

A Practical Approach to Understanding Music Theory

By

Charles Brooks, D.M.A.

Fundamental Pitch

C

Harmonic Content Terminology:
-Harmonics
-Partials
-Overtones

E
D
C
Bb
G
E
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G
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C



A Practical Approach To Understanding Music
Theory

Charles Brooks, DMA



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Dedication

My very first music theory teacher was my biological father Larry Brooks. He introduced me to reading music and playing musical instruments before other kids knew how to be kids. He guided me to a path I did not know I wanted or needed, and for that, I will be eternally grateful. My father would eventually introduce me to Dr.

David Livingston, his big band director at Western Kentucky University. Dr. Livingston would be my next big influence. He found ways to teach me music theory without ever playing a note or scribbling anything on a page; some days we didn't even discuss music, or so I thought at the time. The man who gave me my demeanor in the collegiate classroom and would prove to be my biggest champion within the department of music when no one thought I would achieve anything, is Dr. Charles Smith. I thank him for his guidance, teaching, and mentorship inside and outside the classroom. Dr. Michael Kallstrom taught me that although music is an intellectual pursuit, one could still find the fun music offers us, even in the study of its principles. Dr. Jeffery Wood at Austin Peay State University showed me that there was an entire side of the general intellect of great magnitude of which I was ignorant. I instantly became smarter standing next to him let alone listening to his lectures on music analysis or composition lessons. I consider him to be my intellectual "springboard" in that I have never stopped attempting to learn because I know I can always be more intelligent if I try.

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Introduction

Introduction

Since I can remember I have been around music. My father played professionally and taught high school band, which thrust me into older musicians' learning trajectories. This crossing of paths had a profound effect on my social behavior and learning patterns. At age 5, I began to play the drums and a little piano. We had mini jam sessions during these early years, my brother included. By the time I reached "band age" at grade school I had already experienced complex, musical situations many high school students would not encounter unless they sought out private instruction. Due to these experiences, my father moved me around the band on various instruments. This became a mode of operation later if we had weak sections that needed reinforcement. I would act as a type of "rover" and play that instrument to help fill out the sound of the band. I literally played a different instrument each semester until I reached high school.

In addition to my unique school experiences, I have performed music as a paid professional starting at 15 years of age. By the time I graduated high school, I already had my own private percussion studio. From the moment I began my musical journey, I operated as a freelance musician performing in any group that needed a drumset player, hand drummer, keyboards, and in some rare instances, as a bassist. Still do.

My college education gave me a plethora of invaluable experiences impossible to find in any other area of music study. During my undergraduate career, I directed seven high school drumlines with full battery and pit percussion. This responsibility gave me experiences with writing music for the full range of percussion used in marching band and with teaching students of varying ability levels to read and play their specific instrumental

parts. These opportunities also put me in classroom situations earlier than most education majors which I believe strengthened my teaching skills. Earning an assistantship at my graduate institutions exposed me to more diverse teaching situations but at the collegiate level. As part of my assistantships, I taught classes in Music Theory to non-music majors, Music Theory for Music Education and Performance Majors. Experience teaching high school and college students widened my breadth of knowledge to help me understand how to reach people through music theory regardless of their background or skill level.

Through all of my studies, I actively pursued composition. My first lessons came to me as a freshman in college from Senior and Graduate level composition students who were kind enough to let me bug them. Eventually, I moved into the formal academic study of composition. This is where my understanding of theory took a turn, for when I realized my first pattern I began to unravel all sorts of patterns in all the music put in front of me which means I was able to learn it quicker and sight-read faster than most of my colleagues.

After 20 years of teaching music to middle school students, high school students, college students, and some professionals, I find that almost all people who take up music be it a hobbyist, a professional, or even an educator have issues understanding music theory as a form of study. Music is a language and learning how to use a new language is very difficult. Many musicians wind up quitting music altogether because of the perception that understanding music theory is mysterious and daunting, far too daunting to unravel.

The fact is this is just not true. When stripped down to its bare essentials, the building blocks of music can be very straightforward and easy to understand. So, that's what this book is going to do, give you music theory in a way that's accessible. This method will follow a spiral-learning model in order to introduce theory to the reader. This means that we will start with a basic, easy-to-understand concept and slowly add to that, one piece of information at a time. This allows the student to learn to read and understand music at a

pace with which the brain can contend in real-time. Organizing the material in this method means that a novice who has no experience at all can start at the beginning and begin to learn the secrets of music construction. In addition, the book is laid out in a specific order so that experienced musicians can also use it as a resource manual to teach in the classroom or applied lessons. To really understand an artform one must strip away what they think they know and be ready for new information. Breaking music down into its individual parts for study and manipulation will make the student a better musician altogether whether it be on the page or on the stage.

Technical Skill

Using the basic building blocks of music theory to create an original composition is hard. It takes patience and study to become a good technician. In order to do that, one must be familiar with the genre of music that is required and have a command over Section I of this book. The first section outlines the basics of music construction. Section II will begin to introduce more advanced concepts like melody and scale construction. These concepts can be daunting at first. Go slow and give yourself the time to absorb the information so that it sticks. Section III focuses on using rhythm to enhance musical communication. Section IV, Putting it all together will give the student further guidance on how to use this text and eventually begin to design their own exercises. In order for the information to stay with the student in a meaningful way, then they must learn to practice deliberate repetition to internalize the focus of the practice session. In this model, there is always room for musical and intellectual growth. Growth and evolution as a musician is important in creating great art on a consistent basis.

PART I
SECTION ONE

I. Section I.I: Basics

Basics

Step one: Realize that learning to read and write music is exactly the same as learning to read and write any language be it English, Spanish, German, Danish, Arabic, etc. This means that there are grammar and syntax rules one must follow for the successful communication of music in the form of the written page. Music uses the English language and low-level principles of Mathematics in unconventional ways to communicate graphic information. When we learn Math and English in the classroom we are given foundations or a set of base operating principles. Music being its own language also has grammar and syntax requirements unique to its function, however, it uses the same graphic symbols based in Math and English. It is my opinion that this is where the common “disconnect” happens for most during theory practice. If one spends significant time learning grammar and syntax of the English language and Math functions until they have mastery in those areas it builds a knowledge base. Using that knowledge base in an unconventional language set and applying these new rules in new ways can be difficult. But that is exactly what music demands. So, we approach the study of music theory as one would learning a new language.

From birth, we begin to learn aural communication from our family how to speak until we are old enough to read and write. Many musicians can mimic or repeat sounds and techniques played in front of them for the first time. This is great but unless total understanding is achieved how do we tell someone else? “Playing by Ear ” is a good technique that professional musicians use to their advantage constantly. However, this is during live performance after serious study of music theory and its application is learned. People

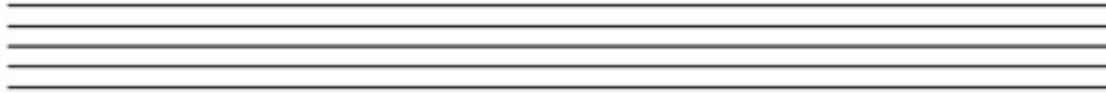
who rely solely on their ear always hit a wall and can never develop their musicianship past a given point.

Most of you reading this now are probably thinking “well crap this is how I operate, and if I can’t just use my ear anymore, where do I start?” The good news is you already have. Many people who play by ear discover things they already knew but had no way to label them verbally for reference or communication. Since we already know how to speak when we enter grade school, we begin to learn the basics of reading and writing or communicating graphically. So, this is where we will start, assuming a certain level of exposure to music without graphic understanding.

The basics of music can easily be deciphered if one understands how music is graphically communicated. In other words, how it is written and what devices we use to deliver that message. The first device we will look at and study is the music staff. The staff is a series of five horizontal lines. That’s it, just five lines with proximity to one another. How we use this device will vary based on the things we place on the staff. This is very important in communicating music and will be the only vehicle to graphically communicate music. Just like words go on a page to make a sentence, and those sentences form paragraphs that go on to fill out a book, notes go on the staff with various spaces and repetitions to form harmony, melody, and rhythm – in other words, music.

The following graphic is an example of a blank staff. If you have staff paper then good for you, now you don’t have to spend time with straight edges drawing line after line. Although, it is good practice to recreate a staff freehand or with a straight edge a number of times. Music as a graphic notation has its own art to its transmission. Portions and space must be followed in order for the language of the song to be interpreted.

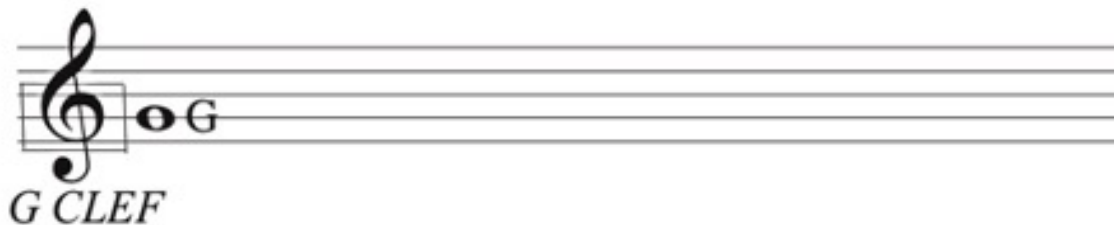
THE STAFF



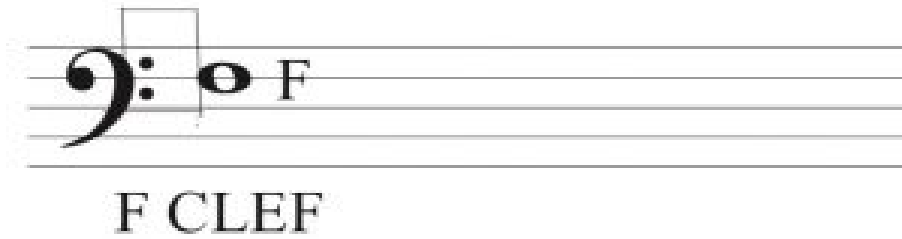
CLEFS

The Staff is nothing without an item we refer to as a CLEF. When no clef is present the staff carries no meaning or frame of reference for the reader, except for a graph. Once a Clef is present then and only then is there a frame of reference present with which the musician can identify notes placed on a staff.

The staff below has a TREBLE clef placed on it. This is one of the most commonly used clefs which is also referred to as a “G” clef. The position of the clef tells us where the note G is located. The tail of the Treble clef surrounds the line where G lives like crosshairs in a scope. This is our first “frame of reference” and will be a tool we use to figure out other notes on the staff when we begin to add them.



The next clef we will learn is called the BASS clef or “F” clef, which is the second-most commonly used clef. The two dots located next to the clef indicate where the note F is located.



RANGE

The Bass and Treble clefs are more commonly used to transmit music, especially in pop and rock settings. However, there are a number of others that exist to help define the vast range of musical instruments that exist throughout the world. Each one has a specific melodic range it defines graphically. Below are examples of other clefs and their placement on the staff.



The fact is that there are a number of clefs that music theorists and composers use to communicate music to performers. The one they decide to use will depend upon the RANGE of the instrument in question. Range is a word musicians use to refer to where the sound is located within a larger spectrum of instruments or sounds. This means that the clef one decides to use will define a particular palette of sounds within the Bass and Treble spectrum. For instance, the Equalizer or “EQ” that is located on almost all consumer-grade electronics depicts the sound spectrum from left to right starting with the lowest range.

Many EQs can control multiple BANDS, a word we use to refer to a specific frequency area we hear as Bass, Mid Tones, and Treble giving one the ability to customize the sound by accentuating or

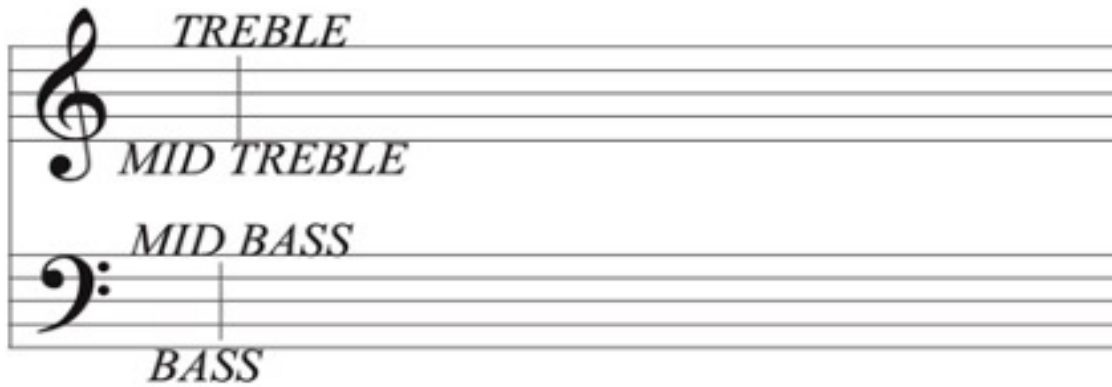
de-accentuating certain parts of the spectrum. The example below is an example of what a “3-band” EQ looks like and where a clef would fit within that spectrum. Isolating three areas of frequency we can begin to understand where this all ties together, Bass, Mid, and Treble.



Besides the clues that clefs give us to decipher their meaning, they are also named after the part of the musical spectrum in which they operate. For instance, the TREBLE clef will be used with instruments that play extremely high notes like trumpets and flutes. The BASS clef will be used for instruments that play low notes like tubas and upright basses.

GRAND STAFF

In certain instances, we use something called the GRAND STAFF when we need to communicate on paper something with an extended range like a piano. A grand staff is created when we combine the Treble and the Bass clefs graphically. The graphic below displays the grand staff for us to peruse and study.

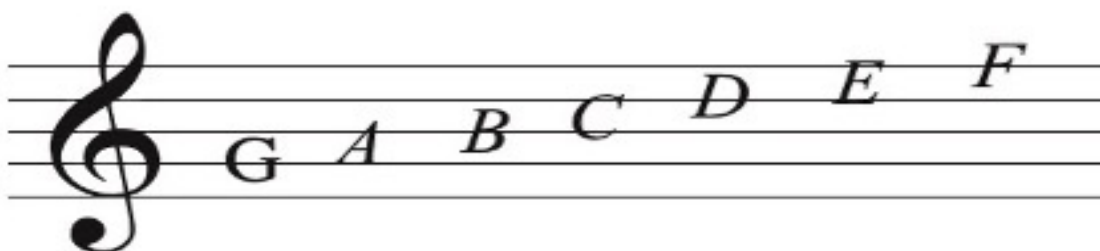


This is the arrangement of range in written form whereas the EQ is graphic but not a tool for writing, showing left to right movement. The grand staff shows how music translates through multiple ranges in an up and down movement with the bass at the bottom. The higher up one goes on the staff, the higher the pitches or tones.

