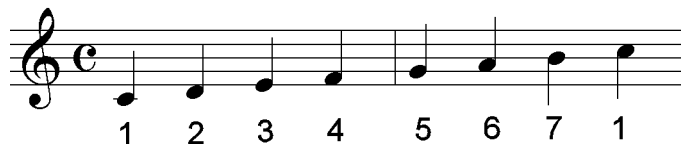
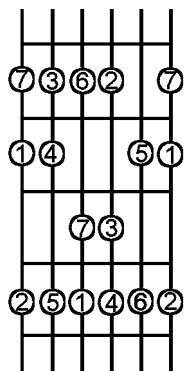
- Major chords are happy sounding.
  - This is not really a function, but does describe the feeling of the chord.
- Minor chords are sad sounding.
  - Again, this is not a function, but a description of the sound of the chord.
- Dominant chords want to resolve.
  - Dominant chords have a direction implied when played. They are essentially a major chord with a b7 added to provide tension. The Mixolydian scale is an Ionian (major) scale with the 7<sup>th</sup> flatted. Dominant chords are the V (see roman numeral chords) chord of a major or minor key and provide resolution back to the I (or i) chord.

## How to make any chord

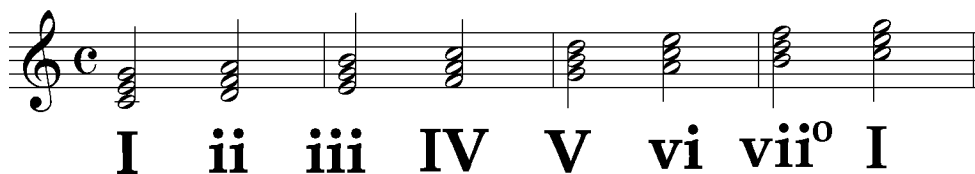
Did you ever run into a chord that you had no idea how to form? In the chapter on Diatonic scales we learned block forms for creating basic scales. In this chapter, we will learn how to use the same block scale forms to create any chord you need, anywhere on the fingerboard. We will also learn the Roman numeral shorthand for describing chords within a specific key.

## Roman Numeral Chords

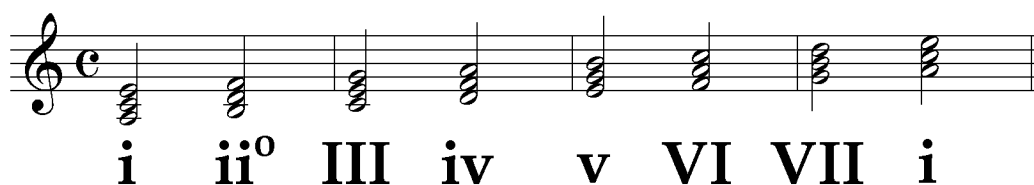
It is common for musicians to describe chords using roman numerals. You often hear someone say, "This song is basically a one (I), four (IV), five (V) progression in G major" or whatever key. The simple fact is that they are describing the placement of certain chords within a specific key. Let's look at the C major scale again.



You can see that it is normal to number the notes according to their placement or order within the scale. In this case we use the Arabic numbers 1, 2, 3, 4, etc. When describing chords within a scale, we use roman numerals that represent 1, 2, 3, etc. On top of this we capitalize the chords that are major and small case the chords that are minor. In the key of C major, the chords are C major, D minor, E minor, F major, G major, A minor, B diminished, and back to C major. In roman numerals chords in C major would look like this:



Notice that the seven (vii) chord has a small “o” after it describing the chord as diminished. If we were to play a song in the key of C major, and I said it was a “ii, V, I” progression, I would be telling you that the chords were D minor, G major and C major. This may seem confusing, but this is essentially musical short hand and is commonly used. Chords in minor keys are generally built on either the harmonic or natural minor scale. For our purposes, we will work with the natural minor scale since it is used commonly in contemporary popular music styles. Here are the Roman numeral chords built on an “A” natural minor scale:



The chords are; A minor, B diminished, C major, D minor, E minor, F major, G major and A minor. The function of the V chord in any major or minor key is to provide a vehicle for resolution (the V chord wants to resolve). In a minor key the v chord is minor and does not provide this function. In this case, the v chord must be made major (dominant) so that it can be used to resolve back to the i chord.

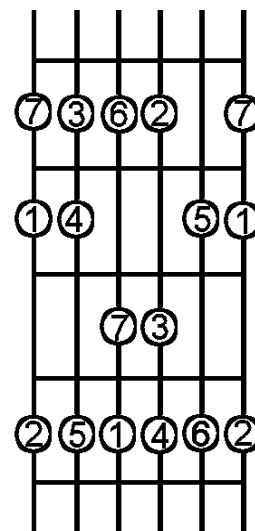
To remember this concept, learn the following;

- Roman numerals in music represent chords.
- Capitals are major chords, small case are minor chords.
- Any Arabic number written after the roman numeral alters the chord in a specific way (*see next section*)
- The V (or v) chord is a Dominant chord.



## Major Chord Forms

Let's start by looking at the Major scale. This time we will number each note of the scale according to it's position within the scale. Note that when we go past the octave, the root can be either 1 or 8 and the 2<sup>nd</sup> can also be the 9<sup>th</sup> etc.



From the major scale we can build all of the following chords. Each chord includes all of the notes (numbers) that follow it.

Major	1	3	5		
Major 7 <sup>th</sup>	1	3	5	7	
Major 6 <sup>th</sup>	1	3	5	6	
Major 9 <sup>th</sup>	1	3	5	7	9
Major add9	1	3	5	9	
Major 6/9	1	3	5	6	9
sus2	1	2	5		
sus4	1	4	5		

To use the above information, all you need to do is:

1. Decide on the key of the chord; "C"maj7, "A"6/9, "F#"sus2 etc.
2. Place the root note of the major scale on the key tone.
3. Pick out the needed numbers (notes) from the scale.

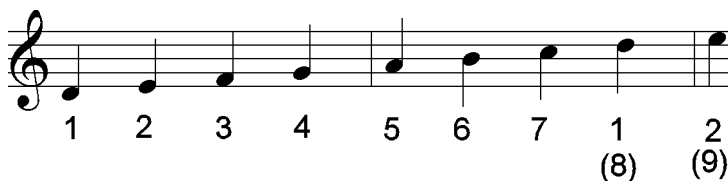
It is as simple as that. You may find that there are too many notes to play with your limited number of fingers. In that case you may omit a note. The most common note to omit is the 5<sup>th</sup>. Your ear tends to assume the 5<sup>th</sup> when hearing a chord. The next most common note to omit is the root or 1. This works particularly well when playing in a group and someone else (bass or piano etc.) is playing the root.

Lets try making a few chords. First lets try a G major chord. This would be played with the root of the scale on the 3<sup>rd</sup> fret. Now find the 1, 3, and 5 notes. You see that there are many options. ***Guitarists often do not play all of the strings all the time.*** You need not have the chords in this exact order either.

You could play 1,3,5 or 3,5,1, or 5,3,1 or whatever. Changing the order is called “voicing” the chord and gives the chord a particular feel or sound. Whenever you figure out a chord, try different voicings until you find one you like. As you improve you will notice that different guitarists prefer different voicings to their chords. It is one of the things that give a guitarist their own sound. Let’s try another chord, Bb6/9. Don’t get nervous, it is easy. First find the root note Bb on the 6<sup>th</sup> string. It is on the 6<sup>th</sup> fret of the 6<sup>th</sup> string. Place your root note of the major scale there. Now locate the notes of the chord in the block major scale pattern. Here are just a few ways the chord could be voiced.

