

REALLY USEFUL GUITAR STUFF - PART 1

# PRACTICAL MUSIC THEORY

BY JUSTIN SANDERCOE



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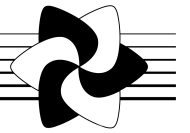
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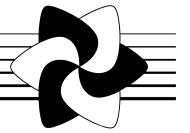
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## About This eBook, The Author And You

### **This Book**

Practical Music Theory has been written by a guitarist, for guitarists. It covers many music theory concepts in a practical way and shows you applications of the theory in ways that you should try to put into use as soon as you can.

After many requests I have decided to release this material as an ebook. If you did not buy this ebook (you "found" a copy on the internet) then please make a donation to the site if you find that it helps you. I try to keep my web site completely free and that is only made possible by the sale of my products and donations. So please don't abuse my generosity. Thanks for understanding.

### **The Author**

I began playing very young and started teaching from home in Tasmania while still at high school. Now after over 20 years of playing and teaching experience I hope that I can bring you a very easy and useful look at music theory. I have been using these techniques and applications with my private students for many years and they have evolved by continuous revisions and re-examination into what you will read on the following pages. I will be happy to try and help if you have any problems - best to ask on the forum on the web site ([www.justinguitar.com/forum](http://www.justinguitar.com/forum)) so you will not just get my opinion but that of many others using this book! You will probably find that other people have had the same questions, and I may have answered them already!

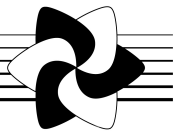
### **You**

By starting this course you will be entering a wonderful journey of understanding. I can't promise that it will always be easy, but if you apply yourself and try to think logically you will get there. It is important that you question yourself and all the theory all the way through - it is through this process that you will truly understand the concepts involved. Music theory is a little mathematical, but don't let it scare you - just take it one step at a time and make sure you are fully to grips with a concept before you move onto the next. The most important things to remember are:

- 1. If it sounds good, it is good.** Even if theory says something should work, if it doesn't sound good, it's not. Great music knows no theory.
- 2. Make music not theory.** Don't be a rocket scientist. Don't let theory get confused with making music. Music comes from the heart, theory from the head. Let the theory move from your head to your heart before you let it out :)

### **Thank You**

I would like to thank all of my students who acted as unknowing guinea pigs over the years. I would also like to thank all of my teachers over the years, particularly John McMillan who helped unlock much of the guitar's logic, Pete Whittard for great advice and friendship over many years. Thanks to the gang at The Guitar Institute for many interesting debates too. Also thanks to Trish (from the forum) for offering some great and funny suggestions from the student perspective, as well as spelling and grammar corrections. And lastly thank you - for being interested :) Also a big thanks to the forum moderators, Tom, Liev and Harps, who contribute a great deal to the smooth running of the place!



## Why and How?

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Music theory is a wonderful thing. At first it may appear to be complicated and confusing, but behind that rather hostile exterior is a wonderful key that can help open your musical mind and let you discover the music in you.

The guitar is a complex instrument. Unlike most instruments each note on the guitar can be played a number of ways (with exceptions of course). The top E note (open 1st string) can be played 5 ways. This makes the guitar more difficult to learn but also offers more choices. Learning the names of the notes all over the fingerboard is quite a task, but very important.

It has been said to me before that learning theory can affect your feel, take away the spontaneity and make you sound "theoretical". This is simply not true. Learning to improvise on a 12 Bar Blues for the first time is fairly straight forward if the minor pentatonic scale has been learnt well. That small piece of knowledge allows you to freely explore the sounds of the Blues. It also makes transcribing lots easier, because you already know where the sounds that you hear are found on the guitar neck. This is just one basic example, but learning theory makes almost everything easier and clearer.

I believe that it is a lack of transcribing (working out music by ear) that can lead to cold and stale playing. Those who try to learn *only* from books usually do not find the answers. Try to learn music by listening and understanding. This book will help you with the understanding but you have to do the listening all by yourself!

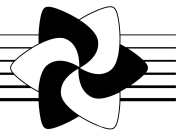
However, it is not essential to learn your theory, most guitarists that have not can name many "legends" that don't know any theory (or read music), but these are the exceptions. Most great players know theory - even if it is only in their ears!

Learning theory will enable you to learn faster and better. You should know that the majority of great guitar players know their theory inside out, and if you are interested in playing any jazz then it is imperative that you get it all 100% down.

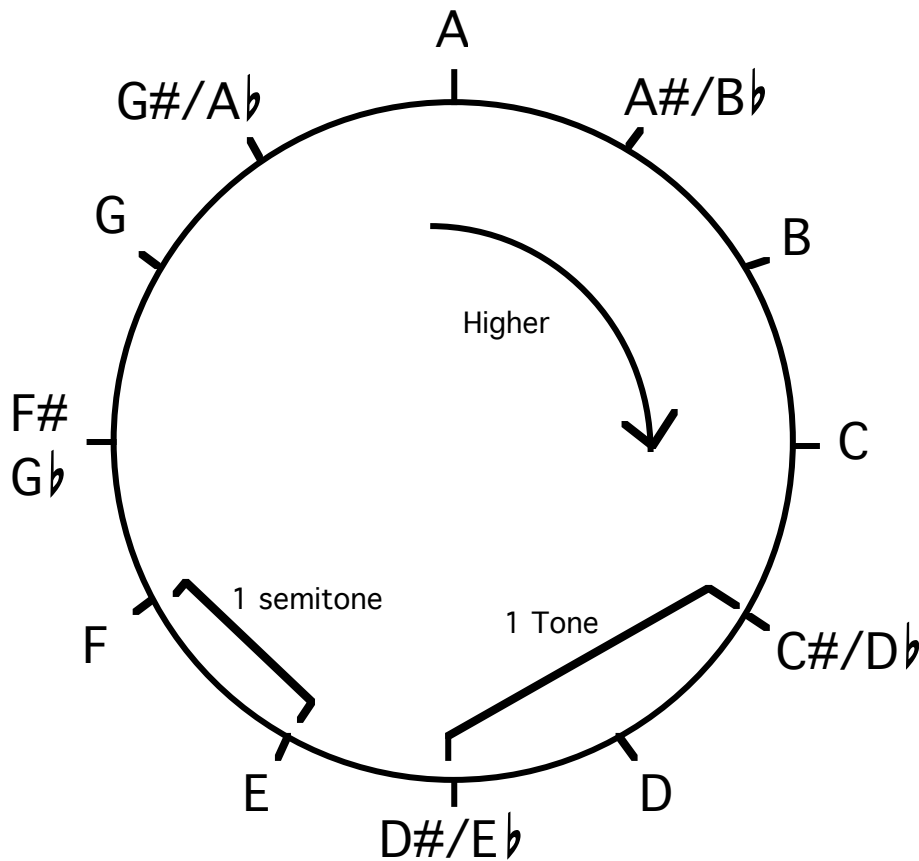
Learning theory helps you go deep and can help you find your own voice. You will discover that all things in music are connected and understanding the big picture opens all the doors and lets you be free. I hope this information helps you along your path.

Wishing you love, peace and happiness

Justin Sandercoe



## The Note Circle



This is the Note Circle. It shows all the 12 notes that exist in western music. Notice that A# and Bb are the same note (called "enharmonic equivalents" if you want to impress your mates with big words!). They sound the same but have different names.

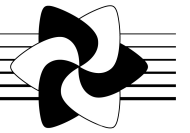
Moving clockwise around the circle makes the notes higher in pitch (up the fingerboard, toward the bridge) and moving anticlockwise (counter-clockwise) makes the notes lower in pitch (down the fingerboard, toward the nut).

The interval of a semitone (shown) is the smallest step on the guitar, and is equal to one fret. Two semitones (two steps around the circle) make a tone (shown). Semitones are often abbreviated to S and tones to T.

A sharp (#) raises the pitch of a note by a semitone and a flat (b) lowers the note by one semitone. For example: the note A is found in the 5th fret of the 6th string. Therefore the note A# is found one fret higher, at the 6th fret, and the note Ab is found one fret lower, at the 4th fret.

Notice that there is no note in between E and F or B and C. No need to be confused - E# is the same as F, Fb is the same as E. Same for the relationship between B and C.

This note order must be memorised as it is the foundation of all the theory that follows. Do the exercises on the following page to help remember them and see one of the many ways that this knowledge can be used in practice!



## Note Circle Exercises

The note circle can be used to work out any note on the fingerboard by knowing only the note names of the open strings. Simply count the steps (intervals) clockwise around the circle, moving up one step for each fret, starting from the note of the open string.

The open string note names are E, A, D, G, B and E (from thickest to thinnest). I would suggest that you make up a rhyme to remember them, like *Easter Angels Don't Give Broken Eggs* (thickest to thinnest string). Or *Eddie Ate Dynamite, Good Bye Eddie*. There are some more funny examples on my web site, but feel free to make up your own rhyme, the funnier the better. Do it however you like, but make sure you learn them.

Do the following exercises and try to memorise the note order and which notes are next to each other. Try to do it without looking at the circle if you can...

### How many Semitones are there between the following?

B to D = <u>  3  </u>	C to D = <u>      </u>	A to C = <u>      </u>
F to G = <u>      </u>	F to A = <u>      </u>	G to D = <u>      </u>
G to A# = <u>      </u>	F# to A = <u>      </u>	E to G# = <u>      </u>
F to C# = <u>      </u>	C# to D = <u>      </u>	B to F# = <u>      </u>
B to C = <u>      </u>	A to B = <u>      </u>	F to B = <u>      </u>
F# to B = <u>      </u>	D to G# = <u>      </u>	G to C# = <u>      </u>
D# to G = <u>      </u>	E to A# = <u>      </u>	F# to Eb = <u>      </u>

### On the E string what notes are at the following frets?

3rd = <u>  G  </u>	12th = <u>      </u>	1st = <u>      </u>	8th = <u>      </u>
2nd = <u>      </u>	6th = <u>      </u>	11th = <u>      </u>	4th = <u>      </u>
5th = <u>      </u>	9th = <u>      </u>	7th = <u>      </u>	10th = <u>      </u>

### On the G string what notes are at the following frets?

9th = <u>      </u>	10th = <u>      </u>	1st = <u>      </u>	4th = <u>      </u>
2nd = <u>      </u>	5th = <u>      </u>	11th = <u>      </u>	8th = <u>      </u>
6th = <u>      </u>	3rd = <u>      </u>	7th = <u>      </u>	12th = <u>      </u>

### On the A string what notes are at the following frets?

5th = <u>      </u>	7th = <u>      </u>	2nd = <u>      </u>	4th = <u>      </u>
3rd = <u>      </u>	9th = <u>      </u>	8th = <u>      </u>	11th = <u>      </u>
6th = <u>      </u>	1st = <u>      </u>	10th = <u>      </u>	12th = <u>      </u>

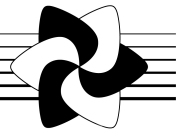
### On the B string what notes are at the following frets?

7th = <u>      </u>	10th = <u>      </u>	4th = <u>      </u>	1st = <u>      </u>
3rd = <u>      </u>	2nd = <u>      </u>	6th = <u>      </u>	8th = <u>      </u>
12th = <u>      </u>	9th = <u>      </u>	5th = <u>      </u>	11th = <u>      </u>

### On the D string what notes are at the following frets?

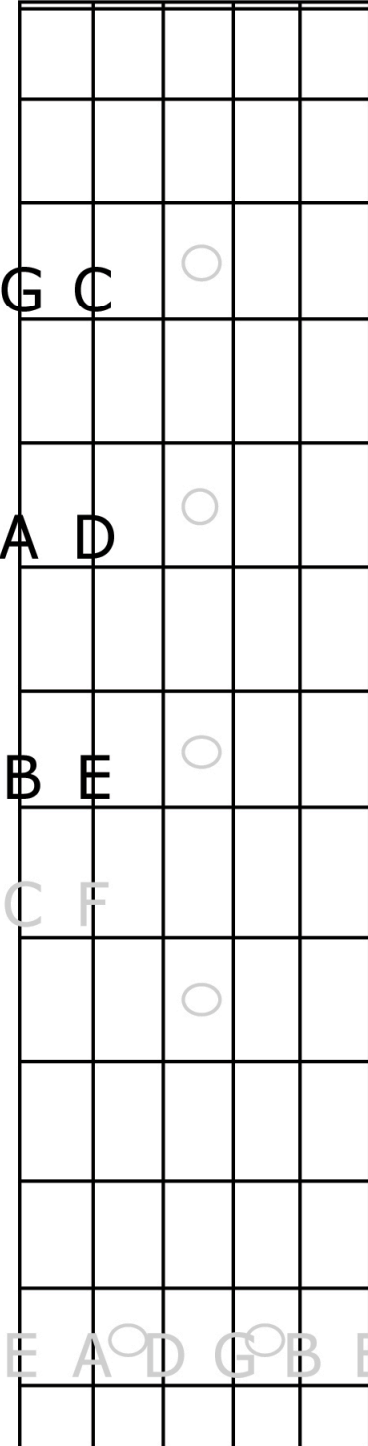
2nd = <u>      </u>	1st = <u>      </u>	7th = <u>      </u>	3rd = <u>      </u>
8th = <u>      </u>	12th = <u>      </u>	6th = <u>      </u>	11th = <u>      </u>
10th = <u>      </u>	5th = <u>      </u>	4th = <u>      </u>	9th = <u>      </u>

(All the answers can be found in the back of the book!)



# The Six Key Tones

E A D G B E



There are six key notes that you MUST learn on the 6<sup>th</sup> and 5<sup>th</sup> strings - shown on your left. You should be able to find any note on those thickest two strings from these *six key tones* without having to count up the string from the nut. Just use what you learnt from the note circle.

