Shape Shifter – 3D

Guitar Method

By

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Forward

This book is written for the aspiring guitarist who has not yet found a teacher. It has been consistently proven that a good guitar teacher will get you to your destination sooner and with much less wear and tear. So my advice is, first find a friend, together find a teacher, learn the guitar together and practice and play together. Until that time comes to pass, this book is my gift to you. I will share with you what I have learned the hard way. I hope that it saves you time as well as wear and tear. This book includes a great deal of information, both specifically for the guitar and also for playing music in general, including music theory, composition, and songwriting. It is therefore rather complete, so learn what is most useful to you at a given time and then come back to the book as things change.

With enough effort on your part, you will begin mastering the instrument. Mastery should be your goal and nothing less. You must put the time in with your instrument in order to be successful. There is no substitute for playing each day, not even a wealth of knowledge and understanding. Playing with another person will help you immensely. Two heads are better than one. So support each other, be a kind and patient friend, and help each other to understand and apply the concepts that you are learning. You will not only learn your instrument, you will also have a friend to play music with. What a deal, and much more fun.

It is very important to play along with recordings of your favorite songs, various styles of music, rhythm and jam tracks, etc. Play using either a metronome or rhythm track that you can set at various tempos. Play slowly at first, do everything slowly and correctly, and then build up your speed. A simple looper (available online and in music stores) is a great tool to use, as is Band in a Box (available online from PGMusic, a very nice Canadian company).

The Shape Shifter - 3D Guitar Method focuses on understanding rather than on memorization. Understanding how and why things work will help you to be more creative and give you the skills necessary to further experiment on your own. Although focused on the guitar, the music theory and application contained herein can be applied to any instrument. Essential elements of music theory and composition have been included as they will help you to better understand the

music that you are playing and to create your own interesting compositions. You will also find the knowledge gained invaluable in playing along with other musicians and in songwriting.

Typically musicians reach a level and stay there for a while before the next breakthrough. Eventually the breakthrough comes along and then a new level. The Shape Shifter -3D Guitar Method is designed to quickly breakthrough each new level and give you the understanding to accomplish your goals. So go with the flow and use this method to your best advantage. Most importantly you will thoroughly enjoy playing your guitar and hopefully not ever be bored as you continue to learn and progress in your mastery of the instrument.

It is highly recommended that you also use YouTube as a valuable source of learning. There are many great teachers who share their knowledge for free, and these teachers know more, and are much better guitarists than I am. The advantage of watching a YouTube video is that you can see and hear what is being taught. This in my opinion is much better than just reading a book.

Hopefully you will not consider this as 'just another guitar book'. I have very thoughtfully decided on this book's content, organized and ordered all of the material, and have presented it in my own original fashion, all with the best of intentions. As I am a very analytical person, I have done my best to be thorough. Why, you might ask? I only wish that I had access to this information as I tried to learn guitar and play music on my own without a teacher. I'm sure that I would be much further along and could have saved a great deal of wear and tear. Alas, such is life, 'too soon old and too late smart'. So this book is my personal gift to you. Although I don't know you, I respect your efforts and want to help you if at all possible. Isn't that what life is all about, helping each other along the way.

And don't forget about rhythm, rhythm rules so learn to keep good time. Tap your feet, clap your hands, and also sing along with the various tones and chords in order to develop good pitch. Good timing, an interesting rhythm, and singing on key (on pitch) are paramount, particularly for playing with other people. After you have learned some scales, try to develop good phrasing techniques for playing leads. It is best to keep things simple at first. Use the chord tones as starting and ending points for your phrases. Think about the next chord in the progression, where you have been, and where you are intending to go next.

Learn to communicate your music through phrasing and in your own original style. You are a unique individual, so no need to pattern yourself after someone else.

I hope that you enjoy this book and succeed in your efforts to master the guitar. You can use this book as a reference as you continue to learn from others. And remember to share the wealth. Learning is a lifelong process, so enjoy the journey, take your time, and don't worry about it. Be sure to include others on your way, play lots of music, write some original songs, and make other people happy. Remember the music is all around us, it is part of being human and there is no need to be a star or a commercial success. Just enjoy playing music and make some good friends along the way.

Elements of Music

The fundamental elements of music are: Key, Time Signature, Tempo, Rhythm, Melody, and Harmony. A musical composition or song is set in a given key. A key is named for its primary tone and given a designation of either major or minor. The primary or root tone of a key becomes the home or resting place where songs often begin, keep returning to, and typically end.

Every key has a chromatic twelve-tone scale that is made up from the successive tones of the scale for that key designation starting with the primary tone or root note for that scale. There are twelve keys and each of these keys supports a major and relative minor harmonic environment. It is very easy to move between the major and relative minor harmonic environments within a given key designation as they share the exact same tones and chords. The relative minor harmonic environment is built off of the sixth tone of the major key. This holds true for all keys. The only difference is the order and spacing between the tones. The distance between any two tones is known as an interval.

Melodies in popular music generally utilize the tones of the shorter eight-note major and minor scales, but they may use non-scale chromatic tones including tones from an octave higher or lower. Although melodies are built from the scale tones they almost always incorporate skips, jumps, and intervals which make them unique. A scale is a sequence of notes played in succession without any skips or jumps. A melody is constructed from the tones of a scale but a melody is not a scale. It is the creative skips, jumps, and intervals between the scale tones that make melodies and instrumental improvisation unique and interesting. Playing the successive notes of a scale is not the same thing as improvising or playing a lead. Play your leads with good phrasing and learn to communicate in a unique and interesting fashion.

The notes of a melody are generally played on the higher-pitched treble strings, chords harmonizing the melody tend to be constructed in the middle, and bass runs typically utilize the lower-pitched bass strings. This is a general guideline and not a rule. All six strings and the entire guitar fretboard are at your disposal. However, it is very important to orient yourself to the treble strings as there is a natural tendency to view the guitar from the top down (bass to treble) rather

than from the bottom up (treble to bass). The melody is generally on the treble strings and accompanying chords may be constructed there as well. Whether you are playing rhythm guitar, generating bass lines, or playing a lead or solo will dictate what string sets you will choose to use.

Music is a language used to tell a story with or without words. Like any good story teller you must bring life to the story using punctuation, timing and phrasing, color and dynamics, adding feeling and emotion just like in a spirited conversation. Take the listener on a journey of changing scenes. Use your own creativity and imagination to provide a varied landscape with adequate elements of novelty and surprise, balancing moments of excitement with rest, using both sound and silence. How you tell the story is very important so make it your own.

All great musical compositions incorporate variety and motion. To add variety there may be temporary key changes or modulations, changes in tempo, rhythm, melody and harmony, chord quality interchange, movement between the major, minor, and modal harmonic environments, chord substitutions, chord extensions and alterations. Motion is achieved by applying short fills and runs, and by using approach chords, passing chords, and connector chords between the fundamental chords in the harmonic environment.

It is important to recognize that music is an art form based on hearing. It is your ear that must connect with your fingers and not just your brain. Reading a music book even if you totally understand everything in it will not be enough. You must spend time playing your instrument and use the techniques you learn while playing along with recorded music and other people. If you want to get good at playing your guitar then you must play your guitar. There is no substitute for it. Like a painter you must first learn your colors and how to mix them. You will then have a pallet of colors to paint from adding your own uniquely creative and imaginative spark.

Every pleasing sequence of tones played melodically or harmonically can be subsequently analyzed and understood using music theory and composition. But what is most important is that the music be pleasing to the ear. Many great songs were first created by musicians without any formal music training. It is the sound that matters and not the analysis.

Ultimately everything is important, including posture, how you hold your guitar and pick, efficient and ergonomic right and left hand movement, and relaxed fingering. So it is best to check on a variety of sources for these particular aspects of guitar playing. You will be playing your guitar over a lifetime and it is important to develop good habits early on. Light strings and lower action on your guitar will make for easier playing. Don't press the strings any harder than necessary to make a clear tone. Learn to play everything in both the open (using the open strings) and closed (not using the open strings) positions. Experiment and determine what works best for you based on the sound advice of several people. For the greatest lifelong satisfaction on a multitude of levels, learn to read music. Go slowly, take your time and develop good habits early on.

There are many words, and some very unique tables and charts in this book. Although all of the words are hopefully worth reading, take everything in very small chunks. Printing out some of the tables and charts that seem interesting to you is probably a good way to start. Then if you need more information, you can thoroughly read all of the associated text. Remember that it is the doing that counts most, so don't just read about it, do it. Don't get bogged down trying to absorb everything at once. You can begin playing your guitar immediately. Try to master each section before moving on to the next.

The Guitar Fret Board and Standard Tuning

The guitar fret board layout is presented in **Figure 1a**. There are six strings. The highest sounding (treble) string is referred to as the 1st String. The lowest sounding (bass) string is referred to as the 6th String. The other strings are named accordingly (Strings 2-5). The standard tuning for the guitar is as follows:

E – String 6 (fattest string with lowest pitch)

A – String 5

D – String 4

G – String 3

B – String 2

E – String 1 (thinnest string with highest pitch)

These are the names of the notes or tones that you will hear when the guitar is properly tuned to pitch and the strings are played openly. **The names of the notes or tones for these open strings should be committed to memory.**

It is very important that your guitar always be tuned to pitch before playing. Your guitar also needs to stay in tune when it is played. Playing with the guitar out of tune will not do particularly when playing with others. It is also necessary that your instrument have good intonation. You must be able to hear the sometimes subtle differences in the sounds that are produced. If you cannot hear the melody clearly or cannot hear the differences between the various types of chords you are playing, you will have a more difficult time learning and likely not enjoy playing as much. So get as good a guitar as you can afford rather than a cheap guitar with poor intonation, and also buy an electronic tuner. Even good guitars are susceptible to changes due to temperature and humidity so remember to tune often. Inexpensive backlit electronic tuners make tuning easy even in the dark.

Figure 1a.

Guitar Fretboard (Showing Sharps)

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	6th
C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	5th
F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	4th
B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	3rd
D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	2nd
G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	1st

Guitar Fretboard (Showing Flats)

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	6th
Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	5th
Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	4th
B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	3rd
Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	2nd
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	1st

Chromatic and Major Scales

Western (European/American) music uses the 12 tone chromatic scale. So there is a maximum of twelve tones or notes in any given key. As you move up the neck (towards the sound hole) along the fret board, each fret is a half step up from the previous fret. Twelve frets complete an octave. This is just like playing all of the white and black keys on a piano over the range of an octave.

In practice, the chromatic scale is generally not used in its entirety. A shortened form called the major scale is used which contains only 8 tones. Actually there are really only 7 unique tones. The 8th tone is the same as the first tone but an octave above it. *For example, the major scale in the key of C contains the tones - C D E F G A B C.* Notice that there are no sharps or flats in the major scale for the key of C. For all other keys there are one or more sharps or flats in their respective major scales.

In the major scale for any key, there are whole steps (2 frets) between all of the scale tones except between scale tones 3 & 4, and 7 & 8, which are always separated by a half step (1 fret). **This fact should be committed to memory**.

1 2 3v4 5 6 7v8

C D E F G A B C

You can play a complete chromatic scale on a single string of the guitar. As you move up the neck (towards the sound hole) along the fret board, each fret is a half step up from the previous fret. *For example, the 6th string, when played open is E, first fret F, second fret F#, third fret G, fourth fret G#, fifth fret A, sixth fret A#, seventh fret B, eight fret C, ninth fret C#, tenth fret D, eleventh fret D#, and twelfth fret E, an octave higher.*

You can also play a complete major or minor scale on a single string using only the tones from the major or minor scale. You can play a complete melody on a single string using any of the tones from the chromatic, major and minor scales. Although a single string may be used for a period of time within a composition we typically use multiple strings when playing the guitar. In practice we end up

playing the guitar horizontally, vertically, and diagonally taking full advantage of the multiple strings and the entire fret board.

The standard tuning of the guitar makes it very convenient to make music. Every tone you need is very close at hand. And it is very easy to build chords and arpeggios, use chord progressions, and play scales and modes, all the while staying in the tonality of the key chosen with every note played sounding absolutely correct with no bad sounding notes.

In reality there are no bad sounding notes that you can't recover from as long as you are quick with your wit. Yet at times certain notes may be best avoided. When playing your guitar, be sure to relax and do not think in terms of good and bad or right and wrong, just enjoy playing your guitar.

In order to achieve your goals you will need to get familiar with numbering and naming the scale tones for any given key. You will also need to be able to find the corresponding notes on the guitar fret board. Again just relax and take your time, this book is designed to help you do that in a simple manner.

For example, if we number and name the tones for the C major scale we have eight numbers (1,2,3,4,5,6,7,8) and eight letters (C,D,E,F,G,A,B,C). This example shows the naming of the notes for the key of C major. We could have chosen another key. The numbering scheme is identical regardless of the key chosen. Everything is relative to the tone that we call the tonic or root tone. In the key of C major this is the tone C. Therefore the C tone was given a number of 1 and all of the subsequent scale tones were numbered accordingly relative to the starting tone.

1 2 3v4 5 6 7v8

C D E F G A B C

Had we chosen to show the numbering for the key of F, the F tone would have been given a number 1, and all of the other tones numbered accordingly. Since only the key of C major contains no sharp or flat notes, for all other keys at least one or more of the letters must also be designated with either a sharp '#' or flat 'b'.

F*or example, if we name the tones for the key of F major which contains 1 flat (Bb) we have eight numbers (1,2,3,4,5,6,7,8) and eight letters (F,G,A,Bb,C,D,E,F).*

1 2 3v4 5 6 7v8

F G A Bb C D E F

In this book most examples will be given for the key of C major. This makes it easier to follow when all of the examples are for a single key. But it is very important to understand that what is shown for the key of C major can be applied to any other key.

You will need to think abstractly to understand the consistent relationships that are presented in this book. Everything presented is relative to the key designation chosen. If the key changes everything still holds true, but the numbering and relationships between the tones, and all the relationships among the scales, modes, chords and arpeggios are relative to the new key designation.

An important element of the Shape Shifter – 3D guitar method is the concept of relativity. Everything is always relative to the key designation, its scale tones and harmonic environment, and the associated numbering and naming of the notes. Yet all relationships remain the same and are consistent for all keys.

Figure 1b shows a guitar fret board depicting the naming and numbering of the tones or notes for the C major scale including any flats and sharps that occur between the tones of the major scale. Although not part of the C major scale, these tones may also be used in a composition for creating chord extensions and alterations and as approach, passing and connector tones for adding variety and motion. For simplicity and to facilitate ease of use, the tones 1 and 8 are both given the designation 1. As mentioned previously, there are really only seven distinct tones in a major scale, the 8 tone just being the same as the 1 tone, but an octave higher.

By looking carefully at the guitar fret board you will begin to see many repetitive patterns and relationships among the tones. This is worth looking at time and again. Get very familiar with the numbering and naming of the notes. Remember that everything is relative to what key you are in. The same patterns and relationships hold consistently for all keys. Always look for patterns that you can

use. Everything is relative to the key you are in and its particular harmonic environment. There is always more than one way to do everything and tones with the same pitch appear in multiple places on the fretboard. The guitar fretboard becomes like the stars in the sky, reach out and pull them down to you.

Depending on the key designation you can designate any tone as being the 1 or root tone. The physical location on the fret board for the 1 or root tone will vary based on the key designation chosen. Every repeating relationship and pattern is exactly the same but the numbering is now relative to the new root tone. Figure 1c shows a guitar fret board depicting the naming and numbering of the tones or notes for the G major, C major, and F major scales including any flats and sharps that occur between the tones of the major scale. The numbering for the tones is always relative to the respective root tone for each given key.

Figure 1b.

Guitar Fretboard (Showing Flats)

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	6th
Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	5th
Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	4th
B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	3rd
Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	2nd
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	1st

Guitar Fretboard – C Major Scale Tones

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	6th
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	5th
b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	4th
7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	3rd
b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	2nd
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	1st

Figure 1c.

Guitar Fret Board – G Major Scale Tones

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	6th
b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	5th
7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	4th
3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	3rd
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	2nd
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	1st

Guitar Fret Board – C Major Scale Tones

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	6th
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	5th
b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	4th
7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	3rd
b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	2nd
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	1st

Guitar Fret Board – F Major Scale Tones

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	6th
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	5th
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	4th
b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	3rd
b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	2nd
b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	1st

Intervals and Frets between Tones

All of the distances or intervals between the root tone and the other scale tones are shown in Figure 2 below based on the twelve tone chromatic scale that we discussed earlier. The chromatic scale for the key of C major will be used as an example.

Figure 2. Intervals And Frets Between Tones

C Major Chromatic Scale Intervals												
1	b2	2	b3	3	4	b5	5	b6	6	b7	7	8
I	bii	ii	biii	iii	IV	bV	V	bvi	vi	bvii	vii	I
C	Db	D	Eb	E	F	Gb	G	Ab	A	Bb	B	C
Root or Unison	Minor Second	Major Second	Minor Third	Major Third	Perfect Fourth	Aug Fourth or Dim Fifth	Perfect Fifth	Aug Fifth or Minor Sixth	Major Sixth	Minor Seventh	Major Seventh	Octave
	1 fret	2 frets	3 frets	4 frets	5 frets	6 frets	7 frets	8 frets	9 frets	10 frets	11 frets	12 frets
C Major Scale Intervals												
1		2		3	4		5		6		7	8
I		ii		iii	IV		V		vi		vii	I
C		D		E	F		G		A		B	C
Root or Unison		Major Second		Major Third	Perfect Fourth		Perfect Fifth		Major Sixth		Major Seventh	Octave
		2 frets		4 frets	5 frets		7 frets		9 frets		11 frets	12 frets

Intervals going from one tone to another, and then from that new tone to the original tone an octave higher always add to nine and the number of frets always add to twelve. Hence the distance from the root to the perfect fourth is an interval of a 4th (5 frets) and from the perfect fourth to the root an octave higher is a 5th (7 frets). The intervals add to 9 and the frets add to 12. From any given tone, a major 3rd is always 4 frets away, a perfect 4th is always 5 frets away, and a perfect 5th is always 7 frets away. Moving from a note on one string directly to the note below it on the next string below it is equivalent to moving a distance of 5 frets, a perfect 4th. These relationships hold true for all keys. These relationships are worth committing to memory.

It turns out that the relationship between the tones 1, 4, and 5 is the strongest and most important in all of music. Many popular songs can be played using only the chords built from these three tones. Look again at the guitar fret board diagram in Figure 1b and see the close proximity and repeating patterns for these

three important tones. We can also see that if an open string is played as the root tone, its perfect 4th is always located at fret number 5 and its perfect 5th is always located at fret number 7.

It is important to spend time experimenting with the sounds of the different intervals. The intervals can be played melodically as arpeggios and harmonically as partial chords. Intervals can be constructed from any tone in the harmonic environment. Everything is just relative to the starting tone. The various intervals are used to add the skips and jumps to melodies and leads in order to make them interesting and unique. These sounds are the colors that you will paint from.

Notice the use of upper and lower case Roman numerals for the intervals. This is used to differentiate between the major, minor and diminished chords that are built from the scale tones. However in practice you may also see only all upper case Roman numerals used, so it is dependent on the reader's knowledge to properly interpret the quality of the chords. The chords in upper case Roman numerals are structural chords also referred to as primary chords and the chords in lower case Roman numerals are referred to as secondary chords. There will be much more on all of this later and you will encounter both methods of presentation in the book. This is worth mentioning but not worth worrying over, particularly at this time.

Many songs in popular music, particularly folk songs and blues use only three or four chords. The chords are strummed and the song is sung without any other instrumental embellishment. Singing a song with guitar accompaniment can be as simple as this. However in order to creatively improvise on the guitar you will need to know and understand other concepts that are easily grasped.

The Major Scales

The major scales for each key are depicted in Figure 3a. In order to accommodate the fact that the three note triad chords built from the major scale can be extended to include 7ths, 9ths, 11ths, and 13ths, in Figure 3b we have continued the table beyond the octave to include these extended tones. If you look closely, you will see that 9ths, 11ths, and 13ths are nothing more than repetitions of the tones 2, 4 and 6, respectively. Again there are only seven distinct tones in a major scale.

Major scales are the primary source for improvisation and the scale from which all modes, chords, arpeggios, and other important scales are derived.

Note that this chart may also be used to transpose a song from one key to another key just by adhering to the ordering, numbering and naming of the corresponding tones.

Figure 3a.

Major Scales For All Keys							
1	2	3	4	5	6	7	8
C	D	E	F	G	A	B	C
Db	Eb	F	Gb	Ab	Bb	C	Db
D	E	F#	G	A	B	C#	D
Eb	F	G	Ab	Bb	C	D	Eb
E	F#	G#	A	B	C#	D#	E
F	G	A	Bb	C	D	E	F
Gb	Ab	Bb	Cb	Db	Eb	F	Gb
G	A	B	C	D	E	F#	G
Ab	Bb	C	Db	Eb	F	G	Ab
A	B	C#	D	E	F#	G#	A
Bb	C	D	Eb	F	G	A	Bb
B	C#	D#	E	F#	G#	A#	B

Figure 3b.

Extended Major Scales For All Keys												
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
C	D	E	F	G	A	B	C	D	E	F	G	A
Db	Eb	F	Gb	Ab	Bb	C	Db	Eb	F	Gb	Ab	Bb
D	E	F#	G	A	B	C#	D	E	F#	G	A	B
Eb	F	G	Ab	Bb	C	D	Eb	F	G	Ab	Bb	C
E	F#	G#	A	B	C#	D#	E	F#	G#	A	B	C#
F	G	A	Bb	C	D	E	F	G	A	Bb	C	D
Gb	Ab	Bb	Cb	Db	Eb	F	Gb	Ab	Bb	Cb	Db	Eb
G	A	B	C	D	E	F#	G	A	B	C	D	E
Ab	Bb	C	Db	Eb	F	G	Ab	Bb	C	Db	Eb	F
A	B	C#	D	E	F#	G#	A	B	C#	D	E	F#
Bb	C	D	Eb	F	G	A	Bb	C	D	Eb	F	G
B	C#	D#	E	F#	G#	A#	B	C#	D#	E	F#	G#

Remember that each major key has a relative minor key that is always based on the 6th note of the major scale that shares the same tones and chords as in the major scale's harmonization. Twice the bang for the buck!

Major Key	Relative Minor Key
C	**Am**
Db	**Bbm**
D	**Bm**
Eb	**Cm**
E	**C#m**
F	**Dm**
Gb	**Ebm**
G	**Em**
Ab	**Fm**
A	**F#m**
Bb	**Gm**
B	**G#m**

Get Your Fingers Working – Chromatic Scale

In order to easily play scales and the chords built from scales it will be necessary to get the fingers of your left hand working properly. There is no time like the present to begin using all four of your fingers in order to strengthen them and to establish muscle memory. Probably the best way to approach this is to learn to play a chromatic scale using all four of the fingers of your left hand. The chromatic scale on its own is not very interesting, but it is very useful. This is primarily a hand exercise at this time. You will be learning to use a span of 4-5 frets. Eventually you will end up using elements of the chromatic scale in your compositions, particularly for runs and fills.

There are various methods to play a chromatic scale, one involving four frets with a shift in the starting position for each string and the other involving five frets with a finger shift/stretch of either the 1st or the 4th fingers. Learning to play the chromatic scale will help you in many ways. The fingerings for playing the chromatic scale are provided in Figure 4a and Figure 4b. This is not easy so give yourself ample time and come back to this exercise again and again.

You will come to appreciate later on that almost everything that can be done regarding scales, modes, arpeggios, chords, harmony, melody and creative improvisation **FOR ALL OF THE KEYS**, can be done within a distance of the same 5 frets on the guitar. This includes the major and minor scales, major and minor pentatonic and blues scales, natural minor scales, harmonic minor scales, melodic minor scales, etc.). So get those fingers working using 4 and 5 frets.

You can also begin to use a guitar pick at this time. It is suggested that you use a light or medium guitar pick rather than a heavy one. When you use the flat pick, use a down motion to play the first note and an up motion to play the next note. Repeat the down/up motion for the successive notes. Try to minimize the amount of pick protruding at 90 degrees from between your thumb and tucked in index finger. It is recommended that you gently tuck in all of your fingers rather than have them hanging down. The tucked in fingers will provide additional support and take any undue stress off of your thumb.