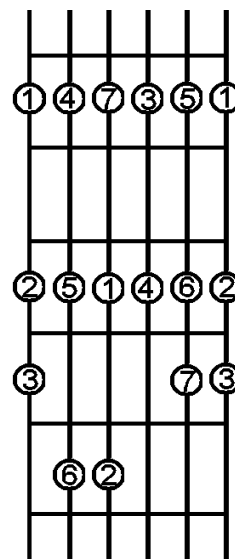
## Minor Chord Forms

To figure out minor chords use the Dorian minor scale. Here I have written out the Dorian minor scale numbering each of the notes up to the 9<sup>th</sup> (also the second).



From this scale we can build all of the following chords.

Minor	1	3	5		
Minor 7 <sup>th</sup>	1	3	5	7	
Minor 6 <sup>th</sup>	1	3	5	6	
Minor 9 <sup>th</sup>	1	3	5	7	9
Minor add9	1	3	5	9	
Minor 6/9	1	3	5	6	9
Sus2	1	2	5		
Sus4	1	4	5		

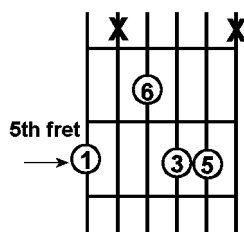
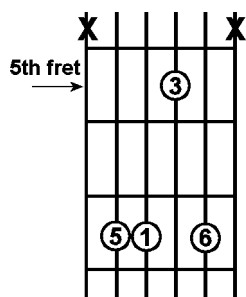


Note that the sus4 and sus2 chords can be built from either a Major or Dorian minor scale. This is because the 3<sup>rd</sup> of the chord (3) has been omitted to form these two chords. It is the 3<sup>rd</sup> of the chord that determines whether a chord is major or minor sounding.

To use the above information, all you need to do is:

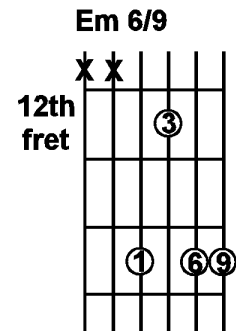
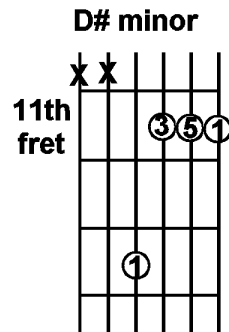
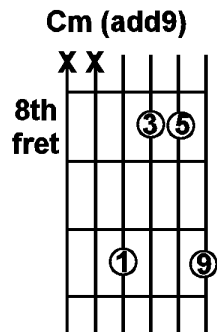
1. Decide on the key of the chord; “C”min7, “A”min6/9, “F#”sus2 etc.
2. Place the root note of the Dorian minor scale on the key tone.
3. Pick out the needed numbers (notes) from the scale.

Using the above information, try fingering an A min6 chord. Remember that you can omit the 5<sup>th</sup> if you need to. Also, try to remember that you do not need to put the notes (numbers) in the order listed; they can be in any order. Here are just a couple of ways to finger A min6 using the Dorian scale.



Try a few more; C min(add9), D#min and E min6/9. Find a voicing you like and write it down.

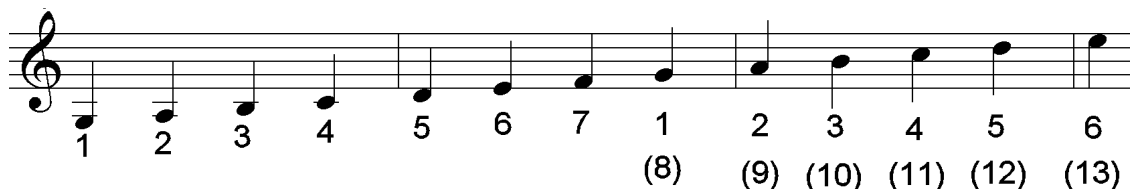
Here is one of each.



Because of their position in the fingerboard, the D# minor and Em6/9 chords are impractical to play. In the section on “**How to play any chord anywhere on the neck**” we will discuss how to find better places to finger these chords.

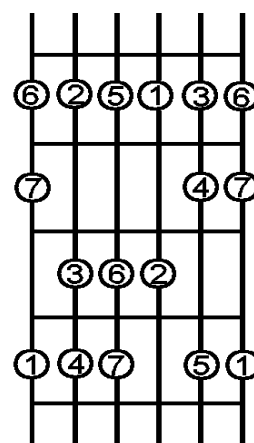
## Dominant Chord Forms

A Dominant chord (also known as a V chord) is any chord that is followed by a 7, 9, 11 or 13 minus the Major or Minor definition; for instance C7, Db13, G11 etc. The Mixolydian scale is used to form Dominant chords. This time we will label each note of the scale all the way to the 13<sup>th</sup>. Dominant chords often add extensions all the way to the 13<sup>th</sup>.



From this scale we can build all of the following chords.

V7	1	3	5	7	
V9	1	3	5	7	9
V11	1	3	5	7	11
V13	1	3	5	7	13
V7 <sub>sus4</sub>	1	4	5	7	



Dominant chords are often altered in some way. It is common to find 7 (b5) or 7 (#9) chords. To accommodate each of these chords, all you need to do is alter the number in the block scale form to what the chord calls for. For instance, to spell a C 7 (b9) chord you need to Spell a C 7 chord 1, 3, 5, 7 and add the b9 (or b2). It is as simple as that. The chord tells you which notes (numbers of the scale) to alter. Lets try a few. First try a D 13. Find a voicing that you like. Now try a Bb 7 chord. Add to the Bb 7 a b9 (flatted ninth). Now sharp the fifth of the chord (#5). You are now playing a Bb 7 (#5 b9). Even complex chords are easy to finger once you understand how scales are laid out. As with the Major and Minor chords, you may omit the 5<sup>th</sup> of the chord if you need to.