The 5<sup>th</sup> and 6<sup>th</sup> strings are THE most important note positions to learn you will use them to find the 'root' notes for all your scales and barre chords. The light grey notes should be very obvious, they are just the open string notes and the C and F are just a semitone up from B and E. But you knew that already from the last lesson, didn't you?

Now you never have to go more than two steps to find the name of any note on the thickest two strings!

A fun way to help memorise them is to use a mnemonic - a big word for making up rhymes and creating pictures to help you remember things.

In this instance we can use the picture of 3 Gay Cats to remember that at the 3<sup>rd</sup> fret the notes are G and C. For this "mnemonic" to work you must make the image as vivid as possible. Try imagining the three gay cats with sparkling collars and little leather pants dancing to YMCA on a fence :) The bad stereotype will help you remember it.

For the fifth fret you just need to remember that all the practice you are doing on the guitar will give you 5 Able Digits (fingers). Just look at your hand and think about your digits moving in crazy ways around those notes.

For the seventh fret you might use 7 Beautiful Elephants. Each one is wearing a beautiful saddle made of silk and each one has a day of the week written in big letters on it (that's how we remember there are 7 of them). Imagine the elephants with the beautiful coloured silk saddles with the days written clearly in your mind.

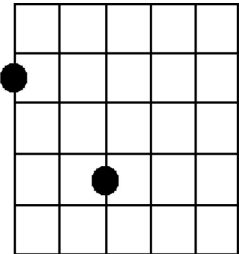
This may sound like kid's stuff, but it works. If you know the notes already, then you are on your way to getting to know them all over the fingerboard!

If you have a "Jam Buddy" (someone that you practice with) then ask them to point to the neck on one the thickest two strings and see how fast you can name the note. This is great way to get to know them, and a bit of friendly competition can really speed things up!

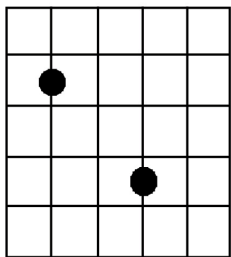


## Using Octaves to Know All The Notes On The Fingerboard

Once you know the *Six Key Tones* notes you need to know your *Octave Shapes* to be able to find all of the other notes all over the guitar. An octave is 12 semitones higher than the root note - the equivalent of going all the way around the note circle and back to the same note. It is the same note, just an octave higher or lower.



Look at the top octave shape to your left. You can see that any note on the 4<sup>th</sup> string is the same as the one on the 6<sup>th</sup> string but back two frets. This means if you have a note on the 4<sup>th</sup> string that you don't know - just count over two strings (getting thicker) and down two frets (toward the nut). The note you will come to will be the same one, but an octave lower. Check out the relationships between the notes in the next lesson *Know Where The Notes Are*, and check you understand the right directions to move.

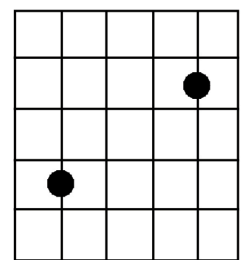


Look now at the one below it and you can see that a note on the 3<sup>rd</sup> string is the same as the note on the 5<sup>th</sup> string but two frets down and two strings over. Same deal as before - count over two strings and down two frets.

You should also play these *Octave Shapes* using your first finger on the lower octave and your 3<sup>rd</sup> finger on the upper octave. Doing it on the guitar can really help get the idea clearly in your head. Do it now!

The top diagram on the right shows now the relationship between the 2<sup>nd</sup> string and the 5<sup>th</sup> string, using a new octave shape. You have to remember that the notes on the 2<sup>nd</sup> string have to be found using this different shape! So in this case you count forward 2 frets (toward the bridge) and over 3 strings (to the 5<sup>th</sup> string) to get to the right note.

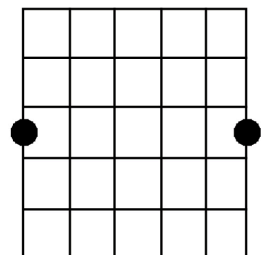
As you should hopefully know, the two outside strings (the thickest and thinnest strings) are both the same note - so knowing the note on the 6<sup>th</sup> string automatically tells you the note on the 1<sup>st</sup> string!



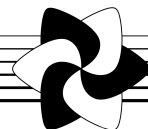
Get these shapes learnt quickly and memorise the *Six Key Tones* and have a go at the exercise below. You will soon know all of the notes on the fingerboard instantly!

### Putting It Into Practice

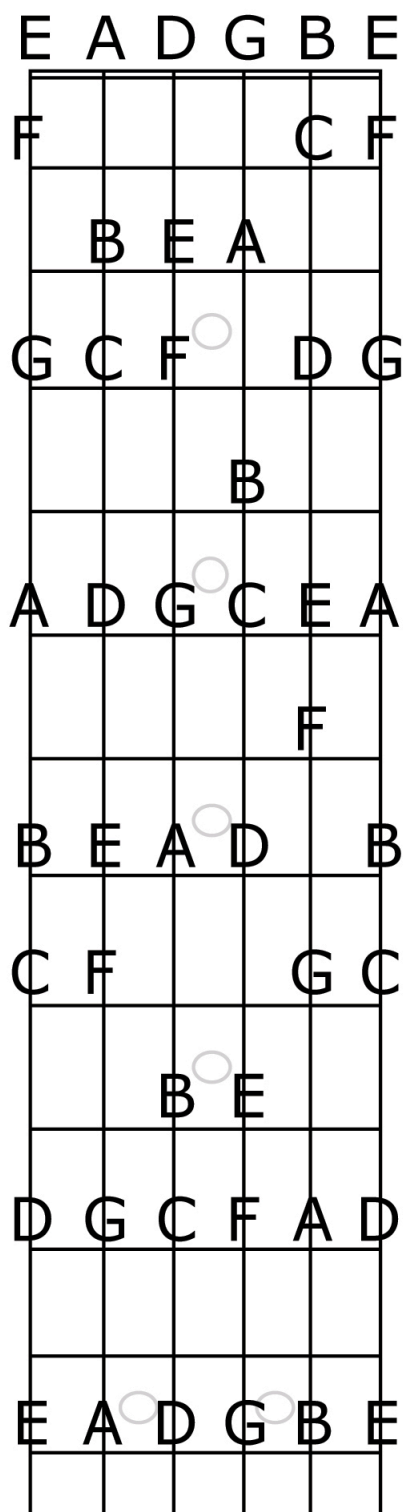
Get your Jam Buddy to point to random notes on the fingerboard and use the octave shapes to work out what the notes are as fast as you can. Do it from memory (don't have the book open). Use your fingers to make the octave shapes to start off with but it's better not to play it, try to "think the octave shape" in your mind and not have to place your fingers in the octave position if you can. It should not take much practice to get this down and knowing the notes all over the neck is a BIG help for everything that follows. That said, don't stress out if you don't get it right away, you can continue with the book without having this down.







## Know Where The Notes Are



Using Octaves is the fastest ways to know the notes on the fingerboard. But once you know them a bit, then you might like to try this exercise. Knowing all the notes quickly will help you find chords and scales, move licks to other parts of the neck, and work out the notes in chords that you play (and change them later!). As well as learning the notes it will help your position jumping technique. But only start this when you can find the notes easily using the *Octave Shapes*!

For the example below we will use the note C, but you should practice all the notes. (Suggested order: C, G, D, A, E, B and then F). Don't bother with practising the #'s and b's.

Start by playing C on the 6th string (8th fret) then on the 5th string (3rd fret) then on 4th string (10th fret) and so on up to the 1st string and back down to the 6th. Then go on to the next note (G) and do the same thing.

### C example (in TAB)

```

|-----8-----|
|-----1-----1-----|
|-----5-----5-----|
|-----10-----10-----|
|-----3-----3-----|
|-----8-----8-----|
    
```

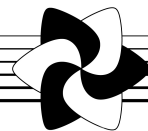
### The Rules

1. Don't play any notes open (play the 12<sup>th</sup> fret).
2. Use the 1st finger to play all the notes.
3. Do it with a metronome if you have one and slowly build up the speed. A good starting speed would be 60 bpm (one note per click), and a target speed would be 160 bpm.
4. Add one note at a time, but still keep working on the earlier notes or you will forget them! So play all the C's then the G's. Then when you add the D's you would play: C's, G's then D's... build it up slowly and you will build it well.

Make sure you follow the rules closely so you spend your time learning the best way that you can. Aim to never waste your practice time doing something the wrong way.

**Hint:** Use the dots. They can really help. Memorise what notes are near the dots.

**Another hint:** Look at the fret where you want your finger to go before you move your finger there! That is the secret to making big position jumps on the guitar!



## The Mind Bending Note Finding Game

This exercise is not for the faint hearted. It is a very hard exercise and should not be attempted until you know the notes pretty well using the previously discussed methods. Just continue through this book and come back to this exercise later. It is very demanding but a great way to learn the notes when you have nothing else to do, like being stuck on a plane or train or at work ;)

The idea is to be able to see all the notes in your 'mind's eye'. It is quite 'easy' to develop a whole fingerboard in your head and be able to work out chords and such visually, without a guitar but it does take some practice. Years of practice. But it's worth it.

If you are up for this little game then follow the directions below.

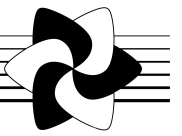
1. Roughly draw out a table as shown below on lined paper.
2. Write 1-6 and 6-1 at the top of each column. These represent whether you will be writing the notes from the 1<sup>st</sup> string to the 6<sup>th</sup> string or the other way round.
3. Write the number 1 to 12 in a random order down the page, once for each column as shown. Try not to put consecutive numbers together because it makes it easy to cheat.
4. Then you are ready to begin. Get your pencil ready...

	<b>1 to 6</b>		<b>6 to 1</b>
4	G#, D#, B, F#, C#, G#	5	
9		1	
6		10	
2		6	
11		11	
1		2	
7		7	
5		4	
10		8	
12		12	
3		3	
8		9	

5. Look in the first space in the example above - column 1 to 6 means you are naming the notes from the 1<sup>st</sup> (thinnest) string down to the 6<sup>th</sup> (thickest) string. The number on the left means you are naming the notes at the 4<sup>th</sup> fret!
6. The notes for that example are shown.
7. You can use either sharps or flats - maybe do one column using only sharps and one using only flats, maybe one day all sharps, and the next all flats - it's up to you!
8. Try filling in the rest of the chart yourself and do this as often as you can before you go completely mad.

Not very easy is it ;)

Check the answers yourself using the neck diagram on page 8.



## Major Scale Theory

A scale is a series of notes played one at a time. What gives each scale its name and unique quality is the intervals (distances) between the notes. The intervals in a scale are measured in tones (T) and semitones (S) (as shown in *The Note Circle*).

The Major scale has seven notes plus the octave (key of C: C, D, E, F, G, A, B and C) and is the most important scale in western music. Each Major scale has a different number of sharps and flats (but never both). A *Key Signature* shows the sharps or flats in a key (for example: The key of G has just one #, but the key of A has three #'s).

We need to find out which major scales have sharps or flats in them, and how many. We will do this by using the Major Scale equation, which is: T T S T T T S - this equation describes the distance between each note of the scale.

You will need to check now with the chart on the next page. Look at the first note in the first column. It is a C. This means that we will work out the notes that are in the Key of C Major by working across the chart from left to right.

The first step is to fill in the chart across alphabetically (as shown in C and Eb Major). Note that the starting and ending note must always be the same. Each letter name must appear once and only once in each key.

Above the chart and between the first and second column you will see a large T. This stands for Tone and means that the interval (distance) between the first and second note must be a Tone. What we will do is add a sharp (#) or a flat (b) to make the alphabetical letters fit the equation.

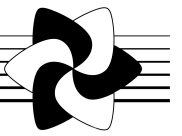
The key of A has been done for you. Look at that now. To work the equation, we **first put the note names across the chart alphabetically**. You can't change them once they are down, you can only add #'s or b's. This is really important. Start with the alphabet.

Then we looked above to see that from note 1(A) to note 2(B) should be a Tone. Check on Note Circle and see if A to B is a tone. It is correct, so we can move on after putting a small tick on the line between the A and the B to help remember it is right.

We continue by checking notes 2(B) to 3(C) - should also be a tone. Check the Note Circle, and notice that B to C is only a semitone. What do we do? We use the Note Circle to see what note is a tone higher than B. By adding a # to the C, the note is raised a semitone, making the interval between B and C# a tone. The interval is correct and gets a little tick. Check the next now, 3(C#) to 4(D), should be semitone, check, and it is. And so on....

Go back and check the Key of C, then complete the rest of the chart. I recommend using a pencil for this exercise because it easy to make silly mistakes. An early mistake can make all the following notes wrong... Do it slow and get it right.

A completed chart can be found at the end of the pack but only cheat if you are really stuck. Then check it at the end and if you went wrong, don't just correct any mistakes, try and figure out why you made them.



# Major Scale Chart

Key	T	T	S	T	T	T	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>1</b>
<b>C</b>	D	E	F	G	A	B	C
<b>G</b>							
<b>D</b>							
<b>A</b>	B	C#	D	E	F#	G#	A
<b>E</b>							
<b>B</b>							
<b>F</b>							
<b>B<math>\flat</math></b>							
<b>E<math>\flat</math></b>	F	G	A	B	C	D	E $\flat$
<b>A<math>\flat</math></b>							
<b>D<math>\flat</math></b>							
<b>G<math>\flat</math></b>							
<b>C#</b>							
<b>G#</b>	A#	B#	C#	D#	E#	F $\times$	G#
<b>D#</b>							
<b>A#</b>							
<b>F#</b>							

Now that you know how to fill out the chart, go right ahead. **Hint: use a pencil!** The keys of A and G# have been done for you to make it clear. \*NB\* Don't forget to finish the key of Eb... it needs some things added to it!