MUSIC ALPHABET

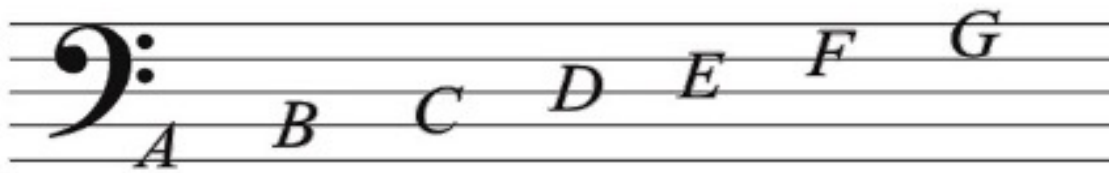
Now that we have a staff with a clef, it is time to learn how notes operate on this graph of sorts. There are a couple of rules that are simple enough to understand if one can do their A B C's. We use the first seven letters of the English alphabet to communicate music: **A B C D E F G**. Once we reach **G** we start over. This rule is good no matter which letter is chosen first. If the first note is D we advance in ABC order: **D E F G A B C D** or if our given tone is "F" **F G A B C D E F**.

Since we learned the treble clef first and we also call it the G clef that is where we will start.



We can find the “G” note that the treble clef introduced us to in the previous section. Once we have located that we begin to use our understanding of the ABC order with a simple rule, move line to space to line to space in strict rotation. These are the tones or notes that live on a treble clef.

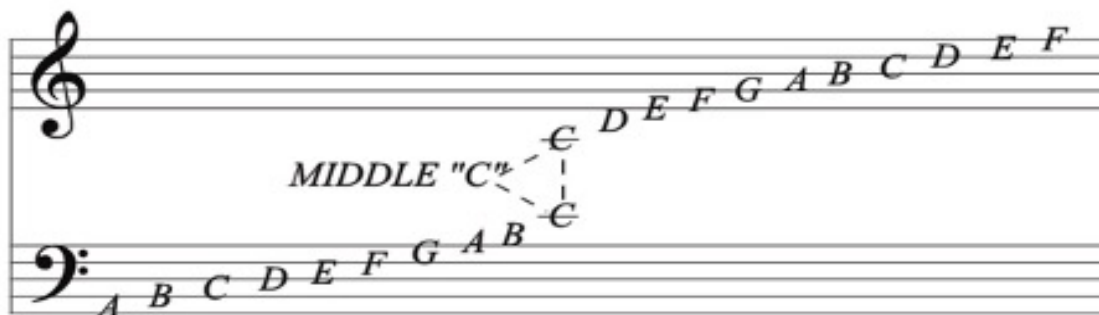
We do the same thing with the bass clef. Starting on the “F” line, the two dots next to the clef surround the note “F”, and fill in the rest in ABC order line to space to line to space.



Now we know four things about reading music:

1. Every clef has an identifying mark that gives us a particular starting note.
2. Once we identify that mark, we move from line to space to line in alternation.
3. We use ABC order to discover the rest of the names of the notes on a particular staff.
4. Never repeat a letter or note.

By creating a Grand Staff and labeling it according to the rules we learned for treble and bass clefs, we see that the notes line up and are centered around one tone that all piano players find on their first day of study which is called MIDDLE C. On a full-size piano, there is one C that stands directly in the middle of the keyboard with an exact number of pitches on each side. Concurrently, that pitch is exactly in the middle of the GRAND STAFF and is used as a type of connective tissue between the bass and treble staves.



MATH OF MUSIC

When one sees the above example, immediately they recognize the pattern that occurs as explained earlier in the Musical Alphabet section in which we use the first seven letters of the English Alphabet as the basis for music notation and communication.

Remember step 1 from before? Realize that music is a language that has its own grammar and syntax. Step 2: Music is also Math. I know that's a bummer, but it is. This means predictable patterns in a specific series will occur everywhere in various forms of music construction. These patterns have protocols that govern their use. The ability to spot mathematical patterns is a theorist's most important tool and will eventually yield a skill that is used in an artful manner. The musical alphabet moves in patterns which means all of music is a series of patterns that are sometimes easy to see at first glance but can also be mysterious and daunting depending on how clever the composer is and how they use a pattern. So, our first Pattern is **A B C D E F G**, the Musical Alphabet. The rule that governs this pattern is that we start over once we have reached the G. The next set of Patterns we will study are referred to as INTERVALS and they are the building blocks of Harmony and Melody.

2. Section 1.2: Reading Music

Reading music is hard, at first. Just like any new skill, it takes practice, patience, and a tenacious attitude to keep moving forward. Using the tools given to you in the first section you can practice reading music until you feel comfortable looking at a score or grand staff. One of the most important tools in sight-reading and music performance is the ability to identify how a composer has strung the building blocks of music such as rhythm, melody, and harmony together in order to create one whole piece of art. Before one can achieve that they must first master the use of each component of rhythm, harmony, and melody individually.

INTERVALS

An INTERVAL is defined in Mathematics as the distance between two points. In music, we use the term in the same manner but the two points in question are musical tones instead of points on a graph. So, for musicians, the term INTERVAL means the space between two notes. Intervals are transmitted graphically in two different ways, which means they have two different textures of sound with which the theory student should become familiar.



MELODIC

HARMONIC

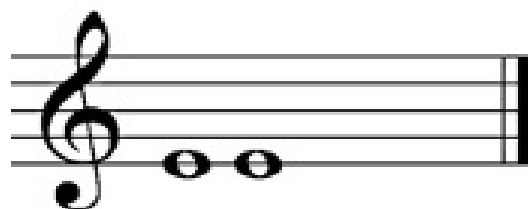
When two tones are sounded separately but close enough to another tone to infer a melodic relationship, we label them MELODIC. When two tones are sounded together as an incomplete chord we say they are HARMONIC because they infer a harmony or multiple harmonies. Melodic intervals have a specific TIMBRE or

tone quality to them that can be identified after practice with and without a piano keyboard. Harmonic intervals also have a specific tone quality or timbre that is identifiable as well. The tones used in the example above are F and C. Sit down at the piano and play these two notes wherever you can find them on a keyboard. For reference, the F note is the first white note before the group of three black keys. The C note is the first white key before the group of two black keys. A mathematical pattern that is true the length of the entire piano keyboard.



Listen to each separately and together. Listen to how they react to each other in both fields, but don't try to just memorize the sound, attempt to absorb it. Spend as much time as you can with the same interval until you can recognize it everywhere, until it becomes part of your vocabulary, until you cannot forget it.

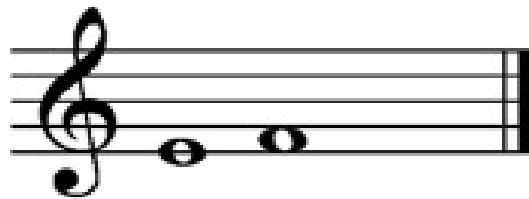
The first interval we will study is called the UNISON. This is very basic as you can see in the example below, two different voices or sounds supply the same pitch or note in the same range.



The next intervals we study will be useful in every aspect of music theory application. They will be the tools we use to identify complex melodic and harmonic motion. The first one is referred to as the HALF-STEP. The Half-Step can be found on the piano keyboard when moving from white key to black key and vice versa. There are only two places on the keyboard in which this formula deviates: between the notes E and F and between B and C we call these Naturally Occurring Half-Steps. These spaces have NO black note between them and therefore are only one HALF-STEP apart from one another.

Notice in the example below, that notes E and F are naturally occurring half steps in graphic form. Play them together and separate to find the timbre of each until you cannot forget it.

ONE HALF-STEP



Now that we can see and hear a HALF-STEP move to the next logical interval, the WHOLE-STEP. Obviously, if we add two HALF-STEPs together we get one WHOLE-STEP. This is easy to see when dealing with White note to Black Note movement on a piano keyboard but what happens when we need a WHOLE-STEP away from E and need to RAISE the pitch F to fit a particular pattern. We use a symbol called an ACCIDENTAL. More specifically, a particular accidental is referred to as a SHARP. This alteration gives us F sharp, which is the first Black key in the pattern of three that lay across the length of the entire keyboard. Since we have NATURALLY OCCURRING HALF STEPS between “E” and “F” we use the SYMBOL to the left of the tone to instruct the performer to raise the pitch F to F SHARP. Musicians refer to this as a WHOLE-STEP because

raising the F to F sharp lengthens the musical space between the tones because we added two HALF-STEPS together.

ONE WHOLE-STEP



We should pause our discussion of intervals here momentarily to discuss the SYMBOLS we call ACCIDENTALS. It will be of the utmost importance when we begin to study complex intervals and chords later in the book. Don't worry we will be back in no time.

ACCIDENTALS

When we need a way to graphically alter notes to fit a pattern, we need to differentiate one from another by using certain symbols. Since patterns tend to repeat and shift at different times, the use of graphic representation to alter notes to fit these patterns or formulas is necessary. These situations that occur in music notation require an extension or redefinition of a musical tone, either for musical grammar and syntax, or mathematical patterns that occurs require the use of symbols called ACCIDENTALS.



Sharp – raises a tone one half step



Flat – Lowers a tone one half step



Natural – restores a note to its original placement

There are also extensions of this system as well, referred to as DOUBLE SHARP and DOUBLE FLAT. Very rarely will a performer see these in standard notation. These tools occur when composers have written very difficult music that moves in awkward patterns and there is a need for the symbol.



Double Sharp raises a tone two half steps



Double Flat lowers a tone two half steps

INTERVALLIC CLASSIFICATION AND APPLICATION

Intervals in music are identified by number and how many letter names span the defined space. However, we require modifiers for some musical situations to define a certain sound or specialty interval required to fit our pattern building, construction, and function. We call these MAJOR, MINOR, AUGMENTED, DIMINISHED, and PERFECT. We use an uppercase “M” to denote a MAJOR interval, we use a lower case “m” to denote a minor interval. We use an “A” to denote an augmented interval and “D” to denote a diminished interval. The PERFECT intervals have a “P” in front of them to denote their status. There are two areas of intervals with which the musician should become familiar.

AREA 1: Unisons, 4ths, 5ths, and octaves which are PERFECT intervals.

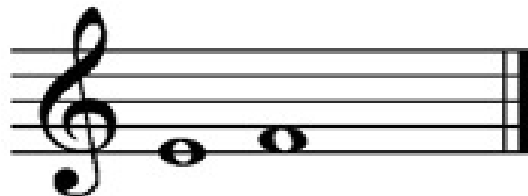
AREA 2: 2nds, 3rds, 6ths, and 7ths which are IMPERFECT intervals that need a modifier to tell us how they function.

Some intervals get the label of “STABLE” intervals because they give the impression of harmonic stability. This reveals something we refer to as CONSONANCE in music theory study. Simply put, consonance is the AGREEMENT of musical tones. This is what non-musicians hear and refer to as a good sound. The “UNSTABLE” intervals are referred to as DISSONANT intervals because they give

the impression that there is an expected harmonic movement waiting to occur.

The first area of intervals referred to as PERFECT has a special relationship to each other that supply a specific texture but reveal no tonal quality. In other words, no musician will ever refer to perfect 5th as major or minor, always P for perfect. Intervals from Area 2 demonstrate tonality with respect to a major or minor scale, therefore they reveal the tonal quality of a specific harmonic area without being an actual harmony.

Minor 2nd: the minor second is synonymous with what is known as the half-step.



Major 2nd: the major second is also known as a whole-step, or the first two notes of a major scale.

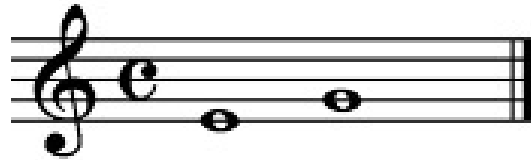


FLAVOR

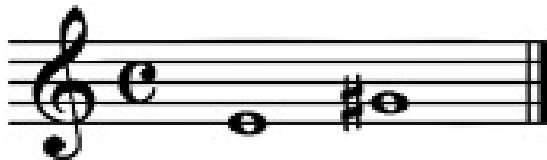
The next two intervals are very important in demonstrating what musicians sometimes call the “flavor” of a chord or harmony because they denote whether the harmony is MAJOR or MINOR. Musicians use the word flavor to describe the sound of chords and harmony because there are so many different tonal combinations

that exist. The theory student will encounter a number of chords that have various functions based on their level of dissonance within a given tonal area. The 3rd is the most important part of a scale and a chord because it defines a specific tonal area.

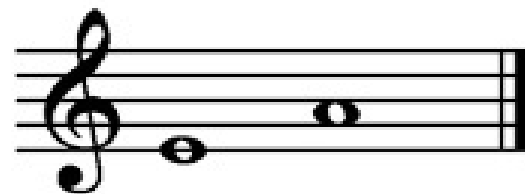
Minor 3rd is three half-steps, or the third degree of a minor scale.



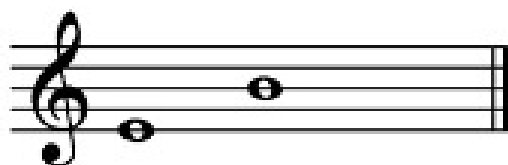
Major 3rd is four half-steps, or the third degree of a major scale.



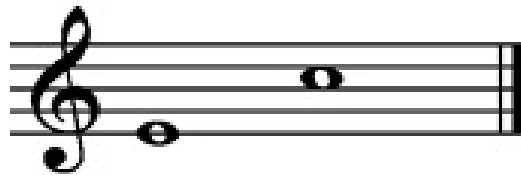
Perfect 4th is five half-steps, or the fourth degree of a major or minor scale.



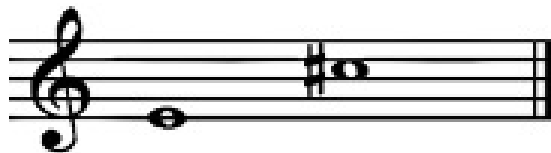
Perfect 5th is seven half-steps, or the fifth degree of a major or minor scale.



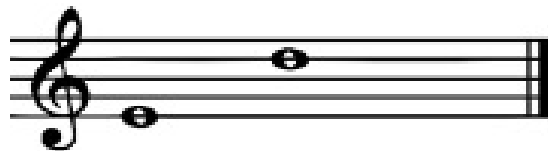
Minor 6th is eight half-steps, or the sixth scale degree of a natural minor scale.(pg33)



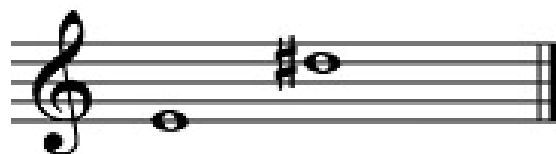
Major 6th is nine half-steps, or the sixth scale degree of a major scale.



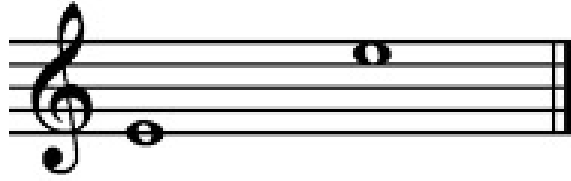
Minor 7th is ten half-steps, or the seventh scale degree in a natural minor scale.



Major 7th is eleven half-steps, or the seventh scale degree in a major scale.