With regards to the guitar fret board try to keep your thumb in place around the center of the back of the guitar neck somewhere between where your 1st and 2nd fingers will be playing. Move your thumb only when necessary and do not press too hard. Try to move your fingers independently. Press down only hard enough to cleanly play the note. Minimize any wasted motion. Do not lift the fingers too high off the fret board. Your hand should be relaxed. Practice playing the chromatic scale in both ascending and descending order.

Figure 4a.

Guitar Fret Board – C Chromatic Scale Fingering

16	15	14	13	12	11	10	9	8	7	6	5	4		
					4	3	2	1					E	6th
						4	3	2	1				A	5th
							4	3	2	1			D	4th
								4	3	2	1		G	3rd
								4	3	2	1		B	2nd
								4	4	3	2	1	E	1st

Guitar Fret Board – C Chromatic Scale Fingering

16	15	14	13	12	11	10	9	8	7	6	5	4		
				4	4	3	2	1					E	6th
				4	4	3	2	1					A	5th
				4	4	3	2	1					D	4th
					4	3	2	1					G	3rd
				4	4	3	2	1					B	2nd
				4	4	3	2	1					E	1st

Guitar Fret Board – C Chromatic Scale Fingering

16	15	14	13	12	11	10	9	8	7	6	5	4		
				4	3	2	1	1					E	6th
				4	3	2	1	1					A	5th
				4	3	2	1	1					D	4th
					4	3	2	1					G	3rd
				4	3	2	1	1					B	2nd
				4	3	2	1	1					E	1st

Figure 4b.

Guitar Fret Board – C Chromatic Scale Fingering

16	15	14	13	12	11	10	9	8	7	6	5	4		
				4	**4**	**3**	**2**	**1**					**E**	6th
				4	**4**	**3**	**2**	**1**					**A**	5th
				4	**4**	**3**	**2**	**1**					**D**	4th
				4	**4**	**3**	**2**	**1**					**G**	3rd
			4	**4**	**3**	**2**	**1**						**B**	2nd
			4	**4**	**3**	**2**	**1**						**E**	1st

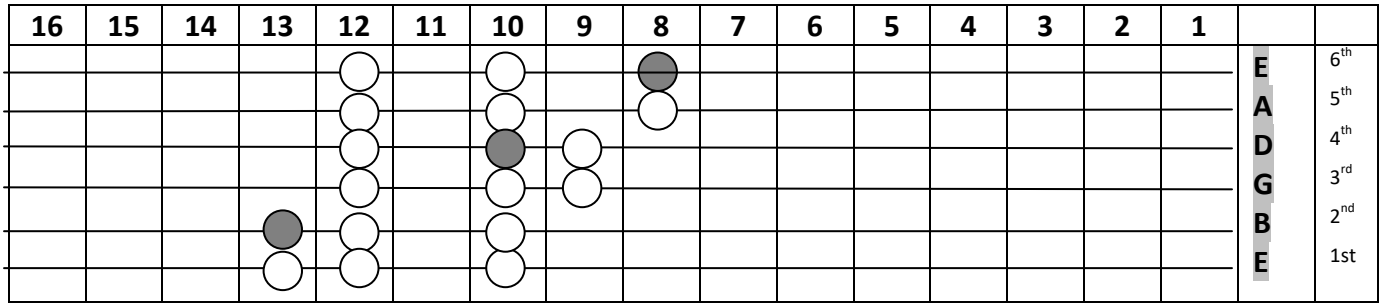
Guitar Fret Board – C Chromatic Scale Fingering

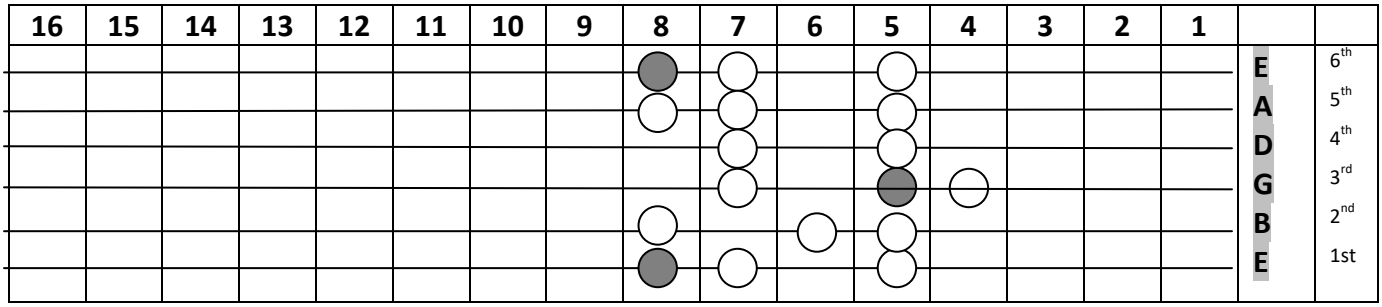
16	15	14	13	12	11	10	9	8	7	6	5	4		
				4	**3**	**2**	**1**	**1**					**E**	6th
				4	**3**	**2**	**1**	**1**					**A**	5th
				4	**3**	**2**	**1**	**1**					**D**	4th
				4	**3**	**2**	**1**	**1**					**G**	3rd
			4	**3**	**2**	**1**	**1**						**B**	2nd
			4	**3**	**2**	**1**	**1**						**E**	1st

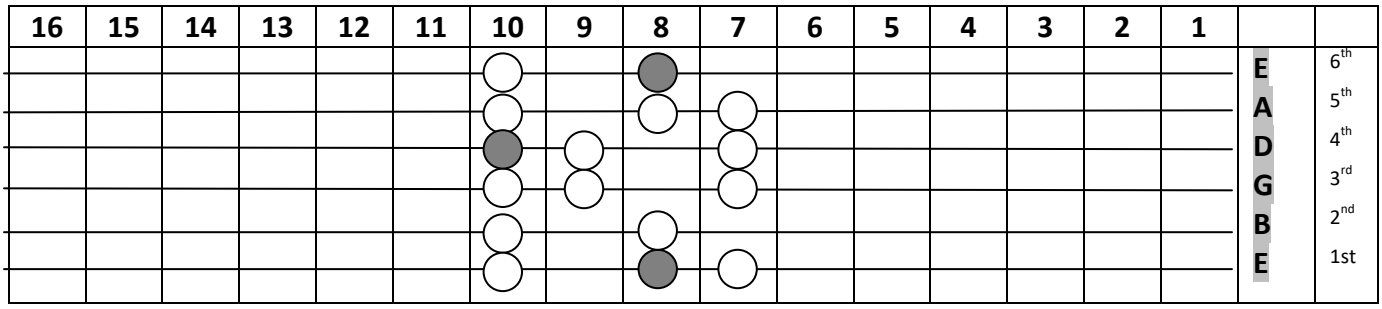
Get Your Fingers Working – Major Scale

Play the C Major Scale using the scale patterns presented below. The root tones are shaded. Listen for the familiar sounds of Do, Re, Mi, Fa, Sol, La, Ti, Do.

Major Scale Patterns or Shapes





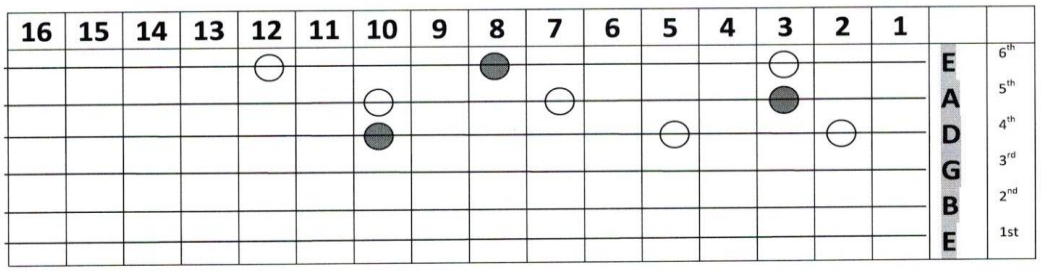


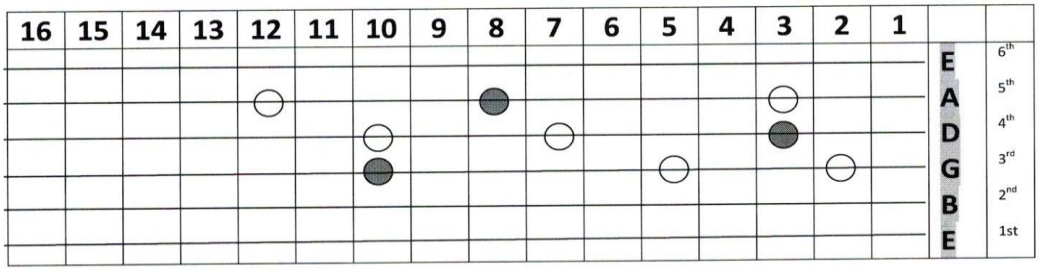
Get Your Fingers Working – Major Chord Triads

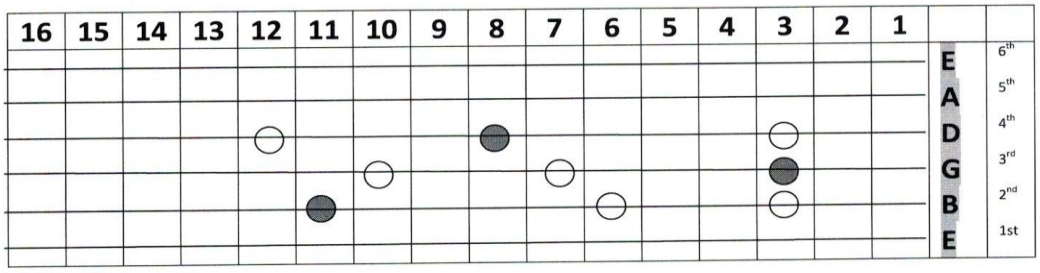
Play the various major chord shapes presented below. The root tones are shaded. Listen to the sound of the major chord triads.

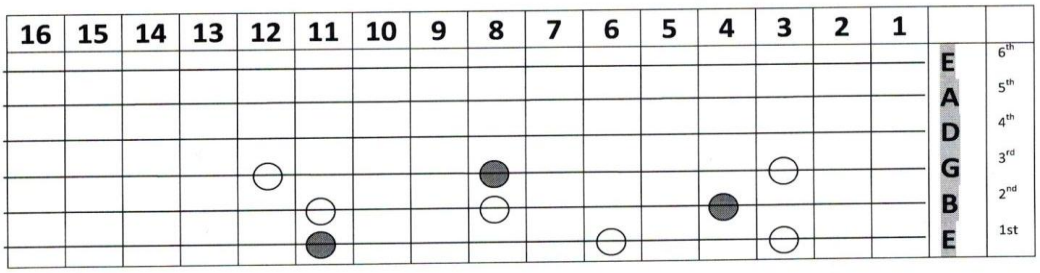
Major Chord Shapes

1st Inversion Root 2nd Inversion









The Major Harmonic Environment

All of the chords based on the major scale are derived from what has been called the Grand Chord or Grand Key. These chords are used to harmonize melodies based on the major scale and make up the harmonic environment for the particular key designation.

If you have a composition in a given key and you play only the tones from the major scale, the modes derived from the major scale, and the chords built from the Grand Chord of the major scale, even if you venture off for a while into the relative minor scale, you cannot play a bad sounding note.

The Grand Chord for the key of C Major is presented in Figure 5. It shows both Chord Triads and Seventh Chords. The addition of the 7th tone creates a broader palette of sound textures and also allows greater possibilities for chord substitution.

Figure 5.

THE GRAND CHORD					
Key of C Major – The Stacked 3rds Make The Chords					
Scale Tone	Chord Root	Chord Tones	Chord Triad	Chord Tones	7th Chords
13 or 6	A	A C E	Am	A C E G	Am7
		6 1 3		6 1 3 5	
11 or 4	F	F A C	F	F A C E	FM7
		4 6 1		4 6 1 3	
9 or 2	D	D F A	Dm	D F A C	Dm7
		2 4 6		2 4 6 1	
7	B	B D F	B°	B D F A	Bø7
		7 2 4		7 2 4 6	
5	G	G B D	G	G B D F	G7
		5 7 9		5 7 2 4	
3	E	E G B	Em	E G B D	Em7
		3 5 7		3 5 7 2	
1	C	C E G	C	C E G B	CM7
		1 3 5		1 3 5 7	
Some chords may be extended and/or altered					
Chord Extensions: 7,9,11,13					
Chord Alterations: b5,#5,b9,#9,#11					

From Figure 5, we see that the chords built to harmonize the tones from the C Major Scale are as follows:

Triads						
1	2	3	4	5	6	7
I	ii	iii	IV	V	vi	vii
C Major	D Minor	E Minor	F Major	G Major	A Minor	B Diminished
C	Dm	Em	F	G	Am	B°
Seventh Chords						
C Major 7	D Minor 7	E Minor 7	F Major 7	G Dom 7	A Minor 7	B Minor7 b5
CM7	Dm7	Em7	FM7	G7	Am7	B$^{\emptyset}$7

Chord triads are built from tones 1,3, and 5 of the major scale.

The chord types for chords built from the tones of a major scale are identical for every key. The I, IV, and V are always major chords, the ii, iii, and vi are always minor chords, and the vii is always diminished. This is the harmonic environment for a major key and should be committed to memory. These chords will always sound correct in any composition that is in a major key and/or its relative minor key.

We will wait to address the characteristics and details of the harmonic environment for the natural minor, the harmonic minor, and the melodic minor until later in this book. The harmonic minor is most often used in classical music and the melodic minor is most often used in jazz. They may all be used at any time regardless of music genre.

Key Designations, Scale Tones and the Harmonic Environment

A great tool exists for depicting key designations and the relationships among keys. This tool is known as the Circle of 5ths. It designates the number of sharps and flats for each key and the names of the respective notes of the scale which are either sharp or flat. The closer that the keys are to each other in the diagram the more they share common tones. *For example, the keys of C, F, and G share all but one single tone and hence they are very closely related.*

The tool also depicts the natural movement among chords within a key based on the theory of chord function and tendency. When traveling counter-clockwise around the Circle of 5ths, the chords built from the tones follow the II to V to I (2 to 5 to 1) chord progression that is commonly used to establish tonality and for modulating between keys. With the guitar in standard tuning the sequence of strings moving from the bass strings towards the treble strings conforms naturally to the II V I progression inherent in the Circle of 5ths adjusting for the 1 fret shift between strings 2 and 3.

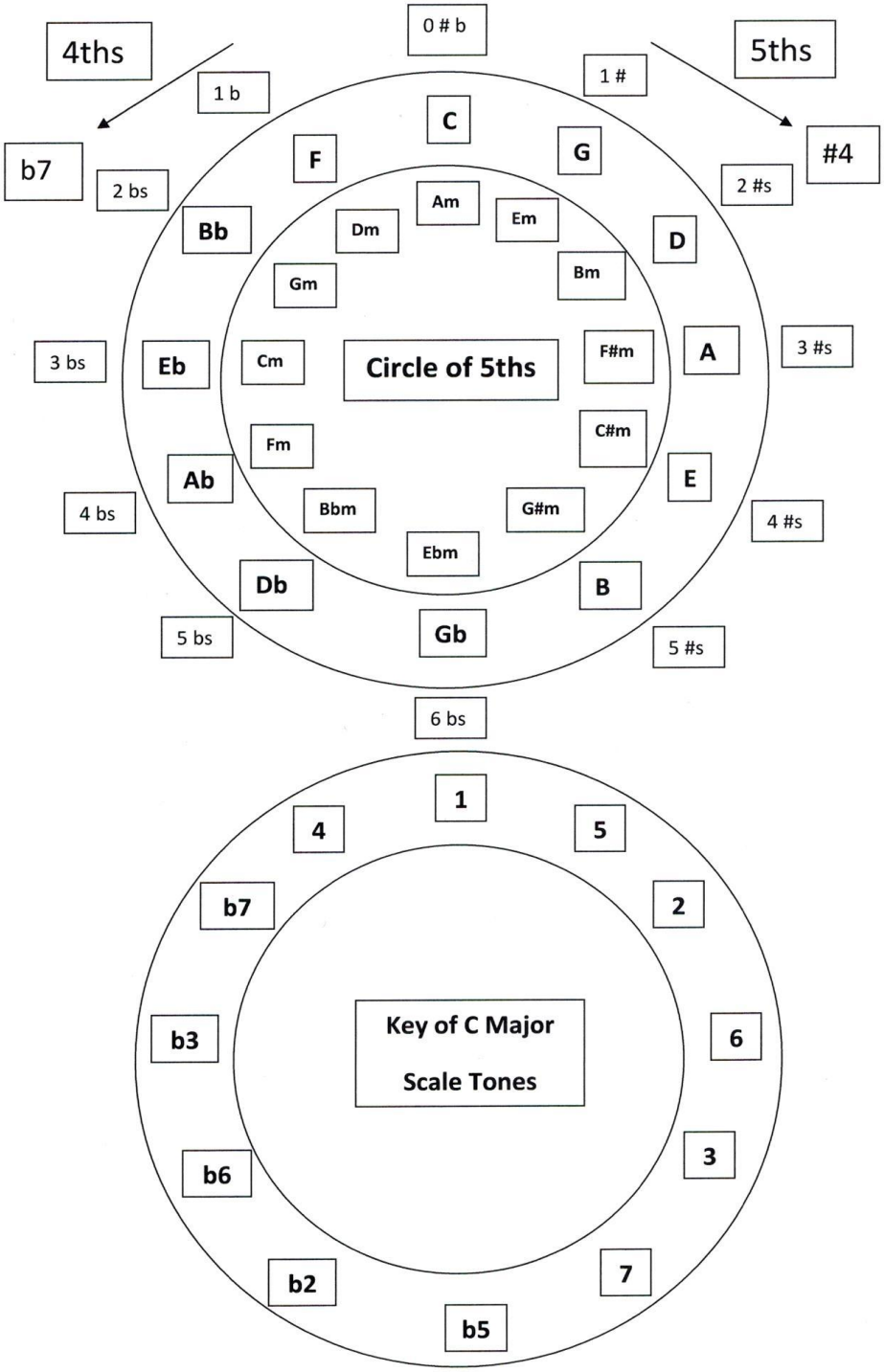
A modified version of the Circle of 5ths is presented in Figure 6. A description of the many ways that the Circle of 5ths can be used is presented below.

1. The twelve major key designations are depicted along the donut portion of the circle.
2. The relative or natural minors for each major key designation are depicted along the donut-hole portion of the circle under each major key.
3. The numbers of sharps or flats for each key are depicted along the outside edge of the donut portion of the circle.
4. If you travel clockwise around the circle, the tones ascend in perfect 5ths. *For example, G is the perfect 5th of C.*
5. If you travel counter-clockwise around the circle, the tones ascend in perfect 4ths. *For example, F is the perfect 4th of C.*
6. The first sharp tone is F. *For example, in the key of G, there is 1#, and this sharp is the tone F.*
7. The second sharp tone is C. *For example, in the key of D, there are 2#s, and these sharps are the tones F and C.*

8. The first flat tone is Bb. *For example, in the key of F, there is 1b, and this flat is the tone Bb.*
9. The second flat tone is Eb. *For example, in the key of Bb, there are 2bs, and these flats are the tones Bb and Eb.*
10. As you travel clockwise around the circle, sharping the 4th tone of the major scale of the previous key derives the major scale for the following key. *For example, the scale of G major is the same as the scale of C but with the 4th tone (F) raised a half step (sharped) to F#.*
11. As you travel counter-clockwise around the circle, flatting the 7th tone of the major scale of the previous key derives the major scale for the following key. *For example, the scale of F major is the same as the scale of C but with the 7th tone (B) lowered a half step (flatted) to Bb.*
12. As you ascend counter-clockwise in perfect 4ths along the circle, the progression of chords built from these tones adhere to the natural progression of chords based on chord function and tendency (7 3 6 2 5 1).
13. As you ascend counter-clockwise in perfect 4ths along the circle, the progression of chords built from these tones follow the II V I progression that establishes tonality. *For example, going from D to G to C, is the II V I for the key of C major.* In practice Dm7 to G7 to CM7 is typically used rather than just the chord triads. The II V I progression is a substitute for the IV V I progression and both of these progressions can be used to establish a new tonality. For modulating to a new key it is best to use the V7 rather than the V, as the dissonance of the added flat seventh tone begs for resolution to the new tonic or root.

When chords are used to harmonize a melody and chord substitutions are used, there may be temporary modulations within a composition. When looking at a piece of music it may be difficult to discern what key a piece of music is in at a given time. Looking for the most recent V to I or II to V to I progression is the most reliable way to determine the key. The circle of 5ths is a great tool. It is like a reference manual for the relationships among keys and chords in one single diagram. The original key for any piece of sheet music is depicted in the standard manner by the number of sharps or flats on the ledger lines appearing in the first bar of any musical composition.

Figure6.


4ths
5ths
0 # b
1 b
1 #
b7
#4
2 bs
2 #s
3 bs
3 #s
4 bs
4 #s
5 bs
5 #s
6 bs
C
G
D
A
E
B
Gb
Db
Ab
Eb
Bb
F
Am
Em
Bm
F#m
C#m
G#m
Ebm
Bbm
Fm
Cm
Gm
Dm
Circle of 5ths
1
5
2
6
3
7
b5
b2
b6
b3
b7
4
Key of C Major
Scale Tones

Visualizing Patterns on the Guitar Fret Board

Refer again to Figure 1b, which for convenience is presented at the end of this section. *The numbering of the notes for this example is based on the C major scale for the key of C major.* We can see that the following important patterns exist.

1. As mentioned earlier, we can see that each string contains the complete chromatic 12 tone scale as well as the shortened 8 tone major and minor scales.
2. We can see that every tone appears in many places along the fret board.
3. With regards to the important IV V I chord progression we see that the 4 is always below the 1 on the same fret, and that the 5 is only 2 frets up from the 4. We can also see that the 5 is always above the 1 on the same fret. We can see that the 1 is always repeated again two strings down and 2 frets up.
4. With regards to the important II V I chord progression we see that the 2 is always above the 5 on the same fret, and that the 5 is always above the 1 on the same fret.
5. The unique tuning of the guitar follows the Circle of 5ths. We can see that if we did not run out of strings, the 7 is always above the 3, the 3 is always above the 6, the 6 is always above the 2, the 2 is always above the 5, and the 5 is always above the 1, and the 1 is always above the 4. This follows the natural progression of chords, and if we could keep going we would see the entire Circle of 5ths: 7,3,6,2,5,1,4,b7,b3,b6,b2,b5.
6. The major chord triad is built using tones 1, 3, and 5. For the major chord we can see that the 5 is always above the 1 on the same fret, and that the 3 is always below the 1 but one fret lower.
7. We see that the b7 is always below the 4, this is useful for making dominant and minor 7ths, while the major 7th is just one fret away.

The more we look at the guitar fret board the more patterns we can see. This makes it very easy to do everything we need to do. The patterns are consistent, they never change and they are repeated up and down the fret board, everything is relative to where you are and to what key you are in. The same

patterns exist for all keys. Everything can be done in a variety of ways and not just in one way. You can build any chord without the need to memorize and you can play scales and modes in a variety of ways from a variety of starting positions. If you think out of the box, and experiment creatively and imaginatively you will find a whole universe of possibilities within the guitar fret board.

It is important to see that there is a break in the pattern between the 3rd and 2nd strings. When we move from stings 6 to 5 to 4 to 3, the same patterns exist. When we move from strings 3 to 2, the note to be played on string 2 is shifted one fret higher. Then the original pattern returns as we go from strings 2 to 1. **This also means that all chord forms (fingering patterns) from the strings above must be adjusted if any of the tones will now include the 2nd string**. A good example is the E chord form, which first changes to the A chord form, and then again changes to the D chord form as it is played from strings above to strings below. This is very important to recognize and it applies to every chord form regardless of shape. This does take a while to get comfortable with but you will soon be good at it. Practice this with a variety of chord forms and scale patterns.

The 6th and 1st strings contain the same tones with sting 1 being two octaves higher in pitch. Playing a major scale starting on the 6th string and ending on the 1st string enables us to play two full octaves from a fixed position on the fret board over a range of four to five frets.