The last six keys (from G $\flat$  to F#) are very rarely used in the real world but are there because this is a theory book and you should know how to deal with them. They require the use of Double Sharps (x- looks like a cross with dots on the ends) and Double Flats (bb- just two flats together). These "doubles" have to be used because you can't change the alphabet notes once you write them in. Look at the G# key example, and see the F double sharp. F double sharp sounds the same as G, but we know that the 7th degree of the scale has to be some kind of F, so F double sharp is the only option, otherwise you would have G and G#, and you can only have one of each letter in a scale.



## Intervals

Intervals are the distances between notes. Understanding the intervallic relationships between notes will help you understand chords, harmony and many more advanced areas (such as modes). This is not immediately practical on the guitar, but we will be putting them to use later. The reason we are looking at them now is because the exercises will also help you memorise the key signatures we looked at in the last lesson.

There are two types of intervals: Major and Perfect. *Perfect* intervals are natural and found in most ethnic music around the world. *Major* intervals are cultural and found in western music. Each type is treated slightly differently.

Lets now look at a numbered C major scale. The first scale degree (1) is the root note.

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	1

Perfect intervals are found: between the root note and itself (called a Perfect Unison), the root and the 4th scale degree (called a Perfect Fourth), the root and the 5th (Perfect Fifth), and the root and its octave (called, funnily enough, a Perfect Octave).

Major intervals are found between the root and the 2nd degree (called a Major Second), the root and 3rd (Major Third), the root and 6th (Major Sixth), and the root and 7th (Major Seventh). That gives us the following intervals in a Major Scale:

C to C	Perfect Unison	(U)
C to D	Major 2 <sup>nd</sup>	(2)
C to E	Major 3 <sup>rd</sup>	(3)
C to F	Perfect 4 <sup>th</sup>	(4)
C to G	Perfect 5 <sup>th</sup>	(5)
C to A	Major 6 <sup>th</sup>	(6)
C to B	Major 7 <sup>th</sup>	(7)
C to C	Perfect Octave	(8ve)

The fun begins when the top note is not found in the key of the lower note. Because the lowest note in all these examples is C - the scale tones are the scale tones of C Major scale.

**We always calculate intervals using the key of the lowest note.** For all the exercises in this book, we assume that the first note is the lowest note.

Both Major and Perfect intervals are called Augmented when the top note is a semitone higher (bigger/sharpened) than the scale tone of the key. For example, C to F is a Perfect Fourth, C to F# is an Augmented Fourth. C to A is a Major Sixth, C to A# is a Augmented Sixth.

When the top note is a semitone lower (smaller/flattened) than the scale tone of the key, Major intervals become minor but Perfect intervals become Diminished. For example, C to B is a Major Seventh, C to Bb is a Minor Seventh. C to G is a Perfect Fifth, C to Gb is a Diminished Fifth.



## Chromatic Intervals in C

C to C	<b>Perfect Unison</b>	0 semitones
C to C#	Augmented Unison	1 semitone
C to Db	Minor 2 <sup>nd</sup>	1 semitone
C to D	<b>Major 2<sup>nd</sup></b>	2 semitones
C to D#	Augmented 2 <sup>nd</sup>	3 semitones
C to Eb	Minor 3 <sup>rd</sup>	3 semitones
C to E	<b>Major 3<sup>rd</sup></b>	4 semitones
C to E#	Augmented 3 <sup>rd</sup>	5 semitones (*not used much)
C to Fb	Diminished 4 <sup>th</sup>	4 semitones (*not used much)
C to F	<b>Perfect 4<sup>th</sup></b>	5 semitones
C to F#	Augmented 4 <sup>th</sup>	6 semitones
C to Gb	Diminished 5 <sup>th</sup>	6 semitones
C to G	<b>Perfect 5<sup>th</sup></b>	7 semitones
C to G#	Augmented 5 <sup>th</sup>	8 semitones
C to Ab	Minor 6 <sup>th</sup>	8 semitones
C to A	<b>Major 6<sup>th</sup></b>	9 semitones
C to A#	Augmented 6 <sup>th</sup>	10 semitones (*not used much)
C to Bb	Minor 7 <sup>th</sup>	10 semitones
C to B	<b>Major 7<sup>th</sup></b>	11 semitones
C to Cb	Diminished Octave	11 semitones (*not used much)
C to C	<b>Perfect Octave (8ve)</b>	12 semitones

The intervals marked (\*not used much) are very, very rarely used in the 'real world' but exist in theory, and as this is a theory book I figured I should include them!

### Calculating Intervals Keys Other Than C

Working out the intervals in other Keys is slightly more difficult, and you will need to know your key signatures! To work out the interval between say E and A# you would:

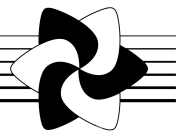
1. Count up alphabetically from E including the root note (E, F, G to A) to see that it is some kind of Fourth.
2. Check the Major Scale Chart (or your head!) and find out if the note A# is found in the key of E.
3. It is not, but the note A is the Fourth, A# is a semitone higher than the scale tone so it is called an Augmented Fourth.

**Remember** - *Intervals are always calculated from the key of the lowest note!*

You will find that after you have done the worksheets you will know many of the basic key signatures by heart, but once we learn the intervals on the guitar neck itself you don't have to remember the note names at all! Remember these exercises are here to help you remember your key signatures.

### The "Effect Both" Trick

To work out intervals such as F# to C# it is often easier to flatten or sharpen BOTH notes, as the interval will remain the same as long as both notes are treated the same way (in this case work out F to C).



# Intervals Worksheet

Up Semitone:	Augmented	Augmented
Scale:	Perfect (U, 4, 5, 8ve)	Major (2, 3, 6, 7)
Down Semitone:	Diminished	Minor

Using the chart above and the Major Scale Chart work out the interval distances of the intervals below in C Major.

C to D = _____	C to B = _____	C to F = _____
C to F# = _____	C to Bb = _____	C to Eb = _____
C to A = _____	C to G# = _____	C to C# = _____

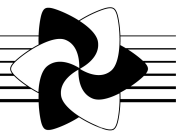
Now do the same but use THE KEY OF THE LOWEST NOTE (the first note). They are going to be a little harder, but stick with it...

D to F# = _____	D to A = _____	D to C# = _____
D to E# = _____	D to F = _____	D to C = _____
F to C = _____	F to Bb = _____	F to Eb = _____
F to A# = _____	F to D# = _____	F to Gb = _____
E to C = _____	E to D# = _____	E to F = _____
E to B# = _____	E to Bb = _____	E to G = _____
Ab to Eb = _____	Ab to C = _____	Ab to G = _____
Ab to D = _____	Ab to F# = _____	Ab to A = _____

This last set are in various keys (still use key of the first/ lowest note). Use the "Effect Both" trick when a key is hard (lots of #'s or b's). The last interval for example, raise both notes Cb and G by a semitone into C and G# because it is easier to work out intervals in C than in a very hard and rare key like Cb. Ahh... the tricks of the trade... ;)

F# to C# = _____	Gb to Bb = _____	C to E# = _____
Ab to E = _____	F to Ab = _____	Bb to B = _____
G to B# = _____	Eb to C = _____	D to C# = _____
Db to A = _____	A to Bb = _____	Cb to G = _____
C to Ab = _____	Bb to D = _____	A to D# = _____
Ab to B = _____	E to C# = _____	Gb to Db = _____
G# to E = _____	B to D = _____	F# to G = _____
B to G# = _____	B# to B = _____	Gb to F = _____
D# to A = _____	E# to F# = _____	Cb to G = _____

(Remember the answers are in the back of the book. Check each section as you go!)



## Chord Theory

Now that you understand your Major Scales, it is time to look at chords, because chords are made up of notes from scales! The simplest type of chord is called a triad and it has 3 notes, called the root note, the 3rd and the 5th.

There are four basic triad types and each has it's own formula. It is easy to work out the notes that belong to any chord in any key by applying the chord formula to the notes of the Major Scale (use the chart at the end of the pack). The four types are:

Major =	1	3	5
Minor =	1	b3	5
Augmented =	1	3	#5
Diminished =	1	b3	b5

By applying the formula to a Major scale you can find the notes in any chord. For example, to find the notes in a C major triad first get the formula (1, 3, 5). Then check on the Major Scale Chart and find out the corresponding 1st, 3rd and 5th notes of the C major scale as shown below. Here is a numbered C Major Scale:

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	1

Major = 1, 3, 5 so C Maj. = C, E, G

When the formula contains a # or b the corresponding note must be sharpened or flattened by a semitone. Look at C minor for example, you will see that it is the same as above but the 3rd (Eb) has to be flattened.

Minor = 1, b3, 5 so C min. = C, Eb, G

If we want to find the notes that make up a D minor chord, first we find the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> notes of the D Major Scale (use the Major Scale Chart), which are the notes D, F# and A. Because the minor formula is 1, b3, 5 we must flatten the 3<sup>rd</sup> (F#) by a semitone, making it F. Therefore the notes in a D minor chord are D, F and A.

Major =	1, 3, 5	so	D Maj	=	D, F#, A
Minor =	1, b3, 5	so	D min	=	D, F, A

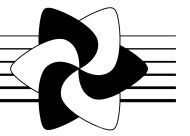
Try to memorise the formulas and at least some of the notes for the most common major chords, if you know the formula and how to apply it it means you will know the notes of many chords very quickly!

### Common Major Chords Worth Memorising

C (C E G), A (A C# E), G (G B D), D (D F# A), E (E G# B), F (F A C), B (B D# F#).

**Hint:** If you see a difficult chord like G# Aug you can just work out G Aug and then sharpen every note a semitone!! - the 'Effect Both' trick again!





# Chord Theory Worksheet

Using your Major Scale Chart and the formulas on the previous page, work out the notes that belong to the following chords:

G Maj.	=	G	B	D	D Aug.	=	D	F#	A#
A min.	=	—	—	—	A dim.	=	—	—	—
Bb Maj.	=	—	—	—	Bb min.	=	—	—	—
C min.	=	—	—	—	C dim.	=	—	—	—
F Maj.	=	—	—	—	F Aug.	=	—	—	—
B min.	=	—	—	—	C Aug.	=	—	—	—
Eb Maj.	=	—	—	—	Ab dim.	=	—	—	—
F min.	=	—	—	—	Gb Aug.	=	—	—	—
D Maj.	=	—	—	—	D Aug.	=	—	—	—
G min.	=	—	—	—	F# dim.	=	—	—	—
F min.	=	—	—	—	A Aug.	=	—	—	—
G# min.	=	—	—	—	F# min.	=	—	—	—
Ab Maj.	=	—	—	—	Ab Aug.	=	—	—	—
Gb min.	=	—	—	—	D min.	=	—	—	—
Ab min.	=	—	—	—	A# min.	=	—	—	—
Gb Maj.	=	—	—	—	C# min.	=	—	—	—

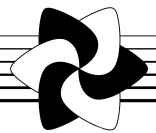
Maybe you didn't realise that many chords that you already know are triads! As long as you play one of each of the triad notes you are playing that chord. You should check out what notes you are playing when you play some open chords. Do it now!

For example the open E chord (TAB: 0 2 2 1 0 0) corresponds to the notes E, B, E, G#, B and E. As you can see it is in fact just 3 notes E, B and G#, the 1st, 3rd and 5th notes from the E major scale. Notes can be doubled at any time but remember to always use your ear to guide you and if it sounds bad then don't play it.

It is also worth noting that the difference between Major and minor is just one note. This often makes it easy to change between Major and minor and may help you remember the chord names. For example, the open A chord (TAB: x 0 2 2 2 0) has the notes x, A, E, A, C# and E. The open A minor chord (TAB: x 0 2 2 1 0) has the notes x, A, E, A, C and E. As you can see it is just that one note that has changed. The Major 3rd became a Minor 3rd.

You should experiment with this idea on the guitar and you will learn a great deal about how guitar harmony works. Of course you will have to learn the names of the notes on the fingerboard (what a pity!).

Try changing your Major chords into Augmented chords by raising the 5th's by a semitone... or making your minors into diminished. Perhaps even make up you own book of chords! hint. hint. It is learning the relationships between chords that makes them easy to remember, as you will see in my *Chord Construction Guide* (another book in the Really Useful Guitar Stuff series).



## Chord Theory Analysis

Just the same as you can use the chord name and root note to find out the notes in the chord, you can also use the notes to figure out the chord name. It's the same process but in reverse :)

So lets say you see the notes: E G Bb and you want to know what chord it is. Of course we start by comparing the notes to the major scale of the bottom note. So we look at the E major scale: E F# G# A B C# D# E.

E will be 1. We look at the next note and see that it is a 3<sup>rd</sup> of some kind... Now in the scale of the 3<sup>rd</sup> note is G#, in our example we have G, so the note has been flattened - making it a b3. The last note is the 5<sup>th</sup>, in the key of G it should be B, but it's Bb, as b5. We have 1, b3, b5 - that is a diminished chord. So it was E dim. Try these examples and you find that it is no harder than the last exercises, just different.

### Exercise 1

A C E = \_\_\_\_\_  
 B D# F# = \_\_\_\_\_  
 C Eb G = \_\_\_\_\_  
 E G B = \_\_\_\_\_  
 C# E# G# = \_\_\_\_\_  
 A C Eb = \_\_\_\_\_  
 F Ab C = \_\_\_\_\_  
 Eb G Bb = \_\_\_\_\_

F A C = \_\_\_\_\_  
 G B D = \_\_\_\_\_  
 D F# A = \_\_\_\_\_  
 A C# E = \_\_\_\_\_  
 Bb D F = \_\_\_\_\_  
 G B D# = \_\_\_\_\_  
 B D F = \_\_\_\_\_  
 D F Ab = \_\_\_\_\_

In the real world the notes are not given in the correct triad order. So you need to learn to recognise them still... can be a little bit of a challenge, so take you time and get used to the letter groups (ACE, BDF, CEG, DFA, EGB, FAC, GBD) they usually stay the same - practice just saying them over and over so that they roll off your tongue!