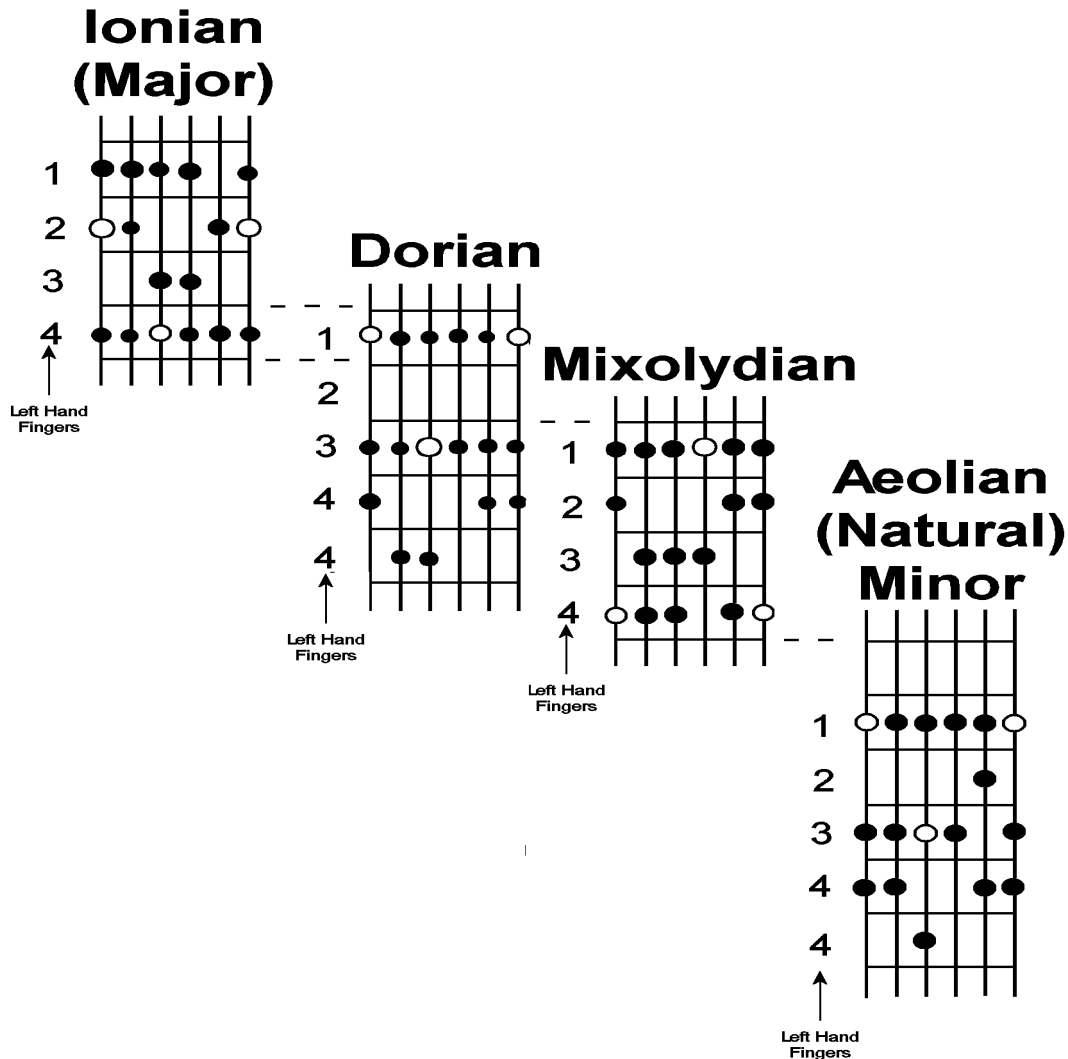
Now it is time to apply this knowledge to the entire neck of the guitar.

## How to make any chord *anywhere on the neck*

**Read through this section carefully.** In this section we will tie all the scales you have learned together into one large unifying block scale form that covers the entire neck. It is this information that will allow you to play solos equally well in any position of the neck as well as forming chords in any position.

At this point you have learned a single block position for each of the Major, Dorian minor, Mixolydian, and Natural minor scales. Now we will put them together in a cohesive unit. As you see below, I have laid out the block scale forms with overlapping frets.

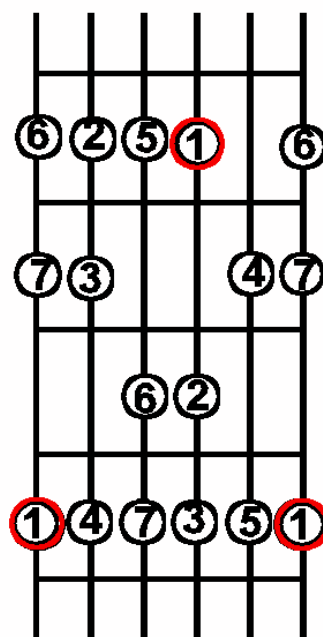
### All four block scale forms joined and covering entire fingerboard



As you learned under “Other Diatonic Scales”, each of the scales are essentially the same Major scale starting on a different note of the scale. In a C Major scale, the notes are “C” to “C”. Using the same notes, the D Dorian scale equals the notes “D” to “D”. E Phrygian is “E” to “E” and so on. Using this logic, if you were to play the C Major block form but start on D (the 2<sup>nd</sup>) and play up an octave to D (the 2<sup>nd</sup>) you would then be playing a D Dorian scale. Starting on G (the 5<sup>th</sup>) and playing up the octave to G (the 5<sup>th</sup>) spells a G Mixolydian scale. Using this information, you can use a Major scale form to spell any Minor or Dominant chord. This is what the Major scale block would look like as a Dorian scale.

**Dorian scale numbered and superimposed on top of a Major scale block form.**

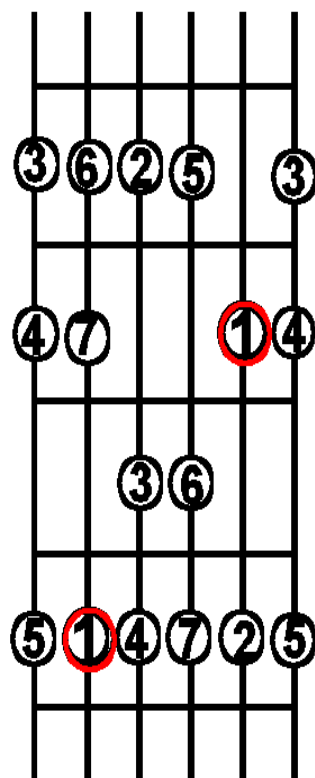
Root note= ○



Try and figure out an A min7 chord. A Dorian = G Major. Use the G Major scale and start out the Dorian Scale on the second note. There you go, you have the notes for any A minor chord you need. Let's try the same thing on a Dominant chord. The Mixolydian scale starts on the 5<sup>th</sup> of the Major scale. Rewrite the major scale with the 5<sup>th</sup> of the scale as the root of the Mixolydian scale. In other words label the 5<sup>th</sup> of the Major scale as 1, the 6<sup>th</sup> as 2 etc. You are now writing the Mixolydian scale in a Major block scale form.

### Mixolydian scale superimposed on Major block scale form

Root note= ○



As you can see, any and all of the block scale forms you have learned can be used to build any diatonic scale. As an exercise, you should now rewrite all of the block scale forms with the Major scale root. When you are done with that, write all of the block scales forms with the Dorian scale root. Do the same thing for the Mixolydian and the Aeolian (natural minor) scales. When you are done, you should have block forms that look something like this.



# Ionian (major) Scale

entire fingerboard

Root Note= ①

Left Hand  
Fingers

The diagram illustrates the Ionian (major) scale across the entire fingerboard, showing four positions. The root note is circled in red in each position. The positions are connected by dashed lines, indicating they are part of a continuous scale.