It turns out that the relationship between the tones 1, 4, and 5 is the strongest and most important in all of music. Many popular songs can be played using only the chords built from these three tones. Look again at the guitar fret board diagram in Figure 1b and see the close proximity and repeating patterns for these three important tones. We can also see that if an open string is played as the root tone, its perfect 4th is always located at fret number 5 and its perfect 5th is always located at fret number 7.

The I, IV, and V chords are very closely related and are used extensively appearing in almost every composition. These are often referred to as the primary chords within a given key. The II, III, VI and VII chords are also used in most compositions. These are often referred to as secondary chords. The chords built on tones that are not in the harmonic environment of the parent key are

typically used only sparingly and for a shorter duration. Yet we may pass through any of the diatonic and non-diatonic tones as we travel to our next destination in a composition wherever that may happen to be.

Figure 1b.

Guitar Fretboard (Showing Flats)

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	6th
Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	5th
Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	4th
B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	3rd
Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	Eb	D	Db	C	B	2nd
Ab	G	Gb	F	E	Eb	D	Db	C	B	Bb	A	Ab	G	Gb	F	E	1st

Guitar Fretboard – C Major Scale Tones

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	6th
b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	5th
b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	4th
7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	3rd
b3	2	b2	1	7	b7	6	b6	5	b5	4	3	b3	2	b2	1	7	2nd
b6	5	b5	4	3	b3	2	b2	1	7	b7	6	b6	5	b5	4	3	1st

Constructing Chords

Chords may be constructed for any of the tones within the major scale. The tone for which a chord is constructed is called the root tone of that chord. Chords are built by continually stacking intervals of 3rds from the major scale. These intervals may be major 3rds or minor 3rds.

The major scale tones for the key of C are presented below.

1	2	3	4	5	6	7	8
C	D	E	F	G	A	B	C

There are only four types of chords, major, minor, diminished, and augmented. Chords consisting of only three tones are called Triads. Their construction is presented below. The intervals presented are relative to the root tone.

C Major Triad	Perfect Fifth Major Third Root	5 3 1	G E C
C Minor Triad	Perfect Fifth Minor Third Root	5 b3 1	G Eb C
C Diminished Triad	Diminished Fifth Minor Third Root	b5 b3 1	Gb Eb C
C Augmented Triad	Augmented Fifth Major Third Root	#5 3 1	G# E C

For completeness, it should be noted that there are actually three variations of triads that are in use, the major with a flatted fifth, the sustained fourth, and sustained second being altered triads as depicted below.

C Major b5 Triad	Diminished Fifth Major Third Root	b5 3 1	Gb E C
C Sus4 Triad	Perfect Fifth Major Fourth Root	5 4 1	G F C
C Sus2 Triad	Perfect Fifth Major Second Root	5 2 1	G D C

You can also view the chords as stacked intervals rather than as intervals from the root tone. The following table shows the stacked intervals for the four types of chords. A major triad contains intervals of a major 3rd and a minor 3rd. A minor triad contains intervals of a minor 3rd and a major 3rd. A diminished triad contains intervals of a minor 3rd and a minor 3rd. An augmented triad contains intervals of a major 3rd and a major 3rd.

C Major Triad	Minor Third Major Third Root	5 3 1	G E C
C Minor Triad	Major Third Minor Third Root	5 b3 1	G Eb C
C Diminished Triad	Minor Third Minor Third Root	b5 b3 1	Gb Eb C
C Augmented Triad	Major Third Major Third Root	#5 3 1	G# E C

Knowing how chords are constructed and the basic intervals for the four types of chord triads makes it very easy to build chords on demand without any memorization. **The arrangement of the stacked intervals for the four types of chords should be memorized.**

It is also useful to think in terms of the number of frets between intervals. Intervals may be played on a single string or across strings. *For example, look at the intervals of a Major Third played on the same string and also played from the string above to the string below. Both of these intervals in effect encompass the same number of frets. Using multiple strings shortens the physical distance between equivalent tones.*

An alternative way to view the construction of chords and arpeggios is to view them simply numerically as shown in the table below.

Chord Triads	Tones To Play	Seventh Chords	Tones To Play
C	1 3 5	CM7	1 3 5 7
Dm	2 4 6	Dm7	2 4 6 1
Em	3 5 7	Em7	3 5 7 2
F	4 6 1	FM7	4 6 1 3
G	5 7 2	G7	5 7 2 4
Am	6 1 3	Am7	6 1 3 5
B°	7 2 4	B$^{\emptyset}$7	7 2 4 6

Thinking in terms of both number and letter names for the scales, chords and arpeggios is very important. This simple counting will take you far once you understand the consistent relationships among the tones on the fret board. Stacking thirds is equivalent to playing every third note from the starting tone based on the major scale of the key that you are playing in. The intervals may be major thirds or minor thirds depending on the type of chord being made.

As mentioned earlier in the section on intervals, Roman numerals are used to represent chords in the harmonic environment and also for depicting chord progressions. Chords built from each of the unique tones of the major scale (1,2,3,4,5,6,7) are given the Roman numeral designations of I, II, III, IV, V, VI, VII. Sometimes the minor and diminished chords are given lower case Roman numeral designations and the major chords are given upper case Roman numeral designations I, ii, iii, IV, V, vi, vii.

Chord Inversions

Every triad (3 notes) chord has two inversions as follows:

Root Position	1st Inversion	2nd Inversion
Root in Bass	Third in Bass	Fifth in Bass
Example - C Major Chord		
G 5	C 1	E 3
E 3	G 5	C 1
C 1	E 3	G 5

Every seventh chord (4 notes) chord has three inversions as follows:

Root Position	1st Inversion	2nd Inversion	3rd Inversion
Root in Bass	Third in Bass	Fifth in Bass	Seventh in Bass
Example - C Major Seventh Chord			
B 7	C 1	E 3	G 5
G 5	B 7	C 1	E 3
E 3	G 5	B 7	C 1
C 1	E 3	G 5	B 7

Inversions are the same chord but with a different note in the bass and they are interchangeable. Having a different note in the bass and/or on top can be very useful for constructing bass lines and melodies and for smoothing out chord progressions. Inversions can also minimize the distance and hand movement required to switch between two chords. Inverted chords may have subtle differences in sound but they have exactly the same function.

Partial Chords

It is important to recognize that it is not necessary to play all of the chord tones in order to imply a given chord. Partial chords may be played, the 5 may be left out, and even the 1 may be left out (rootless voicing). It is the 3 that gives the chord its major or minor characteristic so in most cases it should be retained. The 7 or b7 determines whether it is a major or minor seventh. Leaving the 5 or 1 out of the chord also gives you more fingers for applying extensions and alterations.

Partial chords using only two or three notes played either melodically (arpeggios) or harmonically (chords) can be very effective and may even sound better than a full chord in some cases. You can also include chord extensions and alterations with partial chords. Partial chords without the root are sometimes referred to as inside chords. In some cases, the use of partial chords may also require that one or more strings be muted or dampened. This takes some practice but chord shapes using one or more muted strings are very popular and used extensively in jazz. The notes of a chord can also be doubled. Many common chord fingerings double the root note. For example in rock music, power chords that use only the tones 1 and 5 may double the root tone. The final chord in a musical composition is typically a chord triad in root position but with the root doubled so that the key tone is also the highest pitched.

Chords Shapes

At this time we introduce the concept of "chord shape". Utilizing chord shapes is integral to the Shape Shifter 3-D guitar method. **Everything is relative and moveable and there are consistent, repeating relationships among various chord shapes up and down the guitar fret board.** All chords can be derived from three initial major chord triad shapes. Every other chord triad shape (minor, diminished, augmented) is derived from them. You may add chord extensions and alterations to the various chord triad shapes as desired.

Figure 7 depicts the C major triads in root position, 1st inversion, and 2nd inversion. There are three shapes that we begin with using the strings 6, 5 and 4. These shapes are for the major triad and its two inversions. We see that the exact same shape used on strings 6,5,4 can be used on strings 5,4,3. If we do this, the chord that we are playing on strings 5,4,3 is a fourth below the chord we were playing on strings 6,5,4. This holds true for root position, 1st inversion, and 2nd inversion. We have now gone from the C chord to the F chord.

We see that as we attempt to use the same shape on strings 4,3,2, an adjustment must be made. The note to be played on string 2 must be shifted one fret higher, consistent with the standard tuning of the guitar. We are now playing the Bb chord, which is a fourth below relative to the previous F chord played on strings 5,4,3. We see that as we attempt to use the same shape on strings 3,2,1, another adjustment must be made. Again the note played on string 2 must be shifted one fret higher. We are now playing the Eb chord, which is a fourth below relative to the previous Bb chord played on strings 5,4,3.

As we move vertically in a downward direction we see that we progress in 4ths, always remembering to adjust for strings 2 and 3. As we move vertically in an upward direction, we progress in 5ths, again remembering to adjust for strings 2 and 3. We see that it is very easy to progress to chords that are a 4th or 5th apart.

Although we have used these shapes for a C major chord, we can use the same shapes for any major chord. All we must do is start on a different fret. Using these shapes one fret higher would be the C# major chord, and using the shapes two frets higher would be the D major chord, etc. We see that everything is

relative and that the chord shapes are consistent and moveable without any deviations.

Figure 8 depicts the C minor triads in root position, 1st inversion, and 2nd inversion. Everything that we discussed above for the major chord shapes applies one hundred percent to the minor chord shapes. And we can see that we derived the initial minor chord shapes on strings 6,5,4 from the major chord shapes on strings 6,5,4, just by lowering the 3rd a half step from E to Eb.

Figure 9 depicts the C diminished triads in root position, 1st inversion, and 2nd inversion. Everything that we discussed above for the major chord shapes applies one hundred percent to the diminished chord shapes. And we can see that we derived the initial diminished chord shapes on strings 6,5,4 from the major chord shapes on strings 6,5,4, just by lowering the 3rd a half step from E to Eb, and lowering the 5th by a half step from G to Gb.

Figure 10 depicts the C augmented triads in root position, 1st inversion, and 2nd inversion. Everything that we discussed above for the major chord shapes applies one hundred percent to the augmented chord shapes. And we can see that we derived the initial augmented chord shapes on strings 6,5,4 from the major chord shapes on strings 6,5,4, just by raising the 5th by a half step from G to G#.

As the melody is typically played on the higher pitched treble strings, it is very important to focus on strings 1, 2, 3 and 4. Learn to make melody chords using these strings with the melody tone on top and imbedded directly in the chord shape. The ordering of these chord shape patterns repeats itself along the guitar fret board. Knowing the ordering and placement of the repeating patterns gives you great flexibility.

Any of these chord shapes can be used to play any chord just keep the chord shape and change the root tone. Everything is moveable and always relative to the root tone. They can be used to play every chord in the harmonic environment. The minor, diminished, and augmented chord shapes can be derived from the major chord shapes as discussed above. Practice shifting shapes in both directions from 6th string down and from the 1st string up.

Play all of the major, minor, diminished, and augmented chord triad shapes in Figures 7-10. Try to play the 1, 3, and 5 tones together cleanly with no string

buzz. Play them together as chords harmonically and also melodically as arpeggios. Once you succeed in playing each chord triad shape cleanly, keep the same chord shape and shift it left and right and up and down the guitar fret board. If you keep the same shape but shift left or right or up or down along the guitar fret board you will be changing chords. Listen to the sounds of the various chord shapes. Make the necessary adjustments when shifting chord shapes across strings 3 and 2 in both directions (ascending and descending). Try playing these chord shapes both with and without the use of your 4th finger. Again it is recommended that you use the 4th finger as much as possible. This also allows the first finger to function as a full or partial bar for playing bar chords.

Figure 7.

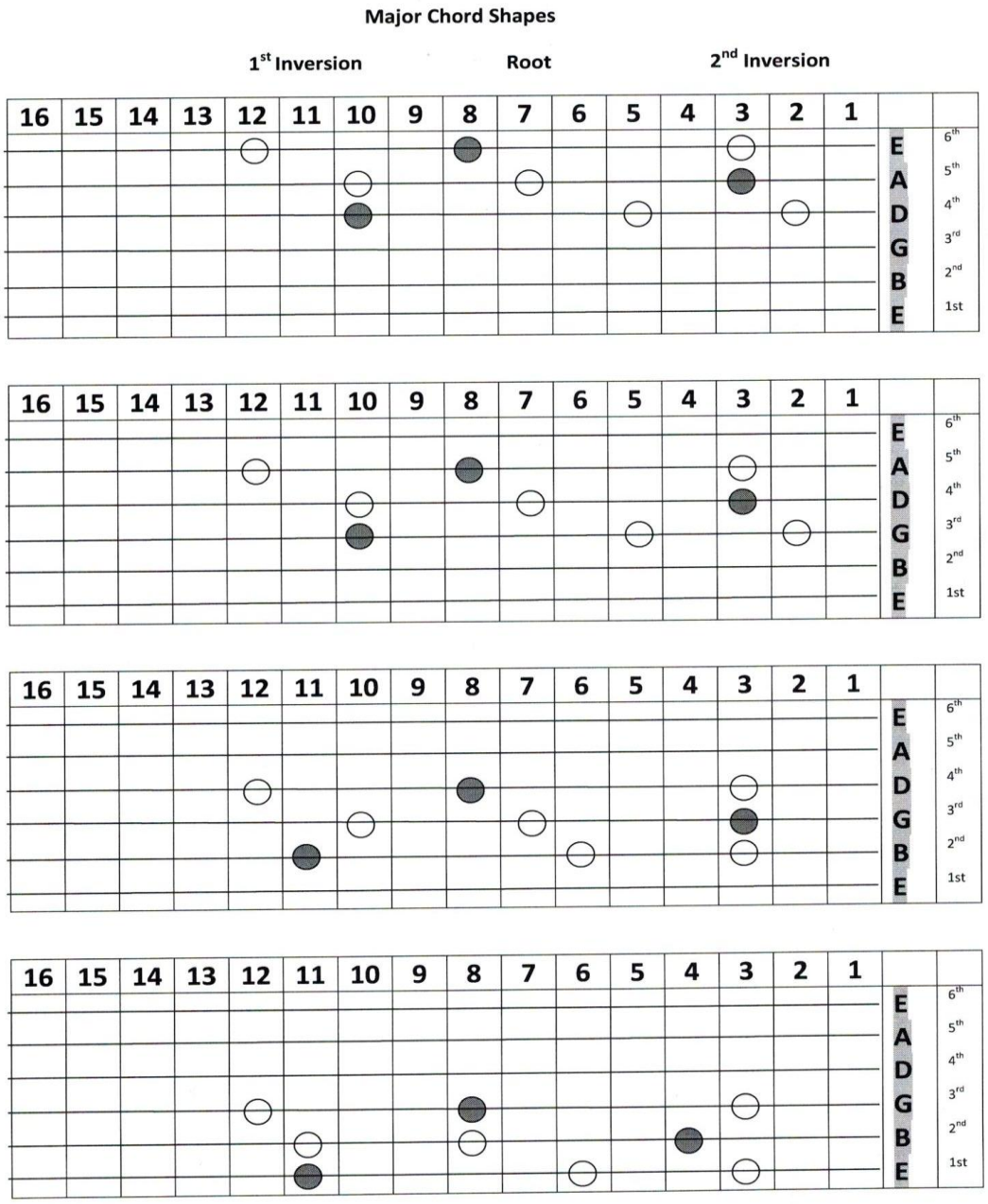

Major Chord Shapes
1st Inversion
Root
2nd Inversion
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
E A D G B E
6th 5th 4th 3rd 2nd 1st

Figure 8.

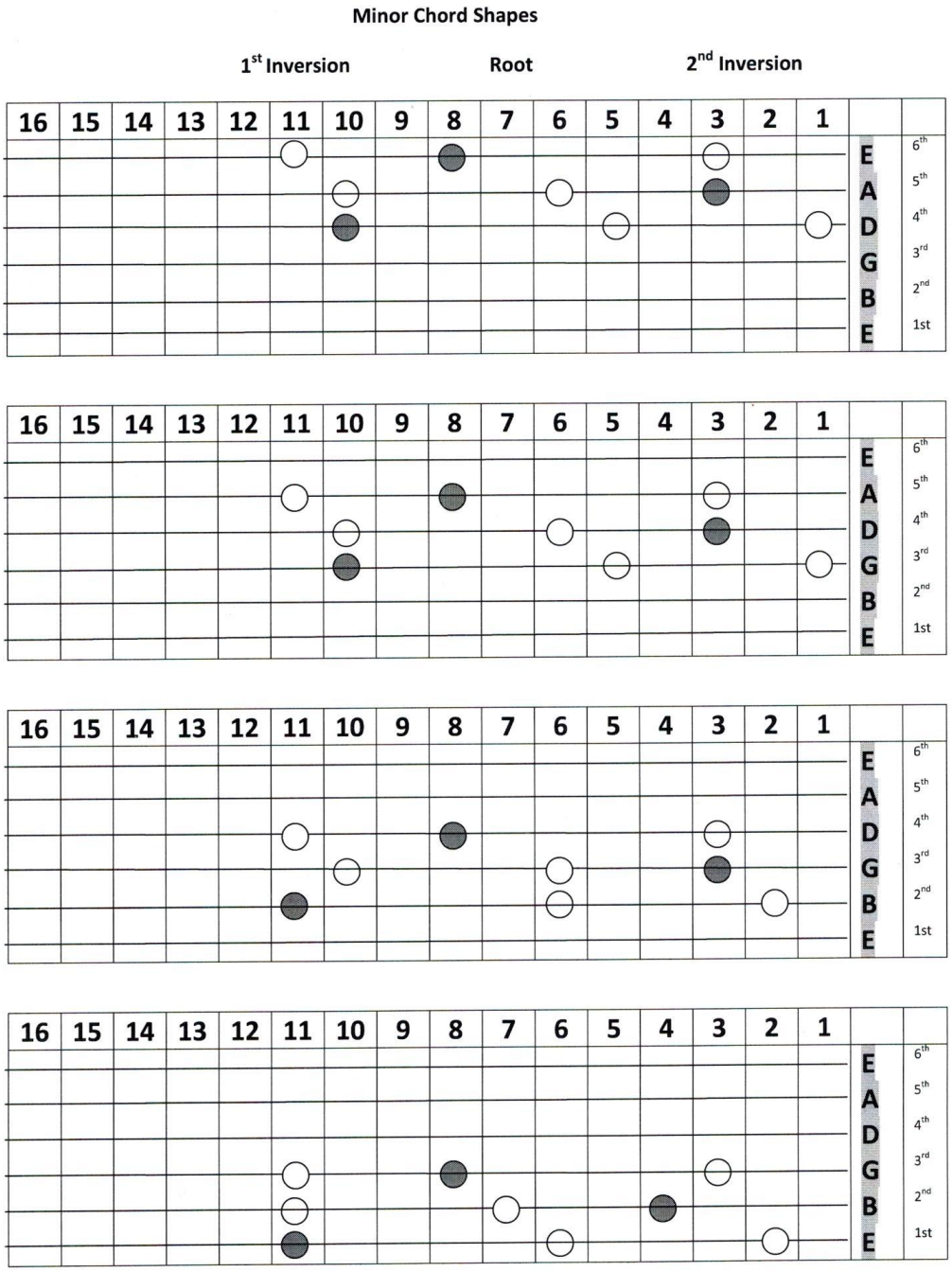

Minor Chord Shapes
1st Inversion
Root
2nd Inversion
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
E A D G B E
6th 5th 4th 3rd 2nd 1st

Figure 9.

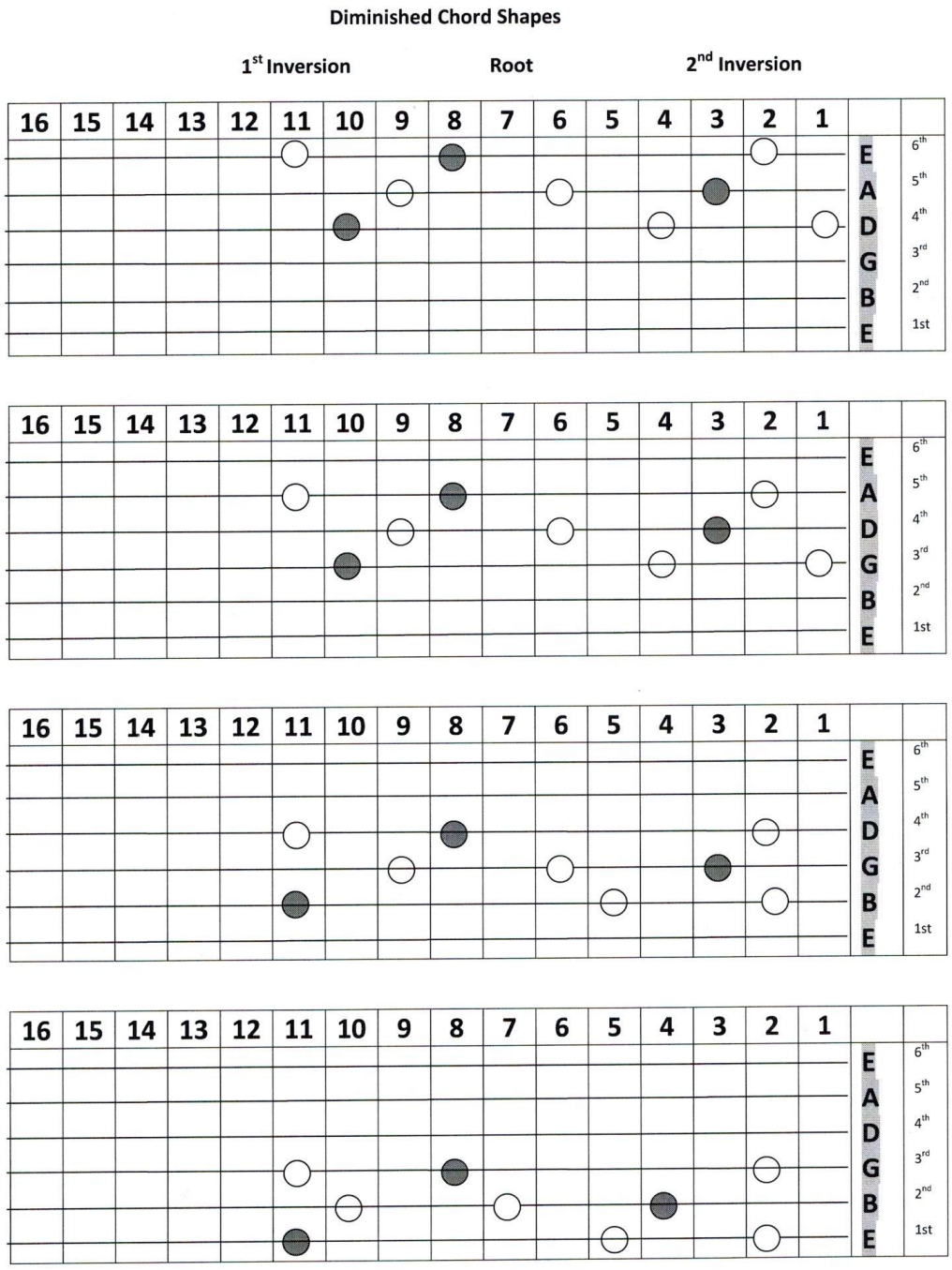
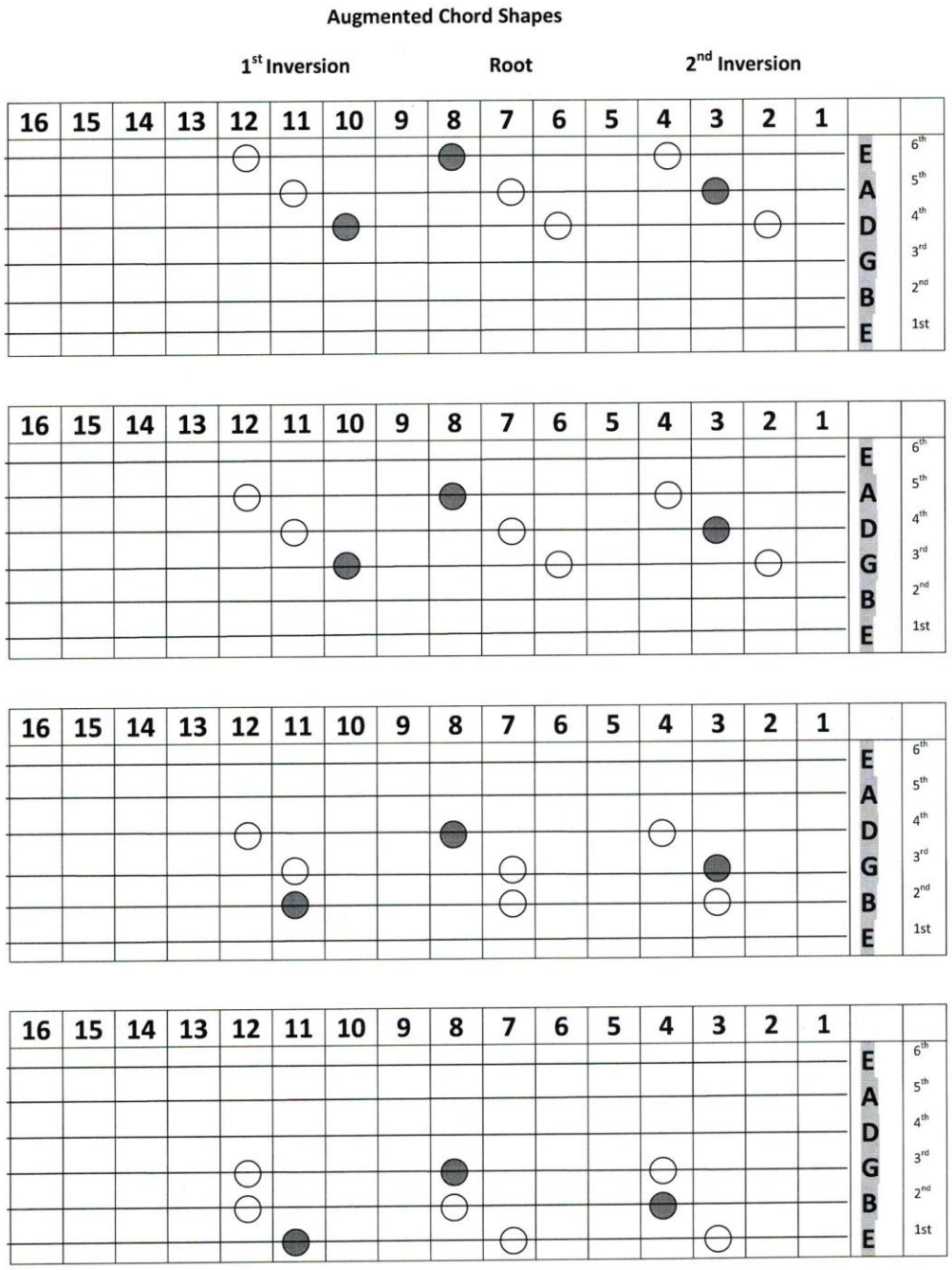
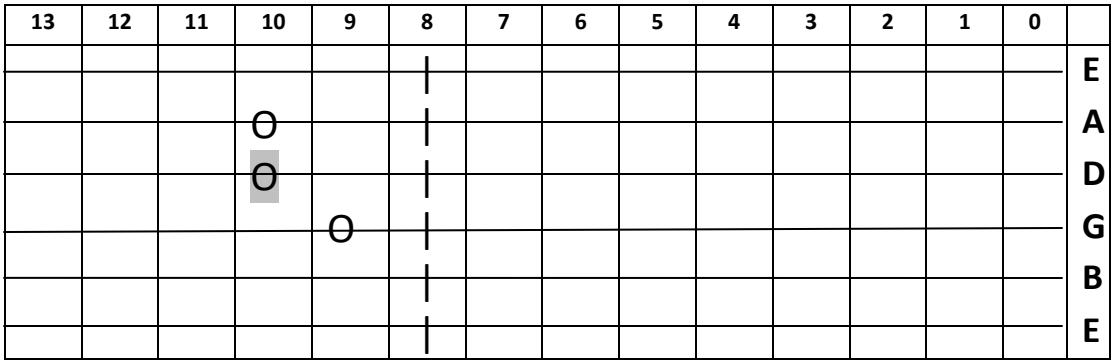