For instance you might find the notes C E A. Recognise them? It's A C E just in the wrong order :) - but once you know it's A C and E you should be able to work out the chord type. Try another.. G# E B... just look at the letters, disregard the sharps and flats... just try and see which triad note group it is... it's E G# and B. Try these:

### Exercise 2

F D B = \_\_\_\_\_  
 E C G = \_\_\_\_\_  
 A F D = \_\_\_\_\_  
 E G B = \_\_\_\_\_  
 A F C = \_\_\_\_\_  
 D B G = \_\_\_\_\_  
 C A E = \_\_\_\_\_  
 F# D A = \_\_\_\_\_

C# A F = \_\_\_\_\_  
 Bb G D = \_\_\_\_\_  
 G Eb Bb = \_\_\_\_\_  
 G# C# E# = \_\_\_\_\_  
 Ab D F = \_\_\_\_\_  
 F# B D# = \_\_\_\_\_  
 C Ab Eb = \_\_\_\_\_  
 D# B F# = \_\_\_\_\_

In more advanced harmony you will find it harder to do this because often notes are left out and some chords can contain all 7 notes of a major scale, so you have to use other techniques. Worry about that when you come to them!

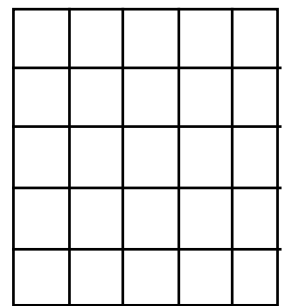
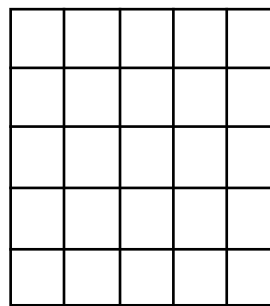
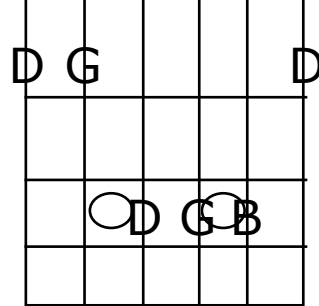
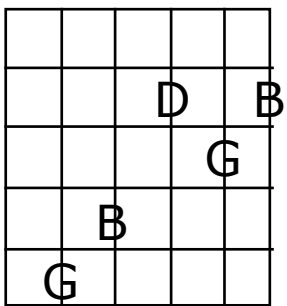
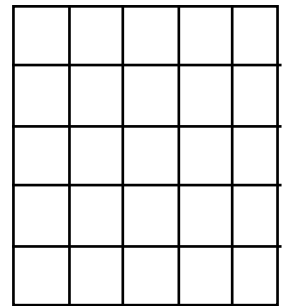
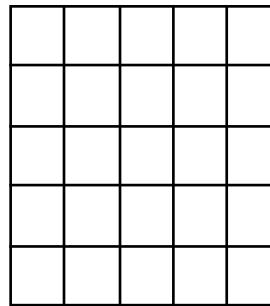
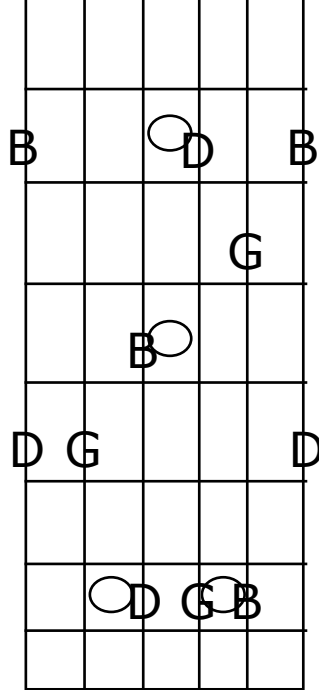
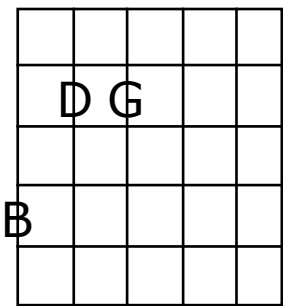
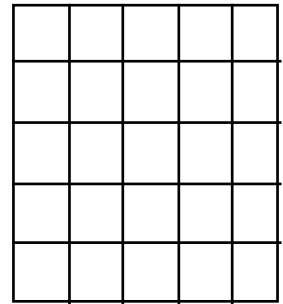
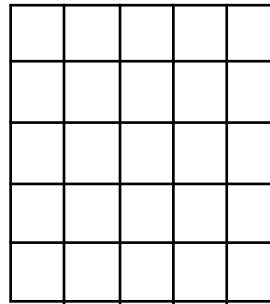
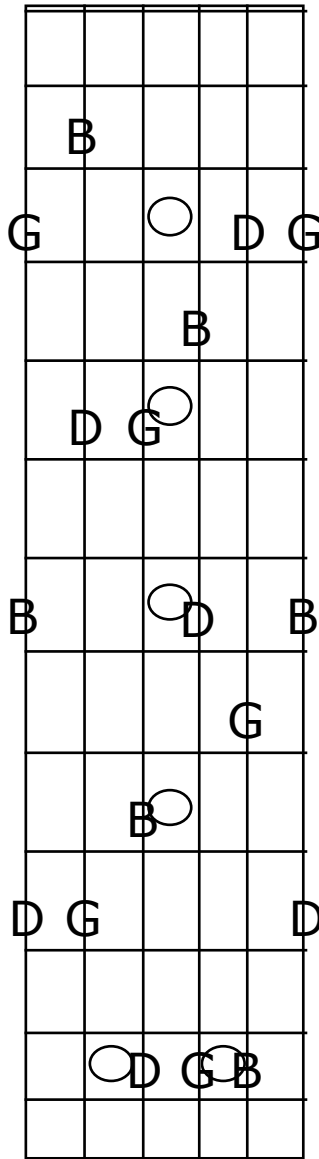
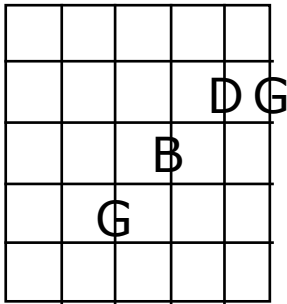


# Chord Theory Use

D G B

Chord eqn= R 3 5 \_ \_ \_ \_

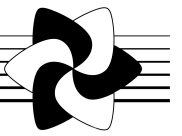
Key \_ G = G B D \_ \_ \_ \_



Now lets put all that theory into practice, by working out your own ways to play chords. Because of the layout of the notes it is possible to play one chord in many different positions with many different "grips". The CFM "Chord Finding Method" is below.

1. Write the chord equation (eqn) in the space above (top-right).
2. Choose your Key and then work out the chord tones in that key.
3. Fill in the big neck using letters, every note can be found once on each string.
4. Choose one of each note, you can double up if you wish, in ways that you can easily play on the guitar. Work out a fingering too, so you can play them.
5. Fill in the smaller neck diagrams. The three on the left have been done, now you finish the 6 on the right.

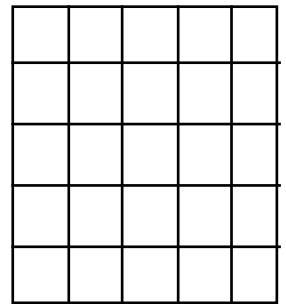
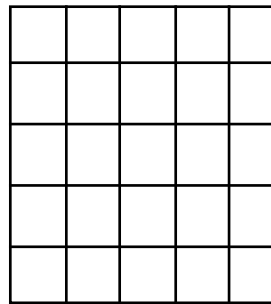
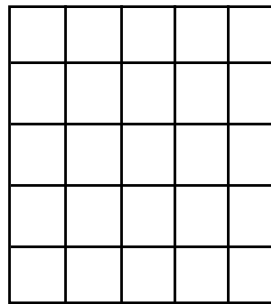
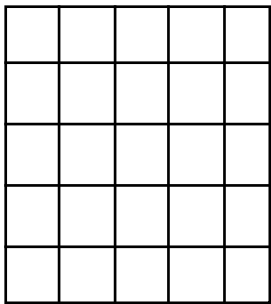
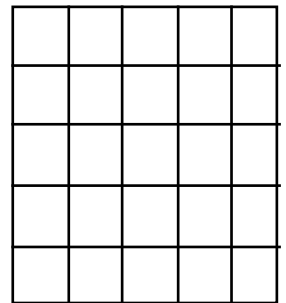
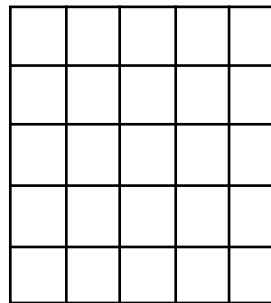
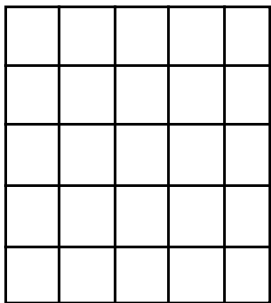
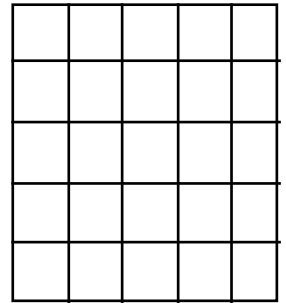
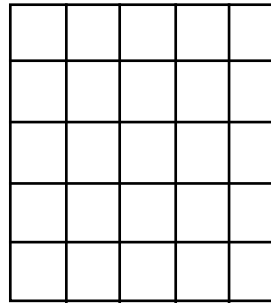
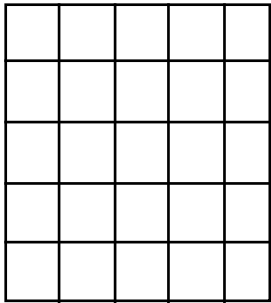
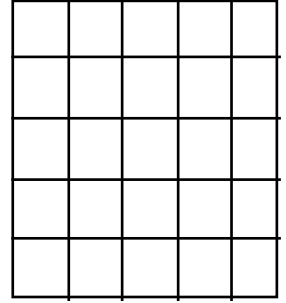
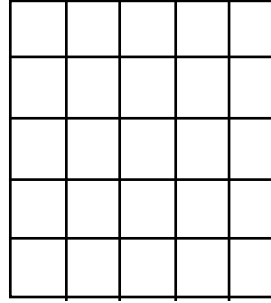
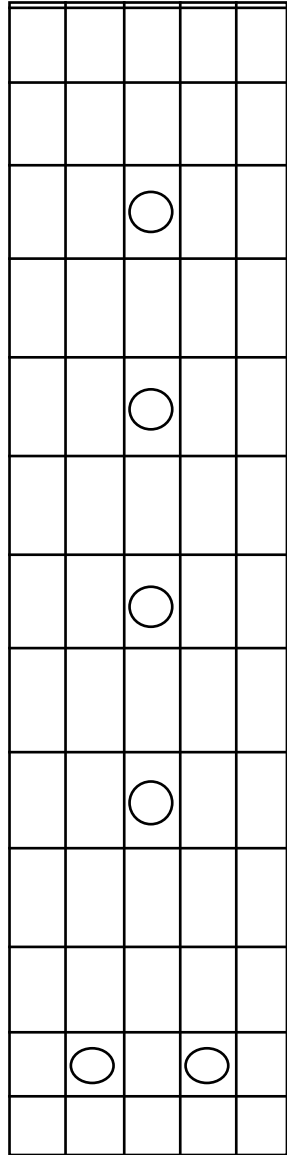
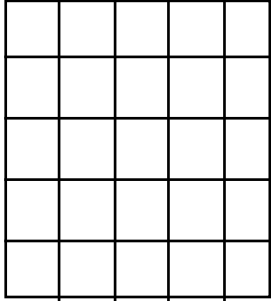
Use between 3 and 6 notes for each grip (shape). When you have finished, photocopy the blank "Chord Finding Method" on the next page and work out as many different chords as you can. When you have finished, you might like to check out the free web lesson on triads (find CH-008 in the Lesson Index) and see another way to use this knowledge! You will be able to work out all the triad shapes all over the neck. That is cool, and very useful.



# Chord Finding Method

Chord Eqn= \_\_\_\_\_

Key \_\_\_\_\_ = \_\_\_\_\_



1. Write in the Equation (Eqn) for the chord you want to explore.
2. Choose a key and fill in the chord tones
3. Fill in the big neck diagram using the chord letters.
4. Choose notes grouped together to make up chord grips.
5. Fill in the smaller neck diagrams with chords you like the sound of.

(This blank sheet is also a free download from the web site).



## Diatonic Chords

Now it is time to explore the relationship between chords and scales a little more, and look at what chords come from the Major Scale. Within a Major Scale there are 7 chords, one built off each degree of the scale. It is best to learn the triads first and learn the extensions later (they get more complex). Below is a numbered C Major scale.

C	D	E	F	G	A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	8	9	10	11	12	13

Lets start by building a 3rd and a 5th from each scale degree (eg. 1, 3, 5 : 2, 4, 6 : 3, 5, 7 etc.). Note that all the chord tones come directly from the C Major scale. No notes are used that are not in the scale (ie. no sharps or flats are used). Once the notes have been worked out, they can be analysed to find out which chord they make. You could try and do that now as we have learnt how to spell out chords in the last lesson!