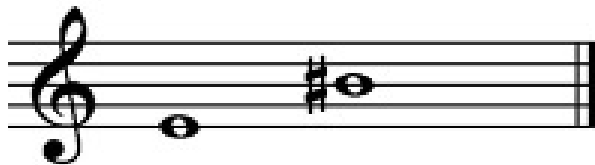


Perfect 8th (octave); is twelve half-steps.

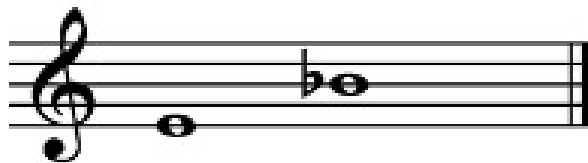


The perfect intervals can be expanded and retracted as well as the imperfect intervals. When this occurs, they should be referred to as Augmented if the space between them is lengthened and DIMINISHED if the space between them is shortened.

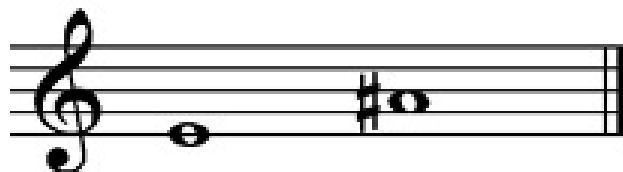
Augmented 5th is eight half-steps.



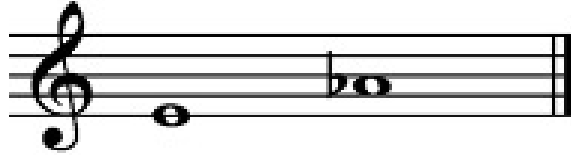
Diminished 5th is six half-steps.



Augmented 4th is also six half-steps.



Diminished 4th is five half-steps.

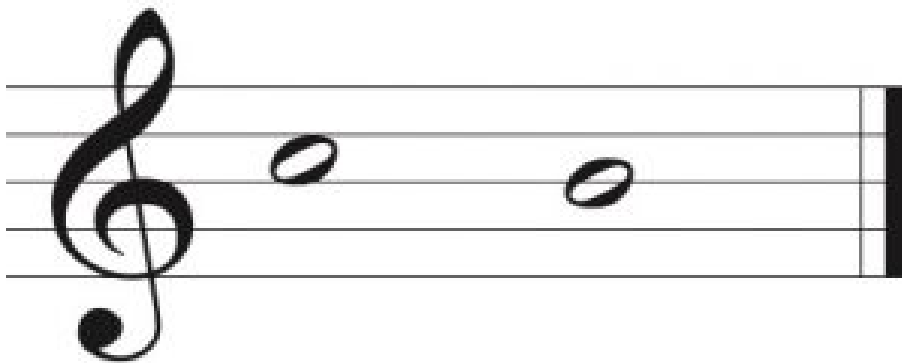


Note the similarities between the d5th and the A4th. These are also known by another label, the TRI-TONE. The tri-tone divides the octave mathematically into perfect halves. Aurally these intervals are the same, however, there is a large difference in function and application in various places throughout the study of music theory which will be discussed in the section covering harmony. Also, notice the similarity between the d4th and the major 3rd.

INTERVALS MOVE IN TWO WAYS

Just as intervals go up, they can go down. In other words, intervallic relationships can be measured down from a base pitch as easily as they can be measured up from a base pitch. Count the corresponding intervals' half steps down to find the desired interval.

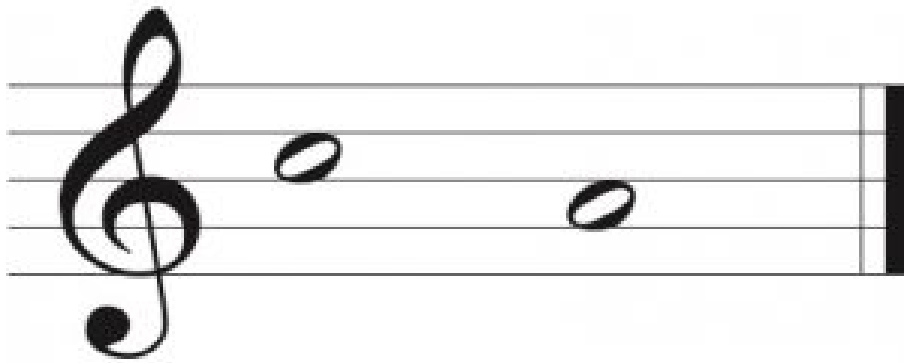
Minor 2nd down (m2)



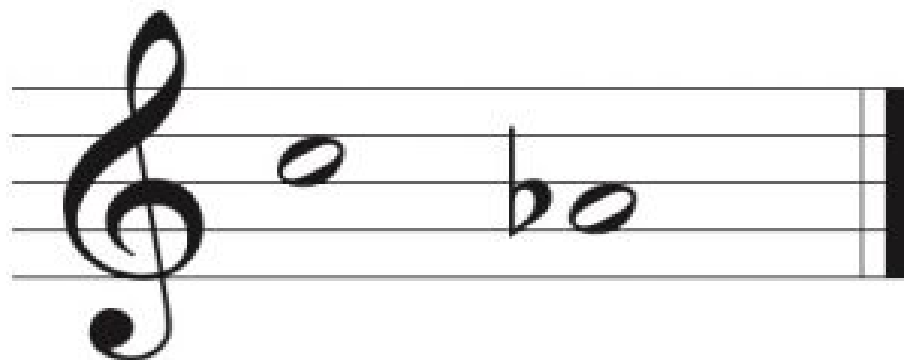
Major 2nd down (M2)



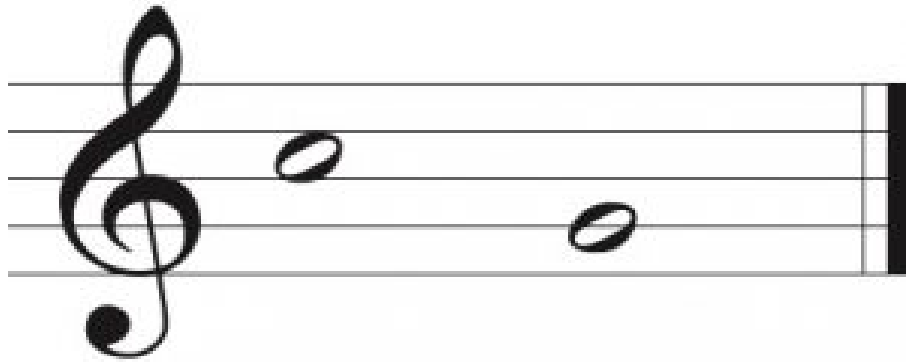
Minor 3rd down (m3)



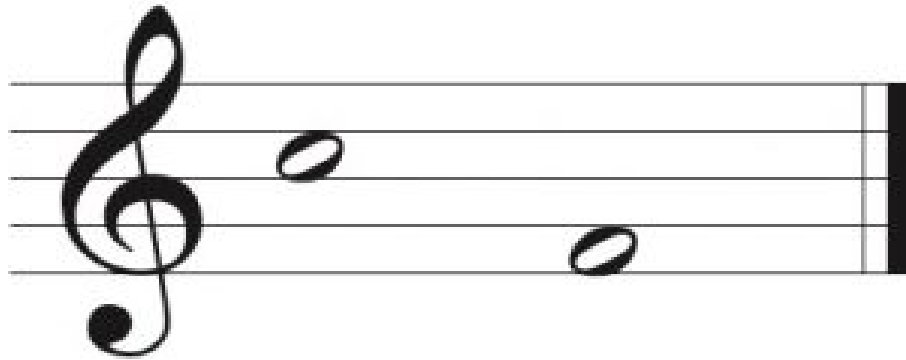
Major 3rd down (M3)



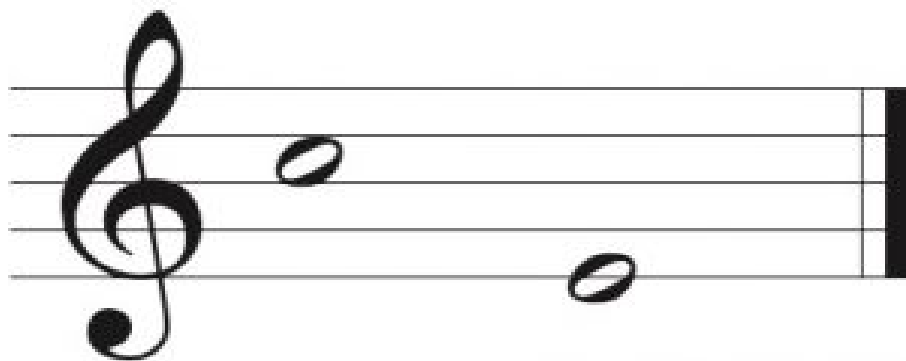
Perfect 4th down (P4)



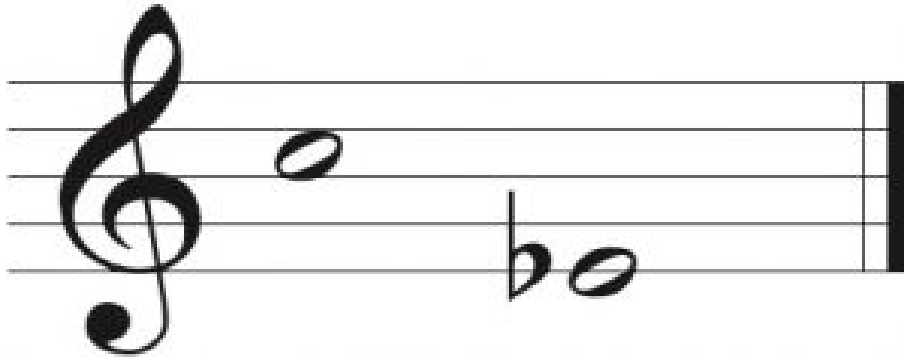
Perfect 5th down (P5)



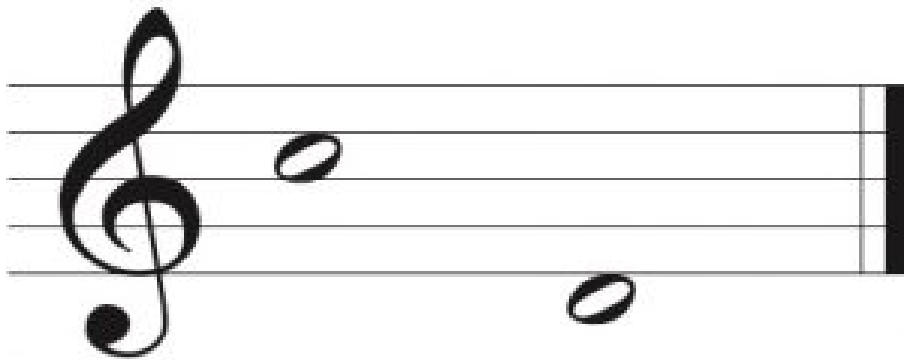
Minor 6th down (m6)



Major 6th down (M6)



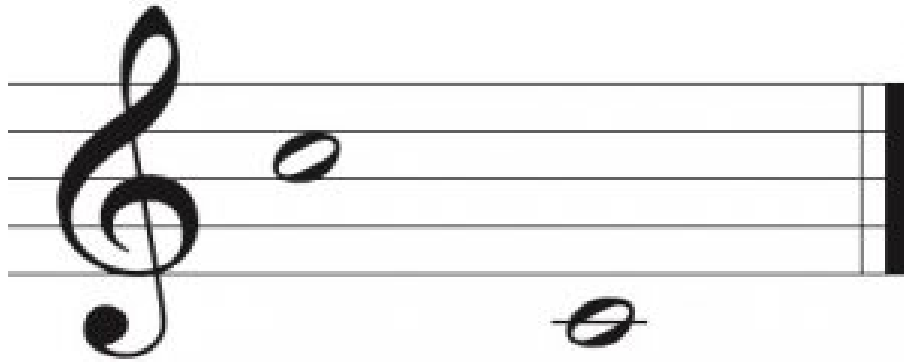
Minor 7th down (m7)



Major 7th down (M7)

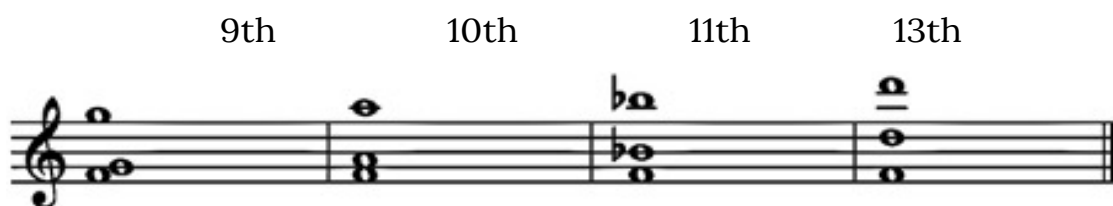


Octave down (perfect)



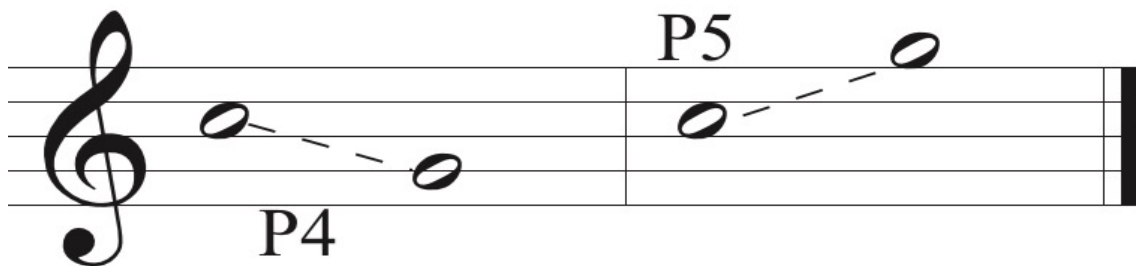
All intervallic sounds should be memorized. This means an ample amount of time spent at the piano keyboard playing and singing these intervals. Participating in Active listening. Active Listening is an exercise in which the student puts all other distractions away and focuses simply on the interval to be internalized. The good student doesn't practice until they get it right, they practice until they can't get it wrong.

When a composer flips the arrangement of an interval by transferring it to another octave, it changes the intervallic relationship with respect to the other notes that surround it. When applied to the 2nd, 3rd, 4th, and 6th they give us new sounds within the same harmony called compound intervals. These new intervals are referred to as compound intervals because they travel past the next mathematical occurrence of the lowest note widening the interval to a large margin. They are the 9th, 10th, 11th, and 13th. These new intervals correspond to previously studied intervals when they were placed next to the root. However, if displaced up an octave the 2nd becomes a 9th, the 3rd becomes 10th, perfect 4th becomes an 11th, and a 6th becomes a 13th.