Diminished Chord Shapes
1st Inversion
Root
2nd Inversion
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
E A D G B E
6th 5th 4th 3rd 2nd 1st

Figure 10.


Augmented Chord Shapes
1st Inversion
Root
2nd Inversion
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
E A D G B E
6th 5th 4th 3rd 2nd 1st

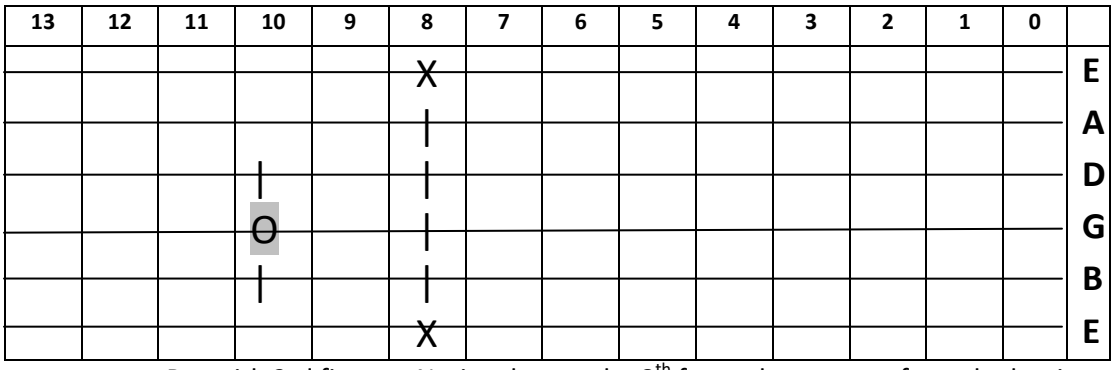
Bar Chords

We now address the subject of bar chords. Playing bar chords is an important skill to master. When we play chords in the open (or first) position the nut of the guitar acts as a bar. If the equivalent of bar string tones are to be sounded as part of a chord played and we want to shift up the fret board then we must take the bar with us. Typically the index finger is used to play one or more of these bar tones. A full bar covers all six strings. *An example of a full bar chord for C major played from the 8th fret is presented below.*



Bar with index finger

Other times we want to bar several notes with a single finger rather than using multiple fingers for each note. This is called a half bar. *An example of a half bar chord for F major played from the 8th fret is presented below.*



Bar with 3rd finger Notice that on the 8th fret only one tone from the bar is sounded

The use of bar chords is indispensable particularly for rock, jazz and blues. If what you are playing (scale or chord) requires a bar and you want to move it up or down the fret board then you must always take a virtual bar with you. Bar chords for minors and various extensions can all be derived from the major bar chord.

Common moveable bar chords are presented below:

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
														E
			O											A
			O											D
				O										G
														B
														E

C Major

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					O									E
					X									A
				O										D
				O										G
														B
					X									E

C Major 7th

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
														E
			O											A
														D
				O										G
														B
														E

C7

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
														E
														A
			O											D
			O											G
														B
														E

C Minor

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
														E
														A
			O											D
														G
														B
														E

C Minor 7th

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					X									E
														A
														D
			O											G
														B
					X									E

F Major

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					X									E
					O									A
			O											D
				O										G
			O											B
					X									E

F Major 7th

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					X									E
					|									A
			O		|									D
					|									G
			O		|									B
					X									E

F7

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					X									E
					|									A
			O		|									D
			O		|									G
				O	|									B
					X									E

F Minor

13	12	11	10	9	8	7	6	5	4	3	2	1	0	
					X									E
					|									A
			O		|									D
					|									G
				O	|									B
					X									E

F Minor 7th

Chord Extensions and Alterations

Chord triads may be extended and/or altered. Chord extensions like the 7th, 9th, 11th and 13th are based on the continual stacking of 3rds from the major scale. The chord construction for commonly used chords along with extensions and alterations is presented below in Figure 11 for the melody tone C. Chords are constructed in the same way for each and every key. Suspended chords sound neither major nor minor as the characteristic 3rd tone has been replaced. Often the major 6th chord is used interchangeably with the major 7th. The dominant seventh V7 chord is often altered and sounds good with all alterations.

Figure 11.

Melody Tone C - Chord Construction With Extensions And Alterations							
Major Triad	**1** **C**	**3** **E**	**5** **G**				
Minor Triad	**1** **C**	**b3** **Eb**	**5** **G**				
Diminished Triad	**1** **C**	**b3** **Eb**	**b5** **Gb**				
Augmented Triad	**1** **C**	**3** **E**	**#5** **G#**				
Suspended 2nd	***1*** ***C***	***2*** ***D***	***5*** ***G***				
Suspended 4th	***1*** ***C***	***4*** ***F***	***5*** ***G***				
Dominant 7th	**1** **C**	**3** **E**	**5** **G**	**b7** **Bb**			
Major 6th	**1** **C**	**3** **E**	**5** **G**	**6** **A**			
Minor 6th	***1*** ***C***	**b3** **Eb**	***5*** ***G***	***6*** ***A***			
Major 6 add 9	**1** **C**	**3** **E**	**5** **G**	**6** **A**	**9** **D**		
MinorMajor7th	**1** **C**	**b3** **Eb**	**5** **G**	**7** **B**			
Minor 7th	**1** **C**	**b3** **Eb**	**5** **G**	**b7** **Bb**			
Minor 9th	**1** **C**	**b3** **Eb**	**5** **G**	**b7** **Bb**	**9** **D**		
Minor7b5 half-diminished	**1** **C**	**b3** **Eb**	**b5** **Gb**	**b7** **Bb**			
Diminished 7th	**1** **C**	**b3** **Eb**	**b5** **Gb**	**bb7 (6)** **A**			
Major 7th	**1** **C**	**3** **E**	**5** **G**	**7** **B**			
Major 7th#4	**1** **C**	**3** **E**	**#4** **F#**	**7** **B**			
Major 9	**1** **C**	**3** **E**	**5** **G**	**7** **B**	**9** **D**		
9th	**1** **C**	**3** **E**	**5** **G**	**b7** **Bb**	**9** **D**		
11th	**1** **C**	**3** **E**	**5** **G**	**b7** **Bb**	**9** **D**	**11** **F**	
13th	**1** **C**	**3** **E**	**5** **G**	**b7** **Bb**	**9** **D**		**13** **A**
Alterations			**b5 #5** **Gb G#**		**b9 #9** **Db D#**	**#11** **F#**	**b13** **Ab**

Try harmonizing your own melody by using chords only from the harmonic environment and also by using any chord that contains the tone that you wish to harmonize. *For example, when you analyze some of the available chords, the melody tone C can be harmonized with any of the chords found in the table below as all of the chords contain the melody tone C.*

Some chords that may be used to harmonize the melody tone C:

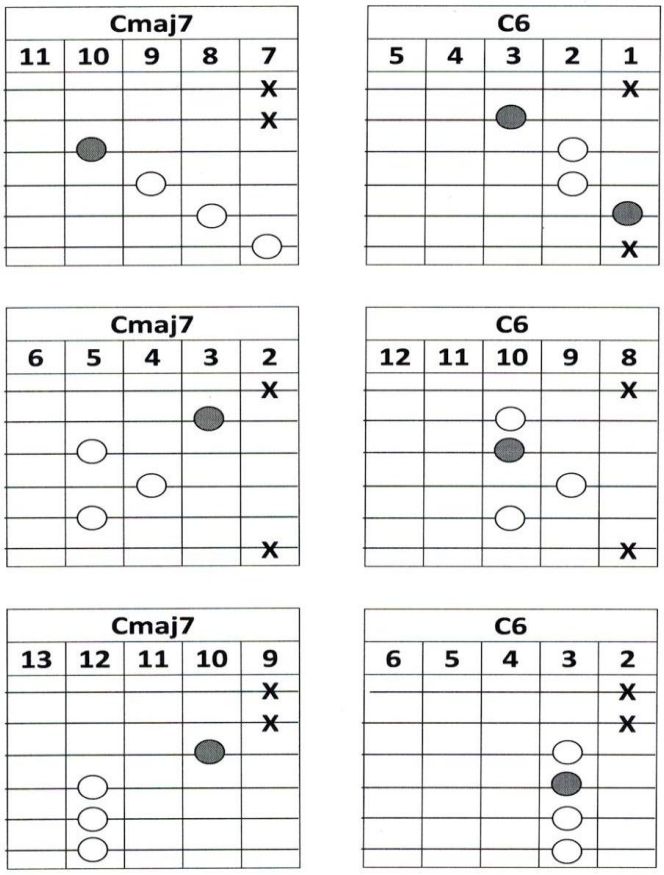
C, Cm, C+, C7, Cm6, C9, C7b5, D7, Dm7, DbM7, Dbm, D+7, D7b5, Db+7, Eb^{o}, Eb6, Ebm6, Eb7, Eb9, E+7, F, F7, Fm6, Am, Ab7, Ab6, Am6

Similar types of chords may be used to harmonize other melody tones. The only rule is that the chord must contain the tone being harmonized. Create your own very unique and original chord progressions to harmonize your melodies.

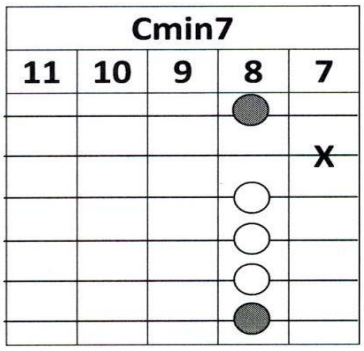
Commonly Used Chord Extensions

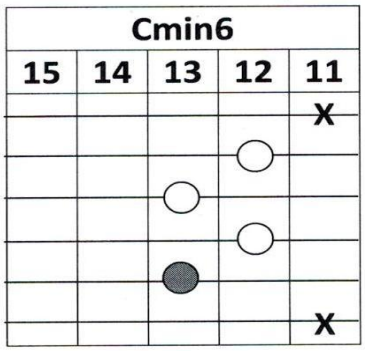
Some commonly used extended chord shapes are provided in the following diagrams. Remember to strive for understanding rather than memorization. Endeavor to be able to make any chord, extension, or alteration from anywhere on the fret board at will. Everything you need can be derived from the initial three chord shapes.

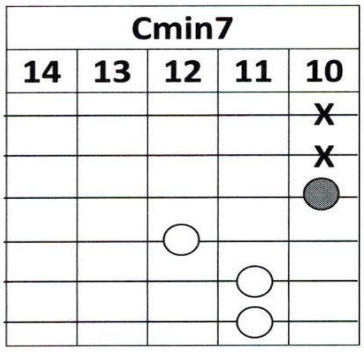
Commonly Used Extended Chord Shapes

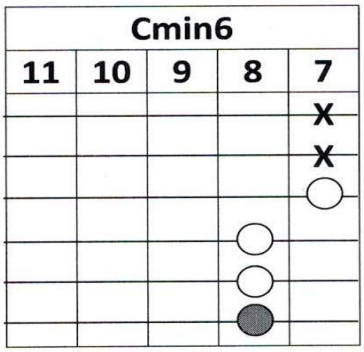


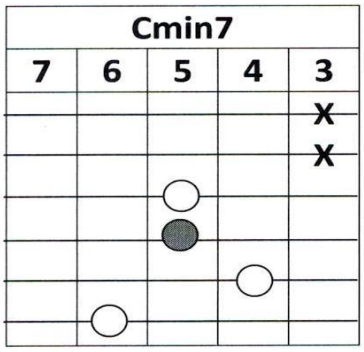
Commonly Used Extended Chord Shapes

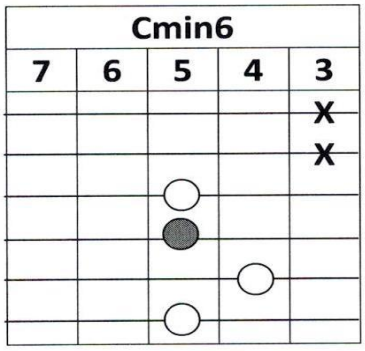




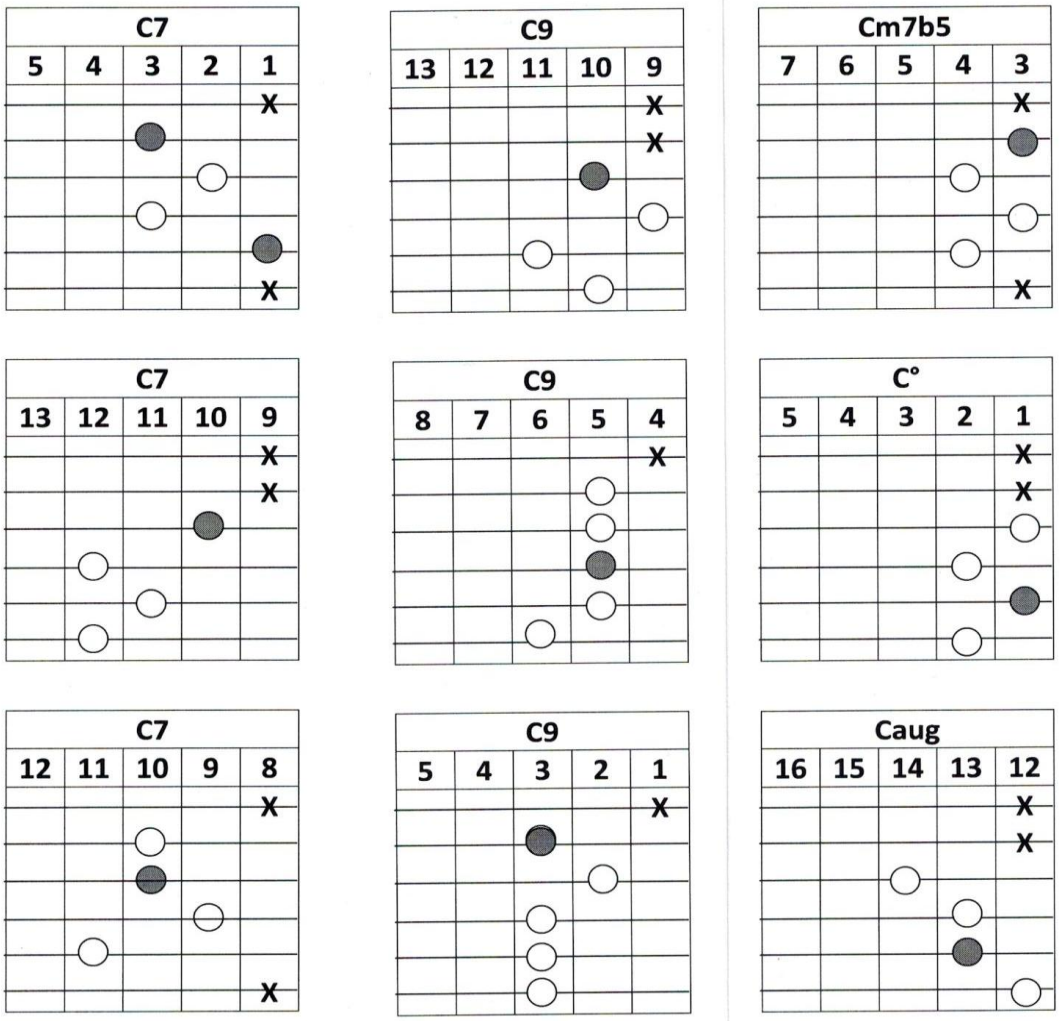








Commonly Used Extended Chord Shapes



Practice moving all of these shapes up and down the strings, adjusting for strings 2 and 3 as necessary. You may be very surprised and even find some new favorite chord shapes to play.

Scale Shapes

Major scales are played in a variety of ways but there are really only three distinct major scale shapes. All other scale shapes are derived from these shapes just being combinations of various parts of the original three scale shapes. Any of these scale shapes can be used for playing the major scale and all of its modes.

You may want to stay in one single position on the fret board or you may want to change shapes in order to change the relative pitch of the tones of the scale and the chords and arpeggios that are imbedded within the scale shapes.

You can shift from scale shape to scale shape at any time as long as you adhere to the new pattern and adjust for the 1 fret shift going from string 3 to string 2 in both directions. You can even shift scale shapes mid-stream and do not have to complete a whole octave before switching scale shapes. You can change scale shapes at any time as long as you know where you are within the scale at any given time.

Figure 12a depicts the three initial major scale shapes. **These initial major scale shapes should be memorized.** Practice using these three scale shapes alone and in combination. The scale shapes shown in Figure 12a all start on the 6th string. Try starting each of these major scale shapes on different strings and frets making any necessary adjustments.

Figure 12b depicts the three initial relative or natural minor scale shapes derived from the three initial major scale shapes. A relative or natural minor scale contains a b3, b6, and b7. In this case all we did is keep the scale shape for the major scale but change the starting tone. Instead of starting from tone 1 of the major scale we started on tone 6, the root tone for the relative minor. **These initial minor scale shapes should be memorized.** Try starting each of these minor scale shapes on different strings and frets making any necessary adjustments.

After experimenting with mixing the various scale shapes, focus on a single scale shape over a range of two octaves and learn it down pat. Learn to play the major scale and the relative minor scale. Learn to play all of the modes, chords, and arpeggios within the harmonic environment for the parent key imbedded within the scale shape. Practice playing scales for various keys within the same 4-5 frets.