Scale Degree	Root	3rd	5th		Chord when analysed
I	C	E	G	=	C Major
II	D	F	A	=	D minor
III	E	G	B	=	E minor
IV	F	A	C	=	F Major
V	G	B	D	=	G Major
VI	A	C	E	=	A minor
VII	B	D	F	=	B dim.

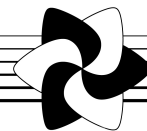
Once analysed, the chords form the sequence of Maj, min, min, Maj, Maj, min, dim. Every different key will produce the same sequence of chords, so there is no need to analyse every key (although it would not be a bad exercise to make sure that you understand it all!). The pattern is shown below and needs to be memorised:

Maj	min	min	Maj	Maj	min	dim
I	II	III	IV	V	VI	VII

If you look at the Major Scale Chart (at the back of the book) you will see this chord pattern in boxes under the scales. A 'I' chord (that is a chord built off the 1st degree of a scale) is always a Major type chord. A 'II' chord (built off the 2nd degree of a scale) is a minor type chord and so on. By adding this pattern to the notes in any key you will find the "Diatonic Chords" of any key (Diatonic literally means "7 tones" but in the real world means "of the major key").

You will find that diatonic chords work very well together and there are many examples of fantastic modern music that uses only diatonic chords (though current trends deliberately use non-diatonic chords).

You also use the diatonic chords to make nice chord progressions to solo over. Try making up a chord progression using any of the chords above and improvise a solo using the C Major Scale and you will find they sound perfect together!



## Diatonic Chords In Practice

### Helping You Remember The Sequence

One of the best ways to remember the order of chords in the diatonic sequence is to say them over and over. It really helps. Another way to think of them is the "3 Chord Trick", which is based on using just the I, IV and V chords to play songs. All three of those chords, the I, IV and V are all Majors. Then you just need to remember that all the rest are minor chords except the VII.

Now use the Major Scale Chart to work out what the chords are in the following keys? (Remember to write the chord type and the root note). First work out the notes in the major scale, then apply the diatonic chord sequence to those notes, then fill in the chords below.

G Major: II\_\_\_\_\_, I\_\_\_\_\_, V\_\_\_\_\_, III\_\_\_\_\_, VII\_\_\_\_\_, VI\_\_\_\_\_, IV\_\_\_\_\_.

Bb Major: I\_\_\_\_\_, V\_\_\_\_\_, IV\_\_\_\_\_, II\_\_\_\_\_, VI\_\_\_\_\_, III\_\_\_\_\_, VII\_\_\_\_\_.

F Major: V\_\_\_\_\_, II\_\_\_\_\_, VII\_\_\_\_\_, III\_\_\_\_\_, IV\_\_\_\_\_, VI\_\_\_\_\_, I\_\_\_\_\_.

A Major: III\_\_\_\_\_, V\_\_\_\_\_, II\_\_\_\_\_, VII\_\_\_\_\_, VI\_\_\_\_\_, I\_\_\_\_\_, IV\_\_\_\_\_.

Eb Major: VI\_\_\_\_\_, III\_\_\_\_\_, V\_\_\_\_\_, II\_\_\_\_\_, IV\_\_\_\_\_, VII\_\_\_\_\_, I\_\_\_\_\_.

### Common Patterns

It is important to know that there are patterns in the chord sequence. These patterns will tell you the key instantly. You will get to know the chords in the more common keys quite quickly, but the patterns will help you with the more unusual keys. The most obvious patterns are:

1. Two major chords a tone apart must be chords IV and V.
2. Two minor chords a tone apart must be chords II and III.
3. A minor chord with a major a semitone higher must be chords III and IV.
4. A diminished chord must be the VII chord.

Use your knowledge of key signatures and the patterns above to work out the keys of the following chord sequences. This way is using theory. You will find it easier to do in practice after you have done the next lesson!

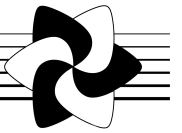
A min, D, E min. = key of \_\_\_\_\_.

Eb, Ab, F min. = key of \_\_\_\_\_.

G, F = key of \_\_\_\_\_.

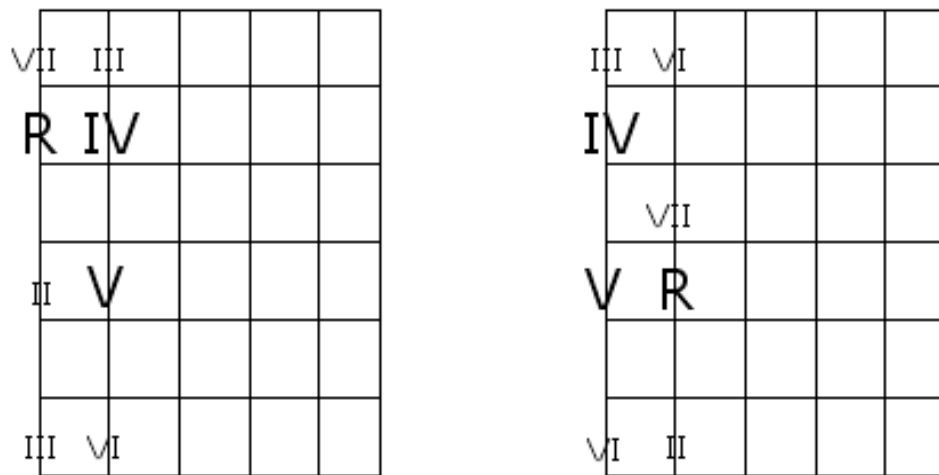
F# min, G# min. = key of \_\_\_\_\_.

A min, Bb = key of \_\_\_\_\_.



## Intervals On The Neck

Trying to remember all of the note names, interval relationships, and all the chords that belong to a key, can be quite difficult. Luckily, there is a simple trick to remembering this information. By using the neck diagrams below (which must be memorised), it is very easy to see note relationships, which is particularly useful for remembering the chords in any key without having to even know the names of the notes! I'm only showing the note relationships on the bottom two strings - most of you should know those notes very well by now (especially your *Six Key Tones*). The root notes of most basic chord grips are on these strings.



As you can see, I have enlarged the R, IV and V chord positions as these are the keys to memorising this information and are the Major chords. Remember that the rest are minor, except chord VII.

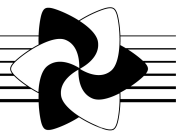
No matter what fret you place these diagrams, the relationships will always remain the same. If the Root is on the sixth string, then the IV chord will always be in the same fret but on the next string thinner (note that this applies to all string groups except 2<sup>nd</sup> and 3<sup>rd</sup> strings because of the tuning anomaly).

This information can be used three ways: it can be used as a starting point for making up chord progressions in any key, can help you find the key of a group of chords that you are playing, and should give you a better overview of the relationships between the chords. Notice too that the III and VI chord at the bottom of the first diagram are the same as the III and VI on top of the second diagram.

### Try it now - and check it...

I want you to believe 100% in these methods, and the best way to do that is to prove it to yourself. So lets put put the Root (R) of the first neck diagram on the note A at the 5th fret and work out all the diatonic chords. Then you do it in another key or two and check them!

So the key is A, chord I will be A, chord II is one tone higher (and we remember that II is minor) so that must be Bmin. Chord III is also minor and is found two tones higher than the R, so must be C#min. The IV chord is in the same fret at the I but on the next string, so must be D, and V is a tone higher, so must be E. VI is two frets up, so F#min.



## Common Chord Patterns

There are many chord patterns (progressions) that are common to many songs. Working out these common chord sequences is a great way to make sure that you know how to use the intervals on the neck that we looked at in the last lesson.

The most obvious is the 12 Bar Blues. This sequence has been used for thousands of songs and other progressions using just I, IV and V chords make up many more songs. If you are trying to transcribe a song then these chords should be among your first guesses.

Some other very common progressions are shown below. Try playing them in many different keys, learn to recognise the sound of them so you can recognise them just by hearing them. Doing this will speed up the transcribing process and enable you to "busk" many songs, that is to play many songs without actually learning them, just guess the chords. "Busking" songs is becoming a forgotten skill these days, now most people use web tabs, buy the sheet music or get a teacher to teach them songs. Remember that all the great guitarists learnt by working out songs and solos from records.

Just to clarify what you should play I will run through the first example (I - VI - II- V) now. In the key of C the progression is C, Amin, Dmin and G. Play this a few times and get used to its sound. Then move it to another key, say F, where the chords become F, Dmin, Gmin and C. Then to Eb where the chords become Eb, Cmin, Fmin and Bb.

Make sure you use the neck diagrams on the previous page to help you - it is far easier to see the patterns than it is to remember all the notes in every key.

- |    |                  |     |                   |
|----|------------------|-----|-------------------|
| 1. | I - VI - II - V  | 6.  | I - V - IV - V    |
| 2. | I - VI - IV - V  | 7.  | I - V- II - IV    |
| 3. | I - VI - III - V | 8.  | III - VI - II - V |
| 4. | I - V - VI - IV  | 9.  | VI - IV - V - I   |
| 5. | I - III - IV - V | 10. | I - IV - I - V    |

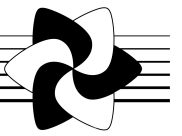
All of the progressions discussed so far have been diatonic (all of the chords belong to one key). Many songs modulate (change keys) and therefore require the use of other scales for improvising. This is a bigger subject than will fit here and will be covered in another book. However there is another very common chord trick, which is to alter the type of chord that is played off a particular degree. For example II 7 would mean that the II chord is changed from it's usual minor into a Dominant 7th chord. Some basic examples of this can be found below.

- |     |                         |                         |
|-----|-------------------------|-------------------------|
| 11. | I 7 - IV 7 - V 7 - IV 7 | (As used in the blues)  |
| 12. | I 7 - VI 7 - II 7 - V 7 | (As used in much jazz)  |
| 13. | I - IV - IVmin - I      | (The Beatles trick)     |
| 14. | I - II - IVmin - I      | (Another Beatles trick) |

### Some examples

Chorus of "American Pie" (10 in G). Verse of "Heart Of Gold" (9 in G). "I Got Rhythm" (1 in Bb). Verse of "All The Small Things" (6 in C). Verse of "Under The Bridge" (4 in E). "Stand By Me" (2 in A). And there are many more of course... find some yourself!





## Extended Chord Theory

Remember our old friend the triad, it has 3 notes: the root note, the 3rd and the 5th? Well they grow and evolve! Any chord can be "extended" but as you add more notes, you have to learn more complex rules about what notes to keep and what notes to leave out. I am going to explain to you the basic rules for extending your chords, and then we will focus on 3 and 4 note chords as preparation for the next book in this series, The Chord Construction Guide. Extending the chords further and altering them will have to wait until later...

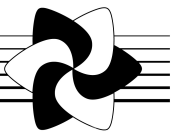
C	D	E	F	G	A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	8	9	10	11	12	13

Every chord has it's own formula, and it is possible to work out the notes that belong to any chord. Below are the triads we looked at earlier and 2 new types. Suspended (sus) means "take away the third and replace with". They are interesting as they are not Major or minor, very useful. Playing them is covered in the Chord Construction Guide.

C Major	=	1, 3, 5	=	C, E, G
C Augmented	=	1, 3, #5	=	C, E, G#
C minor	=	1, b3, 5	=	C, Eb, G
C Diminished	=	1, b3, b5	=	C, Eb, Gb
C sus 4	=	1, 4, 5	=	C, F, G
C sus 2	=	1, 2, 5	=	C, D, G

After the triads, most chords extend upwards in leaps of 3rds (2 scale steps), so the order is: Triad, 7th, 9th, 11th, 13th. Each type can have many variations, only the most common are found below. I wanted you to see all the formula, but I don't recommend getting into using or playing them until you fully understand and can play four note chords (Quadads).

C Major 7	=	1, 3, 5, 7	=	C, E, G, B
C minor 7	=	1, b3, 5, b7	=	C, Eb, G, Bb
C 7 (dominant)	=	1, 3, 5, b7	=	C, E, G, Bb
C min7 (b5)	=	1, b3, b5, b7	=	C, Eb, Gb, Bb
C diminished	=	1, b3, b5, bb7	=	C, Eb, Gb, Bbb (same as A)
C 6	=	1, 3, 5, 6	=	C, E, G, A
C minor 6	=	1, b3, 5, 6	=	C, Eb, G, A
C Major 9	=	1, 3, 5, 7, 9	=	C, E, G, B, D
C minor 9	=	1, b3, 5, b7, 9	=	C, Eb, G, Bb, D
C 9	=	1, 3, 5, b7, 9	=	C, E, G, Bb, D
C Major 11	=	1, 3, 5, 7, 9, 11	=	C, E, G, B, D, F
C minor 11	=	1, b3, 5, b7, 9, 11	=	C, Eb, G, Bb, D, F
C 11	=	1, 3, 5, b7, 9, 11	=	C, E, G, Bb, D, F
C Major 13	=	1,3,5,7,9,11,13	=	C, E, G, B, D, F, A
C minor 13	=	1,b3,5,b7,9,11,13	=	C, Eb, G, Bb, D, F, A
C 13	=	1,3,5,b7,9,11,13	=	C, E, G, Bb, D, F, A



## Extended Chord Theory Exercises

Although at first this theory may seem a little technical, it is very easily put to practical use on the guitar. There are some rules that you will have to learn along the way, but you will see results pretty quickly. The easiest method of playing them and committing them to memory is covered in the Chord Construction Guide (CCG), here I would like you to get the theory clear in your head so you understand all the concepts when they get moved onto the guitar.

### Exercise 1

A great way to start making all this make sense, is to try and apply all the chord equations from the previous page into new keys. I have shown you what the notes are in the key of C, but you should try and work them all out in several keys. That way you will really be clear about the application of chord formula.

At least try and do it in the keys of A, E, D, Bb and Ab. It really helps, and will make sure you know and understand your key signatures too!