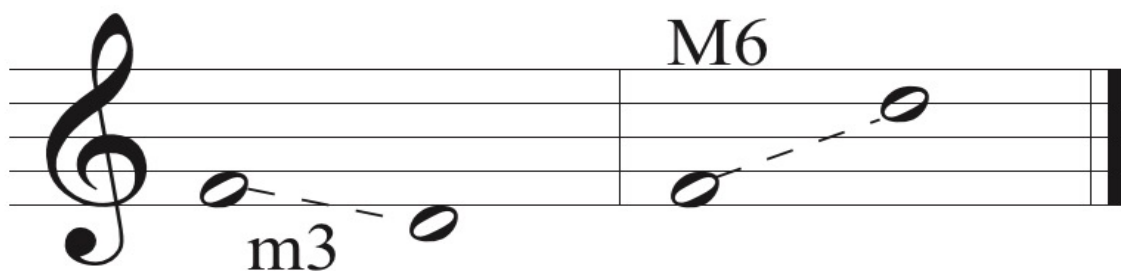
INTERVAL INVERSION

As noted previously, when a composer flips an interval to another octave, it impacts the relationship of that note with respect to the other notes that surround it. All intervals have an inverse that sounds and functions differently. They can be inverted or flipped upside down. For example, when a perfect 4th is inverted it becomes a perfect 5th and vice versa.



The key to inverting intervals is remembering two things:

1. If the beginning interval is major, its reciprocal will be minor and vice versa.
2. To get the desired inversion subtract the first number from 9. To double-check yourself add the remainder to the original interval if the total is 9 then you have calculated correctly.



Practice this exercise with the intervallic examples provided. Use the simple formula to double-check your work and then go find them on the keyboard.

Learning to identify intervals by sight and sound is a large part of the active professional musicians' toolbox. Sight-reading is a requirement for independent contractors because they will play many different types of gigs in a short amount of time. This means they won't have time to sit in the practice room and practice in the classical sense. They may have to take a pencil and begin to mark the road map and identify any potential problems and analyze the music to determine what is required. A thorough understanding of intervals is always in progress no matter how far you think you have come. The author of this text presently studies intervals on a daily basis in some form. So, don't stop, ever.

TEXTURES

Music can be written in a variety of textures to portray a particular emotion, story or event within the grand scheme of music. There are four main textures with which the music student should be familiar:

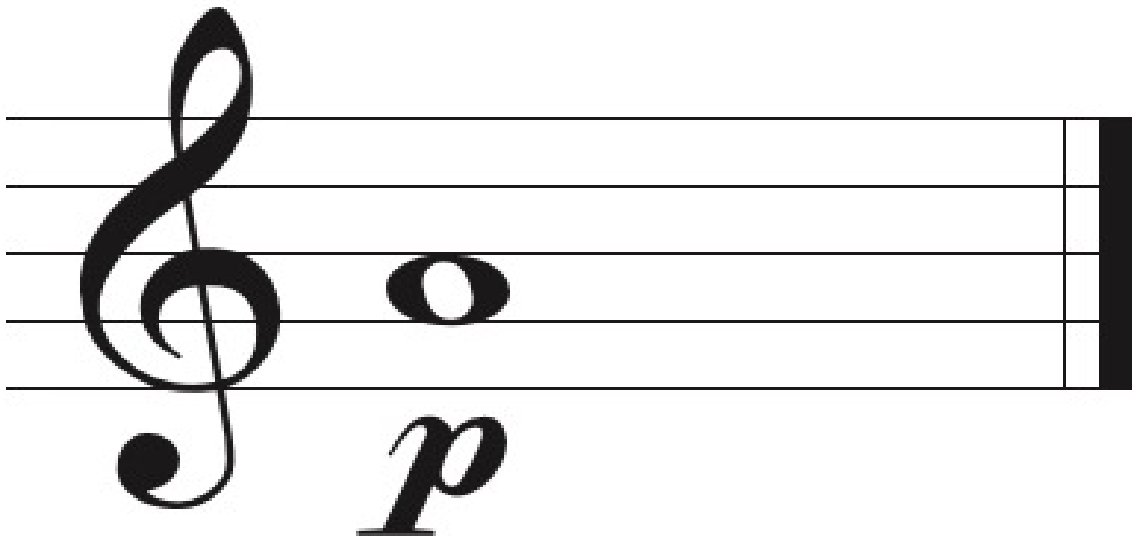
- Monophonic – music that only has one melody performed by one instrument or voice, thus the prefix of mono is added to phonic meaning one sound or melody.
- Polyphonic – music that has many voices or instruments moving in several different directions simultaneously, thus poly a prefix meaning many things at the same time is added to phonic to denote several voices or instruments all moving musically in different directions.
- Homophonic – this music is the combination of multiple voices or instruments performing the same melody at the same time, thus the prefix homo means one melody added to phonic to include many voices.
- Heterophonic – this texture is a traditional style of music performance in which a chord or harmony is used to support a melody like a piano player. Two different things happen simultaneously, thus the prefix Hetero meaning two added to phonic.

DYNAMICS

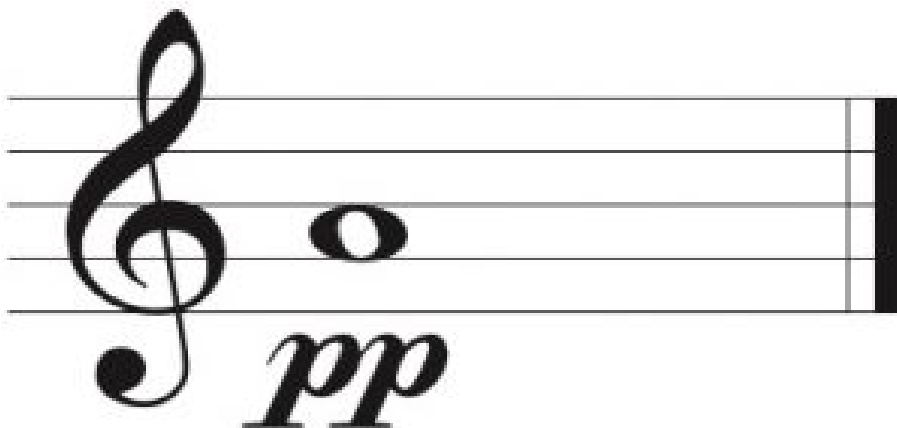
Dynamics or *Amplitude* for musicians is equivalent to volume for the layperson. Studying music means spending time learning the symbols that represent dynamics in written music and the subtleties that come with them.

P is an abbreviation for the Italian word *PIANO*. When we use the P, we denote passages that are to be performed in a quiet manner. A composer may wish to use multiple P markings to make something very, very soft.

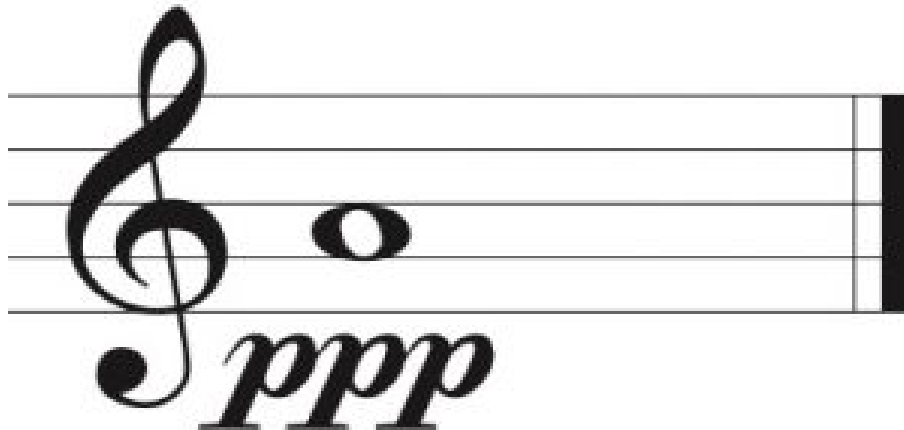
Piano Dynamic



Pianissimo Dynamic



Pianississimo Dynamic

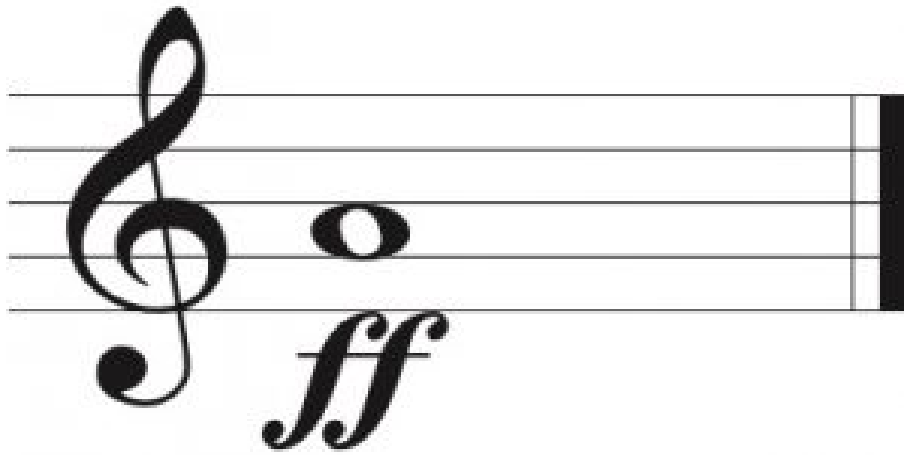


In the event a composer wishes for the performer to be loud an *F* is used. This is short for *FORTE* in Italian. A composer may wish to use multiple *F*'s to inform the performer to be as loud as possible.

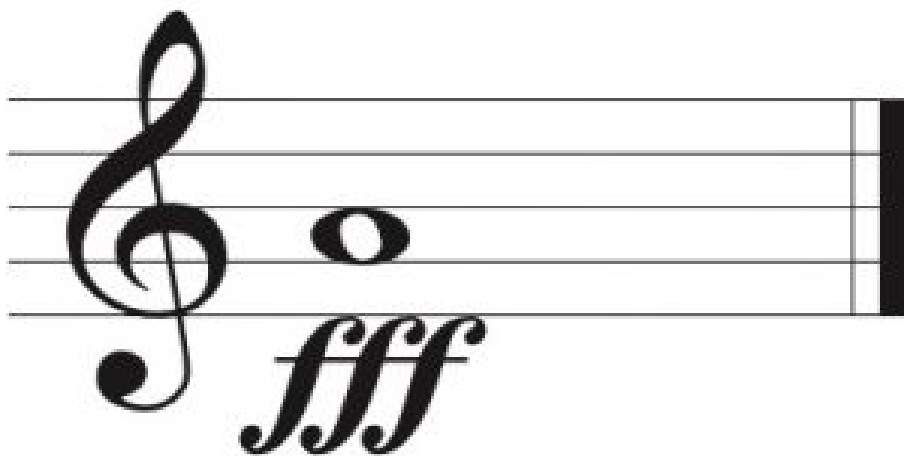
Forte Dynamic



Fortissimo Dynamic

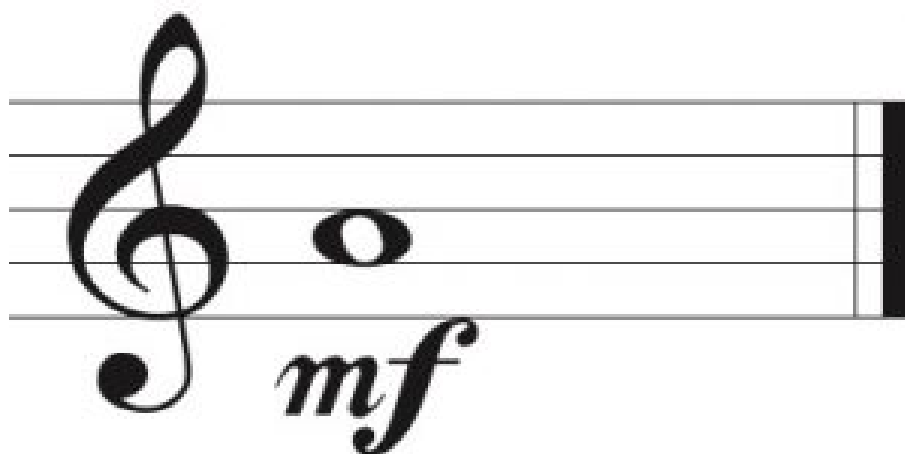


Fortississimo Dynamic



There are points in between loud and soft music that must be addressed through dynamics. When composers wish for a passage to be moderately loud or moderately soft they put an M in front of P or F. M is short for *MODERATO* in Italian indicating a comfortable or “moderate” level of performance volume.

Mezzo Forte Dynamic



Mezzo Piano



Even though the system of communication is straightforward, each composer throughout music history and the present has their own interpretation of volume and what it means. For instance, Beethoven was passionate in his beliefs no matter what the subject. It could be said he was one of the most intense personalities in the history of Western music. That means his dynamic markings are an extension of an emotion he felt during that moment. As performers, we must know these things in order to portray the intended emotion as accurately as possible.

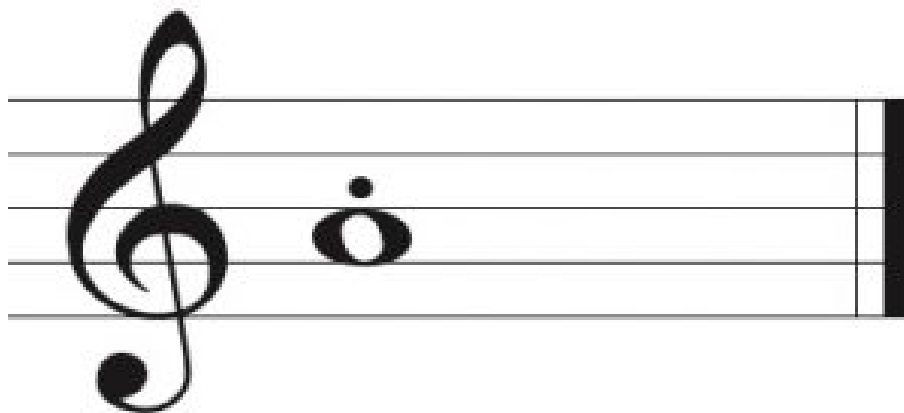
From a technical stance, subtle soft notes with good pitch centers

are hard to achieve without steady practice. The same can be said for very loud notes. Many believe loud means ugly and this could not be more wrong. Loud still requires good tone and pitch. **So, it is up to you to find those “sweet spots” of quiet intensity or uproarious volume during practice on your main instrument. Finding them enough times consistently that they become part of your vocabulary and not a “trick” you use to sound musically mature.** Whatever instrument one chooses, all have techniques required for good tone at various amplitudes or volumes.