**Position 1 (Left Hand):**

- 1: 7 3 6 2 7
- 2: ① 4 5 ①
- 3: 7 3
- 4: 2 5 ① 4 6 2

**Position 2 (Left Hand):**

- 1: 2 5 ① 4 6 2
- 2:
- 3: 3 6 2 5 7 3
- 4: ④ ① ④
- 4: 7 3

**Position 3 (Left Hand):**

- 1: 3 6 2 5 7 3
- 2: ④ ① ④
- 3: 7 3 6
- 4: 5 ① ④ 2 5

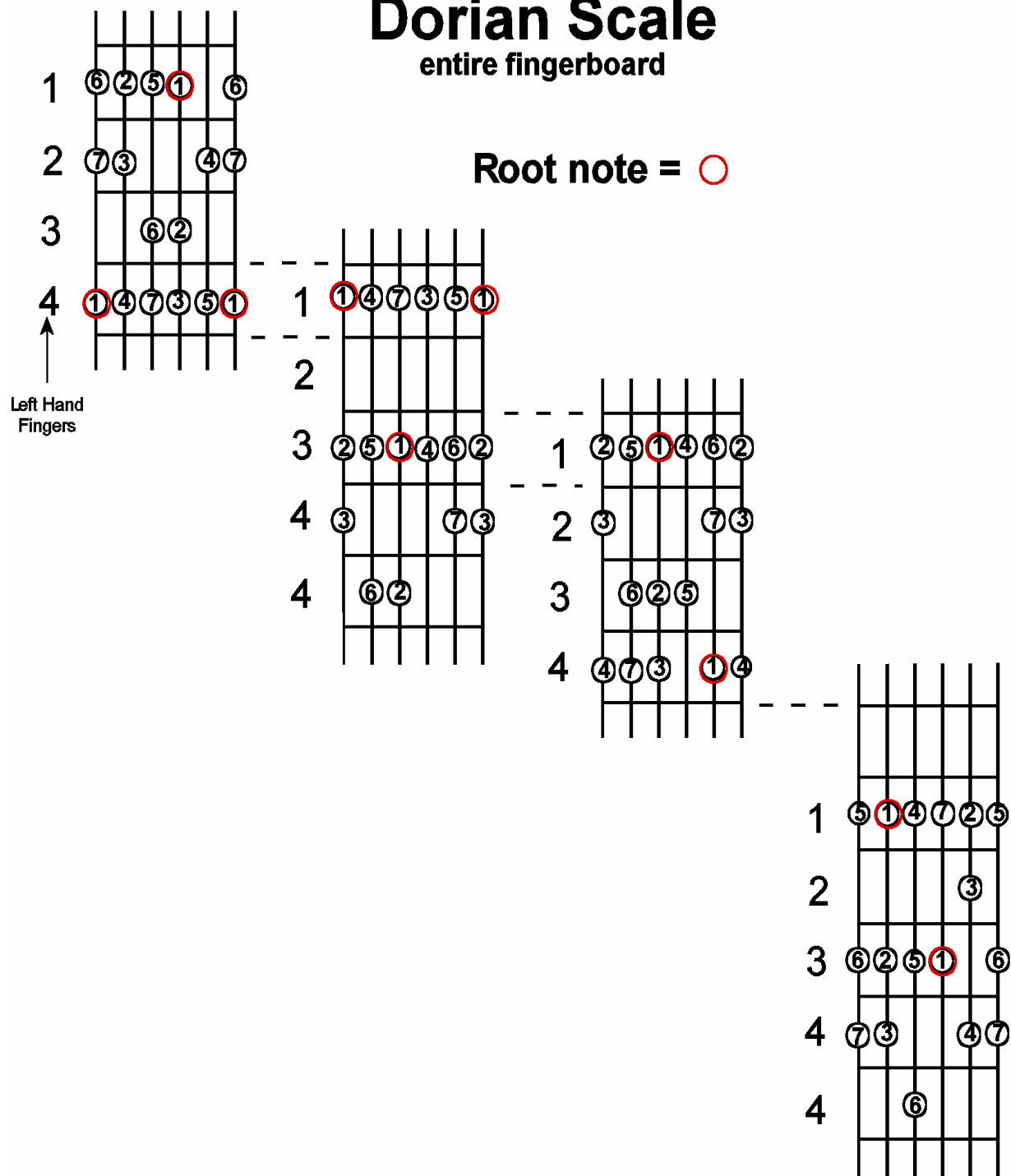
**Position 4 (Left Hand):**

- 1: 6 2 5 ① 3 6
- 2: ④
- 3: 7 3 6 2 7
- 4: ① ④ 5 ①
- 4: 7

# Dorian Scale

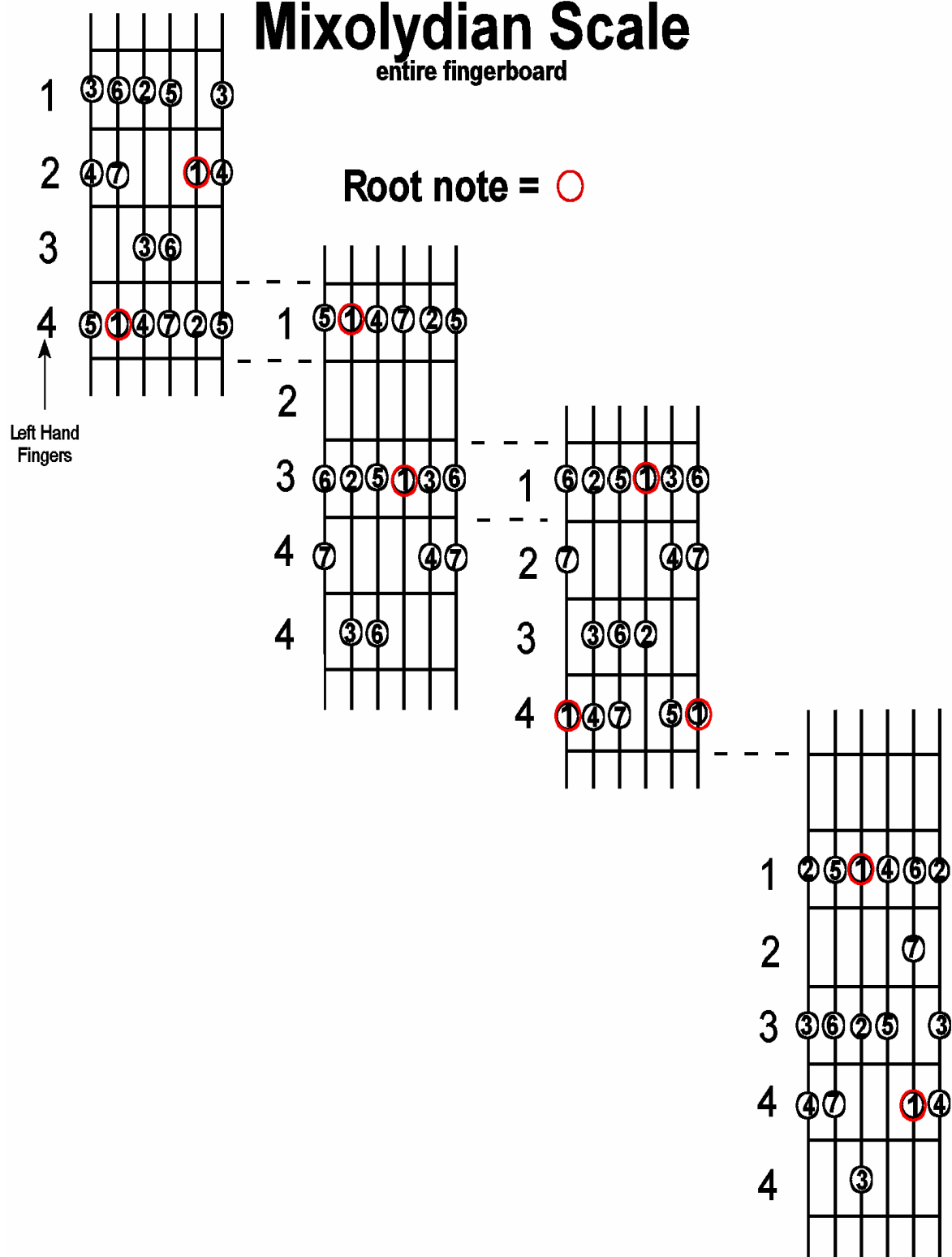
entire fingerboard

Root note = ○



# Mixolydian Scale

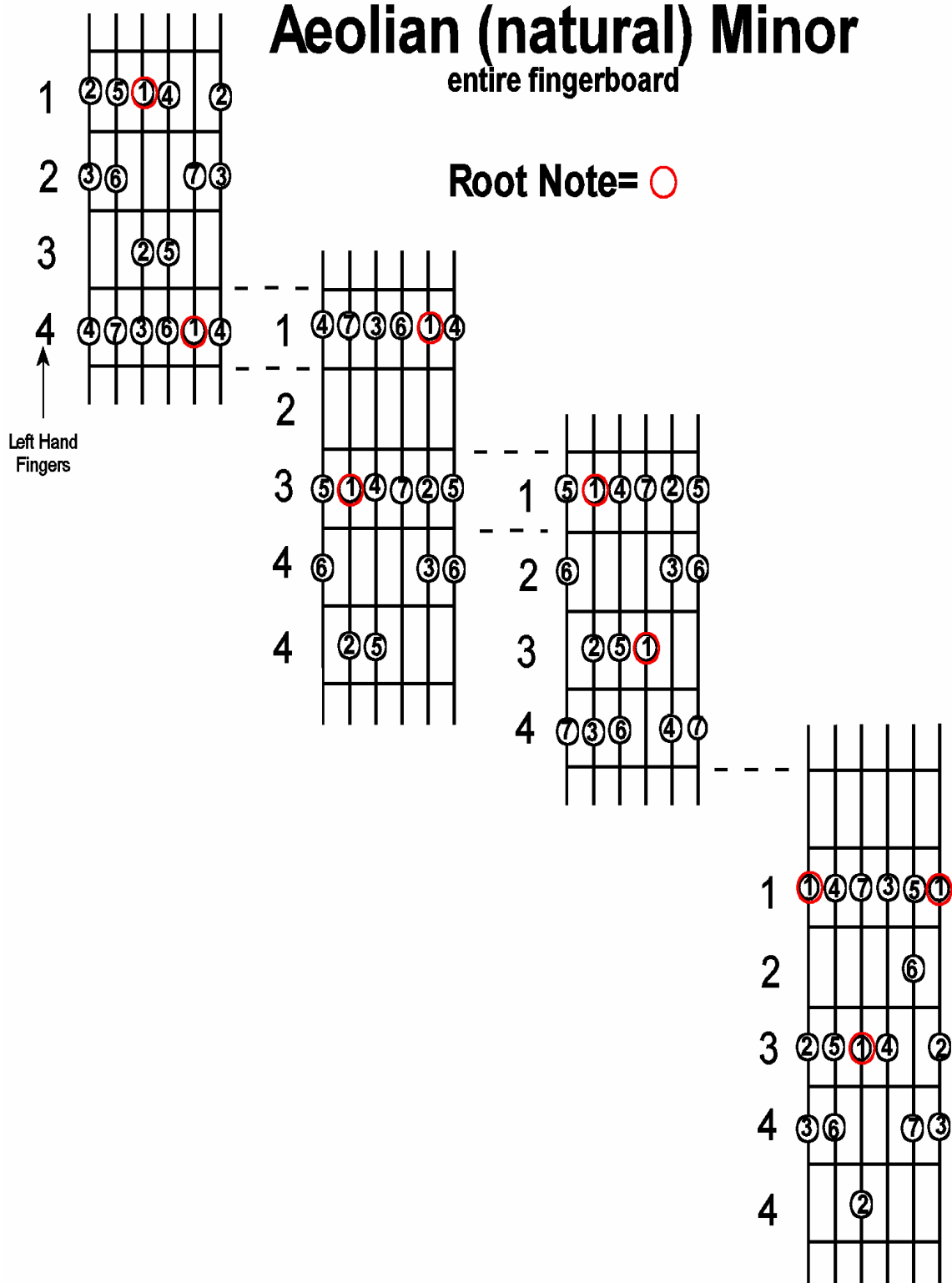
entire fingerboard



# Aeolian (natural) Minor

entire fingerboard

Root Note= ○



Now that we know the scales over the entire neck, lets try to use some of our newfound knowledge. Write out a chord form for the chord Cmaj9 in each of the 4 block scale forms you have learned. Remember that there are many different voicings (inversions) that can be used. Try the same thing for Bmin7 and D9. With the information you wrote out above, this should be a simple task of picking out the correct numbers that apply to each chord. If you have questions, reread the section on “How to make any chord”.

## Pentatonic Scales

Pentatonic means five (penta) tone (tonic). So a pentatonic scale is literally a five tone (or note) scale.

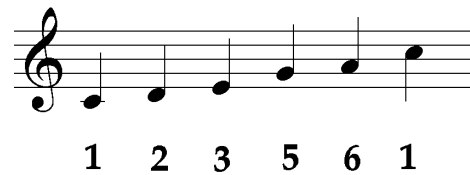
There are two basic scales that are used when we talk about pentatonic scales; the major pentatonic and the minor pentatonic scale. These two scales are widely used in rock, blues, pop, jazz, country and practically all styles of contemporary music.

### The Major Pentatonic Scale

The major pentatonic scale is used in soloing and melody writing in a wide variety of music styles. You can hear its use in Allman Brothers tunes and countless pop songs. The scale has a decidedly upbeat, happy sound.