### Exercise 2

Pick a chord from any of the 7th type chords, for this example we'll use C Major 7 chord (1, 3, 5, 7= C, E, G, B). Use the *Chord Finding Method* blank paper and find and write down those notes all over the fingerboard. Now try and find some ways to play it by selecting one of each note in a way that you can actually play, just like we did with triads earlier on. You can double some notes if you like. Try and use your ear to decide if a chord is a good one or not, your ears are the only guide that you can rely on.

This is a great way to see some of this theory in action, before we get into playing many chord shapes on the guitar in CCG.

### Exercise 3

Another great technique that can help you understand the theory behind chord construction is to analyse some chords that you know. Please start easy, with your basic open chords. Maybe explore some of your barre chords, 7ths, even some extended chords if you feel you are getting the hang of it, but always start simple with theory. It can be a good idea to write out the chord on Chord Box Paper, and then write the "function" (3rd, 7th or whatever) next to each note. You can assume to start off with that the bass note is the root, but of course that is not always the case.

Please don't expect to be able to analyse every type of chord just yet, we have not covered altered chords, or slash chords or... there is a lot to learn. We want to start with the basics, get good with them and then progress with a solid foundation.



## More Extended Chord Theory

Although at first this area of theory may seem a little technical, it is very easily put to practical use on the guitar. There are some rules that you will have to learn along the way, but you will see results pretty quickly. Remember that you should focus on learning your 7th chords before getting into further extensions, but I thought you might like a look at understanding this stuff. There will be a lot more information on using this in a future book.

Lets take a simple C Major 7 chord (1, 3, 5, 7 = C, E, G, B) and find those notes all over the fingerboard (use the Chord Finding Method paper). Now as long as you play one of each note (the C, E, G and B) you are playing a C Major 7 chord. If you already know a few ways to play a C Maj7 chord, check out where those notes are and check that they match up. You should now figure out how to play C Maj7 as many ways as you can, there are at least 18 easily found ones! Pick out your favourites and learn these in all the keys (simply by moving the root note).

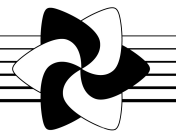
Remember not to use open strings or you can't move them!

This process applies to all other chords too. Try it with Cmin7, and some other more complex chords too. Simply find shapes that fit well under your fingers (or some that are stretched if you fancy some hard work). It is a good idea to write them down so you can remember them later on (use the chord box paper) and I highly recommend making your own chord book. Remember if it does not sound good, then don't bother learning it.

The extended chords can become a bit more difficult. More rules and more complex. For example, lets take C 13 (1, 3, 5, b7, 9, 11, 13) = C, E, G, Bb, D, F, A. This chord contains 7 notes so it is physically impossible to play this chord in full on the guitar. In fact most guitar grips leave out notes, so how do you know what you can leave and what you have to have in the chord? Well, here are some rules, for what they are worth. But the big rule is: "If it sounds good, it is good..."

1. The most important chord tones are the 3rd and 7th. These must *nearly* always be present. (No 7th in a triad though of course).
2. The root note can be left out for jazz or if you have a bass player, although to my ear, most chords sound better with the root note on the bottom.
3. The 5th can be left out anytime.
4. A 9th chord should have R, 3, 7 and 9th.
5. An 11th chord should have at least the R, 3, 7 and 11th.
6. A 13th chord should have at least the R, 3, 7 and 13th.
7. Any of the rules may be broken at any time IF IT SOUNDS GOOD.
8. Have Fun.

I know learning this stuff can be a bit of a drag but try to apply it to the guitar as soon as you can and you will see the benefits and it will become more fun. Take your time and enjoy it. This kind of theory will open your ears and eyes to the complexity of the guitar and the wonderful harmony it can produce.



## Your Chord Book

With all the information you now have about making up chords I would highly recommend that you try to make up your own chord book. You should find it quite easy and in the process of making it you will learn a great deal about the make up of the fingerboard.

In *The Chord Construction Guide (CCG)* I will be showing you a great way to organise them, and some pro tricks to finding all the important chords, but you can make a start on your own first and it will help you really get into using this knowledge.

The first thing you need to grasp is the types of chords and how they are used (a concept I leaned from jazz guitarist Joe Pass). Then you can make up your own useful chord book by photocopying a page a chord boxes (Blank Pages are on the web site) and filling them in yourself. A lot more beneficial than one of the "Billions Of Chords" type books that are available and full of useless chord shapes that sound awful and are hard to play.

Chords can be broken into 3 main types. Major, minor and Dominant. The reasons for such a simple breakdown is down to sound. So what chords are in what categories?

**Major Chords** contain a Major 3rd and a Major 7th.

Includes: Maj, Maj7, Maj9, Maj11, Maj13, Maj7#11

**Minor Chords** contain a minor 3rd.

Includes: min, min7, min9, min11, min6, min7b5, minMaj7

**Dominant Chords** contain a Major 3rd and a b7th.

Includes: 7, 9, 11, 13, 7#11, 7b9, 7#5

It is that easy. You will often find that most chords of the same type can be exchanged for another in the same group. The exception is the altered (containing #5, b5, #9, b9) in the Dominant category, they are a little stickier and require further study. This is a very general rule that is governed by the BIG RULE - If it sounds good it is good.

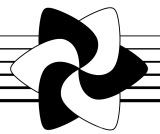
I would recommend you start with simple Major triads. Try and find many ways you play them on the guitar. I know at least 25 off the top of my head and I'm sure there are a lot more.

Use the chord finding method paper (remember blanks can be downloaded from the web site resources section) and then use chord box paper to write out all the chords.

Once you have done Major triads, try minor. Same thing - how many can you find? Write them out, listen to them. Understand what note is functioning as what and be sure to remember which note is the root note!

Then get onto 7ths, do 7<sup>th</sup>'s then Maj 7<sup>th</sup>'s then min 7<sup>th</sup>'s then Min7b5's - there are loads to do. It's going to take time. Don't rush. Take it easy and GET IT RIGHT. Learn it right and enjoy the journey. :)

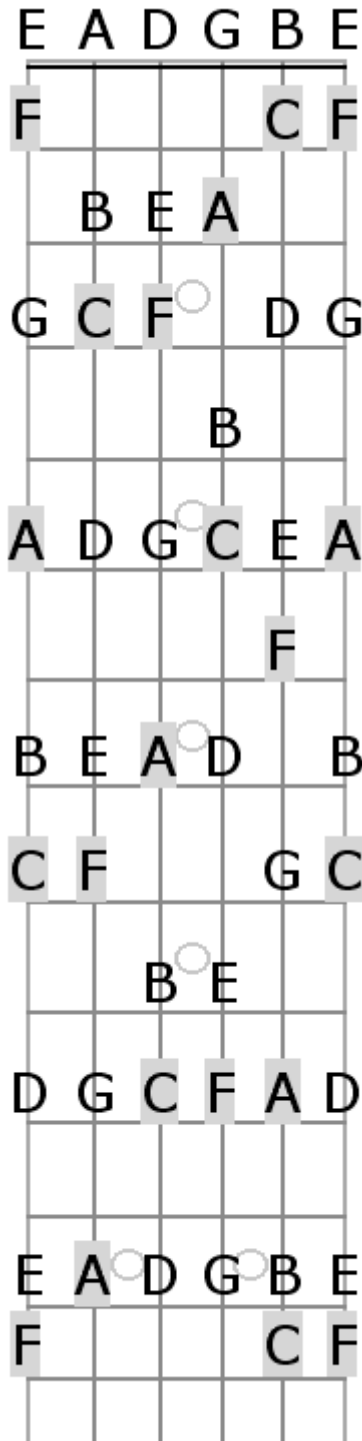
We will next look at the CAGED system and see how they all fit together.



## The CAGED System

The CAGED system was not 'invented'. It is a fact. It is how the guitar works and comes directly from the tuning of the instrument combined with western harmony.

You should find that after understanding this system that a lot of things make more sense and I will try and point out the most important things as we go and suggest some exercises we will do along the way. You will also need to understand it before starting the CCG.



### The Birth Of CAGED

The CAGED system comes from combining the notes on the guitar neck with the notes of a chord. For this example I will start with an F chord as it fits well on the neck but works with all other chords too. Once you understand it, you will be able to apply it to every chord in every key!

### Finding the notes

A major triad consists of the first, third and fifth notes of a major scale. In the key of F Major the triad notes would be F A and C.

Lets start by finding them all on the guitar fingerboard. Notice that every note can be found on every string. On some strings the octave is shown to to help make the shapes clear later. The notes shown on the fingerboard are just all the "white notes", not the scale of F Major.

I would suggest if you do this yourself that you work out where each note is found on each string and then double check them. Mistakes in this kind of exercise can be a real pain and lead to misunderstandings.

It would be worth photocopying the neck diagram on page 9 and having a go at this your self. Working out a theory exercise yourself will help it stick in your mind and will make it whole lot easier to understand. You don't have to do it right now but maybe when you have finished this section on the CAGED system you should try and do all these steps from memory. You might like to try it in other keys too. Just:

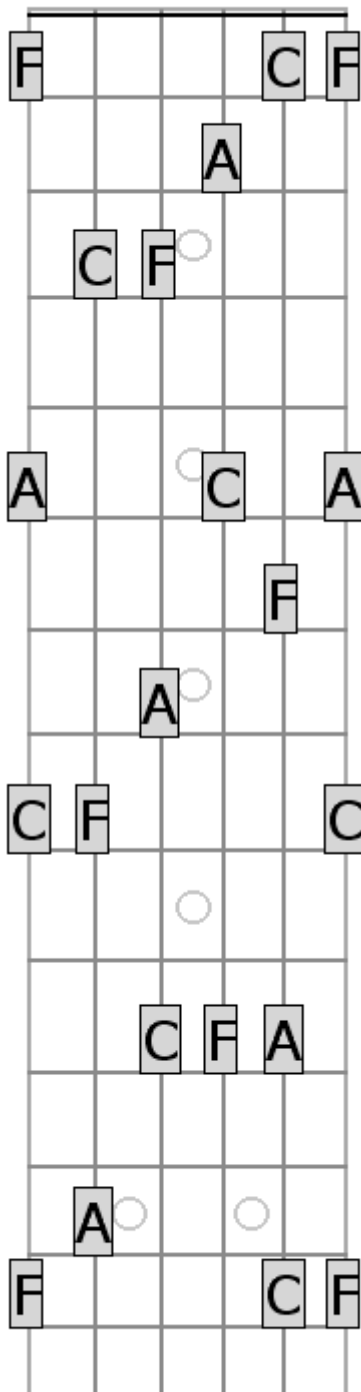
1. Work out the notes of a chord - you can use the chord formula's we learnt earlier.
2. Circle all the notes of that chord on the neck diagram (preferably with a coloured pen to make them clear).
3. Use it with the following information :).



## The CAGED System (con't)

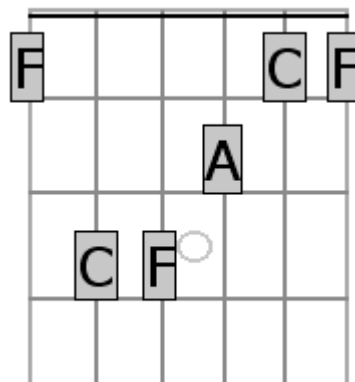
The next thing you should do is just remove all the other notes. Usually I would recommend that you re-write your findings from the previous page onto a blank neck diagram and just add the notes you need, I think that it is clearer for you to see it this way. Blank *Chord Finding Method* paper can be downloaded as a pdf file from the web site.

So now with all the excess notes removed we can clearly see all the notes that make up and F major triad.



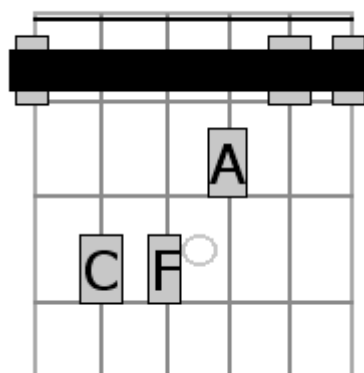
### The First Shape

Now lets look more closely at the first group of notes, found at the top of the neck in the first 3 frets. I have moved them onto a smaller neck diagram below. But make sure you can see where they came from. :).

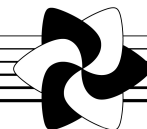


Notice that it is still only using the notes F A and C but they form a useful and common shape. Also notice that the 'root note' (F) is on the thickest (6th) string.

Now lets look at it more closely and I have put a barre over the lowest fret so you can clearly see the shape...



Imagine that the big black barre is the nut... Hopefully you recognise the chord as your old friend - the open E chord!



## The CAGED System (con't)

That is why this shape is often referred to as an "E shape barre chord". You know it is the chord F but the parent shape of the chord is from the common open E chord shape, hence it's name. The basic E chord has just moved up and the first finger barre (bar) has replaced the nut!

This shape is also referred to as Position 1. Mainly (I think) because it is often the first barre shape that people learn.

Position 1 really means in practice that the root note of the chord is found on the 6th string (in this case the note F) and the majority of the notes are found further up (higher) than the root note. This does not become important until you start applying the CAGED system to scales and more advanced chords, but is worth understanding that now.

So be sure to understand the "E shape" and "Position 1" mean the same thing, depending on who teaches them. I personally prefer to think of the E Shape, but many people prefer the term position, so I use both on the web site.

### Move the shapes

Remember too that every shape on the guitar that DOES NOT use open strings is moveable. Just know that the root note is on the thickest string (to play F we are placing the Root note at the 1st fret). You can move this shape up and down and it forms any other major chord. For example - this same shape moved up to the 5th fret (where the note A is found on the thickest string) becomes the chord of A but still uses an "E Shape".