Figure 12a. Major Scale Shapes

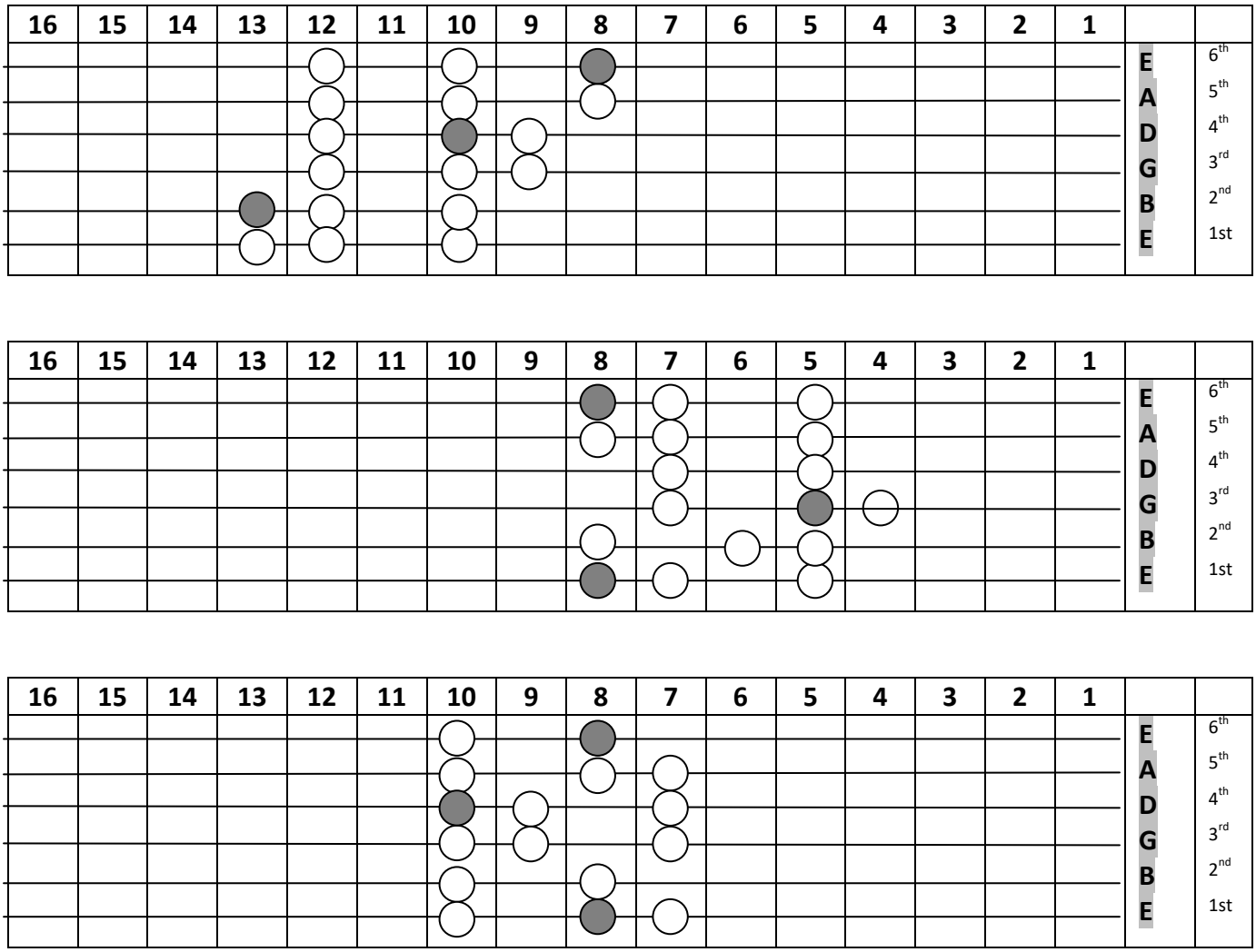
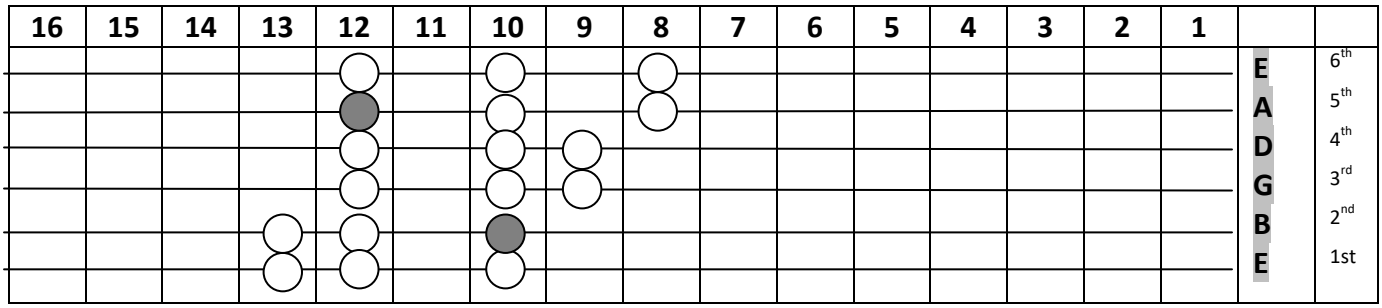
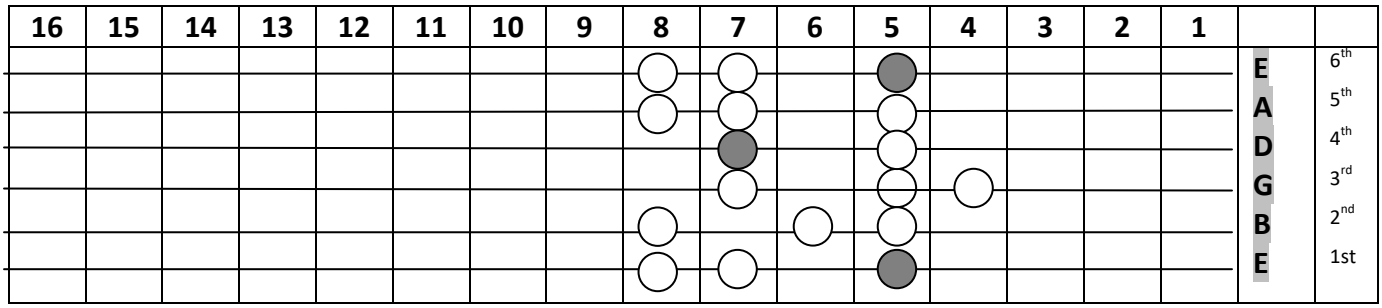
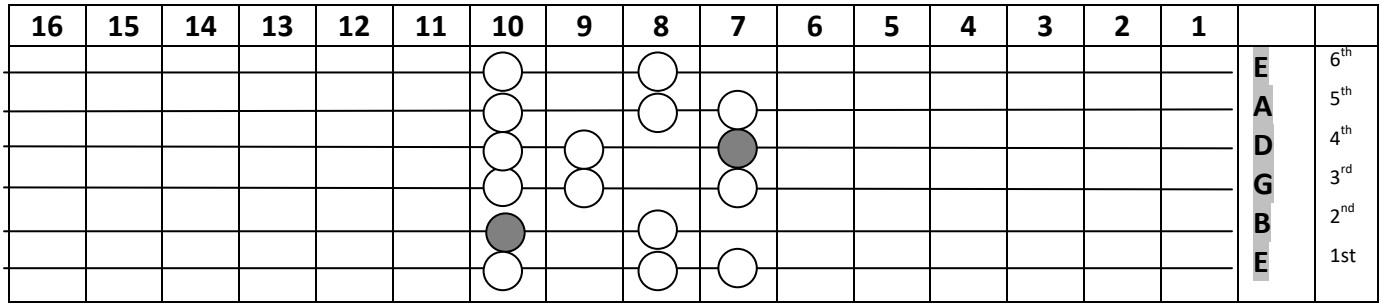


Figure 12b. Relative or Natural Minor Scale Shapes







Repeating and Overlapping Major Scale Shapes and Patterns

When you are playing close to the headstock of the guitar (the open position), you are limited by the nut. You can use the open strings as part of your scale shape but you can't go any further in that direction. So if you need another note you must find it in the other direction. This somewhat limits your choice of scale shapes to choose from. When you are playing away from the headstock (closed position) you have many more options to choose from as you can move up and down the neck of the guitar for the desired note.

Figure 12c depicts some of the choices available for playing a major scale when you are not limited by the nut of the guitar. Remember that any of the scale shapes may be used starting on any string on any fret as long as you adhere to the pattern and make the adjustment going from string 3 to string 2 in both directions.

Looking closely at Figure 12c we can see repeating and overlapping scale shape patterns moving up and down the fret board. This repeating pattern is consistent for all keys relative to the root or starting tone for that particular key. This gives us the ability to play the same scale at many locations on the fret board in a variety of ways, yet in a very predictable manner. Regardless of what string and fret we may start at (root tone), we have more than one choice and can move in either direction.

It is important to recognize that for any given key, when we talk about scales, chords and arpeggios, we are talking about closely connected and related elements. Everything is derived from the major scale. Scales are tones played individually in a sequence, chords are tones from the scale played together (harmonically), and arpeggios (often referred to as broken chords) are tones of chords played sequentially like a scale. Chords and arpeggios can also be played in all of their inversions. The chord shapes and arpeggios are imbedded within the scale shapes. The creative use of all three in combination provides a whole world of possibilities for creating melodies, harmonies, and for improvisation and playing leads. Figure 12d depicts the imbedded chord shapes and arpeggios for the closed position scale shapes for the D major scale that were shown in Figure 12c. Notice that there are multiple ways to play the chord shapes and arpeggios

imbedded in every scale shape when you include the inversions. The repeating and overlapping scale shapes are sometimes named by the chord shapes contained within them, C, A, G, E, D.

A very useful exercise is to limit your playing to the use of only certain strings, e.g., 6,5,4 or 5,4,3 or 4,3,2 or 3,2,1. Try to do all of the things you want to do but limit yourself to using limited sets of strings. In particular, try limiting yourself to playing on string sets 4,3,2,1 and 3,2,1. This is very important as the melody notes are usually on top (higher pitched) and are generally played on the first three strings.

Figure 12c. Major Scale Shapes in Closed Position – D Major Scale

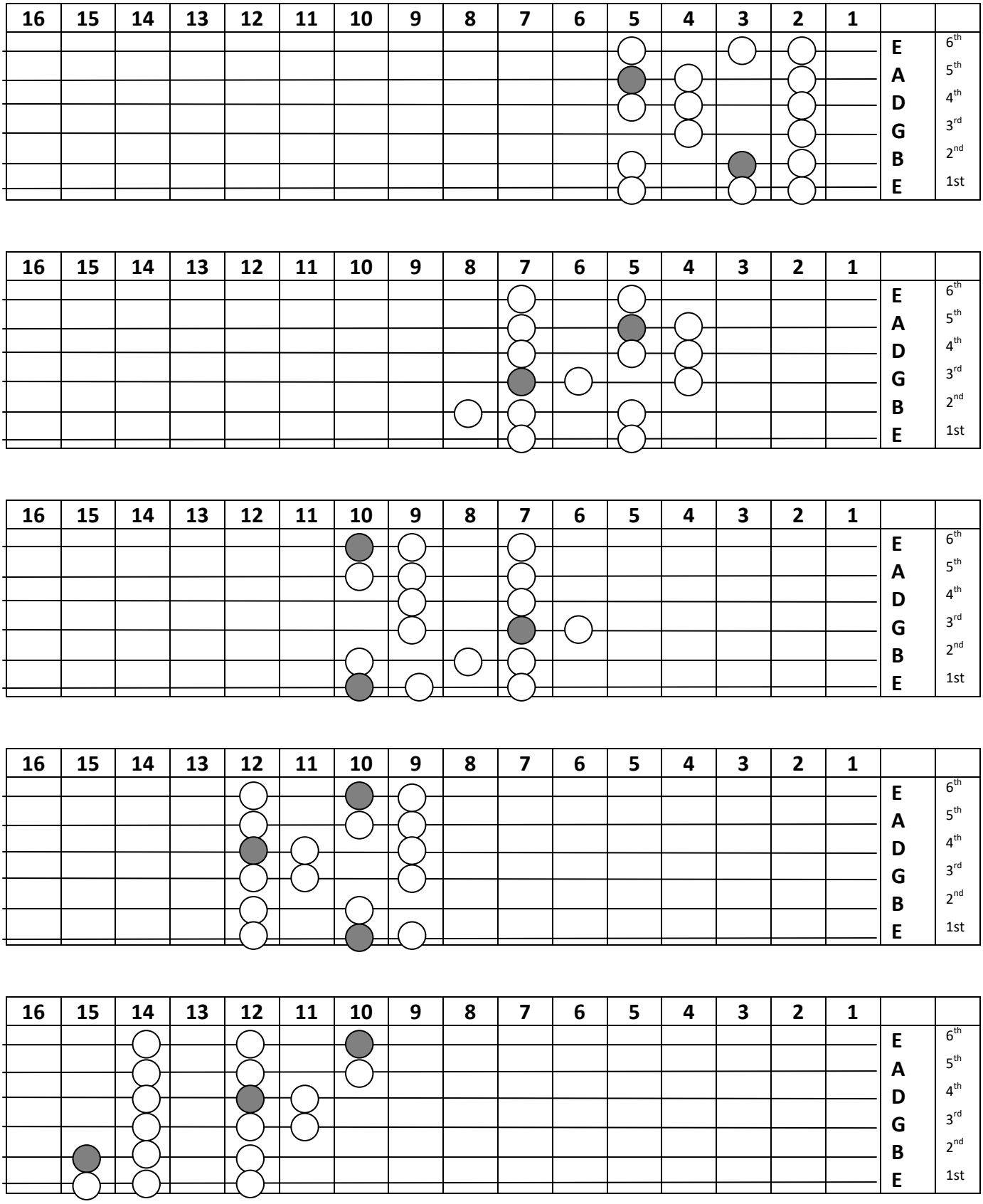
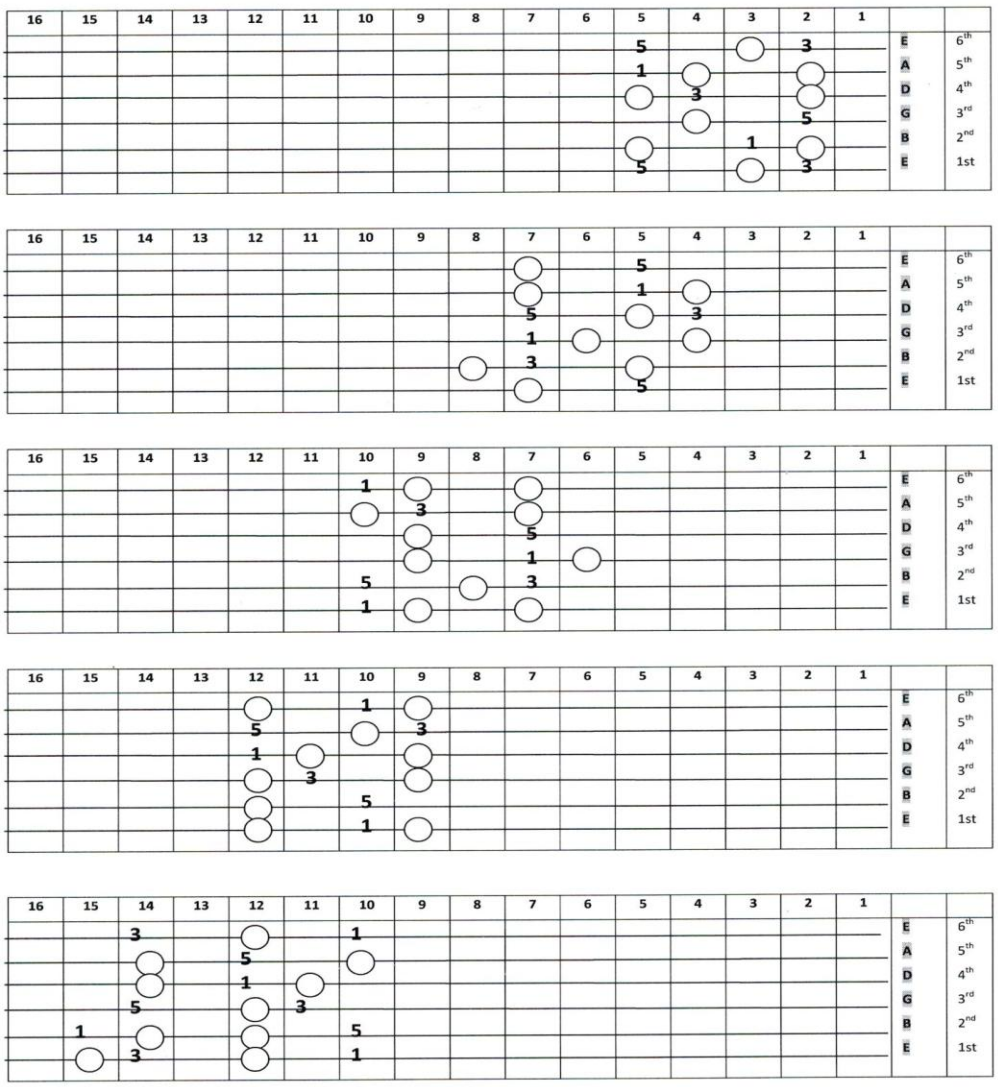


Figure 12d. D Major Scale Shapes Depicting Imbedded Chords and Arpeggios



Derived Scale Shapes

In addition to the major and minor scales, there are other important scales that are prominently used in popular music (folk, country, rock, soul, R&B and blues). These are the major and minor pentatonic scales and the major and minor blues scales, and they are all derived from the major scale.

Figure 13a shows some alternate scale shapes in closed position for a D major pentatonic scale which is a shortened five tone scale that includes tones 1,2,3,5 and 6. The relative minor pentatonic (B minor) uses the exact same scale pattern but instead of beginning the scale on the root or 1 tone you begin on the 6 tone. This gives it a minor sounding quality quite distinctive from the major sounding quality. The major and minor pentatonic scales have five modes, each one beginning on a different starting tone of the five tone scale.

Figure 13b shows some alternate scale shapes in closed position for a D major blues scale which adds one blue note, the b3 to the major pentatonic scale, giving it a blues sounding quality. The relative minor blues scale (B minor) uses the exact same scale pattern but instead of beginning the scale on the root or 1 tone you begin on the 6 tone. The blues scale can also be altered by adding additional tones to the scale such as b5, b7, 7 and 4. This adds some chromatic components to the scale.

It is important to note that there are many other scales which will not be discussed in this book. These are traditionally used in international folk and ethnic music. They may characteristically sound Mediterranean or Eastern European or Far Eastern or Spanish or Oriental, etc., all based on the number of tones and the intervals between the tones in each scale. Figure 14 provides a small sampling of scales that are used in international folk and ethnic music.

Figure 13a. Major Pentatonic Scale Shapes in Closed Position – D Major Pentatonic Scale

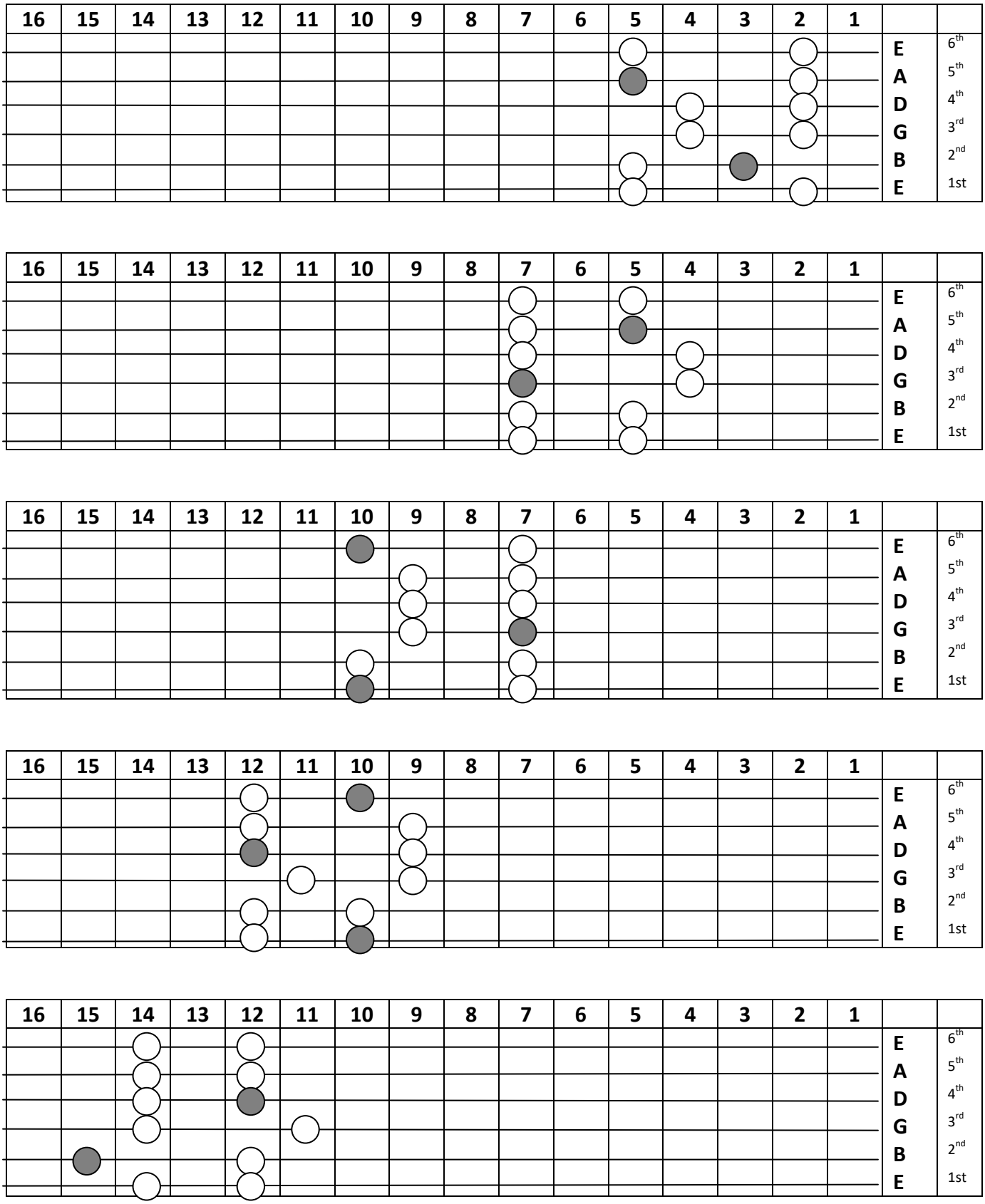


Figure 13b. Major Blues Scale Shapes in Closed Position – D Major Blues Scale

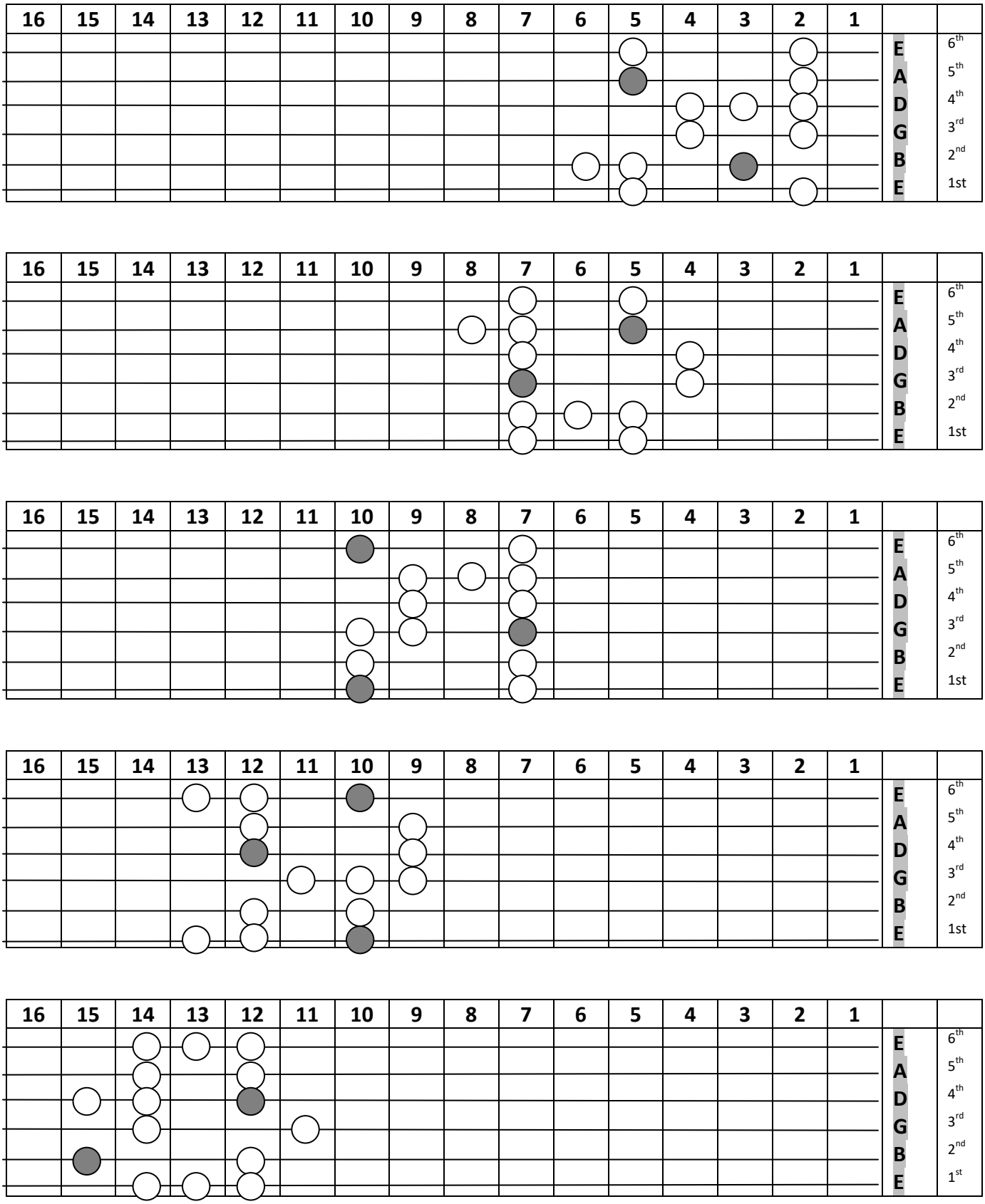


Figure 14. A Sampling of International Folk and Ethnic Scales

Arabian							
1	2	3	4	5	6	7	8
C	D	E	F	Gb	Ab	Bb	C
Egyptian							
1	2	3	4	5	6	7	8
C	Db	E	F	G	Ab	B	C
Gypsy							
1	2	3	4	5	6	7	8
C	Db	E	F	G	Ab	B	C
Hindu							
1	2	3	4	5	6	7	8
C	D	E	F	G	Ab	Bb	C
Japanese							
1	2	3	4	5	6	7	8
C	Db		F	G	Ab		C
Oriental							
1	2	3	4	5	6	7	8
C	Db	E	F	Gb	A	Bb	C
Spanish							
1	2	3	4	5	6	7	8
C	Db	E	F	G	Ab	Bb	C

Note that some of these scales use fewer tones than the major scale. There are many other types of scales that are used in music around the world and for a variety of instruments. Some use fewer tones and some use more tones. It may be important for you to try out some of the scales in Figure 14 in order to get out of the rut of playing what you have already heard and what everyone else is always playing. Look around for interesting international scales and try them out.