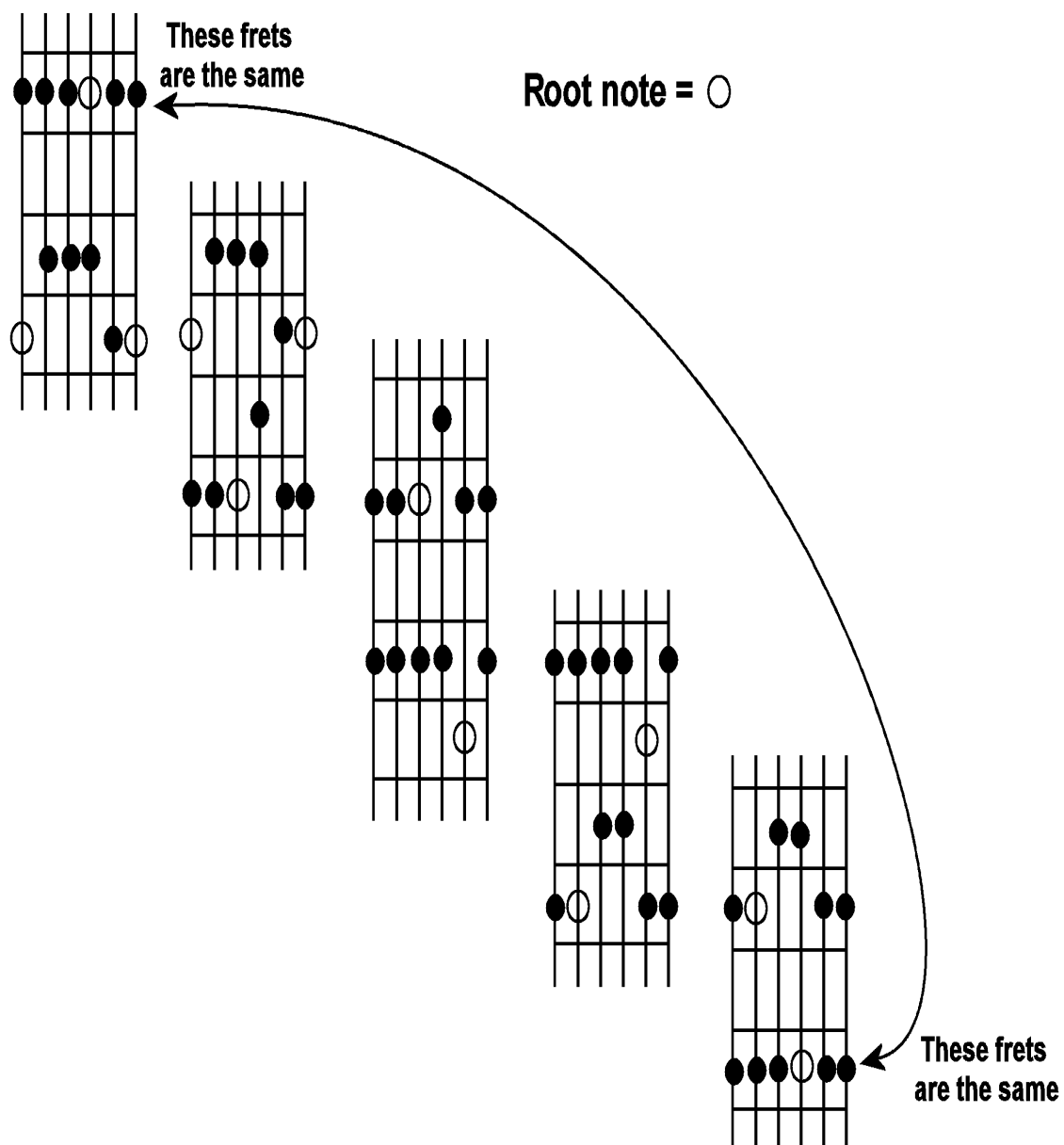
Major Pentatonic scale uses:

- Soloing over most major chord progressions
- When trying to recreate a specific stylistic mood or sound i.e. southern rock etc.



I have included 5 block scale forms that cover the entire neck for the major pentatonic scale

# Major Pentatonic scale

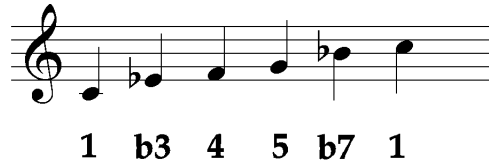


## The Minor Pentatonic Scale

The minor pentatonic scale is used in soloing and melody writing in a wide variety of music styles. It is most prevalent in rock music and has the nickname of the “Rock” scale. When used over a major chord progression, the scale has a “harder” rock sound. This scale is sometimes mistakenly called the “Blues” scale.

Minor Pentatonic scale uses:

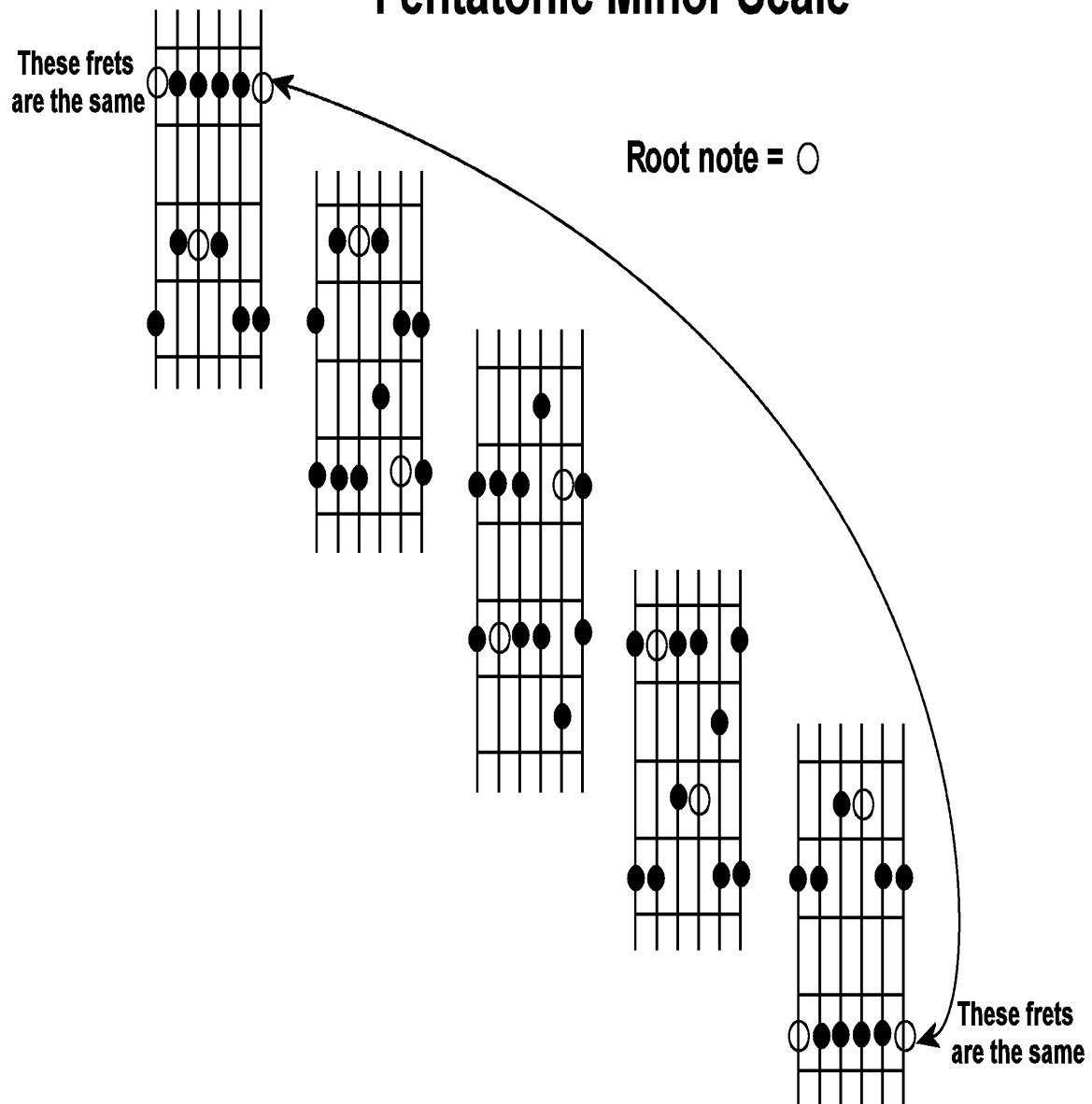
- Soloing over minor chord progressions
- Soloing over major chord progressions (for a rock sound or feel)



I have included 5 block scale forms that cover the entire neck for the minor pentatonic scale.



## Pentatonic Minor Scale



You will notice that both the major and minor pentatonic scales use exactly the same block scale forms to produce the scales. This is because the two scales are relative major and minor scales. In other words, the C major pentatonic scale contains the same notes as the A minor pentatonic scale.