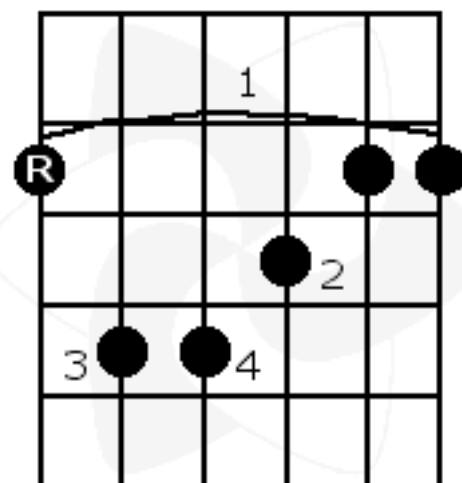
This shape is usually played like this: ----->

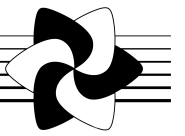
It is usually the first barre chord that people learn. The specific technique of playing barre chords is out of the scope of this book but there is plenty of information on that on the web site.

### EDCAG vs CAGED

Because E is the first shape, and called Position 1, sometimes (although rarely) the CAGED system is called EDCAG. I personally think that CAGED has a more memorable ring to it, so it is always the one I use but I figured you should know that sometimes it gets called it's 'other' name.

## Major

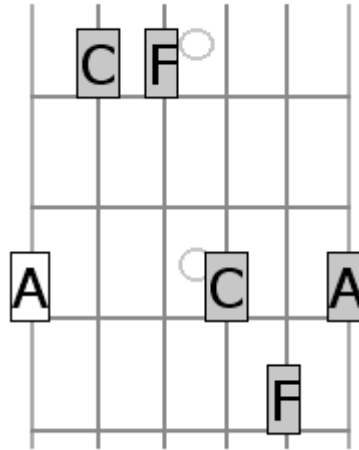




## The CAGED System (con't)

### The Next Shape Up The Neck

If we look a little further up the neck we can see the next group - be very sure that you can still see where the shape came from by checking with the full neck picture on page 28.

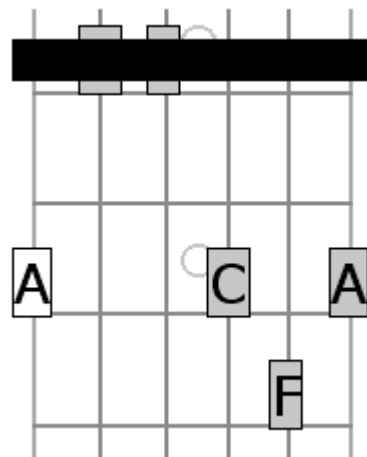


Notice too that I have left the note A on the thickest string with just the box and no shading - it's not a mistake - it is a note of the chord and does fit the CAGED system but it is easier to see the chord shapes if you ignore it for now.

Remember too that you only have to play one of each note to get the chord - any old F, A and C will do - you don't have to try and play them all.

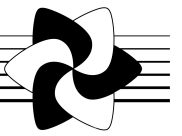
Notice that it is still only using the notes F A and C but they form a useful and common shape. Also notice that the 'root note' is on the 4th string.

Now lets look at it more closely and I have put a barre over the lowest fret so you can clearly see the shape... Imagine that the big black barre is the nut... ignore the unshaded note... recognise it??



It's the good ol' open D chord :)





## The CAGED System (con't)

That is why this shape is often referred to as an "D shape barre chord". You know it is still an F chord but the parent shape of the chord is from the common open D chord shape, hence it's name.

This shape is also referred to as Position 2.

Position 2 means that the root note is found on the 4th string and the majority of the notes are higher up the fingerboard.

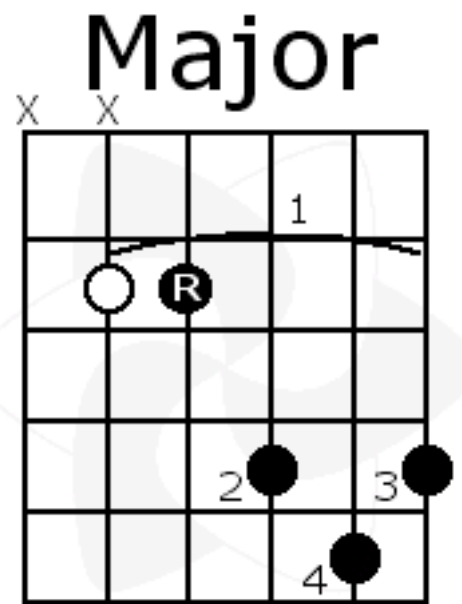
Remember that "D shape" and "Position 2" mean exactly the same thing and that every shape on the guitar that DOES NOT use open strings is moveable.

This one can be quite hard to play - quite a finger stretcher - but possible :) like this: ----->

Notice the white hollow note on the 5<sup>th</sup> string. That is an optional note. Usually the chord sounds best when the root note is the lowest note but sometimes it sounds a lot fatter to add in that extra lower note. So you can choose - to play it or mute the 5<sup>th</sup> string!

### D Shape Power Chord

Sometimes this chord is just played using strings 4/3/2 which makes it a Power Chord (just the notes F C F, or R 5 R). Power Chords consist of only the root note and the 5th scale degree. Taking away the 3rd of the chord gives it ambiguity because it is the 3rd of the chord that makes it major or minor :) This shape is used less than the common grips, but try it out, it can sound well cool!

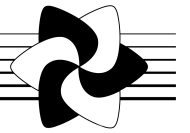


### About additional notes...

Many times with the CAGED system there are additional unused notes in each shape. These notes are correct and can form part of the chord but for ease of explanation and also very often in practice - they are best forgotten about.

Hopefully you will find some interesting examples if you explore the concept a little - for example the chord D/F#... Otherwise known as a D chord with the 3rd in the bass. Have a look at the chord box back on page 30 and notice the lowest note there on the 6th string - add that note in the open position and you get the common D/F# slash chord - add that to the F chord we are playing and you will get F/A - also known as F with the third in the bass.

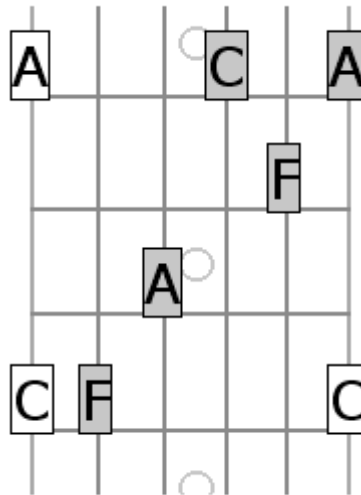
Playing that slash chord as a barre can be quite a finger stretcher. Use your 2nd finger on the bass note, the first finger on the root, and the 3rd and 4th fingers to tackle the other two notes.



## The CAGED System (con't)

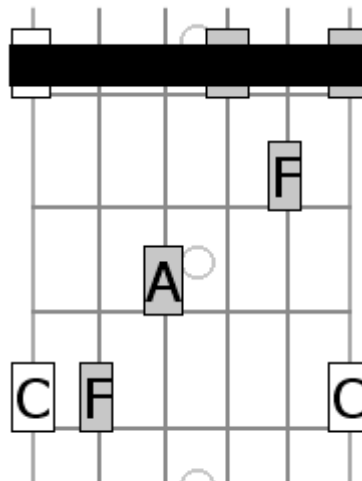
### What do you see?

Check out this next shape - we have a few more hollow "unused notes", some of which are regularly used in practice but just for this theory part we'll ignore them.



Still we only use the notes F A and C but they form a useful and common shape. Also notice that the 'root note' is now on the 5th string.

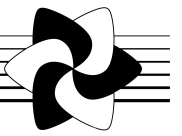
Now lets look at it more closely and I have put a barre over the lowest fret so you can clearly see the shape... Imagine that the big black barre is the nut... ignore the hollow notes... can you see it?



It's an open C chord!

This shape is often called the "C shape barre chord". You know it is the chord F because you can see it is still just using the chord tones (F A C) but the parent shape of the chord is from the common open C chord shape. Hopefully you are getting the idea now :). I know I'm repeating myself, but I hope that helps you to remember..

This shape is also referred to as Position 3.



## The CAGED System (con't)

Position 3 really means in practice that the root note of the chord is found on the 5th string (in this case the note F) and the majority of the notes are found further down (lower) than the root note.

So be sure to understand the "C shape" and "Position 3" mean the same things depending on who teaches them.

Remember too that every shape on the guitar that DOES NOT use open strings is moveable. And this one is no exception.

This is the first chord in the RHCP song "Under The Bridge" and is usually played like this: ----->

### Variations On C

As you may know, there are many ways of playing an open C chord. Sometimes (especially back in the 50's and 60's) it was played using your 3rd finger on the 6th string and your 4th finger on the root note. Think about it - they are all chord tones, and it sounds pretty cool. Try the following example and check back on the previous page and see why it works.

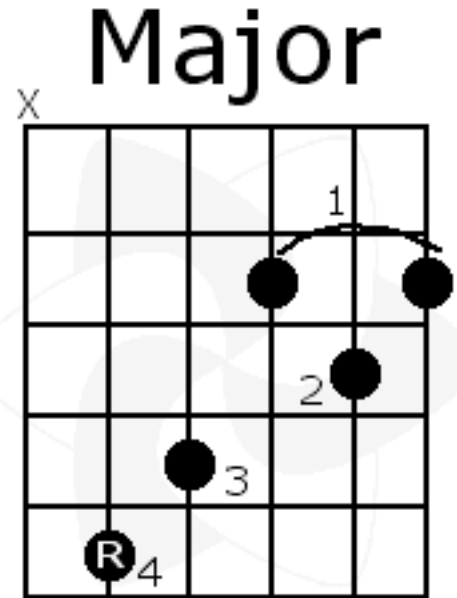
Try it now. Go back and play regular open C chord. The move your 3<sup>rd</sup> finger over onto the thickest string and put your little finger down on the root note, 3<sup>rd</sup> fret 5<sup>th</sup> string. Now play it. Sounds fat doesn't it. :)

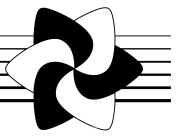
Most of the time we want the root note to be the lowest note though - that why it is the way that you have probably learnt it :)

Another common variation is to play the regular C open chord and then add your little finger in the 3rd fret of the thinnest string. Another lovely variation. I use it in my arrangement of the Beatles song Yesterday - it can really make a nice change from the "usual" C shape :) - but it is very hard to play as a barre because we don't have enough fingers :))

Understanding the CAGED system is about a lot more than just learning these 5 positions, it is about understanding the logic behind the instrument and how we can play so many chords and scales so many ways.

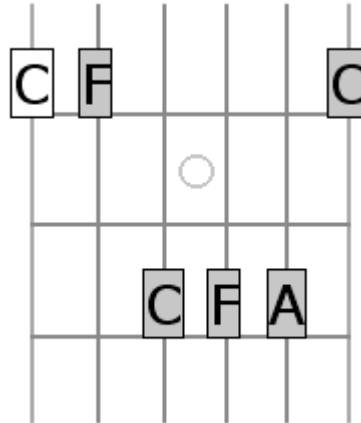
Once you have finished this course, every time you play a chord you should try and think about which of the 5 shapes it came from... food for thought...





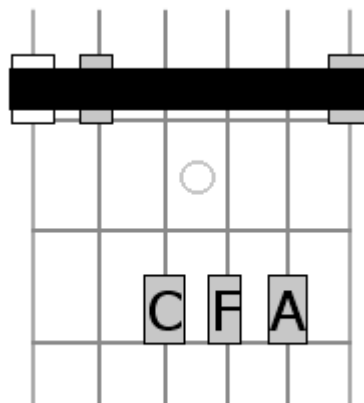
## The CAGED System (con't)

This next shape is the second most commonly played shape, many people learn guitar for many, many years without realising that there are more shapes than just the E and the A shape barre chords!



Still we only use the notes F A and C but they form a very common shape. Also notice that the 'root note' is on the 5th string - just like it was for the C shape - but now the notes are higher (further up) than the root note.

Now lets look at it more closely and I have put a barre over the first fret so you can clearly see the shape... Imagine that the big black barre is the nut... see it?

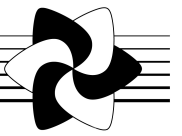


It's an open A chord! easy :)

This shape is often called the "A shape barre chord". You know it is still the chord F but the parent shape of the chord is from the common open A chord shape.

This shape is also referred to as Position 4 - and is a very widely used barre chord, the only more popular one is the E shape.

Position 4 really means in practice that the root note of the chord is found on the 5th string (in this case the note F) and the majority of the notes are found further up (higher) than the root note.



## The CAGED System (con't)

So be sure to understand the "A shape" and "Position 4" mean the same thing - depending on who teaches it.

Remember too that every shape on the guitar that DOES NOT use open strings is moveable. And this one is no exception.

It is usually played like this: ----->

### Fingerings for the A Barré

There are quite a few different ways to play this as a barre chord - I have shown here the one that makes the most sense to me on most occasions.

The method show is using a part barre with the 3rd finger and also having the note played on the first string by the first finger. This can be quite hard and it is dependent on the exact length of the first segment of your 3<sup>rd</sup> finger and also it's flexibility to be able to lift and let the note on the first string ring out.

It is much more common mute the first string with the 3rd finger. Just lift it a little and it should be no problem to mute the thin string. I think it also makes the chord sound better - it is not just about being able to do it - but wanting to do it :)

Some people try and play the 3 notes forward of the barre with finger 2/3/4. This can be ok in some circumstances - like playing reggae where the thin strings are most important, but it is hard to change to and from so therefore it is not the method I recommend.