The Minor Harmonic Environment

We now address minor harmony. Minor harmony is more complex because there are three types of minor scales, the natural minor scale, the harmonic minor scale, and the melodic minor scale.

The major scale and its relative minor share the same key designation (the number of b's or #'s) and they contain the exact same tones and chords only beginning on a different root tone. The major scale begins on tone 1 whereas the relative minor begins on tone 6 of the major scale. If we look at the Key of C Major (A Minor), we see that A is the sixth note from the C major scale.

1	2	3	4	5	6	7	8
C	D	E	F	G	A	B	C

Earlier we saw that the chords built for harmonizing the C major scale were as shown below.

Triads						
C Major	D Minor	E Minor	F Major	G Major	A Minor	B Dim
C	Dm	Em	F	G	Am	B°
Seventh Chords						
C Major 7	D Minor 7	E Minor 7	F Major 7	G Dom 7	A Minor 7	B Minor7 b5
CM7	Dm7	Em7	FM7	G7	Am7	$B^{\emptyset}7$

Thus from the chart we see that the harmonization of the C major scale is as follows is:

CM7 Dm7 Em7 ^ FM7 G7 Am7 $B^{\emptyset}7$ ^ CM7

Whereas the A natural minor scale begins on A as follows:

1	2	3	4	5	6	7	8
A	B	C	D	E	F	G	A

The harmonization of the A natural minor scale is as follows:

Am7 $B^{\emptyset}7$^ CM7 Dm7 Em7^ FM7 G7 Am7

The only difference is the displacement of the intervals due to the change in the root tone. The tones and the chords in the major scale and relative minor scale are identical. It is very easy to move from the major to the minor and to use both of these scales within a single composition. Compared to the major scale, the natural minor contains a b3, b6 and b7. That is what gives it its minor character.

Comparing the A natural minor scale and chords to the A major scale and chords we can see that the tones 3, 6 and 7 are flatted for the natural minor scale as discussed above. And we can see that the tones and chords of the A minor scale are the same as the tones of the C major scale only with a change in the tonic or root (from C to A).

Key of A Major							
A	B	C#	D	E	F#	G#	A
AM7	Bm7	C#m7	DM7	E7	F#m7	G#$^{\emptyset}$7	AM7
Key of A Minor							
A	B	C	D	E	F	G	A
Am7	B$^{\emptyset}$7	CM7	Dm7	Em7	FM7	G7	Am7

The harmonic minor contains only a b3 and b6. This alters some of the chords in the harmonic environment.

A	B	C	D	E	F	G	A
Aminmaj7	B$^{\emptyset}$7	CM7#5	Dm7	E7	FM7	G°7	Aminmaj7

In classical music, the melodic minor has two forms one for ascending and one for descending. The ascending melodic minor contains a b3 only. The descending form of the melodic minor is the same as the natural or relative minor and contains a b3, b6 and b7.

This alters some of the chords in the harmonic environment.

A	B	C	D	E	F	G	A
Aminmaj7	Bm7	CM7#5	D7	E7	F$^{\emptyset}$7	G#$^{\emptyset}$7	Aminmaj7

The melodic minor scale used extensively in contemporary jazz uses the same ascending melodic minor scale both ascending and descending.

For direct comparison purposes we now show the scales and their harmonization for the C major scale, the C natural minor scale, the C harmonic minor scale, and the C melodic minor scale.

C Major Scale and Harmonization							
C	D	E	F	G	A	B	C
CM7	Dm7	Em7	FM7	G7	Am7	B^{ø}7	CM7

C Natural Minor Scale and Harmonization							
C	D	Eb	F	G	Ab	Bb	C
Cm7	D^{ø}7	EbM7	Fm7	Gm7	AbM7	Bb7	Cm7

C Harmonic Minor Scale and Harmonization							
C	D	Eb	F	G	Ab	B	C
Cminmaj7	D^{ø}7	EbM7#5	Fm7	G7	AbM7	B°7	Cminmaj7

C Melodic Minor Scale and Harmonization							
C	D	Eb	F	G	A	B	C
Cminmaj7	Dm7	EbM7#5	F7	G7	A^{ø}7	B^{ø}7	Cminmaj7

Notice that the parent key for the C natural minor (relative minor scale of Eb) is the key of Eb major which shares the same key designation and has the same tones and chords but with displaced intervals.

Using The Major Scales And Modes

For every major key, the major scale has seven modes, the same number of modes as the number of distinct tones within the scale itself. Modes are just displaced scales. The major scale starts on the root tone and follows a set ordering of steps. Modes start on a scale tone other than the root tone. As indicated earlier, in the major scale for any key, there are whole steps (2 frets) between all of the scale tones except between scale tones 3 & 4, and 7 & 8, which are always separated by a half step (1 fret). **The Ionian mode is identical to the major scale as it begins with the root tone for the scale.**

So for example, the ordering of steps is as follows for the key of C major:

1 2 3v4 5 6 7v8
C D E F G A B C

The other modes begin on a tone other than the root tone. Modes must adhere to the ordering of steps from the parent scale even though they begin on a tone other than the root. For the key of C major there are seven modes as follows:

Ionian	starts on root tone of major scale	C
Dorian	starts on second tone of major scale	D
Phrygian	starts on third tone of major scale	E
Lydian	starts on fourth tone of major scale	F
Mixolydian	starts on fifth tone of major scale	G
Aeolian	starts on sixth tone of major scale	A
Locrian	starts on seventh tone of major scale	B

Staying with the ordering of steps from the parent major scale of C major, there are whole steps between all tones but E^F and B^C which are only a half step apart. So for the modes there is a displacement to the ordering. *For example in the Ionian mode, the half steps occur between 3 & 4 and 7 & 8 (as it does in every major scale). In the Dorian mode, the half steps occur between 2 & 3 and 6 & 7, etc. All seven of the modes contain the same tones but there is a displacement of the intervals. The Aeolian mode is identical to the natural or relative minor scale of the parent key. Notice for the key of C, the Aeolian mode starts on tone 6, the starting tone for the relative minor (Am).*

Modes are used in improvisation along with the major scale. Once you have learned just one fingering pattern for a major scale you can also play all the modes of that scale, just keep the same fingering pattern and change the starting note. The modes of the C major scale are presented in Figure 15.

Figure 15.

Mode	1	2	3	4	5	6	7	8
Ionian	C	D	E	F	G	A	B	C
Dorian (b7,b3)	D	E	F	G	A	B	C	D
Phrygian (b7,b6,b3,b2)	E	F	G	A	B	C	D	E
Lydian (#4/b5)	F	G	A	B	C	D	E	F
Mixolydian (b7)	G	A	B	C	D	E	F	G
Aeolian (b7,b6,b3)	A	B	C	D	E	F	G	A
Locrian (b7,b6,b5,b3,b2)	B	C	D	E	F	G	A	B

One full-proof method for improvisation is to play leads over chords using only the modes built from the 1,3, and 5 tones that make up the chord. For any given chord triad you can play three different modes based directly on these chord tones. *For example, to improvise over the C major chord triad, you can play the Ionian mode (major scale) starting on the tonic or root tone, you can play the Phrygian mode starting on the third tone, and you can play the Mixolydian mode starting on the fifth tone.* The same applies when you change chords. Just play the appropriate modes for the new 1, 3, and 5 tones based on the parent key. This gives you a world of possibilities for improvisation while staying in the harmonized environment of the parent key.

The table below is constructed for the parent key of C major and designates the three modes that can be played for the various chords in the harmonic environment. Try playing the appropriate modes based on the chord triad tones for each chord in the harmonic environment. Play the chord several times then play the modes. Mix it up and experiment with the sounds.

Chord	Starting Tone	Mode
C	G	Mixolydian
	E	Phrygian
	C	Ionian
Dm	A	Aeolian
	F	Lydian
	D	Dorian
Em	B	Locrian
	G	Mixolydian
	E	Phrygian
F	C	Ionian
	A	Aeolian
	F	Lydian
G	D	Dorian
	B	Locrian
	G	Mixolydian
Am	E	Phrygian
	C	Ionian
	A	Aeolian
B°	F	Lydian
	D	Dorian
	B	Locrian

Modal Harmony

Not to be confused with the modes of a single major scale as discussed above, there is another type of harmony called modal harmony. In modal harmony, each mode begins with the same root tone and the scale displacements are now relative to the parent keys associated with each mode that is being played.

Figure 16 shows the scheme for the C modal environment which uses the same tone C as the root tone for all of the various modes. Notice the different parent keys for each mode. Playing each mode is just like playing the major scale of a different parent key but starting on a note other than the tonic or root of the parent key. So you must be careful not to place too much emphasis on the root tone of the parent key or you will get the impression that you are in the parent key rather than in the intended mode.

Figure 16.

C Modal Harmony								
Parent Key C (Am)	C Ionian	CM7	Dm7	Em7	FM7	G7	Am7	Bø7
Parent Key Bb (Gm)	C Dorian	Cm7	Dm7	EbM7	F7	Gm7	Aø7	BbM7
Parent Key Ab (Fm)	C Phrygian	Cm7	DbM7	Eb7	Fm7	Gø7	AbM7	Bbm7
Parent Key G (Em)	C Lydian	CM7	D7	Em7	F#ø7	GM7	Am7	Bm7
Parent Key F (Dm)	C Mixolydian	C7	Dm7	Eø7	FM7	Gm7	Am7	BbM7
Parent Key Eb (Cm)	C Aeolian	Cm7	Dø7	EbM7	Fm7	Gm7	AbM7	Bb7
Parent Key Db (Bbm)	C Locrian	Cø7	DbM7	Ebm7	Fm7	GbM7	Ab7	Bbm7

In the case of modal harmony you could use the same technique as before for playing modes, you stick to a fingering pattern but start on a tone other than the root (except for Ionian). But in this case you must do this relative to the parent key for that particular mode. The root tone of the parent key changes for each of the modes even though the fingering patterns do not and the starting tone is always the same.

For example, to play a C Mixolydian mode you could use the F major scale pattern but begin playing from tone C. Similarly to play the C Aeolian mode you could use the Eb major scale pattern but begin playing from tone C.

Fortunately there is an alternative way to view the construction of these modes by looking at the number of flats in a given mode. This gives you a way to construct modes from the major scale of a single key rather than thinking in terms of changing parent keys for each mode. The table below shows the names of the flat tones for the various modes.

	Mode	**Flat Tones For The Key Of C Major**
Parent Key C (Am)	C Ionian	None
Parent Key Bb (Gm)	C Dorian	b7 , b3
Parent Key Ab (Fm)	C Phrygian	b7, b3, b6, b2
Parent Key G (Em)	C Lydian	#4 (b5)
Parent Key F (Dm)	C Mixolydian	b7
Parent Key Eb (Cm)	C Aeolian	b7, b3, b6
Parent Key Db (Bbm)	C Locrian	b7, b3, b6, b2, b5

For example, from the table we see that we can play a C Mixolydian mode just by starting on C and playing a C major scale with a b7. Similarly we can play a C Dorian mode just by starting on C and playing a C major scale with a b7 and b3, etc.

A Quick Recap

Every key has a major scale and a relative minor scale which share the same tones. The only difference is the starting tone and the intervals between the tones. The major scale starts on tone 1 whereas the relative minor scale starts on tone 6. This displaces the intervals between the tones.

There are only three starting shapes for a major scale. All other scale shapes can be derived from these three, just being combinations of two of the three original scale shapes. Other important scales like the major pentatonic, minor pentatonic, and major and minor blues scales can all be derived from the three initial major scale shapes.

There are only four basic chord types, major, minor, diminished and augmented.

There are only three starting shapes for a major chord triad (root position, 1st inversion, and 2nd inversion). The chord shapes for the minor, diminished and augmented chords can all be derived from the three initial major chord triad shapes.

All of the scale tones, modes, chords and arpeggios necessary to create melodies, supporting harmonies, and to do creative improvisation are imbedded in each and every one of the major scale shapes. You may also use chromatic tones.

You are free to use any scale shape or chord shape that you choose to use regardless of the location of the root tone. You can use any of the various scale shapes or chord shapes starting on any string and on any fret. You can modify the use of the scale shapes and chord shapes as long as you always make the necessary one fret adjustment between the 3rd and 2nd strings in both directions. You can shift between the various scale shapes and chord shapes at any time when necessary or convenient, even within an octave. You only need keep track of where you have been, where you are at the current time, and where you are going. There are many repeating patterns on the guitar fret board. The same patterns and relationships found on the guitar fret board hold for each and every key. Everything is relative to the key you are playing in, its associated root or starting tone, and the harmonic environment.

Rhythm

We have taken an in-depth look at major and minor keys, scales, modes, chords and arpeggios. We now look at rhythm which many would argue is equal to melody in importance. An interesting rhythm can capture your interest in a way comparable to that of an interesting melody. When an interesting melody and an interesting rhythm are combined it becomes almost magical as the tune immediately becomes recognizable. Play even one or two bars of the song and everyone can "name that tune". When lyrics are added you have a memorable hook that stays with the listener even after the song has finished playing. Many people don't care about melody, harmony or lyrics. They only want to hear a rhythm that gets their feet tapping and their whole body moving, and typically this rhythm will have a lively tempo.

Rhythm is a combination of beat, meter, accents and feeling all occurring at a given tempo. Keeping in synchronization with the beat is referred to as timing. Most people either have it or they don't but like anything else it can be learned. Timing can also be associated with singing where it is referred to as phrasing. Singers with good phrasing sing rhythmically. Once a rhythm is established it is very important to be consistent and to watch your timing. This makes it easier for the listener to feel the music, particularly if you want them to dance. It is very important to keep each rhythm pattern consistent even if you are not playing a note at the time. Internalize the rhythm and tap your feet if necessary. If the rhythm gets distorted or falls apart, the listener will be negatively impacted.

Rhythm is composed of layers. The first layer is a beat or pulse. An endless stream of recurring beats at fixed interval (speed or tempo), just like a beating heart. The next layer is meter, where this pulse is divided into measures or bars of fixed length containing both strong and weak beats. The final layer is rhythm where notes and silences of various temporal durations are applied with or against the meter, some on strong beats and others on weak beats. When the accents occur on weak beats rather than strong beats it is called syncopation or back beat.

Meters are first designated as being either duple, triple or quadruple. In duple meter the measure is broken down into 2 beats; in triple meter the measure is broken down into 3 beats; and in quadruple meter the measure is broken down

into 4 beats. But meter does not end here. Each of these initial meter designations are further broken down. When each initial beat of the meter is further broken down into 2 beats, this is called simple meter. When each initial beat of the meter is further broken down into 3 beats, this is called compound meter. The first beat of a measure is usually the strong beat while the others are weak beats, however accents may be placed anywhere to strengthen an otherwise weak beat. For example, in 4 / 4 time the third beat may also be slightly accented.

		Counting the Beats
	1 2	
Duple	**| I I |**	**1 2**
Simple Duple	**I I I I**	**1 and 2 and**
Compound Duple	**I I I I I I**	**1 and a 2 and a**

		Counting the Beats
	1 2 3	
Triple	**| I I I |**	**1 2 3**
Simple Triple	**I I I I I I**	**1 and 2 and 3 and**
Compound Triple	**I I I I I I I I I**	**1 and a 2 and a 3 and a**

		Counting the Beats
	1 2 3 4	
Quadruple	**| I I I I |**	**1 2 3 4**
Simple Quadruple	**I I I I I I I I**	**1 and 2 and 3 and 4 and**
Compound Quadruple	**I I I I I I I I I I I I**	**1 and a 2 and a 3 and a 4 and a**

It is important to recognize that it is the further breaking down of the initial meter designations that enable you to better *feel a rhythm* and that gives you the opportunity for applying various accents with or against (syncopation and backbeat) the meter, as well as more locations within a given bar for the placement of melody notes and their associated chord harmonies.

A complex meter combines two or more different meter types within a single measure or bar. So we can have duple, simple duple, compound duple; triple, simple triple, compound triple; quadruple, simple quadruple, compound quadruple; and complex meters. A longer piece of music will typically use a variety of meters within the composition.

A piece of music is given an initial time signature that designates how many beats there are per measure and the note value duration that comprises a single beat. The most common time signatures are 4 / 4 (four beats per measure with a quarter note getting a beat), 2 / 4 (two beats per measure with a quarter note getting a beat), 3 / 4 (3 beats per measure with a quarter note getting a beat), and 6 / 8 (6 beats per measure with an eighth note getting a beat).

For simple meters the top number of the time signature is usually 2, 3, or 4; while for compound meters the top number of the time signature is usually 6, 9, or 12. The note duration getting a single beat is usually 2, 4, or 8. The time signatures for complex meters typically have top numbers such as 5, 7, 9, 11, 13, or 15, as they are combinations of two or more meters.

Within a given measure, you cannot exceed the number of notes or rests that are available as per the designated time signature. However you may use any note or rest value durations as long as you stay within the limit. For example in a time signature of 6 / 8, you cannot exceed the equivalent of 3 quarter notes or rests, 6 eighth notes or rests, 12 sixteenth notes or rests, or 24 thirty second notes or rests, or 1.5 half notes or rests.

A piece of music is also given an initial tempo designation typically stated in the number of beats per minute (bpm). The slower tempos, Largo, Larghetto, and Adagio range from 40 – 76 bpm; Andante and Moderato range from 76 – 120 bpm; Allegro, Presto, and Prestissimo range from 120 – 208 bpm. For comparison

purposes, the average heart rate or pulse is around 72 bpm, while most hit pop songs are typically around 100 – 120 bpm, a relatively lively tempo.

The melody that is to be played or sung within a given measure consists of a variety of notes of varying duration and pitch, as well as rests of varying duration that are placed both with and against the underlying meter. The piece of music is played or sung rhythmically according to the underlying meter and the various accents.

Although all of the other elements like melody and harmony are applied with the left hand, rhythm is a right hand technique and it is very important.

Just as it is desirable to have variety in the melodic and harmonic elements of a composition the same is true with regards to rhythmic variation within a composition unless you are applying a strict steady dance rhythm. For dance music each type of dance form has its own distinctive combination of meter, accents, tempo, and feeling. Once a rhythm pattern is established it typically does not vary. Some dance forms incorporate syncopation and some do not.

Another factor to consider is whether you enjoy using a pick or just using your fingers to pluck the strings with your right hand. You can do one or the other or both in combination. Some people like to use a flat pick while others may like a thumb pick or even individual finger picks.

Some people get very adept at finger picking and stick to that style alone. The continual rolling motion of finger picking gives the song a broad and pleasing harmonic background that is not easily achieved with a flat pick. However like anything else it can be overused. Many blues players use a thumb pick. Thumb picks are also used in the Chet Atkins style of playing.

It is good to be able to both flat pick and finger pick.

On the following pages some common patterns will be provided for finger picking and flat picking. Try keeping to the given pattern while always staying on the beat. Eventually you will be able to keep the same pattern going even as you change chords. It is the constancy of the pattern that makes the rhythm work so well. Always strive to be consistent rhythmically and to keep good time.

The designations used for finger picking are as follows: T=thumb, I=index finger, M=middle finger, R=ring finger.

4/4 Time – Quarter Notes				
	T	I M R	T	I M R
Count	**1**	**2**	**3**	**4**

4/4 Time – Eighth Notes								
	T	I	M	R	T	I	M	R
Count	**1**	**&**	**2**	**&**	**3**	**&**	**4**	**&**

4/4 Time – Eighth Notes								
	T	I	M R	I	T	I	M R	I
Count	**1**	**&**	**2**	**&**	**3**	**&**	**4**	**&**

4/4 Time – Eighth Notes								
	T	I	M	I	R	I	M	I
Count	**1**	**&**	**2**	**&**	**3**	**&**	**4**	**&**

3/4 Time – Quarter Notes						
	T	T M R	T M R	T	T M R	T M R
Count	**1**	**2**	**3**	**1**	**2**	**3**

3/4 Time – Eighth Notes						
	T	I	M	R	M	I
Count	**1**	**&**	**2**	**&**	**3**	**&**

3/4 Time – Eighth Notes						
	T	I	M R	I	M R	I
Count	**1**	**&**	**2**	**&**	**3**	**&**

You can also combine finger picking with strumming. You first use your thumb or pick to play a bass note and then you sweep the stings with your thumb or one or more fingers for the strum, using either up or down motions. The designations are as follows: T=thumb, ↑=up, ↓=down.

2/4 Time – Eighth Notes								
	T		↓	↑	T		↓	↑
Count	**1**	**&**	**2**	**&**	**1**	**&**	**2**	**&**

3/4 Time – Eighth Notes						
	T		↓	↑	↓	↑
Count	**1**	**&**	**2**	**&**	**3**	**&**

Syncopated Blues Strum

4/4 Time – Eighth Notes								
	T	↑	↓	↑	T	↑	↓	↑
Count	**1**	**&**	**2**	**&**	**3**	**&**	**4**	**&**

For flat picking, you typically stick to a down / up motion as you play your chords and leads. Keep your wrist loose and try just turning your wrist with a slight rocking motion.

4/4 Time – Quarter Notes								
	↓	↑	↓	↑	↓	↑	↓	↑
Count	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**

Other flat picking variations,

3/4 Time – Eighth Notes								
	↓	↑	↓	↑	↓	↑	↓	↑
Count	**1**	**2**	**3**	**&**	**1**	**2**	**3**	**&**

3/4 Time – Eighth Notes								
	↓	↓	↓	↑	↓	↓	↓	↑
Count	**1**	**2**	**3**	**&**	**1**	**2**	**3**	**&**

Chord Function and Tendency

The individual chords within the harmonic environment each have a unique function and also a tendency to move to other chords within the harmonic environment. The subdominant, dominant, and tonic are the primary chords for a given tonality. The tonic chord is the home or arrival tone of rest for the given tonality, the dominant signals a potential movement or modulation to a tonic chord, and the sub-dominant is like a pre-dominant, preparing and smoothing the way for the dominant.

The roots of chords in the harmonic environment tend to move either up a 4th (down a 5th), or up a 2nd (down a 7th), or down a 3rd (up a 6th). This movement creates forward motion within a composition. Forward motion is deemed to be progressive while a backward or a lack of motion is deemed to be retrogressive.

Figure 17a shows the natural chord function and tendency for the major harmonic environment. This is the same forward motion found in the Circle of 5ths and is also consistent with the standard tuning of the guitar strings.

Figure 17a.

MAJOR HARMONY	Chord Function	Chord Tendency
I7 (major 7 6)	Tonic	Move to any chord in the harmonic environment
II7 (minor 7)	Supertonic	Move up a 4th to the V7 chord
III7 (minor 7)	Mediant	Move up a 4th to the VI7 chord
IV7 (major 7 6)	Subdominant	Move up a 2nd to the V7 chord, also down a 3rd to the II7 chord
V7 (dominant 7)	Dominant	Move up a 4th to the I7 chord
VI7 (minor 7)	Submediant	Move up a 4th to the II7 chord
VII7 (minor7b5)	Leading Tone	Move up a 2nd to the I7 chord, also down a 3rd to the V7 chord

Figure 17b shows the natural chord function and tendency for the minor harmonic environment.

Figure 17b.

NATURAL MINOR HARMONY	Chord Function	Chord Tendency
I7 (minor 7 6)	Tonic	Move to any chord in the harmonic environment
II7 (minor7b5)	Supertonic	Move up a 4th to the V7 chord
III7 (major 7)	Mediant	Move up a 4th to the IV7 chord
IV7 (minor 7)	Subdominant	Move up a 2nd to the V7 chord
V7 (minor 7)	Dominant	Move up a 4th to the I7 chord
VI7 (major 7)	Submediant	Move up a 4th to the II7 chord, also down a 2nd to the v7 chord
VII7 (dominant 7)	Leading Tone	Move up a 2nd to the I7 chord, also up a 4th to the III7 chord

Chord root movement up a 2nd is depicted in Figure 17c.