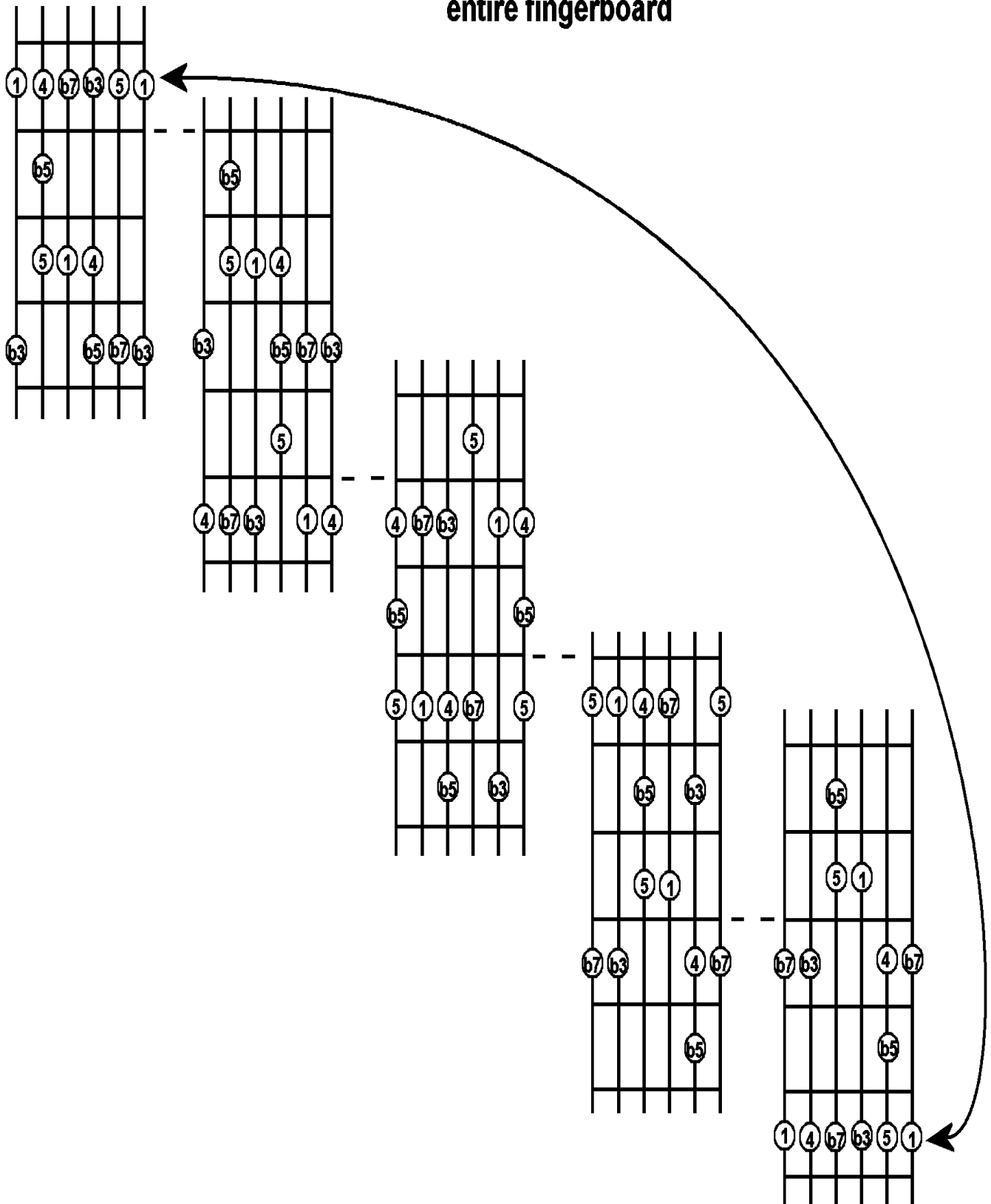
## The Blues Scale

The blues scale is essentially a minor pentatonic scale with a flatted fifth (b5) added to the scale. The scale contains all of the “blue” notes; these are the flatted third (b3), the flatted fifth (b5) and the flatted seventh (b7). Remember that when we refer to these flatted notes, we are comparing them to a plain major (Ionian) scale. If we were in the key of C major, the “b3” would be Eb, the “b5” would be Gb and the “b7” would be Bb. Here is how the Blues scale lays out over the entire neck in 5 block positions.



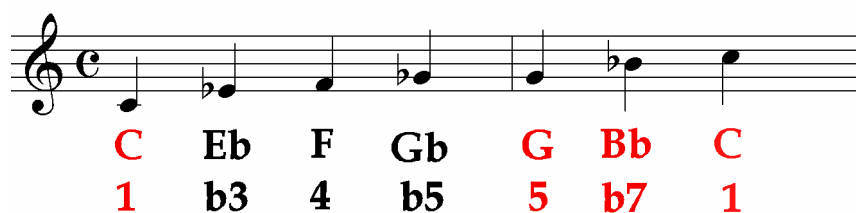
# Blues Scale

entire fingerboard



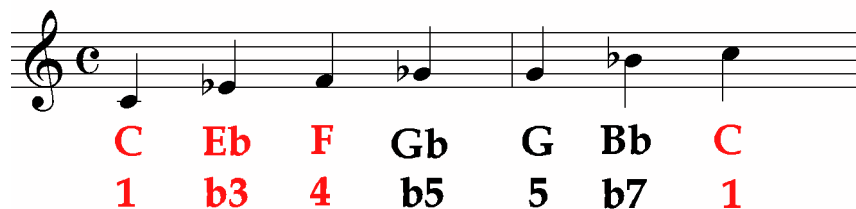
The blues scale is used just as you might think; to solo over “the blues”. The blues most often incorporates 3 chords in a basic progression. The chords used are the “I7”, “IV7” and the “V7”. Below and on the CD I have laid out a typical 12 bar blues for you to practice the blues scale over. This scale is primarily used as a single solution for playing the blues; that is to say you play the blues scale in the same key as the “I7” chord. The reason this works, is that the notes in the blues scale include notes from each of the “I7”, “IV7” and “V7” chords. In the key of C Major, the chords would be; C7 (I7), F7 (IV7), and G7 (V7). The notes in a C blues scale are C, Eb, F, Gb, G, Bb. The chord notes that are included in the scale are as follows; C7= C+G+Bb, F7= F+C+Eb, G7= G+F.

### Chord tones for a I<sup>7</sup> chord



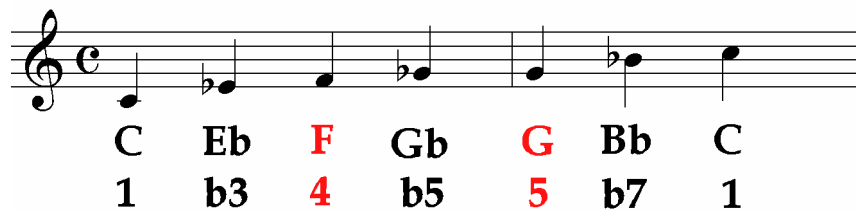
**C Eb F Gb G Bb C**  
**1 b3 4 b5 5 b7 1**

### Chord tones for a IV<sup>7</sup> chord



**C Eb F Gb G Bb C**  
**1 b3 4 b5 5 b7 1**

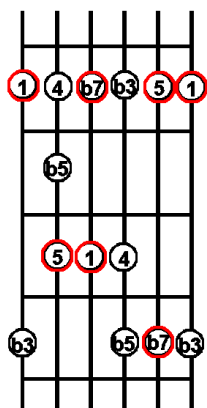
### Chord tones for a V<sup>7</sup> chord



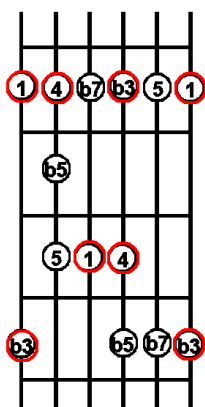
**C Eb F Gb G Bb C**  
**1 b3 4 b5 5 b7 1**

From this you can see that the blues scale includes chord notes from all three chords based in a blues progression. It is important to note when using a blues scale to improvise over a blues chord progression, you need to start and end phrases or licks on chord notes. I have analyzed the scale and it's relationship to the chords for you below.