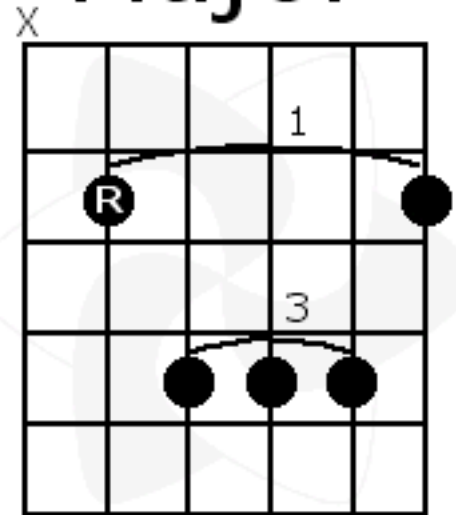
### The Logic

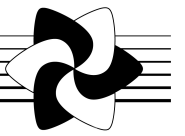
I hope you are starting to see the logic behind the chords and the voicing. It all fits together really easily and is definitely worth giving some thought to the construction of these chords. When you get to the end of this CAGED section, go back and look at each shape again and think about how it might be used, what songs you have seen it in before and just let your mind explore the shape :)

In CCG we are going to learn how to change each one of these basic shapes into many other chords, it is lots of fun, but will require you to have a thorough understanding of these chords. Make sure that you commit them to memory and most importantly, remember where the root note is found!

Only one shape to go ;)

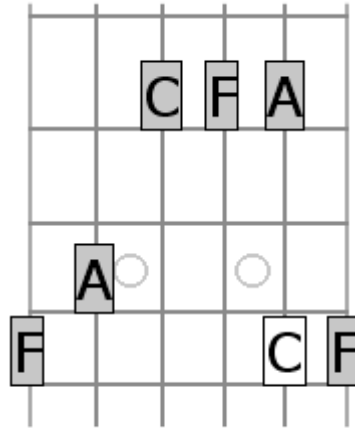
## Major





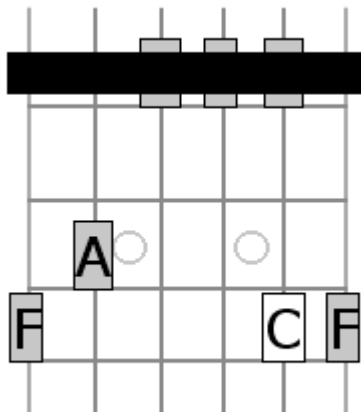
## The CAGED System (con't)

This last shape is the least used and can be very difficult to play as a full barre chord.



Still we only use the notes F A and C but they form a useful and common shape. Also notice that the 'root note' is now on the 6th string - like it was for the E shape but now the chord is falling behind (lower) than the root note...

Now lets look at it more closely and I have put a barre over the first fret so you can clearly see the shape... Imagine that the big black barre is the nut... ignore the hollow box... can you see it?

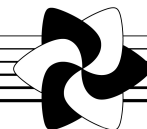


It's an open G chord!

This shape is often called the "G shape barre chord". You know it is the chord F but the parent shape of the chord is from the common open G chord shape.

This shape is also referred to as Position 5 - which really means in practice that the root note of the chord is found on the 6th string (in this case the note F) and the majority of the notes are found further down (lower) than the root note.

So be sure to understand the "G shape" and "Position 5" means exactly the same thing depending on who teaches them.



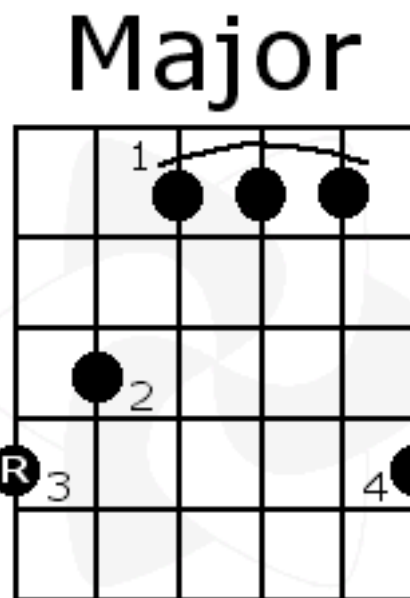
## The CAGED System (con't)

Remember too that every shape on the guitar that DOES NOT use open strings is moveable. And this one is no exception. Try them out - don't be scared - experiment. Try moving any and all of the shapes all over the neck and just listen.

It is a very hard chord to play as a full barre chord, especially as an F chord, you would have to barre the 10th fret (I would struggle) but if you are going to try it is usually played like this: ----->

### The Rock G

If you look back again at all the available notes for the G shape on the previous page you will notice that there are two available notes on the B string (2<sup>nd</sup> string). If we apply that to the open G chord (because it is impossible to play as a barre) we find the two most common variations. The one shown on the right here is the most common for beginners when played as an open chord (but using fingers 1, 2 and 3 of course). The next variation is to move the 3<sup>rd</sup> finger onto the 2<sup>nd</sup> string (still at the 3<sup>rd</sup> fret) and then placing your little finger down on the thinnest string, 3<sup>rd</sup> fret. This gives what I call the Rock G.



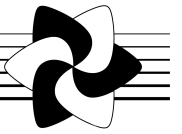
 [www.justinguitar.com](http://www.justinguitar.com)

Because the 3<sup>rd</sup> of the chord controls the major or minor sound, removing it is a good way of toughening the sound up. These so called 'Power Chords' have a bigger sound with distortion than regular barre chords. The note we just changed in G was a 3<sup>rd</sup> of the chord we changed to a 5<sup>th</sup> of the chord to fatten it up!

### A CAGED Conclusion

Before moving onto more complex material it is very important that you consolidate all the information that we have covered in this module. Some things you might want to be sure about...

1. Make sure you remember all 5 CAGED shapes and that you know which note is the root note for each.
2. Be aware of the way each shape joins onto the next one - check it out on the big neck diagram.
3. Make sure you repeat this yourself in a few different keys to help prove to yourself that this works, better to believe yourself than me!
4. Don't spend too much time in theory land - try and put some of these new chords into practice right now!



## Consolidation

Well if you have made it this far then you should congratulate yourself. It's not easy to face music theory in the face and win! The next step before you even think about moving on is to consolidate all the information here.

Then it is time to move onto adapting your basic CAGED chords into all the four note chords in Really Useful Guitar Stuff Part 2 - The Chord Construction Guide.

### Theory

- Understand tones, semitones and the note circle
- Know the notes in the common major scales off by heart (including sharps and flats of course). The common keys being C, G, D, A, E, F, Bb, Eb.
- Know the sequence of chords in the diatonic series and be able to apply it to a major scale above, thereby know the chords in those keys.
- Be able to recognise and name any interval in any key.
- Know and understand how chords are constructed and at least remember the chord formulas (equations) for triads and the four 7<sup>th</sup> type chords.
- Understand the CAGED theory and how it applies to the guitar.

### Practical

- Know all the notes on the thickest two strings instantly.
- Know all the notes on the guitar fingerboard or be able to find them fairly quickly.
- Be able to locate and play any of the 5 CAGED chord shapes and know the root note and how it related back to the chord shape.
- Understand the theory of chord extensions and be able to add notes to a chord and understand the effect of those notes...

### Where to go from here...

I hope you have enjoyed this little adventure in theory land. The next step for you is to apply your knowledge of chords, as I mentioned earlier.

But also take a little time off now and let all this new information settle in your mind. Trying to digest too much information at one time will mean that you do not get the chance to apply it properly and then you will not make the best use of it.

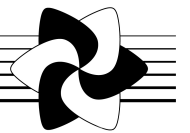
I wish you all the best for your life and your guitar playing, and I hope I have helped you along your way!

Any questions, please remember to use the forum!

[www.justinguitar.com/forum](http://www.justinguitar.com/forum)

good luck :)





## Answers - NO CHEATING :)

### Page 5 - Note Circle Exercises

How many Semitones are there between the following?

3	2	3
2	4	7
3	3	4
8	1	7
1	2	6
5	6	6
4	6	9

NOTE: I have written all the answers as sharps but the equivalent flat could also be used. Check the note circle if you are unsure about the equivalent flat note.

On the E string what notes are at the following frets?

G	E	F	C
F#	A#	D#	G#
A	C#	B	D

On the G string what notes are at the following frets?

E	F	G#	B
A	C	F#	D#
C#	A#	D	G

On the A string what notes are at the following frets?

D	E	B	C#
C	F#	F	G#
D#	A#	G	A

On the B string what notes are at the following frets?

F#	A	D#	C
D	C#	F	G
B	G#	E	A#

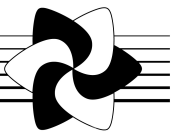
On the D string what notes are at the following frets?

E	D#	A	F
A#	D	G#	C#
C	G	F#	B

### Page 14 - Intervals Worksheet

Work out the interval distances of the intervals below in C Major:

Maj 2	Maj 7	Per 4
Aug 4	min 7	min 3
Maj 6	Aug 5	Aug U



Answers - NO CHEATING :)

**Page 14 - Intervals Worksheet (con't)**

Now do the same but use THE KEY OF THE LOWEST NOTE (the first note).

Maj 3	Per 5	Maj 7
Aug 2	min 3	min 7

Per 5	Per 4	min 7
Aug 3	Aug 6	min 2

min 6	Maj 7	min 2
Aug 5	Dim 5	min 3

Per 5	Maj 3	Maj 7
Aug 4	Aug 6	Aug U

NOTE - intervals like the Aug 3, Aug 6 or Aug U are hardly ever used in real life but are used here to make sure you understand the concept.

Last part of intervals work (many different keys...)

Per 5	Maj 3	Aug 3
Aug 5	min 3	Aug U
Aug 3	Maj 6	Maj 7

Aug 5	min 2	Aug 5
min 6	Maj 3	Aug 4
Aug 2	Maj 6	Per 5

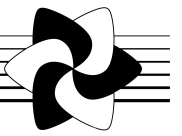
min 6	min 3	min 2
Maj 6	dim 8ve	Maj 7
Dim 5	min 2	Aug 5

\*\*\* I hope you remembered to use the effect both trick on these or they must have been REALLY hard :)

**Page 16 - Chord Theory Worksheet**

G B D	D F# A#	(shown on sheet already)
A C E	A C Eb	
Bb D F	Bb Db F	
C Eb G	C Eb Gb	

F A C	F A C#
B D F#	C E G#
Eb G Bb	Ab Cb Ebb (double flat)
F Ab C	Gb Bb D



Answers - NO CHEATING :)

**Page 16 - Chord Theory Worksheet (con't)**

D F# A	D F# A#
G Bb D	F# A C
F Ab C	A C# E#
G# B D#	F# A C#
Ab C Eb	Ab C E
Gb Bbb Db	D F A
Ab Cb Eb	A# C# E#
Gb Bb Db	C# E G#

**Page 17 - Chord Theory Worksheet 2**

A min	F Maj
B Maj	G Maj
C min	D Maj
E min	A Maj
C# Maj	Bb Maj
A dim	G Aug
F min	B dim
Eb Maj	D dim
B dim	F aug
C Maj	G min
D min	Eb Maj
E min	C# Maj
F Maj	D dim
G Maj	B Maj
A min	Ab Maj
D Maj	B Maj

**Page 21 - Diatonic Chords**

A min, G Maj, D Maj, B min, F# dim, E min, C Maj  
 Bb Maj, F Maj, Eb Maj, C min, G min, D min, A dim  
 C Maj, G min, E dim, A min, Bb Maj, D min, F Maj  
 C# min, E Maj, B min, G# dim, F# min, A Maj, D Maj  
 C min, G min, Bb Maj, F min, Ab Maj, D dim, Eb Maj

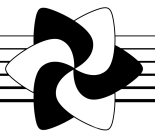
Key of G

Key of Ab OR Eb (not enough info to determine key ;)

Key of C

Key of E

Key of F



# Major Scale Chart

	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>I</b>
Key C	C	D	E	F	G	A	B	C
Key G	G	A	B	C	D	E	F#	G
Key D	D	E	F#	G	A	B	C#	D
Key A	A	B	C#	D	E	F#	G#	A
Key E	E	F#	G#	A	B	C#	D#	E
Key B	B	C#	D#	E	F#	G#	A#	B
Key F#	F#	G#	A#	B	C#	D#	E#	F#
Key C#	C#	D#	E#	F#	G#	A#	B#	C#
Key F	F	G	A	B $\flat$	C	D	E	F
Key B $\flat$	B $\flat$	C	D	E $\flat$	F	G	A	B $\flat$
Key E $\flat$	E $\flat$	F	G	A $\flat$	B $\flat$	C	D	E $\flat$
Key A $\flat$	A $\flat$	B $\flat$	C	D $\flat$	E $\flat$	F	G	A $\flat$
Key D $\flat$	D $\flat$	E $\flat$	F	G $\flat$	A $\flat$	B $\flat$	C	D $\flat$
Key G $\flat$	G $\flat$	A $\flat$	B $\flat$	C $\flat$	D $\flat$	E $\flat$	F	G $\flat$
Key C $\flat$	C $\flat$	D $\flat$	E $\flat$	F $\flat$	G $\flat$	A $\flat$	B $\flat$	C $\flat$
Triads	Maj	min	min	Maj	Maj	min	dim	Maj
Quadads	Maj 7	min 7	min 7	Maj 7	7	min 7	min7b5	Maj 7

Order that the #'s appear: F C G D A E B

Order that the b's appear: B E A D G C F

Notice that they are the reverse of each other?

Can you see the pattern in the above chart?

The sharp is always added on the 7<sup>th</sup> degree - flats always on the 4<sup>th</sup>...

Try to memorise C and the first 4 sharp keys and the first 4 flat keys:

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



in association with