Figure 17c. Progressive Root Movement - up in 2nds (down in 7ths)

Chord Progression		Type of Triad	Name/Function
I		Primary	Tonic
VII		Secondary	Leading Tone
VI		Secondary	Submediant
V		Primary	Dominant
IV		Primary	Subdominant
III		Secondary	Mediant
II		Secondary	Supertonic
I		Primary	Tonic

Chord root movement down a 3rd is depicted in Figure 17d.

Figure 17d. Progressive Chord Movement – Root movement down in 3rds (up in 6ths)

Chord Progression		Type of Triad	Name/Function
I		Primary	Tonic
III		Secondary	Mediant
V		Primary	Dominant
VII		Secondary	Leading Tone
II		Secondary	Supertonic
IV		Primary	Subdominant
VI		Secondary	Submediant
I		Primary	Tonic

Modulation

Although a composition is in a given key, within the composition there can be temporary shifts to new keys, sometimes several in succession before returning to the tonality of the original key. This is called modulation and it is often used to raise the pitch for a new section of music different from the preceding section.

You can modulate to either a major key or a minor key. Although you can modulate to any key, the most common modulations raise the pitch a half-step, a whole-step, a minor third, a major third, or a fourth. *For example, you could modulate from the key of C to C#, D, Eb, E or F.* Modulations used for bridges in songs often go from a major key to the relative minor or parallel minor and then back to the original key through cadence.

Often you find temporary modulations that raise the pitch a fourth occurring several in succession traveling around the Circle of 5ths. You typically enter the circle on the III7, VI7 or VII7 chord and then get out with a II V I progression, where the I is a chord triad. *For example, you might find the chord progression C E7 A7 D7 G7 C, which temporarily modulates from the keys of C to D to G before returning back to C. In this case, we start the modulations by jumping into the circle with an E7, being the II for the key of D in the II to V to I progression for that particular key.*

There are a variety of techniques for modulating to a new key. Some are very abrupt using a single chord and some are smoother using several chords. A common method is to place the V7 of the new target key in front of the root tone of the new target key. You can also precede the V7 chord by its own minor triad or by another diatonic chord. *For example you might have the progression C Dm D7 G or C Em E7 A.* The most reliable and smooth method for modulation is to use the II V I progression to establish a new tonality. In order to change keys, just initiate the II V I progression for the key of target destination and you will have established the new tonality.

There are other quick ways to implement a shift in tonality. Use the diminished VII (B°) or half diminished VII (Bm7b5) that would naturally precede the key of

destination *(e.g., from* B° or *Bm7b5 to C).* The VII tone is referred to as a leading tone and its tendency is always to go to the corresponding tonic or I chord.

As mentioned earlier in the book, the Circle of 5ths has the II V I progression imbedded in it for all keys. Also as mentioned, the guitar fret board with standard tuning is set up the same way as the Circle of 5ths on strings 6, 5, 4, 3 (E, A, D, G) and by doing the necessary shift one fret higher from the 3rd string to the 2nd string the same relationship continues. The tuning of the guitar makes modulating to new key centers very easy.

E	A	D	G	Shift	C	F
II	V	I				
	II	V	I			
		II	V		I	
			II		V	I

Chord Substitution

Chord substitution is an important technique that is used for adding variety to a composition and to provide a much broader palette for improvisation. Chords may be substituted for one another if they have two or more shared tones. Because all of the chords supporting the harmonic environment are constructed from the grand chord by stacking 3rds, chords that are a 3rd apart can be substituted for each other because they share 2 or more tones. This holds true for chord triads and seventh chords. Figure 18 shows the chords that may be substituted for one another based on shared tones for the key of C major. Notice that they are a 3rd apart.

Figure 18.

The Basis For Chord Substitution – Chords That Share 2 or More Tones					
Chords A Third Apart May Be Substituted For Each Other					
THE GRAND CHORD					
Key of C Major – The Stacked 3rds Make The Chords					
Scale Tone	Chord Root	Chord Tones	Chord Triad	Chord Tones	7th Chords
13	A	A C E	Am	A C E G	Am7
11	F	F A C	F	F A C E	FM7
9	D	D F A	Dm	D F A C	Dm7
7	B	B D F	B°	B D F A	$B^{ø}7$
5	G	G B D	G	G B D F	G7
3	E	E G B	Em	E G B D	Em7
1	C	C E G	C	C E G B	CM7

C	**Dm**	**Em**	**F**	**G**	**Am**	**$B^{ø}$**
Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes
Am	B°	C	Dm	Em	F	G
Em	F	G	Am	B°	C	Dm
CM7	**Dm7**	**Em7**	**FM7**	**G7**	**Am7**	**$B^{ø}$ 7**
Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes
Am7	$B^{ø}7$	CM7	Dm7	Em7	FM7	G7
Em7	FM7	G7	Am7	$B^{ø}7$	CM7	Dm7

Another way to look at these substitutions is to relate the primary triads within the harmonic environment to the secondary triads. When substituted for a

primary triad the secondary triads perform the same function. Notice that some of the chords may act as substitutes for two of the primary chords. The strongest relationship within the harmonic environment is between the dominant and tonic.

Chord	**Type of Triad**	**Name/Function**	**Substitution**
VII	Secondary	Leading Tone	Substitute for V
V	Primary	Dominant	
III	Secondary	Mediant	Substitute for V or I
I	Primary	Tonic	
VI	Secondary	Submediant	Substitute for I or IV
IV	Primary	Subdominant	
II	Secondary	Supertonic	Substitute for IV

There are other possibilities for chord substitution based on chord function. All of the primary chords, the tonic, sub-dominant, and dominant have additional substitutions. A very common substitution for the V7 chord is the called the flat-five substitution. The flat five of the dominant chord may be used as a substitute for the dominant chord. *For example, DbM7 or Db7 may be substituted for G7.* This substitution is also sometimes called the flat-two substitution with regards to the tonic tone, as in the example above where Db is the flat-two of C major. It is also common to find the bVII as a substitute for the VII^{ø} chord.

Chord substitution can also continue to a second or even third level by using chord substitutions for the chord substitutions. As the dominant chord is often preceded by one or more pre-dominant chords (like the supertonic), a variety of potential substitutions of various lengths are possible. These can also be used to extend a phrase and delay a cadence.

All of the diatonic chords may be replaced by their dominant sevenths. This can produce a temporary modulation in a chord progression.

Chord Substitution						
CM	**Dm**	**Em**	**FM**	**G**	**Am**	**B^{ø}**
Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes

C7	D7	E7	F7	G7	A7	B7

All of the diatonic chords except for the vii chord may be replaced by their secondary dominants.

Chord Substitution						
CM	**Dm**	**Em**	**FM**	**G**	**Am**	**B^{ø}**
Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes	Substitutes
G7	A7	B7	C7	D7	E7	

All dominants can be preceded by their associated supertonics.

Chord substitution and chord quality interchange are used in modern jazz and are integral for providing variety in a composition.

The table below depicts how additional substitutions are derived for the Pre-Dominant and Dominant tonal areas. In addition to the substitutions for the Pre-Dominant area provided in the table below, the following chords may also be used in the Pre-Dominant area: F, Dm, D7, Db6, A+, Fm, D°, G+, F#° as all of these effectually lead to the Dominant.

Major Harmony				
Pre-dominant Area		Dominant Area		Tonic Area
IV Sub-Dominant	II Supertonic	V/V Secondary Dominant	V Dominant & Substitutes	I Tonic & Substitutes
FM7, F6	Dm7		G7	CM7, C6
	Am7	D7	G7	
	Abm7		Db7	
	Ebm7	Ab7	DbM7	
		B7		Em7
		E7		Am7
Minor Harmony				
Pre-dominant Area		Dominant Area		Tonic Area
IV Sub-Dominant	II Supertonic	V/V Secondary Dominant	V Dominant & Substitutes	I Tonic & Substitutes
Fm7, Fm6, F7	D^{ø}7		G7	Cm7,Cm6, Cminmaj7
	A^{ø}7	D7	G7	
	Ab^{ø}7		Db7	
	Eb^{ø}7	Ab7	DbM7	
		Bb7		EbM7, Eb6
		Eb7		AbM7, Ab6

Chord Quality Interchange

Individual chords can always be found in more than one harmonic environment. So their function and tendency is dependent on how they are being viewed. For example, an Em7 could be interpreted as a iii chord in the key of C major or as a vi chord in the key of G major. A CM7 could be interpreted as a I chord in the key of C major or as a IV chord in the key of G major.

To add additional variety to a composition chord qualities are often interchanged, for instance going from major to minor or diminished, or going from a major seventh to a dominant seventh. Chord qualities can be interchanged for all of the individual scale degrees but are most commonly found for scale degrees II, III and IV. A major harmony can temporarily change to the harmony of either the relative minor or the parallel minor to add variety to a composition. Return back to the original tonality through the appropriate ii V I chord progression. This creates a broad palette of sounds to work with in many interesting combinations. When a chord belongs to more than one key it can be used as a way to move from one key to another. Once the new key tonality has been established you will have effectually made the transition. Remember to use chord triads as well as extensions. Chord triads provide a greater sense of arrival or rest.

Figure 19 depicts chord quality selections available for interchanging chords between the C Major, C Minor, and C Modal harmonic environments arranged in order of ascending 2nds (I – II- III- IV – V – VI – VII).

Figure 20 depicts chord quality selections available for interchanging chords between the C Major, C Minor, and C Modal harmonic environments arranged in order of ascending 4ths (VII –III- VI- II- V- I- IV).

Figure 21 depicts chord quality selections available for interchanging chords between the C Major, C Minor, and C Modal harmonic environments arranged in order of (IV – V – I) and (II – V – I).

Figure 19. C Major, Minor, and Modal Harmony Chord Quality Interchange (I –II- III - IV- V- VI- VII)

		I	II	III	IV	V	VI	VII
C Major Harmony		CM7	Dm7	Em7	FM7	G7	Am7	B^{ø}7
C Natural Minor Harmony		Cm7	D^{ø}7	EbM7	Fm7	Gm7	AbM7	Bb7
C Harmonic Minor Harmony		Cmmaj7	D^{ø}7	EbM7#5	Fm7	G7	AbM7	B^{ø}7
C Melodic Minor Harmony		Cmmaj7	Dm7	EbM7#5	F7	G7	A^{ø}7	B^{ø}7
C Modal Harmony								
Parent Key C (Am)	C Ionian	CM7	Dm7	Em7	FM7	G7	Am7	B^{ø}7
Parent Key Bb (Gm)	C Dorian	Cm7	Dm7	EbM7	F7	Gm7	A^{ø}7	BbM7
Parent Key Ab (Fm)	C Phrygian	Cm7	DbM7	Eb7	Fm7	G^{ø}7	AbM7	Bbm7
Parent Key G (Em)	C Lydian	CM7	D7	Em7	F#^{ø}7	GM7	Am7	Bm7
Parent Key F (Dm)	C Mixolydian	C7	Dm7	E^{ø}7	FM7	Gm7	Am7	BbM7
Parent Key Eb (Cm)	C Aeolian	Cm7	D^{ø}7	EbM7	Fm7	Gm7	AbM7	Bb7
Parent Key Db (Bbm)	C Locrian	C^{ø}7	DbM7	Ebm7	Fm7	GbM7	Ab7	Bbm7

Figure 20. C Major, Minor, and Modal Harmony Chord Quality Interchange (VII –III- VI- II- V- I- IV)

		VII	III	VI	II	V	I	IV
C Major Harmony		B$^{\emptyset}$7	Em7	Am7	Dm7	G7	CM7	FM7
C Natural Minor Harmony		Bb7	EbM7	AbM7	D$^{\emptyset}$7	Gm7	Cm7	Fm7
C Harmonic Minor Harmony		B$^{\emptyset}$7	EbM7#5	AbM7	D$^{\emptyset}$7	G7	Cmmaj7	Fm7
C Melodic Minor Harmony		B$^{\emptyset}$7	EbM7#5	A$^{\emptyset}$7	Dm7	G7	Cmmaj7	F7
C Modal Harmony								
Parent Key C (Am)	C Ionian	B$^{\emptyset}$7	Em7	Am7	Dm7	G7	CM7	FM7
Parent Key Bb (Gm)	C Dorian	BbM7	EbM7	A$^{\emptyset}$7	Dm7	Gm7	Cm7	F7
Parent Key Ab (Fm)	C Phrygian	Bbm7	Eb7	AbM7	DbM7	G$^{\emptyset}$7	Cm7	Fm7
Parent Key G (Em)	C Lydian	Bm7	Em7	Am7	D7	GM7	CM7	F#$^{\emptyset}$7
Parent Key F (Dm)	C Mixolydian	BbM7	E$^{\emptyset}$7	Am7	Dm7	Gm7	C7	FM7
Parent Key Eb (Cm)	C Aeolian	Bb7	EbM7	AbM7	D$^{\emptyset}$7	Gm7	Cm7	Fm7
Parent Key Db (Bbm)	C Locrian	Bbm7	Ebm7	Ab7	DbM7	GbM7	C$^{\emptyset}$7	Fm7

Figure 21. C Major, Minor, and Modal Harmony Chord Quality Interchange (IV – V – I and II- V- I)

		IV	V	I		II	V	I
C Major Harmony		FM7	G7	CM7		Dm7	G7	CM7
C Natural Minor Harmony		Fm7	Gm7	Cm7		D$^{\emptyset}$7	Gm7	Cm7
C Harmonic Minor Harmony		Fm7	G7	Cmmaj7		D$^{\emptyset}$7	G7	Cmmaj7
C Melodic Minor Harmony		F7	G7	Cmmaj7		Dm7	G7	Cmmaj7
C Modal Harmony								
Parent Key C (Am)	C Ionian	FM7	G7	CM7		Dm7	G7	CM7
Parent Key Bb (Gm)	C Dorian	F7	Gm7	Cm7		Dm7	Gm7	Cm7
Parent Key Ab (Fm)	C Phrygian	Fm7	G$^{\emptyset}$7	Cm7		DbM7	G$^{\emptyset}$7	Cm7
Parent Key G (Em)	C Lydian	F#ø7	GM7	CM7		D7	GM7	CM7
Parent Key F (Dm)	C Mixolydian	FM7	Gm7	C7		Dm7	Gm7	C7
Parent Key Eb (Cm)	C Aeolian	Fm7	Gm7	Cm7		D$^{\emptyset}$7	Gm7	Cm7
Parent Key Db (Bbm)	C Locrian	Fm7	GbM7	C$^{\emptyset}$7		DbM7	GbM7	C$^{\emptyset}$7

Non-Harmonic Melody Tones

The types of non-harmonic melody tones are depicted in the table below.

Anticipation	A non-harmonic tone that is approached by leap and left by repetition.
Appoggiatura	A non-harmonic tone that is approached by leap and left by step often in other direction.
Neighboring tone	A non-harmonic tone approached and left by step above or below with change in direction.
Passing tone	A non-harmonic tone approached and left by step from above or below in the same direction.
Suspension	A non-harmonic tone that is approached by the same note and left by step typically downward.

Often times a chord fingering can be viewed as more than one thing and it may also have a different function depending on the current key. The table below shows a couple of examples how the same chord tones can represent multiple chords.

Chord		**Chord**		**Chord**
Cm7	=	A6		
Dm7	=	F6		
Cm6	=	F9	=	Am7b5
Dm6	=	G9	=	Bm7b5
Cm7b5	=	Ab9	=	Ebm6
Dm7b5	=	Bb9	=	Gm6
Cm9	=	Ebmaj7		
Dm9	=	Fmaj7		

Approach Chords

The types of approach chords are depicted in the table below.

Approach Chords Approach chords are typically either a semitone (half step or one fret) or a 4th or 5th above or below the target destination.
DbM7 Dm7 EbM7 Dm7
CM7 Dm7 Em7 Dm7
Gm7 Dm7 Am7 Dm7
Chords from every diatonic scale degree may be preceded or followed by their dominants located a prefect fifth above except for the VII chord.
G7 CM7 A7 Dm7 B7 Em7 C7 FM7 D7 G7 E7 Am7
CM7 G7 Dm7 A7 Em7 B7 FM7 C7 G7 D7 Am7 E7
Approaching The I Chord (Tonic)
The tonic chord may be preceded by the V chord and its substitutes.
G7 CM7 Db7 CM7 $B^{\emptyset}7$ CM7
Approaching The IV Chord (Sub Dominant)
The IVm7 can be placed in front of the IVM7.
Fm7 FM7
Approaching The V Chord (Dominant)
Every V7 chord can be preceded by its own II V.
Am7 D7 G7
The companion minor of the dominant chord (V/V) may precede or follow the dominant chord.
Dm7 G7 Dm7 Dm7b5 G7 Dm7b5
Substitutes for the dominant chord may precede or follow the dominant chord.
DbM7 G7 C Db7 G7 C $B^{\emptyset}7$ G7 C

Passing and Connector Chords

The types of passing and connector chords are depicted in the table below.

Passing and Connector Chords Passing chords are used between two diatonic chords within the harmonic environment and they may be either diatonic or non-diatonic.
Diatonic passing chords are typically inserted between two chords a major or minor third apart.
CM7 Dm7 Em7 Em7 FM7 G7
Non-diatonic passing chords are not part of the harmonic environment.
Dm7 EbM7 Em7 Dm7 Eb7 Em7
The IVm7 may be used as a passing or transition chord between the IVM7 and IM7 chords and between the IIm7 and IM7 chords.
FM7 Fm7 CM7 Dm7 Fm7 CM7
The bVII7 (IV/IV) may be used as a passing or transition chord between the IVm7 and IM7 chords.
Fm7 Bb7 CM7
Diminished chords may be used as passing or transition chords between I and II, I and V, III and II.
CM7 C° Dm7 CM7 C#° Dm7 CM7 C° G7 CM7 C#° G7
Em7 Eb°7 Dm7
You can place a Major 7th or Dominant 7th chord between I and II, II and III, IV and V, V and VI.
CM7 Db7 Dm7 Dm7 EbM7 Em7 FM7 Gb7 G7 G7 AbM7 Am7
You can place a major 7th and/or minor 7th between Dominant 7th chords.
G7 GM7 G7 G7 Gm7 G7 G7 GM7 Gm7 G7
Slash chords may be used as passing or connector chords.
C C/E F C/E Dm C G/B Am G/B C

Using Diminished and Augmented Chords

Diminished and augmented chords may be used as connector chords to give motion to chord progressions. They have a unique dissonant sound that requires resolution. As indicated earlier the fully diminished seventh chords contain the tones 1, b3, b5 and bb7, and the augmented chords contain the tones 1, 3 and #5.

The fully diminished seventh chord actually contains four leading tones from which you can modulate from the diminished seventh chord to any key whose leading tone is one of the components of that diminished chord. *For example, you could go from C°7 which contains the tones C, Eb, Gb, A, directly to the keys of Db, E, G, or Bb.*

When you lower any single tone within a fully diminished seventh chord, you create a dominant seventh chord for that new lowered tone. This enables you to easily move from a diminished chord to four dominant seventh chords and from there to four new tonal centers as desired. *For example taking the **C°7** chord, comprised of the tones C, Eb, Gb, A, we can easily move to a B7, D7, F7, Ab7 by lowering any of the respective tones one half-step. We could then move from there to the new tonal centers E, G, Bb, Db.*

A	A	A	A	Ab
Gb	Gb	Gb	F	Gb
Eb	Eb	D	Eb	Eb
C	B	C	C	C
C°7	***B7***	***D7***	***F7***	***Ab7***
	to E	to G	to Bb	to Db

When you raise any single tone within a fully diminished seventh chord, you create a minor sixth chord for that new raised tone. This enables you to easily move from a diminished chord to four minor sixth chords. *For example taking the **C°7** chord, comprised of the tones C, Eb, Gb, A, we can easily move to a Dbm6, Em6, Gm6, Bbm6 by raising any of the respective tones one half-step.*

A	A	A	A	Bb
Gb	Gb	Gb	G	Gb
Eb	Eb	E	Eb	Eb
C	Db	C	C	C
C°7	***Dbm6***	***Em6***	***Gm6***	***Bbm6***

When you move a fully diminished chord up the neck a half step or one fret you move up in 5ths. When you move a fully diminished chord down the neck a half step or one fret you move down in 4ths.

←---------- (moving up guitar fret board towards sound hole)

A°7 D°7 G°7 C°7

----------→ (moving down guitar fret board towards neck)

The fully diminished chords and augmented chords are often used as connector chords as depicted in Figure 22 and Figure 23, respectively. A fully diminished chord one half step above the root may be used as a substitute for a dominant seventh chord. *For example G#°7 may be used as a substitute for G7.*

Figure 22.

Key of C Major – Common Uses Of Diminished Connector Chords										
I7 CM7	**I°7** **C°7**	II7 Dm7		I7 CM7	**I°7** **C°7**	V7 G7				
I7 CM7	**#I°7** **C#°7**	II7 Dm7		I7 CM7	**#I°7** **C#°7**	V7 G7				
I7 CM7	**#2°7** **D#°7**	I7 CM7		II7 Dm7	**#2°7** **D#°7**	I7 CM7				
I7 CM7	**b3°7** **Eb°7**	II7 Dm7		I7 CM7	**b3°7** **Eb°7**	V7 G7		III7 Em7	**b3°7** **Eb°7**	II7 Dm7
I7 CM7	**#IV°7** **F#°7**	II7 Dm7		I7 CM7	**#IV°7** **F#°7**	V7 G7				
Commonly Use Diminished Chords: #1°, #2°,b3°,#4°										

Figure 23.

Key of C Major – Common Uses Of Augmented Connector Chords										
I CM	**I+** **C+**	II7 Dm7		I CM	**I+** **C+**	IV FM		I CM	**I+** **C+**	VI Am
I CM	**IV+** **F+**	I CM		II7 Dm7	**IV+** **F+**	I CM				
I CM	**V+** **G+**	I CM		V G	**V+** **G+**	I CM				
Commonly Used Augmented Chords: 1+, 4+, 5+										

Chord Progressions

When chords are used to harmonize a melody the end result is a progression of chords. The chord progressions can be used for simple harmonic accompaniment as you sing the melody of a song. Chord progressions can also be used as lead sheets for improvising over the chords. **Almost every composition** utilizes the I IV V chords and some songs are based solely on these three chords. The chords I, IV, and V are the primary chords structurally fundamental to establishing tonality and harmony. Just as common for establishing tonality is the ii to V to I progression, the ii chord being a substitute for the IV chord. The most common movements for the primary chords are I to IV, I to V, and IV to V. This leads to chord progressions like I to V to I, I to IV to I, and I to IV to V to I, that are found in so many songs and compositions.

Another very popular chord progression is III - VI - II - V - I. It is found in many standards from the 1940's and is used in jazz. This progression follows the Circle of 5ths moving down in 4ths. The table below depicts this progression for all keys. It should be practiced using both triads and seventh chords. Practice using bar chords and various chord forms and fingerings. This is a very valuable exercise.

3	6	2	5	1
Em7	Am7	Dm7	G7	Cmaj7
Fm7	Bbm7	Ebm7	Ab7	Dbmaj7
Gbm7	Bm7	Em7	A7	Dmaj7
Gm7	Cm7	Fm7	Bb7	Ebmaj7
Abm7	Dbm7	Gbm7	B7	Emaj7
Am7	Dm7	Gm7	C7	Fmaj7
Bbm7	Ebm7	Abm7	Db7	Gbmaj7
Bm7	Em7	Am7	D7	Gmaj7
Cm7	Fm7	Bbm7	Eb7	Abmaj7
Dbm7	Gbm7	Bm7	E7	Amaj7
Dm7	Gm7	Cm7	F7	Bbmaj7
Ebm7	Abm7	Dbm7	Gb7	Bmaj7

A progression of chords that provides forward motion is termed ‘progressive’ whereas a progression of chords that lacks forward motion or provides a backwards motion is termed ‘retrogressive’. This is relative to the movement of the roots of the chords. Chord root movements that are progressive are depicted in the following diagrams. The use of chromatic chord progressions is very effective if applied in moderation and should be used where appropriate.