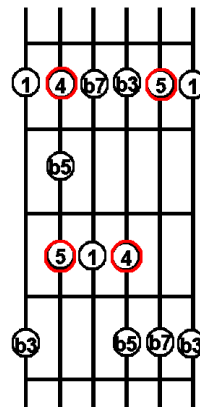
### Chord tones for the I<sup>7</sup> chord



### Chord tones for the IV<sup>7</sup> chord



### Chord tones for the V<sup>7</sup> chord



At this point you should work out the I7, IV7 and V7 chord tones for the entire neck. Use the blues scale covering the entire fingerboard as a reference point.

When using the blues scale for soloing, try using these basic concepts to get the best sound out of the scale.

- Start and end each phrase on a chord tone (note).
- Keep phrases short (4 to 8 notes)
- Repeat phrases to emphasize an idea
- Breathe between phrases

There will be much more on soloing concepts in the section on soloing.

## Soloing and Improvisation

Soloing can seem like a daunting task to the uninitiated. You are expected to create a fresh, interesting melodic line over a specific chord progression instantly without previous thought. Certainly, if you haven't practiced your scales to the level of simplicity, this will be a difficult task. For this reason, I implore you to go back and review all of your scales to the point where they are easy to play. The better your grasp of scales and their block positions on the neck, the easier it will be to create a wonderful solo. Like a painter that has practiced brush strokes to exhaustion before setting out on painting for the first time, you need to practice your scales. I have included recordings on the CD allowing you to practice scales with a background band playing. This should help in the tedious nature of scale practice, but you will need to practice with any and all songs that you hear; on the radio, on CDs or any recordings.

### Basic Improvisation Concepts

Music improvisation has been around for as long as man has existed; from the first human to beat out a rhythm to the present day geniuses of improvisation. My 3 years old son is always singing melodies that he makes up. When you whistle a tune you have never heard or tap a rhythm to no particular tune, you are improvising. There are two basic ideas on improvisation.

1. Taking a familiar melody and embellishing it. This is the concept of "Theme and variations" that has been around for centuries.
2. Creating a totally new melodic idea. This concept is a little more challenging and is the basic idea behind most popular improvisation heard nowadays.

#### Embellishing a melody

The concept behind melody embellishment is pretty straightforward. You need to be familiar with the melody to improvise over it. Using the melody as a basic structure of the solo, you improvise constantly returning to and referring to the melody. This is often the case in ballad soloing. In this instance the solo would start with a loose interpretation of the melody using grace notes and various ornaments. The result is a solo so close to the original melody as to leave the listener with the impression that they can hear the melody "in the solo". To practice this concept, you should learn a ballad along with its melody and practice just playing the melody. After you feel comfortable playing the melody, use the scales that correspond with the chords adding a few notes here and there to slightly change the melody. Try to keep the melody in your head all the while you are improvising. This is the basic idea behind melody embellishment.

#### Creating a new Melodic Idea

Most people are uncomfortable with the idea of creating a new idea. They try, but give up saying, "it just doesn't sound good", or "I can't seem to get my fingers to do what I hear", or "I have no idea what to

play.”. The problem stems from their lack of basic concepts that can help give them direction in their playing. Like doodling on a piece of paper or writing a short story, all you need to improvise are the tools and motivation. Read the next section carefully and follow the rules closely. You will find with practice that you can produce fine sounding coherent solos at will.

## Six Steps to a good solo

1. **Create a simple melodic idea.** Come up with a very simple short riff or lick (4 to 8 notes) to begin your solo. Keep it so simple that a deaf man can whistle it the first time you play it. I cannot over emphasize this. The general public are not seasoned guitarists and do not care if you play a complex first riff; in fact, they will ignore it as they will not understand it. Simplicity is the key.
2. **Repeat the idea.** You will need to repeat the idea so that the listener will catch on to your solo. The fact is that most people will not realize you are soloing until you repeat the idea. At that point half the room will look up and think, “I’ve heard that somewhere before”, not realizing that you just played it. How many times you repeat the idea is up to you. Many blues solos are based around a single idea repeated throughout the entire solo. A basic rule would be to repeat the riff one or twice.
3. **Elaborate on the idea.** Here is where it can get tricky. You definitely want to stay with the idea and not change it too much. Add a note to the riff or play all the same notes and change the rhythm slightly. Do not play a totally new riff! You will lose your listeners and sound like you don’t know what you are doing.
4. **Develop Tension.** This is where you will be building energy in the solo. Remember to try to stay true to the original idea or riff. Use pieces of the original idea to build tension following these concepts:
  - a. **Speed:** Playing faster will evoke tension in the ear of the listener.
  - b. **Pitch:** Higher notes sound more intense or energetic. Try playing the exact same riff on lower notes and higher notes; the higher notes sound more intense.
  - c. **Tricks:** Tricks include any playing that would be considered unusual or out of the ordinary. This include; excessive note bending, double stops, octaves, finger tapping etc.
  - d. **Melodic Tension.** This can be a very complex concept but in its simplest explanation, playing outside of the key causes this type of tension.
  - e. **Rhythmic Tension.** Just as melodic tension is caused by playing outside of a given key, rhythmic tension is caused by playing outside of a given rhythm. Simply stated, ignoring the time and feel (rhythm) of a tune can cause rhythmic tension.

5. **Climax the solo.** In life practically everything comes to a climax. It doesn't matter if we are talking about books or a movie or a meal or life itself. As with a wonderful meal or a life well spent, the climax should occur near the end of the time allotted. Think of the climax as where the tension has built to a peak and can go no further. Sometimes solos come to a climax and they end abruptly. This can work, but I more often prefer to finish with the next step.
6. **Release tension/ Repeat original idea.** You release tension by doing the opposite of step 4; slow down, lower your pitch, use no tricks, and play within the key and rhythm. If after all this, you can remember the original idea, repeat it here. This will tie the solo up into a nice little present for the listener. Above all, do not linger into an extended solo. You will just bore the listeners and come across like a solo hog.

Try your best to practice and follow all of the above rules. When all else fails remember these rules:

- You are playing to a public of non-musicians. Keep in mind that simplicity is the key.
- Keep all phrases short and simple. Only the most experienced players should try to create interesting long phrases that keep the attention of the listener.
- Breathe often. Put pauses between the phrases. If you continuously play riffs one after another without pausing, you will confuse and lose your listeners.
- Use repetition of phrases to capture your listener and tension to keep it interesting.

## Summery

We have covered much of basic contemporary music theory in this book. We have looked at concepts for transposing, working out any chord in any position, diatonic scales and their use, pentatonic scales and their use, the blues scale and basic ideas for improvisation. If you don't put this newfound knowledge to use, you will never really learn it. Use your head, heart and hands together as a unit and you will achieve any goal you want to reach. Remember all this but most of all, enjoy yourself.