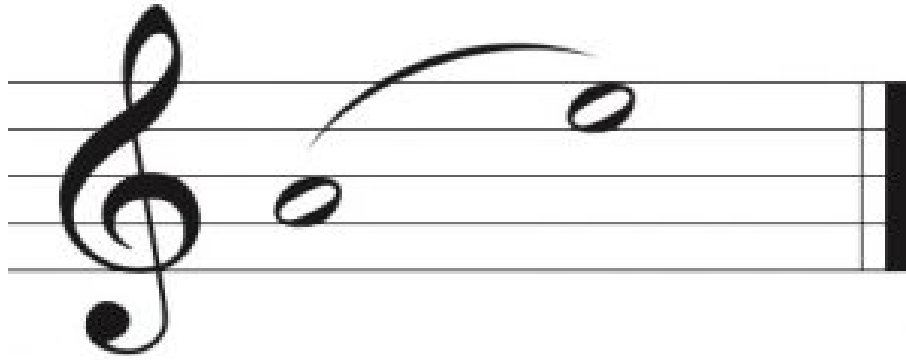
ARTICULATION

The word *Articulate* means to speak, utter or pronounce in a particular manner that is easily understood. For musicians, it is no different. Articulations are symbols we apply to notes to show a performer how a note should be shaped.

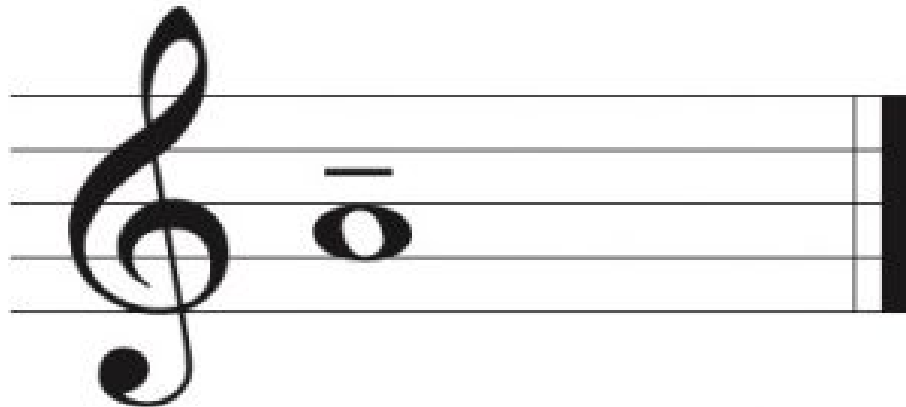
A note with a small dot over it tells the performer to play short and separated.



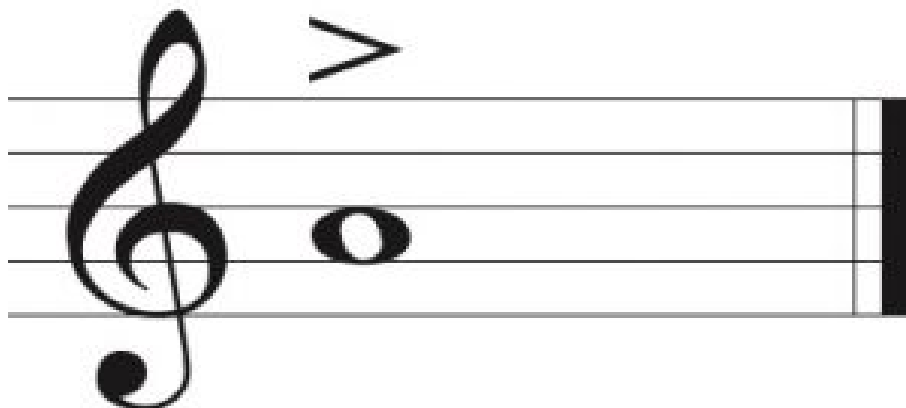
Notes with his mark are to be performed smooth and connected.



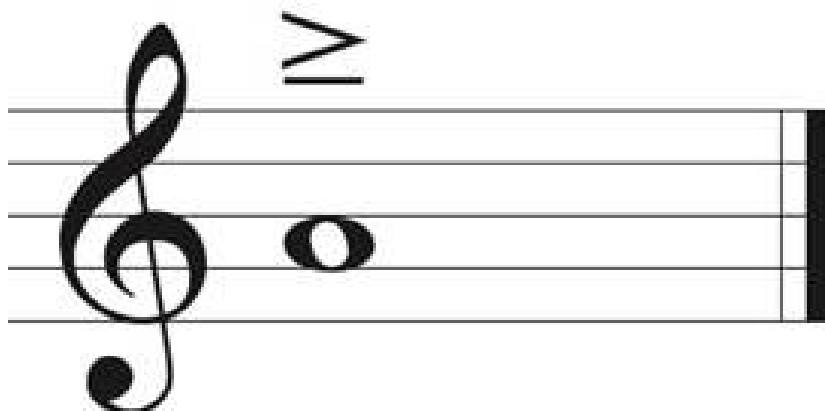
A note with a line over it tells the performer to give the note weight or emphasis.



A note with this symbol means to give the note an accent slightly above the written dynamic.



Sometimes we use two articulations together to form a new musical direction for the performer.



When a musician refers to the *SHAPE* of a note we are talking about how the note is physically initiated or “attacked”, plus everything in between and the end or “release” of a note. In the area of Acoustic Theory, this is referred to as the envelope or the shape of a musical note.

Acoustic instrumentalists can alter the shape of a tone by using various means supplied to them by the usage of air, muscles of the jaw and lip areas, and the instrument itself. This is hard to achieve without regular practice. In order to achieve ultimate control over articulation for any instrument, one must use articulations as workouts. Using a metronome at a very slow tempo, take a specific articulation and perform it over and over until it becomes a natural sensation within your muscle group. Once you can attain regularity with quality, begin to slowly speed up the metronome 4-5 clicks at a time. When this is accomplished, we add another element. We slow the metronome back down and add dynamics to the equation. Perform the articulation at various dynamic levels to understand how different ranges feel and require different performance practices for different levels of dynamics. The student can also pick a dynamic and run various articulations in the same manner and get the same effect. The biggest lesson here is that composers write specific musical instructions such as dynamics and articulation for

the performance of their music. We can be more prepared for any musical situation that arises if this type of practice is part of our everyday routine.

3. Section 1.3: Form and Structure

Form and Structure

One of the most essential tools of music performers and theorists alike is the ability to identify formal structure in music construction. To truly be able to identify visually and aurally the different parts of form within a composition the theory student must be able to use the three major building blocks of melody, harmony, and rhythm. Basically, the rest of this text. Composers will use rhythm and melody like a marker to outline different sections of their music. This enables the performer to know when to stop or pause when musically accurate.

There is some good news. The first and easiest form structure we study is called BINARY and means exactly what the word implies, something in two parts. When we have a BINARY structure in music we refer to the first part as “A” and the second as “B”. Both are evenly structured and have the same musical weight for symmetry which is important for the listener’s sense of closure in the short term and the long term.

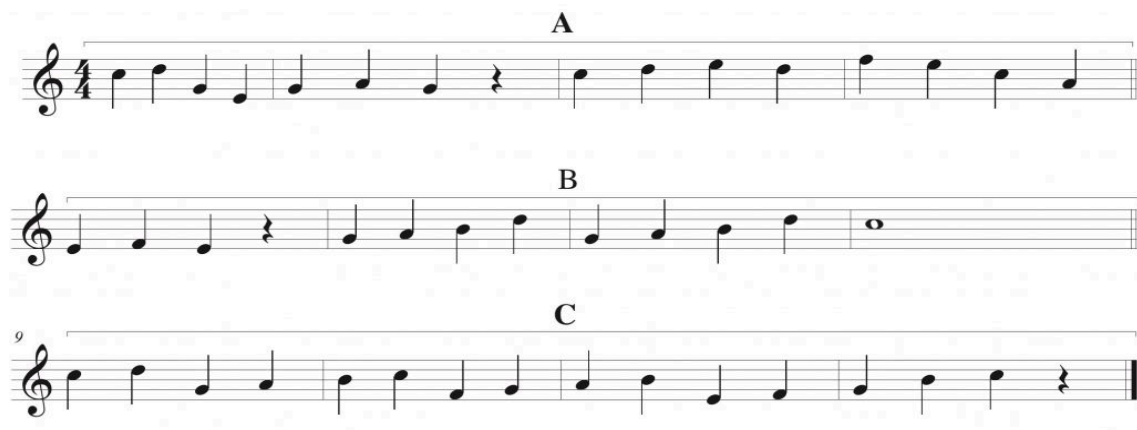
Study the following example. Demonstrated is a short melody divided into two parts. The brackets designate two evenly spaced musical sentences or phrases. Focus on how the two lines look graphically in reference to each other. Even without rhythmic or notational reference one can compare the motion and amount of notes to discover the basic symmetry between two parts of the entire structure.

BINARY FORM



When the composer wishes to extend the melody, or has more to say within the music, they can add a third section to expand the composition. We call this format *TERNARY* for there are three distinct sections. Some composers will add new melodic material in this section similar to the A section or in some instances a direct repeat of the A section. The following example displays the format of ternary form with three distinct sections marked by the double bar line at the end of each staff.

TERNARY FORM



SONG STRUCTURE

Binary and Ternary forms should be easy to figure out even for new students to music theory. However, once we pass these two forms, we enter into a new area of formal structure that takes

patience and time to be able to identify. There are literally dozens of forms used by composers throughout music history. This section will cover the most commonly used forms in Popular, Jazz, and Classical music. So, we begin with song structure. Don't forget we denote different sections with letters A,B, C... and so forth. However, we can also use other terms to define different sections of a song. These terms are VERSE, CHORUS, and BRIDGE. The verse is the literal bones of the song where the storytelling actually takes place. A chorus is a section that repeats at musically appropriate intervals that can sometimes include the title of the song or an important phrase that ties the verses together. The bridge is a tool composers use to give a song a texture or tonality change. We will use V to denote verse, C chorus, and B for bridge to outline some possible combinations.

One of the most common song formations is the strict rotation of verse and chorus with a bridge that transitions back to the chorus:

$$V1 - C - V2 - C - V3 - B - C - V4$$

Another common use of song form is to have two verses followed by a chorus with a bridge that transitions back to the verse:

$$V1 - V2 - C - V3 - V4 - C - B - V5 - C$$

If the story is long then we can use this formula of sorts to outline a longer format that is broken up by a bridge for musical balance:

$$V1 - V2 - V3 - V4 - C - B - V5 - V6 - V7 - V8 - C$$

The composer can also be concise and repetitive if that is what the story requires:

$$V1 - C - B - V2 - C - B - C - C$$

Many popular composers like to begin their work with the chorus,

or HOOK this way they can end with it and have a bookend shaped format that gives the listener a sense of balance:

C- V1 - V2 - C - V3 - V4 - C

When the composer wishes to have every section be slightly different with no repetitive sections, we use the verse:

V1 - V2 - V3 - V4 - V5 - V6

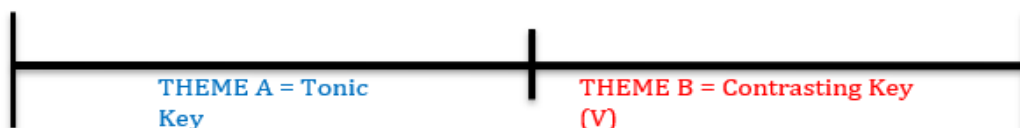
This song format is hardly used unless there is a unique musical circumstance for example a musical or play that is not bound by pre-existing song formats.

SONATA ALLEGRO FORMAT

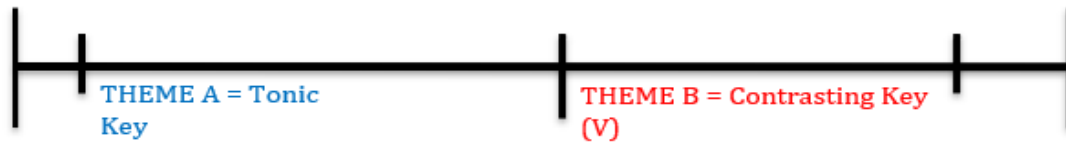
Sonata Allegro Form was born in the Classical period of music history and the main format used by musicians of that period in music history. Many students may find this form difficult to deal with at first but once they have spent enough time studying scores and sheet music they will be able to see the form of the song without hearing it. The sonata allegro form comprises three main parts: EXPOSITION, DEVELOPMENT, and RECAPITULATION with two optional parts the INTRODUCTION and the CODA.

The exposition will contain two principal parts that define it in which there is a main theme or melody in the home or tonic key with a second theme in a contrasting key.

Exposition:



An introduction in sonata allegro form is slower in tempo than the exposition statement and has a slightly different texture. This section is optional and classical composers used this option to balance the entire movement of a piece.

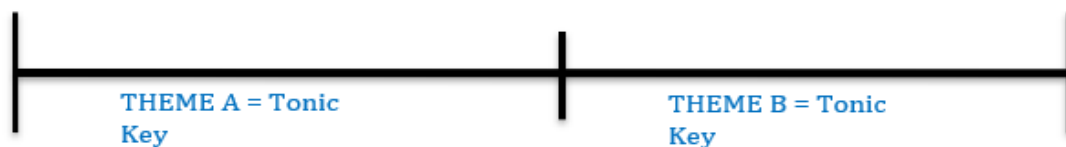


As this form is used and developed composers began to find ways to elongate it with minor changes at the end of phrases usually referred to as “connective material” that prepares the listener for the next section.

Development:

The development section is a magical tool within the form that allows the composer to open up the tonal constraints of diatonic harmony (defined in Section II) and use both themes from the exposition for compositional substance. In many cases, the development is an elongated portion of the work and will sound completely different from the exposition with fragments of both themes and multiple modulations. The idea is that a musical idea is stated and then exposed in many variants that present the listener with new material that is derived from the one simple musical statement.

Recapitulation:

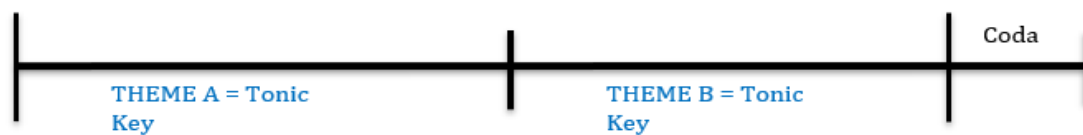


The recapitulation is the restatement of both themes from the exposition, creating a sense of balance within the form and a place of rest for the entire piece. This is achieved by restating not only

the first theme in the tonic key but also the second theme in the tonic key, not a contrasting key. This is designed to give the listener a sense of finality and closure for the entire work.

Codas:

CODAS are small sections of music that appear at the end of musical works. It is also optional and can be used to balance out the entire form. Composers will use this to balance out the end of the composition to counter the optional introduction at the beginning of the work.



JAZZ FORMATS

Jazz formats are tricky. Jazz composers rarely follow anyone's rules but their own so there are many forms that are in use and have been in use for a number of years. Jazz musicians use a combination of binary, ternary, and song formats to depict the form of their compositions. We use the letter system again when communicating these formats to one another. The A section is always the verse, the B section is usually a chorus of some type and the C section is used as the bridge. In Jazz, improvisation is key and we can outline solo areas using the same terminology.