Progressive Chord Movement - Primary and Secondary Chord Movements

Chord Progression		**Type of Triad**	**Name/Function**	**Rule**
VII		Secondary	Leading Tone	Movement from a primary chord to a secondary chord is deemed to be progressive
V		Primary	Dominant	
III		Secondary	Mediant	
I		Primary	Tonic	
VI		Secondary	Submediant	
IV		Primary	Subdominant	
II		Secondary	Supertonic	

Progressive Chord Movement – Root movement down in 5ths (up in 4ths)

Chord Progression		Type of Triad	Name/Function
I		Primary	Tonic
IV		Primary	Subdominant
VII		Secondary	Leading Tone
III		Secondary	Mediant
VI		Secondary	Submediant
II		Secondary	Supertonic
V		Primary	Dominant
I		Primary	Tonic

Progressive Chord Movement – Root movement up in 2nds (down in 7ths)

Chord Progression		Type of Triad	Name/Function
I		Primary	Tonic
VII		Secondary	Leading Tone
VI		Secondary	Submediant
V		Primary	Dominant
IV		Primary	Subdominant
III		Secondary	Mediant
II		Secondary	Supertonic
I		Primary	Tonic

Progressive Chord Movement – Root movement down in 3rds (up in 6ths)

Chord Progression		Type of Triad	Name/Function
I		Primary	Tonic
III		Secondary	Mediant
V		Primary	Dominant
VII		Secondary	Leading Tone
II		Secondary	Supertonic
IV		Primary	Subdominant
VI		Secondary	Submediant
I		Primary	Tonic

Figure 24 shows some very common chord progressions used in popular music today. The nature or character of the chords (major, minor, augmented or diminished) depends on the parent key and its harmonic environment. The nature or character of the chords can temporarily be changed by using chord substitution and chord quality interchange.

Figure 24.

I	V	I						
I	IV	I						
I	IV	V	I					
I	II	V	I					
I	II	IV	V					
I	V	IV	I					
I	VI	IV	V					
I	VI	II	V					
I	V	VI	IV					
I	III	VI	IV	V	I			
I	III	VI	II	V	I			
I	III	VI	I	IV	I	II	V	I
VII	III	VI	II	V	I	IV	I	
I	V	VI	III	IV	I	IV	V	
VI	II	V	I	III	VI	II	V	
I	III	IV	I	IV	I	II	V	
I	biii	IV	V					
I	bvii	I	IV	I	V	I		

Improvisation

To improvise or play a lead over a chord within a chord progression, the scale should contain the notes of the chord or at least not be in conflict with it. If you extend or alter a chord or arpeggio then the scale should include the extended or altered tones as well. Melodies and leads built solely from the chord tones of the chord progressions will never be in conflict with the harmonic environment.

As mentioned earlier in this book, one common fail-safe technique for improvisation in a given key is to play leads only from the 1, 3 and 5 tones for any chord that is within the harmonic environment. You can choose to use only these 3 notes (arpeggios) and nothing else or you can play the appropriate mode from each tone based on the parent scale. You can start your lead from either the 1 or 3 or 5 tones of the chord and play the associated mode for beginning on that particular tone. When a composition progresses to a given chord, for that period of time you can improvise playing the appropriate modes against that chord staying solely within the harmonic environment. *An example is provided below for the key of C major whose parent scale is the C major scale.*

Chord	Starting Tone	Mode
C	G	Mixolydian
	E	Phrygian
	C	Ionian
Dm	A	Aeolian
	F	Lydian
	D	Dorian
Em	B	Locrian
	G	Mixolydian
	E	Phrygian
F	C	Ionian
	A	Aeolian
	F	Lydian
G	D	Dorian
	B	Locrian
	G	Mixolydian
Am	E	Phrygian
	C	Ionian
	A	Aeolian
B°	F	Lydian
	D	Dorian
	B	Locrian

Figure 25a shows some of the various scales and modes that may be played over a given chord triad for C major harmony. Although the examples are for C major they can be transposed to any key. Note from Figure 25a that the 5 tone In-Sen scale starting on the 3rd tone (E F A B D) of the major scale may be played across the entire major scale harmony. Occasionally when playing a scale over a chord certain tones may seem dissonant (avoid notes) and are best avoided.

Over the ii V I chord progression so prominent in contemporary jazz, the pentatonic, In-Sen and altered pentatonic are the three most commonly used 5 tone scales. A summary of how these 5 tone scales may be used over the ii V I chord progression is provided in Figure 25b. Note from Figure 25b that the major pentatonic scale starting on the 5th tone (G A B D E) may be played across the entire ii V I progression as can the In-Sen scale starting on the 3rd tone (E F A B D).

The melodic minor scale (C D Eb F G A B C) is used prominently in jazz. A summary of how these 5 tone scales may be used in melodic minor harmony is provided in Figure 25c. Note from Figure 25c that the major pentatonic scale starting on the 4th tone (F G A C D), the In-Sen scale starting on the 2nd tone (D Eb G A C), and the altered pentatonic scale starting on the 2nd tone (D Eb F G A) may be played across the entire melodic minor harmony.

A selection of commonly used scales is provided in Figure 25d. The starting tones are shaded for each scale. Although these scales are shown for the root tone C, they can be transposed to any other root tone. Remember that when underlying chords are altered, the scales must be altered consistent with the alteration of the chords.

When dominant seventh chords are used in a chord progression, things get very interesting. Many options are available for improvisation.

When playing the blues with dominant seventh chords, some scales starting on the root of the I chord can be played against the entire chord progression (I7 IV7 V7). These include the minor pentatonic scale, minor blues scale, dorian scale, mixolydian blues scale, and dominant pentatonic scale. A single scale can be used for the entire song, just emphasize the individual chord tones within the scale as the chords change within the progression. *For example, the C minor pentatonic*

scale may be used against the entire blues progression for the key of C (C7, F7, G7).

When playing the blues with dominant seventh chords, a major scale beginning on the bVII (a whole step below the root) or a major scale beginning on the IV (a 4th below the root) may also be used against the entire I7 IV7 V7 chord progression. *For example, a Bb or F major scale may be used against the entire blues progression for the key of C (C7, F7, G7)*.

When playing the blues with dominant seventh chords, individual scales may also be played for each chord in the progression. For example you can play the mixolydian mode for each chord, as well as the minor pentatonic, major pentatonic, mixolydian pentatonic, and arpeggios for each individual chord in the progression. You must play the appropriate scale or arpeggio for each chord as the chord progression progresses.

Figure 25a.

C Major Harmony – Scales And Modes That Sound Good With Each Chord		
Chord Triads	**Scale or Mode**	**Starting Tone**
C Major Seventh **1 3 5 7** **C E G B**	**Major Scale (Ionian Mode)** **Phrygian Mode** **Mixolydian Mode** **Major Pentatonic Scale** **Minor Pentatonic Scale**	**C** **E** **G** **C or D or G** **A or B or E or C (over triad)E**
D Minor Seventh **1 b3 5 b7** **D F A C**	**Dorian Mode** **Lydian Mode** **Aeolian Mode** **Minor Pentatonic Scale** **Major Pentatonic** **Blues Scale**	**D** **F** **A** **D or E or A** **F or G or C** **D**
E Minor Seventh **1 b3 5 b7** **E G B D**	**Phrygian Mode** **Mixolydian Mode** **Locrian Mode** **Minor Pentatonic Scale** **Blues Scale**	**E** **G** **B** **E** **E**
F Major Seventh **1 3 5 7** **F A C E**	**Lydian Mode** **Aeolian Mode** **Ionian Mode** **Major Pentatonic Scale** **Minor Pentatonic Scale**	**F** **A** **C** **F or G or C** **D or E or A**
G Dominant Seventh **1 3 5 b7** **G B D F**	**Mixolydian Mode** **Locrian Mode** **Dorian Mode** **Major Pentatonic Scale** **Minor Pentatonic Scale** **Blues Scale** **In-Sen Scale** **Lydian**	**G** **B** **D** **G or Bb or F** **E or Gb or D** **G** **E** **F**
A Minor Seventh **1 b3 5 b7** **A C E G**	**Aeolian Mode** **Ionian Mode** **Phrygian Mode** **Minor Pentatonic Scale** **Blues Scale**	**A** **C** **E** **A** **A**
B Minor Seventh b5 **1 b3 b5 b7** **B D F A**	**Locrian Mode** **Dorian Mode** **Lydian Mode**	**B** **D** **F**
C Minor Harmony ***C Minor Seventh (as tonic)*** ***1 b3 5 b7*** ***C Eb G Bb***	***Dorian Mode*** ***Aeolian Mode*** ***Phrygian*** ***Minor Pentatonic Scale*** ***Blues Scale***	***C*** ***C*** ***C*** ***C or G*** ***C***

Figure 25b.

C Major Jazz Harmony – 5 Tone Scales Used Over ii V I Chord Progression		
Seventh Chords	**Scale or Mode**	**Starting Tone**
D Minor Seventh **1 b3 5 b7** **D F A C**	**Major Pentatonic Scale** **Minor Pentatonic Scale** **In-Sen Scale**	**F or G or C** **D or E or A** **E**
G Dominant Seventh **1 3 5 b7** **G B D F**	**Major Pentatonic Scale** **Minor Pentatonic Scale** **In-Sen Scale**	**G or Bb or F** **E or G or D** **E**
C Major Seventh **1 3 5 7** **C E G B**	**Major Pentatonic Scale** **Minor Pentatonic Scale** **In-Sen Scale**	**C or D or G** **A or B or E** **E**

Figure 25c.

C Melodic Minor Jazz Harmony – 5 Tone Scales		
Chord Triads	**Scale or Mode**	**Starting Tone**
C Minor Major 7th 1 3 5 7 C E G B	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
D Minor Seventh 1 b3 5 b7 D F A C	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
Eb Major Seventh #5 1 b3 #5 7 Eb G B D	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
F Dominant Seventh 1 3 5 b7 F A C Eb	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
G Dominant Seventh 1 3 5 b7 G B D F	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
A Minor Seventh b5 1 b3 b5 b7 A C Eb G	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D
B Minor Seventh b5 1 b3 b5 b7 B D F A	Major Pentatonic Scale In-Sen Scale Altered Pentatonic Scale	F D D

Figure 25d. Commonly Used Scales For C Major and C Minor

Scale Tone	1	b2	2	b3	3	4	b5	5	b6	6	b7	7
	C	**Db**	**D**	**Eb**	**E**	**F**	**Gb**	**G**	**Ab**	**A**	**Bb**	**B**
Major	C		D		E	F		G		A		B
Natural Minor	C		D	Eb		F		G	Ab		Bb	
Harmonic Minor	C		D	Eb		F		G	Ab			B
Melodic Minor	C		D	Eb		F		G		A		B
Spanish Minor	C	Db		Eb		F		G	Ab		Bb	
Dorian Minor	C		D	Eb		F		G		A	Bb	
Hexatonic Minor	C		D	Eb		F		G			Bb	
Major Pentatonic	C		D		E			G		A		
Minor Pentatonic	C			Eb		F		G			Bb	
Altered Minor Pentatonic	C			Eb		F	Gb	G			Bb	
Major Blues	C		D	Eb	E			G		A		
Minor Blues	C			Eb		F	Gb	G			Bb	
BeBop	C			Eb		F	Gb	G			Bb	B
Mixolydian Blues	C		D	Eb	E	F	Gb	G		A	Bb	
Altered Pentatonic		D	Eb					G		A		B
Dominant Pentatonic	C		D		E			G			Bb	
In-Sen			D		E	F				A		B
Whole Tone	C		D		E		F#		G#		A#	
Whole/Half Diminished	C		D	Eb		F	Gb		Ab	A		B
Half/Whole Diminished	C	Db		Eb	E		F#	G		A	Bb	
Augmented	C			D#	E			G	Ab			B
Lydian Dominant	C		D		E		F#			A	Bb	

Improvisation Over Non-Diatonic Chords

The table below provides scales and modes to use over non-diatonic chords.

C Major Harmony - Non-Diatonic Chords – Scales And Modes		
Chord Triads	**Scale or Mode**	**Starting Tone**
Non - Diatonic Major Seventh ***With A Diatonic Root*** **1 3 5 7** ***Examples:*** ***Dmaj7*** ***Emaj7*** ***Gmaj7*** ***Amaj7*** ***Bmaj7***	**Major Scale (Ionian Mode)**	**Root**
Non- Diatonic Major Seventh ***With A Non -Diatonic Root*** **1 3 5 7** ***Examples:*** ***Dbmaj7*** ***Ebmaj7*** ***Gbmaj7*** ***Abmaj7*** ***Bbmaj7***	**Major Scale (Ionian Mode)** **Lydian Mode**	**A Perfect 5th Above Root** **Root**
Non - Diatonic Minor Seventh **1 b3 5 b7** ***Examples:*** ***Cmin7*** ***Dbmin7*** ***Ebmin7*** ***Fmin7*** ***Gbmin7*** ***Gmin7*** ***Abmin7*** ***Bmin7***	**Major Scale (Ionian Mode)** **Dorian Mode**	**1 Whole Step Below Root** **Root**
Non - Diatonic Dominant Seventh ***With A Non -Diatonic Root*** **1 3 5 b7** ***Examples:*** ***Db7*** ***Eb7*** ***Gb7*** ***Ab7*** ***Bb7***	**Melodic Minor**	**A Perfect 5th Above Root**

The Nashville Numbering System

There is a convenient way of depicting chord progressions that has been called the Nashville Numbering System. By using numbers rather than letters, a chord progression can be presented that can be applied to any key. All numbering is relative to the root tone of the particular key that you are playing in. Each chord designation also identifies if it is a major or minor chord, extended or altered, etc., etc. **This Nashville Numbering System is worth understanding. It is a great communication tool used by professional and semi-professional musicians.** *An example of a chord progression for a song depicted using the Nashville Numbering System is provided below. In this example, the song is a waltz to be played in 3/4 time, each chord is held for 3 beats, and the song has both an A and B section. A translation is provided for playing the song in the key of C major.*

1	6m	4	2m
1	6m	2m	5
1	17	4	2m
1	6m	5	1
1	17	4	1
1	6m	5	5
1	b7	4	1
1	6m	5	1

C	Am	F	Dm
C	Am	Dm	G
C	C7	F	Dm
C	Am	G	C
C	C7	F	C
C	Am	G	G
C	Bb	F	C
C	Am	G	C

Notice that in this song, the I IV V major triad chords are used extensively and that it also contains the II minor triad and VI minor triad, as well as a I dominant seventh chord and a flat VII chord.

Basic Music Composition – Harmonizing the Melody

It is possible to create a pleasing song just by singing lyrics against a progression of chords. Many popular songs have been created this way using only three or four chords in simple progression. F*or example in the key of C Major many popular songs use the I vi IV V (C Am F G) chord progression. Many twelve bar blues songs are based on only three chords, I, IV and V, typically expressed as dominant seventh chords (C7 F7 G7).* This is the essence of simple folk music.

If your interests go beyond simple folk music then the materials that follow will be useful to you. The fundamental elements of music composition will help you to better understand and analyze the music that you are playing and also help you to create your own pleasing compositions.

If you study a well-written song or composition, the particular harmony and the chosen progression of chords and placement that were used to harmonize the melody are the result of applying the fundamental rules of music composition and the proper use of chords available from the harmonic environment (major and minor) for that given key, including the use of chord substitutions, chord inversions, chord extensions and alterations, and non-chord tones.

A musical composition is composed of various parts that are linked together in an orderly way to best express the theme and intentions of the composer. These parts create a unified whole with sufficient forward motion to take the listener on a journey through an interesting and varied sonic landscape, providing moments of activity and rest, with periods of excitement and relaxation, all in a manner that makes sense to the listener and keeps their attention and interest.

Every individual part of a composition, no matter how small will effectually have a beginning, middle, and end. It is imperative to recognize that the ending of a section is of great importance. The ending is actually like the tail wagging the dog, because the harmonic, melodic, and rhythmic elements within a given part are all moving towards the ending. An ending is called a cadence. Some endings have a sense of completeness and/or finality and some endings only suggest further continuation. The beginning of a section may be a truly new beginning, for instance establishing a new idea or tonality, or it may just be a continuation

from the previous part. The middle is in direct relationship to the tonality of the beginning and leads to a desired cadence. Compositions typically end with a chord triad for the parent key rather than an extended or altered chord and compositions in a minor key also typically end in a major triad rather than a minor. This provides a more complete sense of rest and arrival to home.

To begin with let's look at the smallest unit of a composition, a **motif.** The motif establishes tonality and presents a basic idea in melodic terms. The motif is further developed and larger structures are built based on the musical idea and the tonal/melodic material contained within the smallest unit.

Once an idea has been established and the underlying tonality (or tonalities) chosen, a motif is further developed into two-bar **motives**, and then into 4-bar **phrases** with the melodic contour, harmony, and rhythm in direct relationship with the phrase's beginning and its planned ending by cadence. Phrases are typically of three common types:

1. A phrase built on a single chord leading to a cadence.
2. A phrase that further embellishes a single chord leading to a cadence.
3. A phrase consisting of a progression of chords leading to a cadence.

The phrases are combined into 8-bar **sections** which are joined together to create the composition in its entirety based on the desired structure for the composition. The terms motif, motive, phrase, and section are arbitrary and other terms may be used in their place. The idea is to start very small and end big with a unified whole. This may be as simple as folk song or as complex as a symphony. In common use for many contemporary standards is the binary form AABA and the tertiary form ABC. The music for each section is different but seamlessly connected into a whole greater than the sum of its parts. Often a short introduction, turn around, and an ending are applied to the phrases and included with the form. It should be obvious that if you are writing for four-part or six-part vocal harmonies or writing parts for a variety of instruments playing together, the development and harmonizing of the appropriate phrases and their combination can be quite a challenge.

There is also a rhythmic element to the harmonization of a melody. The number of chords chosen to harmonize a melodic line and their placement is referred to

as harmonic rhythm. This can help enhance or retard forward motion and takes into consideration the time signature and most prevalent note values within various measures, as well as the intended rhythmic style for the music.

The chords chosen to harmonize the melody must contain the melodic tone within their structure, typically as either the 1st, 3rd, or 5th tones of the chord triad being built for the melody tone, as the chord may be in root position or in one of its two inversions. When chord extensions and alterations are utilized further harmonic options and additional inversions are available.

In order to harmonize a phrase the following steps should be taken:

1. Determine the phrase's tonality and select the appropriate key(s) for the idea being presented.
2. Determine the appropriate cadence for the phrase.
3. Determine the appropriate harmonic rhythm for the phrase.
4. Determine the underlying structure for the phrase (the primary chords for the key) and harmonize these structural melody tones first.
5. Determine harmonies for the remaining melody tones in the phrase.
6. Determine if any chord inversions or other steps are required to reduce leaps and smooth out the base line (root movement) for the phrase.

Cadences

The various types of cadences are presented in the table below.

Cadence		Type	Quality	Rules
Authentic	**V or VII to I**			
	V to I	Final	Perfect	1. Both chords must be in root position. 2. The final tonic must have the root repeated in the soprano voice. Both rules must apply, else Imperfect.
Authentic	**VII to I**	Final	Imperfect	
The authentic cadence provides a sense of finality like a period at the end of a sentence. Traditionally the root tone is doubled so that it also appears in the soprano voice.				
Plagal	**IV to I**	Final	Perfect	1. Both chords must be in root position. 2. The final tonic must have the root repeated in the soprano voice. Both rules must apply, else Imperfect.
The plagal cadence is also referred to as the 'Amen' cadence as it was used predominantly in church music. It sometimes follows an authentic cadence to give a further sense of finality and prolong the ending.				
Half	**I, IV, II to V**	Non-Final		
The half cadence ends on the dominant, suggesting that it must still be resolved. This is often used to precede a short turnaround between phrases.				
Deceptive	**V to VI**	Non-Final		
The deceptive cadence contains the dominant chord but it does not lead to its expected outcome. It is used to extend a section rather than ending a section.				

Song Structures and Formulas for Song Writing

For many years the most common 32 bar (measures) song construction was AABA. Each section was 8 bars long. The B section was called the middle eight or bridge or release. The music in the B section was different from the A section. Typically there would also have been a short instrumental introduction, an instrumental turnaround between sections, and an instrumental ending.

This form was used extensively in the 1930's and 1940's and is still in use today, most particularly in jazz. It is very easy to follow, provides adequate variety, and it makes a lot of musical sense, particularly if you are not fond of the constant repetition found in today's popular commercial music. This song structure is a good one on which to hone your skills, as you must create different music for the different sections, including an introduction, turnaround, and an ending, and everything must tie together with each section supporting the others.

In today's popular commercial music there are other types of song structures that are commonly used. The commercial song construction incorporates sections called Verse (V), Chorus (C), Bridge (B), Pre-Chorus or Lift (PC or L), Instrumental Verse (IV), Instrumental Chorus (IC), Instrumental Bridge (IB) or just Instrumental (I). Of course you can create your own song structure. But for commercial song writing you will be better off using one or more of the structures that are considered part of formula song writing, just as there are standard formulas for making successful movies. Some of the structures commonly used today for songs containing lyrics are:

V	**V**	**C**	**V**					
V	**C**	**V**	**C**	**B**	**C**			
V	**C**	**V**	**C**	**IC**				
V	**L**	**C**	**V**	**L**	**B**	**C**		
C	**V**	**C**	**I**	**B**	**C**			
V	**L**	**C**	**V**	**L**	**C**	**IB**	**C**	
V	**L**	**C**	**V**	**L**	**C**	**B**	**L**	**C**

With regards to formula song writing, the most important feature is the hook. The hook should incorporate an interesting melody and rhythm in support of the lyrics. There is usually much repetition of the hook which is often the song's title and it may be repeated in each chorus and/or in the last line of each verse. It is very important to get to the hook quickly within 30 seconds to one minute. The music must change (middle eight) in the middle of the song within one and a half to two minutes time. This is important so that the listener does not get bored. In many instances the songs will include a temporary modulation or key change and may also include changes in the rhythm structure. A good melody is absolutely necessary and a catchy rhythm is extremely important. The song should have a lively tempo typically at least 100-120 beats per minute. The song should immediately engage the listener and once a listener is engaged you must keep them engaged.

The song should have a beginning, middle and end, and typically be around three and a half minutes in length. The song's title is very important and should almost be a complete story in itself. The song should always make the listener feel good and come out as a winner. Happy endings are preferred to sad ones just like in the movies. Your story must be original and easy to follow but it must also have twists and turns or unexpected surprises. How you tell the story may be more important than the story itself. A popular song is like a three and a half minute movie and it must not be boring or too predictable. You must be totally clear but never too predictable or obvious.

The listener must be able to understand what the story is about, how the story came to be, who the characters are and why things are happening as they are. Usually some type of conflict will be going on until a matter is eventually settled with someone clearly being victorious or appearing heroic just like in the movies. The listener will always want to identify with the winner.

You do not have to write commercial songs, but if that is your goal then you must follow the formulas for success. The most successful commercial songs are love songs written in 4/4 time with a lively tempo. Song writing is a true craft and it doesn't come easy. No one makes it alone and most successful songwriters co-write although not all successful songwriters co-write. It is very important to get

second and third opinions on the songs that you write and not just from your best friends and family members.

For most people music is a pleasant pastime and not a profession so you must be realistic. You do not need to be a rock star or a commercial success to consider yourself a musician or to be absolutely content with the music that you make and the songs that you write. So as they say, don't quit your day job. But if that truly is your dream then do give it a try and ample time. You must be very patient and keep on writing songs. You need to write some bad songs before you write some good ones and then perhaps even the great one. Perhaps the best formula for a commercial song is one that appeals to a working woman listening to the radio on her way to work and then again on the way back home, it should vindicate her life and make her feel very good about herself. And if she likes the song then she will also likely purchase a CD or download of the song.

If you are fortunate and talented enough to create a great song it will be like a banquet that feeds many people. But first and foremost, do it for the love of music and not for hopes of making money. If you are truly talented and you keep on writing perhaps in time money may even come.

Most importantly, enjoy playing your guitar!