In many instances Jazz composers will start simple with a simple ternary structure:

A - A - B

A - B - B

A - B - C

Then there is the use of deliberate repetition:

A - B - A - B

The more diverse the composition the longer it can be:

A - B - C - A - B - C

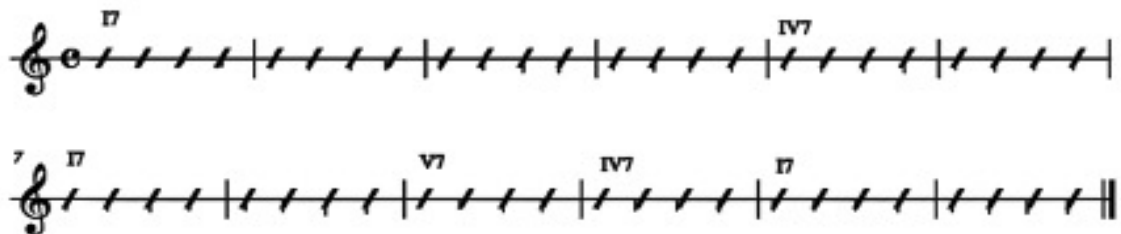
Another popular formula is to use the sections in a palindrome:

A - B - C - B - A

Blues Form:

Blues comes in two traditional forms; 12-bar and 16-bar. For the purposes of our study, we will focus on the 12-bar blues because it is more common in use. When dissecting the 12-bar Blues we look at it in three equal parts each four measures in length. Further, when mapping out the form we use the tonal areas within those sections as transferable labels that create a type of shorthand. The first example is a traditional 12-bar format grouped by chord. Once the student has completed or referred to the Harmony section of this text, the Blues formats will become more accessible. For now, realize that there are only three chords used in the traditional format Tonic or I, Sub Dominant or IV and the Dominant or V. These markings can be as utilitarian as the formal markings from a previous form, i.e A-B-C or I-IV-V.

Traditional Blues Progression:



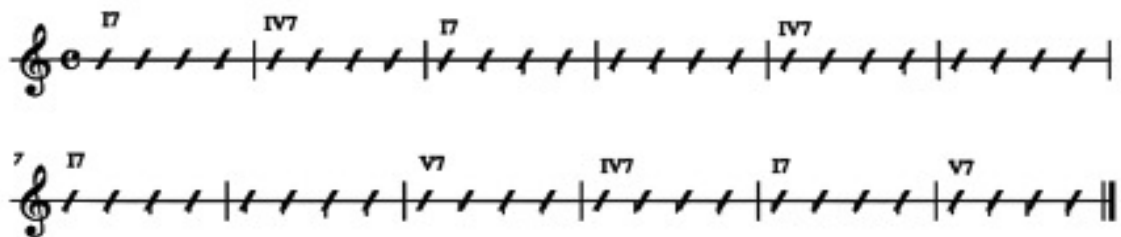
The traditional Blues format made its way into popular music via Country and Rock and Roll. Early forms of both types of music

are rooted in the harmonic, melodic and rhythmic practices of traditional Blues. Much of popular music is the extension or evolution of these early foundations so it is important to understand the form and eventually the harmonic practice of the Blues format.

Country and Rock would not be the only genres of music to grab on to the Blues form. Jazz musicians play blues tunes all the time and we tend to alter chords during performance. Chord substitution is a regular practice in Jazz, it allows the player a broader palette of sounds from which to choose during improvisation. There are rules to chord substitution, one can't switch out anything anywhere, there must be a method.

The following example is what is possible for chord substitutions over a traditional Blues using only the three chords originally supplied. Moving the tonality of the progression from chord to chord quicker changes the feel of the song. Both forms are acceptable during performance. Performers will determine which chord to substitute and when based on musical judgements either predetermined or in the moment when another musician's performance demands it.

Blues progression with Chord Substitution:



Jazz performers will also dip into the classical area for chord substitutions and make use of older rules but set them in modern work. For instance, the use of artful chromaticism. CHROMATICISM is the use of tones or chords outside the perceived tonal area of a song. These substitutions have the ability to fill out a Blues progression and make it blossom with tonal color. Musicians will use

the word color to refer to a specific sound, performance technique, or even mood of a song. The Blues by definition is all of those things at once and more so color as a descriptive form of a musical event is quite common.

If one overextends and attempts substitutions in appropriate places of the form, then the original intent of the song is lost and the listener has no frame of reference. So, have fun but beware.

Blues Progression with chord substitution rooted in chromatic movement:

I^7 IV^7 I^7 IV^7 $iv^{\circ 7}$
 raise root one half step
 to create fully diminished chord

I^7 V^7 I^7 V^7 I^7

Jazz Blues progression with chromatic chord substitutions:

Bb^7 Eb^7 Bb^7 Eb^7 $E^{dim 7}$
 raise root one half step
 to create fully diminished chord

Bb^7 $D^{min 7}$ / D^7alt G^7 / G^7alt $C^{min 7}$ / C^7 F^7 Bb^7 Eb^7 Bb^7 F^7
 chord substitution

PART II

SECTION TWO: MELODY

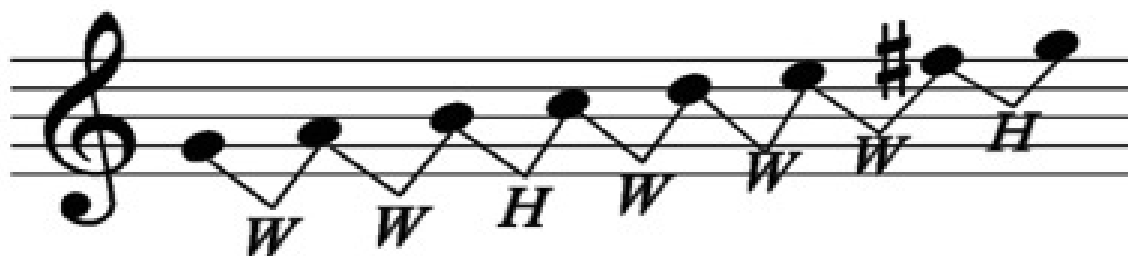
4. Section 2.1: Scales

Scales

Most believe the melody to be the most important part of a composition. They argue it is the thing people walk away remembering or a song's main identifying hallmark. Though this is true, it would not be so without the application of harmony and rhythm. To have a deep understanding of melodic passages and their content, it is important to begin with a study of scale construction then move on to rhythm and harmony.

The word SCALE in and of itself simply means a collection of tones in serial order. That order can depend on multiple factors, which we will discuss over the coming portions of this text. There are many types of scales that exist in music theory. Which is why it is dangerous to study alone or without understanding the application. Scales are arranged in a particular manner to suit a musical need. There are a number of methods for transforming a series of tones into a beautifully crafted melody. The first scale we should study is the MAJOR scale. For now, we look at the MATH of the major scale. The formula for creating this scale is denoted in the following example of a G Major Scale. Notice the arrangement of **W**hole steps (W) and **H**alf steps (H).

G Major Scale



We can construct this and any other major scales using the

formula with a starting note on the staff. Remember Music is Math and Math is patterns. We learned this in the musical Alphabet section: when we reach G we start back at A. If we discover a major scale at the keyboard or guitar, the same math holds true once we reach the end of the scale. We can start over and climb all the way up or down the keyboard/fretboard with the same intervallic composition.

The theory student should play this scale at the keyboard many times before attempting to find other major scales. However, once they have discovered another scale they should practice it until they cannot forget it. Writing scales on staff paper is also a great way to learn and memorize scales.

Scale Writing Rules:

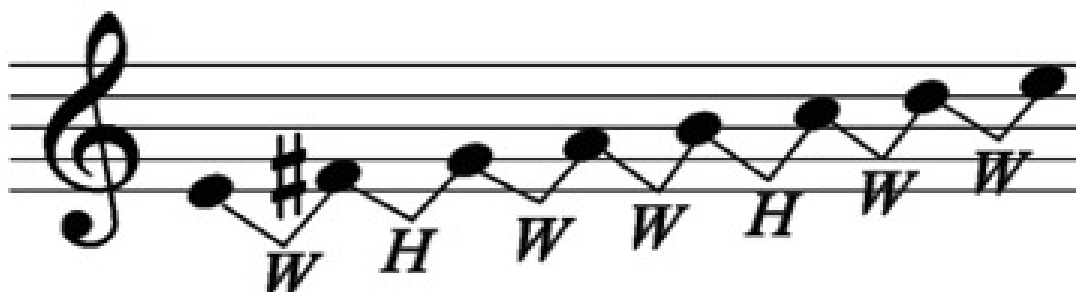
1. Find a starting pitch.
2. Move from that pitch in ABC order.
3. Do not repeat any letters.
4. Do not use two different accidentals in a scale.
5. Use a formula to determine when accidentals are needed.

One of the most elusive scales the young theory student will tackle is the Minor Scale. Three distinct versions of the minor scale exist, and they all serve various functions. Therefore, it is not uncommon to find all three in a composition fulfilling different roles within the harmonic structure.

First, we look at the *NATURAL MINOR* scale. This scale is referred to as *NATURAL* because it has the same Key Signature as its cousin or *RELATIVE MAJOR*. All Major and Minor scales have relative scales that correspond to their own *KEY SIGNATURE* and we refer to them as such, relative. For now: a *KEY SIGNATURE* is the number of accidentals required to keep the integrity of the pattern of whole-steps and half-steps required to build a specific scale. For this scale, we follow the formula shown below and create E Natural Minor. This minor scale shares the same *KEY SIGNATURE* as G Major. Therefore, we only need one sharp (#) to complete our formula

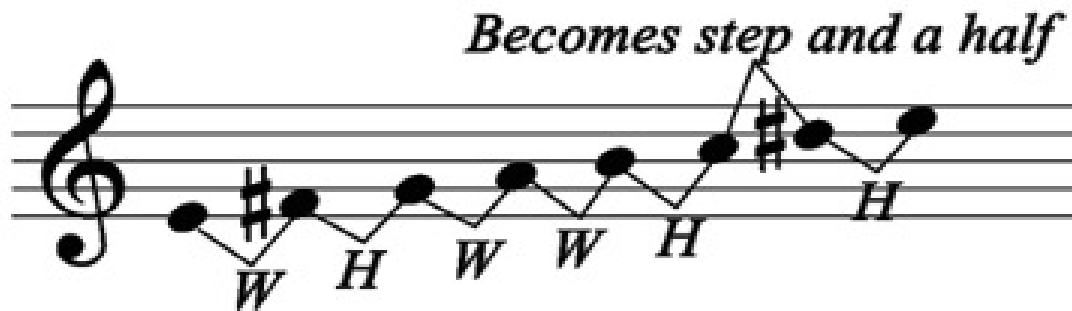
- the same way we constructed G Major. (There is a relationship here worth exploring, and we shall, but for now focus on the actual construction of scales according to our formula.)

E Natural Minor Scale



The natural minor scale is easy to find and use because it functions much the same way the major scales function. However, there are two variations on the minor scales that have their own rules and construction that can be confusing at first. But if we go slow and stay diligent we can find all three. One variation of the minor scale is called the *HARMONIC MINOR* and it has only one alteration - but a very important one - that distinguishes it from other minor scales. The 7th scale degree is raised one half-step creating a dissonance between certain tones within the scale. Composers do this by “borrowing” the 7th tone from the relative major. It is called the Harmonic Minor because changing the 7th scale degree also changes the chord built on the 5th note of the scale giving the composer two different harmonies to exploit, one major and one minor. The intervallic composition of the major chord provides new dissonance in the tonal area that will aurally push the listener to desire the return of the first chord of the piece. This aural yearning brings a sense of resolution when the listener is released by the composer to return to the *HOME KEY*. All music is designed to resolve itself at the end of its design by returning to the chord or chords with which it began. We refer to this as the *HOME KEY* or *TONIC*.

E Harmonic Minor Scale



The MELODIC MINOR scale can be more frustrating than the harmonic minor at first, but with practice and study the theory student will achieve control over the scale. This scale has special conditions that require us to break one of our scale rules by using two different accidental types within the same scale. However, it is required to build the scale and therefore we allow it in certain musical instances. This minor scale has two exceptions on the way up for tones 6 and 7 that are borrowed from the PARALLEL MAJOR SCALE. Any scale started on the same note has multiple versions of itself which are called PARALLEL in this instance it is E Major which has four #’s in its KEY SIGNATURE. On the way down, we return the 6th and 7th scale degrees to their rightful natural minor positions. Thus, giving composers more MELODIC choices than any other scale. All other previous rules for scale construction still apply.

E Melodic Minor Scale



When a composer chooses to use a minor key they may use any form of it that fits their musical needs. So, it is up to the theory student to be able to recognize them when they encounter

accidentals in music performance. At times accidentals seem to come out of nowhere in the middle of a song, or the whole sound of the piece changes. This is the composer using musical technique to tell a story.

5. Section 2.2: Flavor of Music Using Scales

Flavor of Music

This is the terminology we learned in the first section during interval study. Now that we have described scales in multiple forms we can identify the intervals previously studied and the origin of the interval itself. With only two notes inferring musical flavor like major or minor there is a minimal amount of information with which to contend. Multiple notes of a scale require a deeper understanding of theoretical techniques and construction because the amount of information outlined in a scale is vast and more information means multiple subtle layers of tone color available to a composer. The first thing we teach beginning music students about the flavor of music is that MAJOR sounds equate to HAPPY emotions and MINOR sounds equate to SAD emotions. That philosophy is still relevant because the human mind attaches emotional content to sounds received by the brain based on multiple factors such as environment, socialization, education, temperament, past experiences, and other things we are still discovering.

Composers have used this understanding for millennia to compose music as a functionary part of everyday life. In its earliest stages, music had two sounds: major and natural minor. These two sounds served early composers well but eventually, they began to demand a larger palette from which to draw multiple sounds to display an array of emotions from happy to sad and all points in between. It is this need that kick-started composers into searching out new sounds and developing new scales based on history and travel. When composers travel, they soak up the local culture and artistic philosophy. If one were to travel to Greece, they learn that scales are called MODES. Through studying the Greeks, we learn

they classified scales according to function and developed the Modes according to how they sound. Modality in music construction gave the composer more melodic and harmonic choices, opening the emotional floodgates, so to speak. They could now create more subtle emotional content within their compositions that affects the listener on a deep level that can have multiple interpretations.

Here we will take a look at other scales called MODES that look like different versions of major and minor scales.

6. Section 2.3: Modes

Modes

The first mode to study is referred to as the *IONIAN* mode and is constructed with the same formula of half steps and whole steps as a major scale.



The next mode is referred to as the *DORIAN* mode and it is constructed the same as a natural minor scale. However, in this scale, the 6th scale degree is raised one half-step.



The third mode is referred to as the *PHRYGIAN* mode and is constructed as a natural minor scale with a lowered 2nd scale degree.



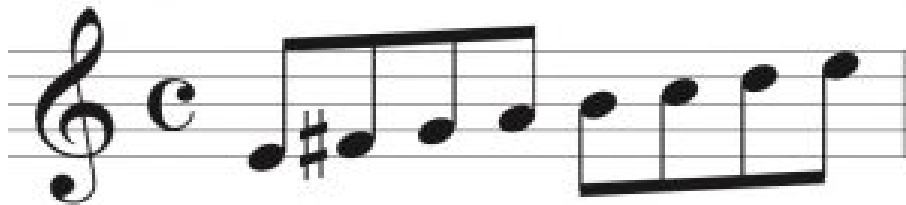
The fourth mode is referred to as the *LYDIAN* mode and is constructed as a major scale with a raised 4th scale degree.



The fifth mode is referred to as the *MIXOLYDIAN* mode and is constructed as a major scale with a lowered 7th scale degree.



The sixth mode is referred to as the *AEOLIAN* mode and is constructed as a natural minor scale.



The seventh mode is referred to as the *LOCRIAN* mode. This mode is difficult to discuss because there is no analogy to make in order to compare it to what we use regularly in improvisation. So we use the half-step/whole-step formula H-W-W-H-W-W-W to represent the Locrian mode.

identification. Some composers use melody to represent characters of a story when that character's presence is required for good storytelling. For example, in the first three Star Wars films by George Lucas(4,5,6), the composer John Williams is brilliant with melodic development which gives those pictures the ability to draw the audience into the story and hold their attention without them even realizing it. Every character has their own melody or theme that represents them. The audience hears these themes every time the characters are on screen. Williams even composed melodies that represented the relationships between different characters. It is practically impossible for anyone familiar with American Pop culture to hear the "Imperial March" and not picture Darth Vader coming down the hall.

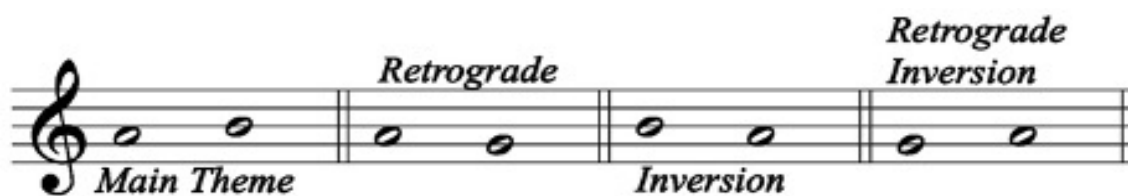
Good composers use scales to draw on for musical substance. In order to create new material connected to the original idea, composers find a relationship within the construction of a melody to exploit in multiple ways. How they use those existing relationships will yield other artistic substance that ultimately relates to all parts of the piece in very subtle manners because it is all based on the original idea. Using and manipulating mathematical and musical relationships to divide and distribute melody is called a VARIATION. In order to be a good composer, one must be able to manipulate melodic development in a number of ways to create multiple VARIATIONS for musical interest.

Start out small. Write short effective melodies and try to find various ways to manipulate them. The best place to hear this technique in use is in Beethoven's 5th Symphony. The entire composition is based on two notes used in a simple, repetitive manner that fuels the rhythm and harmonic content. Listen to the piece and how Beethoven masterfully flings around the main musical idea throughout the work in various instruments and various ranges, various dynamics, as solos and unison licks, and even the entire orchestra playing the theme together. Even in later movements, he is able to find new and unique ways to bend or

flip the theme so that it sounds like the original statement while simultaneously giving the listener something new to digest.

The next graphic shows the first composition lesson everyone receives at the beginning of their creative journey. The ability to take only two notes and turn them into something musical is an important part of learning how to effectively compose good, balanced melodies.

Starting with a simple two-note main theme, use notes A and B that are one whole step in distance from each other to generate compositional material. We use two notes to start in order to isolate and learn each separate technique for music construction. With experience, a seasoned composer can use the rules outlined below with entire scales and original melodies or even create their own system of rules to follow. A good composer will sketch out ideas on how to expand the melody through variation. We extend the original statement by starting on the note B and going in reverse according to intervallic structure or creating a mirror image of the main theme, this is called **RETROGRADE**. A composer can create even more substance by inverting the original theme based on an intervallic relationship, called **INVERSION**. Finally, we can invert that new retrograde cell thus creating another part of the melodic whole.



Once a solid melody is constructed, the composer can elicit new melodic cells by using simple math and intervallic measurement to transpose their work up or down then transposing that melodic cell and so on, yielding a seemingly infinite amount of musical material. Creating multiple versions of a melody will also give clues as to which harmony structure to pick or whether to create your own.

The spaces between the notes of a melody can also define the rhythmic values a composer uses to spell out a melody or when it arrives in the storytelling process.

PART III
SECTION THREE:
HARMONY

7. Section 3.1: Circle of Fifths

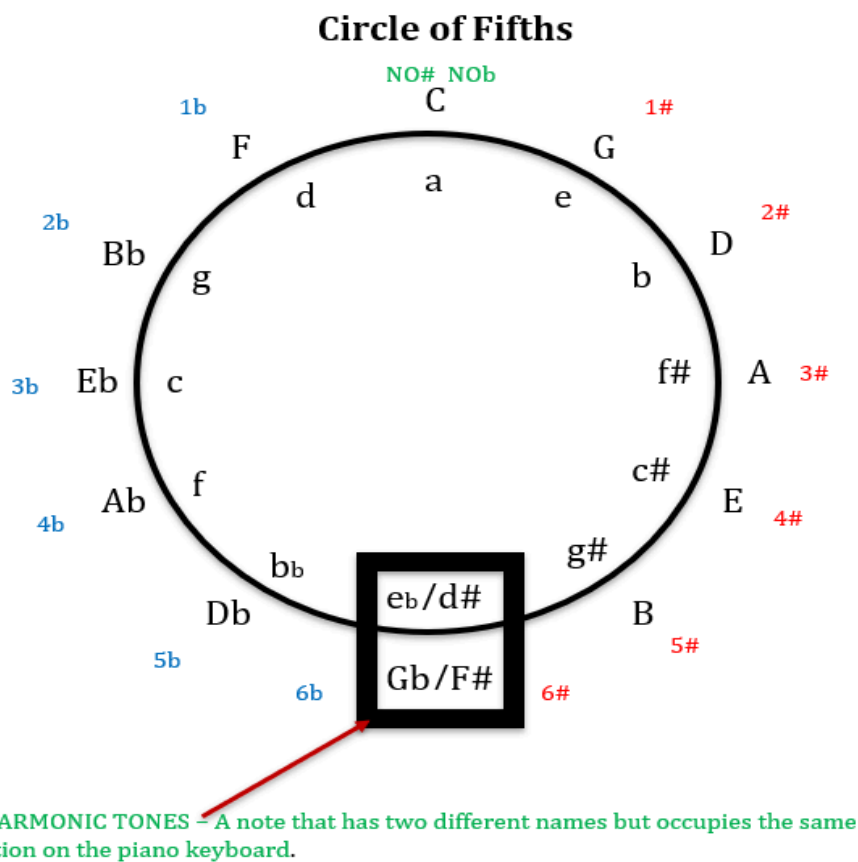
The first item up for study in the area of harmony should be the *CIRCLE OF FIFTHS*. This is a graphic representation of harmonic motion based on intervallic relationships shared by different notes and tones used in making music. Beginning at the top with the note "C" we use the musical alphabet to move clockwise in intervals of a Perfect 5th (P5), thus the term Circle of Fifths. If we start with "C" again but move counterclockwise we find that the intervallic motion is in Perfect 4th (P4). These are the first patterns we see in the circle of fifths chart. It shows us Key Signatures, harmonic motion, and the mathematical relationship of all keys and how they can interact together.

The capital letters around the outside of the circle represent MAJOR key areas, while the lowercase letters around the inside represent the MINOR key areas. Each major has a corresponding minor that shares the same key signature denoted by the number of sharps (in red) and flats (in blue) for each area. Notice that when we move around the circle in clockwise motion we add a sharp to each key. Once we reach the bottom we have effectively altered every available note so we can no further add sharps. We use the ENHARMONIC version of the tone to pivot from sharp to flat so that instead of adding, we take away flats until we reach C again where there are no sharps or flats.

Once the student has learned the Circle of 5ths, they should start to look at mathematical patterns and relationships. For example, the Blues form uses three chords, I, IV and V of a tonal area. If C is our home key or tonic, where the song starts, then the IV is F which is on the left of C and the V is G which is on the right of C. This pattern exists at every location on the wheel. Every chord progression known can be tracked and studied through the Circle of 5ths if we spend enough time with it. That is exactly what the student must do is be diligent in their practice and spend time

using the Circle of 5ths during instrumental practice and music theory study. Deciphering the Circle of 5ths will take some time and practice but is well worth the effort if one remains disciplined and focused.

Composers build harmonic progressions based on the relationships displayed in the Circle of 5ths or the mathematical patterns that exist within it. This is why we need to spend time with it and learn how to apply it to our performance practice.



ENHARMONIC TONES

Enharmonic tones play an important role in the composition and communication of music as a language. Just as the English language has grammar, syntax, and style, so does the language of music.

Enharmonic tones provide the necessary flexibility in constructing melody and harmony needed to communicate a musical phrase to the listener. Building scales and constructing chords have rules that demand multiple labels for the same note depending on how and when it is used within a key area. G-flat and F-sharp geographically on the keyboard are the exact same pitch; however, there are no G-flats in F-sharp Major or Minor because we must abide by the original rule of scale construction. Using alphabetical order, we must have each note represented for the completion of a scale. Therefore, there must be F#-G#-A#, etc., and no G-flats, they cannot exist within this usage.

The Circle of Fifths is a very important part of serious music study, no matter the level. In order to properly unlock the secrets of this tool, one must spend a large amount of time using a technique I call “putting your eyes on the chart”. Don’t just stare at it blankly, but look at the chart intensely, with deliberate intention to identify patterns that comprise harmonic motion. The next logical conclusion is that there must be other relationships on the wheel based on multiple principles that have not yet been introduced, which means that the Circle of Fifths will always yield material for academic study and compositional substance.

The name of the symbol, the Circle of Fifths, gives us the understanding that music can move in fifths. An easily recognizable pattern based on its name so it is the harmonic first pattern we learn. As mentioned earlier, if we reverse the direction and move in counterclockwise motion we begin to see that the intervallic motion unfolds in fourths.

In mathematical study, we learn that if one pattern exists within a series, then there are more patterns based on simple relationships within the existing integers. The more one studies or “puts their eyes on the chart”, the Circle of Fifths reveals more musical secrets. As more patterns are identified, harmonic motion becomes easier to understand and use. To discern which notes are altered with accidentals we use the formula to build a scale and find out the key of G has one sharp which is F#. From here the math is to add

one sharp every turn on the wheel while retaining the previously altered tones, gathering accidentals as we move. However, we can also put the order of sharps and flats in a way that we can study away from the chart in order to memorize which is useful when put together with other aspects of music theory study: $\# = F, C, G, D, A, E, B$ - $b = B, E, A, D, G, C, F$. Notice the intervallic space between each sharp note is a fifth and each flat note is a fourth, another way to define the math of the chart. The more we use the Circle of Fifths we will begin to unlock all sorts of patterns that govern and define chord movement in all genres of music.

As this text unfolds, we will explore the deeper relationships of the Circle of Fifths and how they govern and describe harmonic motion. This can become complicated when studying more complex chord movement and tonal relationships. For now, we will diverge momentarily to look at chords and chord construction in order to unlock more patterns that seem to hide from the beginning music student.

The first thing we learn about *HARMONY* is that it is intended to be used in a supportive manner for reinforcing the melody of a song. So, *HARMONY* as a working definition is the simultaneous performance of multiple tones intended to support a melody. Further we will learn that the types of harmony used in a song will also be used for *KEY* identification to define a specific tonal area. The word *signature* is added to the word *Key* to form a phrase musicians use to communicate verbally and in graphic notation what is known as a *KEY SIGNATURE*. The arrangement of sharps and flats for each tonal area is its *Key Signature*.

The simple definition of melodic support is useful until we arrive at the Romantic period and 20th Century of music history when studying composition as an art form. Composers of this period learned how to manipulate the rules that govern harmonic motion and apply new ideas to that end. As a result, many composers began to use and develop harmonies in the same manner that they developed melodies. They began to use harmonies to represent feelings they wished to evoke in the listener, to represent a

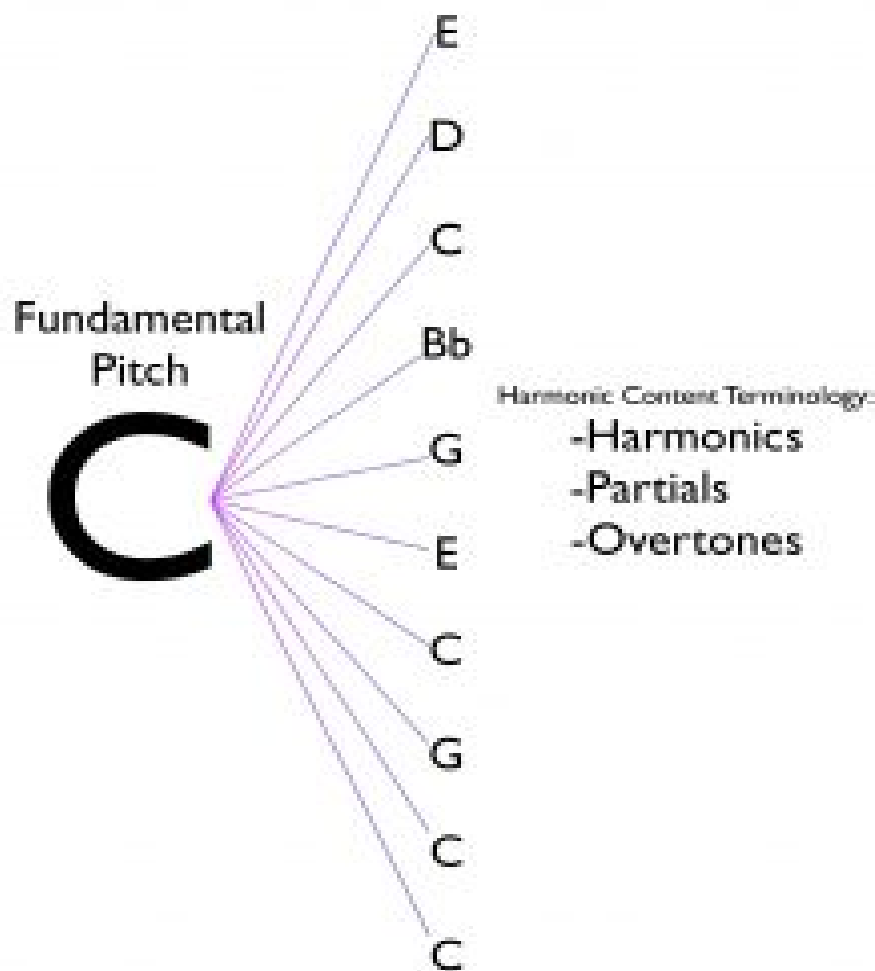
character within a story, or to represent a particular emotion or psychological connection. Bringing harmony and melody in and out of the musical texture this way defies many of the rules established by the masters. These new rules and the old ones made it all the way into 20th Century music. These composers would take melody and harmony and begin to manipulate them through extra-musical means like math and science.

OVERTONE SERIES

The overtone series is described as the presence of multiple notes that reside within one note called the *FUNDAMENTAL*. This series is a mathematical subset that outlines the texture and *TIMBRE*, or sound quality, of a musical note observed by the listener. That mathematical subset is called *HARMONIC CONTENT*. It is also known as *THE OVERTONE SERIES*, *HARMONICS*, and *PARTIALS*. When Overtones are observed and studied, we see that the Fundamental pitch occurs more times in the series than any other. These multiples heard together build a louder dynamic or amplitude than the remaining harmonic content, this is why we can hear and identify a fundamental tone. It occurs the most in the math, therefore it has a greater amplitude than any other note in the series. The following diagram is a small isolation of harmonic content in the lower portion of the entire mathematical range, it is intended to give the student a visual of this intangible process that governs music-making. We see the main pitch “C” or the *FUNDAMENTAL*, the note our ears recognize as a singular pitch because it occurs the most in the mathematical pattern therefore it has more amplitude than the other parts of the series.

Different terms are used in different contexts when referencing *HARMONIC CONTENT*: For wind instruments, the term *PARTIAL* is used because the performer is literally isolating parts of the instrument to create a higher or lower tone. In order to change notes, the instrument must be manipulated in a way that elongates or shortens the length of the instrument to raise or lower a pitch, i.e. valves on a trumpet, the slide of a trombone, or the keys on

a woodwind instrument. When performing on a string instrument, we refer to them as HARMONICS because these are easily found on the string and are a division of the string itself. If, however, we are performing tasks purely based in music theory we use the term OVERTONE SERIES.

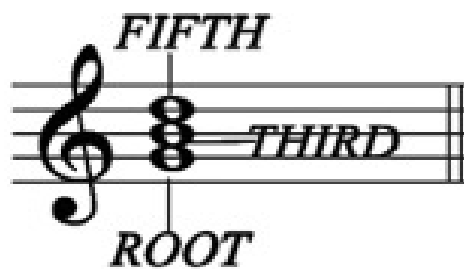


This phenomenon that occurs naturally in all music helps us to identify which chords go with that melody and vice versa. The series also helps us determine which chords can follow or precede a chord that creates a sense of agreement or disagreement within

the music. When we observe the disagreement the musical term we use to identify it is called *DISSONANCE*. When the listener can observe agreement between tones it is identified as *CONSONANCE*. Consonance is always used to announce the ending of a phrase or the completion of a musical work.

CHORDS

In order to understand complex harmonic motion in a deep manner, it is necessary to start with the simplest chord used in music construction: the *TRIAD*. A triad, simply put, is a three-note chord. The example below demonstrates the graphic representation of a triad on a staff and the names we use to identify notes of which they are constructed.



This G major triad outlines the three components the theory student must know in order to study harmonic motion. Later in harmonic study, we use chord extensions in which we add multiple tones to the chord past the 5th which alters the quality of sound. But before that happens, we must build a solid foundation in the basics.

The *ROOT* is the most important and is generally found in the *BASS* sections of an ensemble. Without it we do not know how a particular chord will function within a larger soundscape. The 3rd, the second most important tone within a triad, tells the listener what type of chord they are hearing, major or minor. Without a third *TONAL AMBIGUITY* arises and makes it hard for the listener to determine the musical Flavor and process what they hear. The

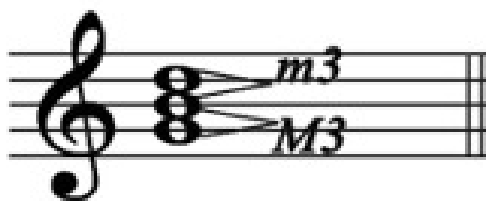
fifth is the least important and can sometimes be omitted from use altogether depending on the musical situation. These rules will be discussed in the section covering Diatonic Harmony later in the text; for now, learn the different parts of the triad and be able to identify them when presented.

CHORD CONSTRUCTION

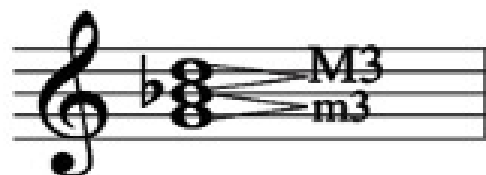
There are two ways to construct and analyze a triad. The first is by using the alphabet to spell out the chord. Start with the first pitch given and skip every other letter until you get to the fifth. So, to construct a G major triad one would start with the note G, skip A, use note B, skip C, and use D, thus Root -Third - Fifth.

The second technique is by identifying the intervallic construction of a chord. A triad is built with two intervals stacked on top of one another. The bottom being an interval of a Major 3rd with a Minor 3rd on top for major and the reverse for minor. Understanding the arrangement of intervals inside chord construction is an important skill to have when studying harmonic motion and identifying chords in a musical work.

MAJOR



MINOR



One can build triads on any musical note by following the previous formulas. It is the music student's responsibility to become familiar enough with chord construction that they can identify triads by sight and sound.

Further, it is worth noting that communicating a triad in written form on a staff gives it an artistic shape as well. With the root on a line of the staff the next two notes must be placed on the next two lines in order. This establishes a shape in which even if one doesn't know which chord they are studying they should be able to identify the fact it is a triad. By the same reasoning, we know that if the root of a chord is on the space of the staff then each part of the chord must be placed on a space as well. Recognizing spatial differences on a staff is important when performing music theory analysis.

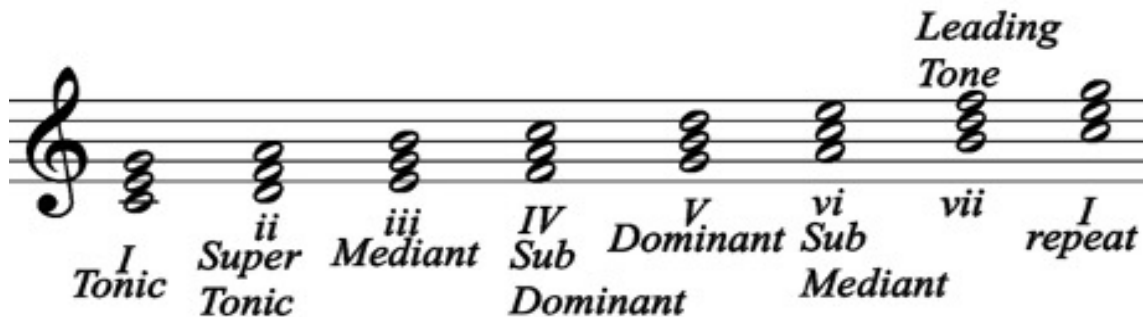
DIATONIC HARMONY

DIATONIC HARMONY is a system of rules that govern the use of chord progressions. This system was designed to give the listener the greatest sense of finality at the end of a piece, clearly outline smaller units within a larger format, and provide structural reinforcement at impact points within a composition. Composers and theorists alike abide by these rules when writing four-part harmony, arranging for bands or orchestras, and composing original songs. Learning how, when, and why to use a specific chord will also teach us about melodic construction and the use of tonal areas to evoke a specific emotion in the listener. These rules were solidified during the Classical Period of music history. However, through inventive use by songwriters these rules made their way into the first forms of American Popular Music. Over time songwriters and composers would begin to bend and break these rules according to their musical needs.

The best way to begin the study of Diatonic Harmony is to understand chord placement within Major and Minor scales. Each part of the chord has a specific function based on musical context. To understand that context we start with Triads positioned on a

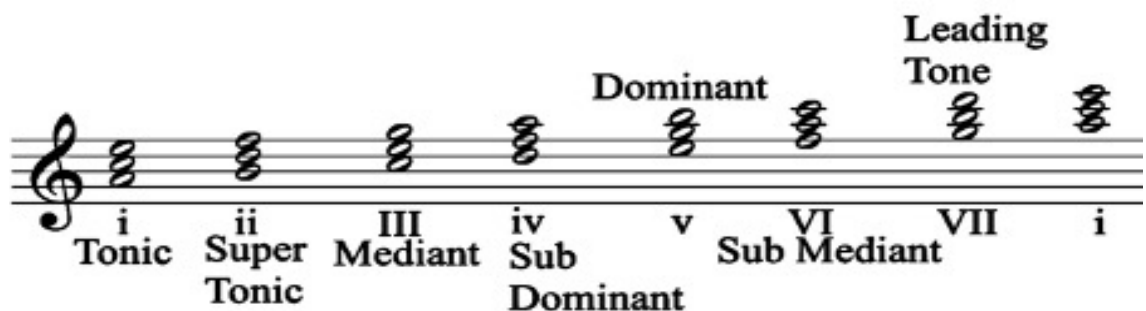
scale degree within the Major Scale which demonstrates the tonal hierarchy that exists in the Diatonic Harmony system.

C-MAJOR



Each note of the scale as an individual tone is referred to with Arabic numerals (the numbers we normally use when writing in English), and when a chord is built on one of these notes we refer to it with Roman numerals. The upper case Roman numerals refer to Major chords and the lowercase numerals refer to minor chords. There is one exception on the seventh scale degree that we refer to as DIMINISHED because its intervallic placement within the scale forces it to have a minor third and a lowered fifth, thus the term diminished. Each chord is also referred to by a name that determines its function in Diatonic Harmony. Remember from scale study that music is patterns and can be repeated. So, it is worth noting that the chords in the diagram are always in the same arrangement as long as the scale is Major. In other words, in Major scales I, IV and V are always major while ii, iii and vi are minor chords with the seventh being our diminished chord or SUB-TONIC.

A NATURAL MINOR



Notice that in a minor scale the chord order is reversed placing major where minor existed within the major scale.

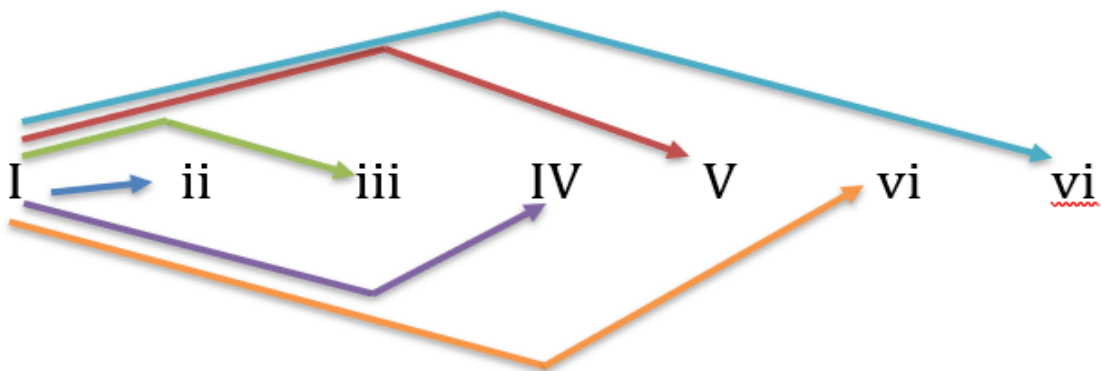
The word TONIC refers to the “HOME” chord because it is built on the first note of the scale. This chord will begin and end every musical composition for structure and finality. This is the most important chord in the entire scale.

The next two most important chords are IV and V. These two chords help to establish TONAL or KEY areas that are defined by the use of the chords. The four is referred to as SUB-DOMINANT and is named so because it precedes the V chord in music compositions to prepare the listener for the V or DOMINANT chord. Both these chords can lead back to the TONIC key for structure and harmonic definition.

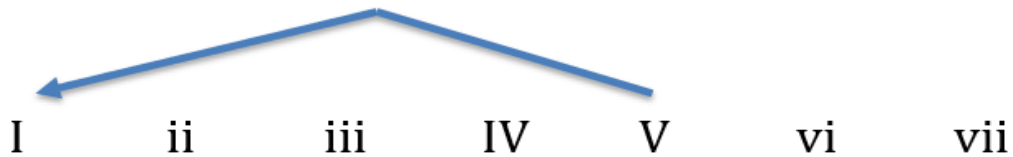
SUPER-TONIC, SUB-MEDIANT and MEDIANT chords are called “PREPARATORY HARMONIES.” They precede SUBDOMINANT or DOMINANT chords; composers use these to extend sections or lead the listener to a specific moment or emotion.

The diagrams below illustrate the harmonic movement allowed within the rules of Diatonic Harmony.

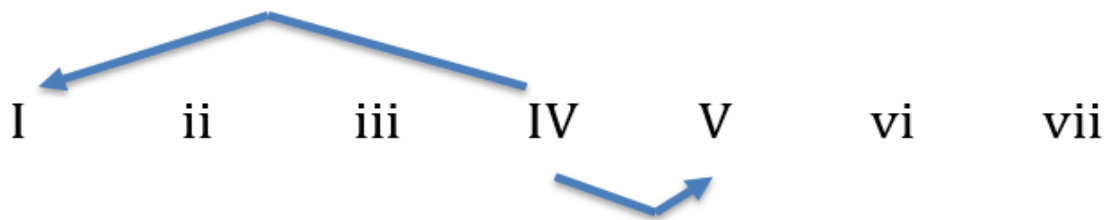
Rule 1: I can go to any chord and any chord can go to I.



Rule 2: In the system of diatonic harmony V (Dominant Harmony) can only move to I. This is the strongest resolution and is used to mark the end of a section or the end of an entire song.



Rule 3: In the system of diatonic harmony IV (Subdominant Harmony) chord can go to V or I, but V can never go to IV.



Rule 4: Subdominant Harmonies are any harmony that can move from I to V in order to prolong harmonic motion and provide color and texture change within a composition. This means that ii (Supertonic) goes to V which then leads to I.

I – ii – V – I

Rule 5: Submediant harmonies precede Mediant chords. This means that iii goes to vi and vi can move to ii which always precedes V which always goes to I.

iii – vi – ii – V – I

As long as the harmonies involved are basic like the Triad, then the first set of rules work well. However, composers are known to add more notes to a chord to thicken up the overall sound. Once we begin to add tones to a chord we have more to keep up with when writing harmonies for multiple voices or orchestrating a work

for a large ensemble. When writing music with moving multiple moving parts, the composer is forced to adhere to a subset of rules in Diatonic Harmony called *VOICE LEADING*. This is a phrase used in music to refer to the outer and inner movements in harmony that occur over the course of a musical work. Here is a good spot to learn about *CONSONANCE* and *DISSONANCE*. These two terms are used to describe the workability in an aural setting of certain tones. Another way to say it is the agreement and disagreement of tones or chords. Dissonance is the disagreement of musical tones and is used to create tension within a composition. Consonance is the agreement of tones and describes the resolution of the musical disagreement.

To build dissonance and tension within a composition composers add a tone to chords after the triad is formed, this note is called the 7th. It is called this because it is seven steps away from the root. Four toned chords with 7ths are difficult to control because they have to be resolved in a particular way. When the Dominant 7th is present it creates an interval within the larger chord called a *TRITONE*. The *TRITONE* has a lot of bite and is extremely dissonant. When this is used the 3rd and the 7th must resolve by stepwise motion in opposite directions.

MAJOR, MINOR AND DOMINANT CHORDS

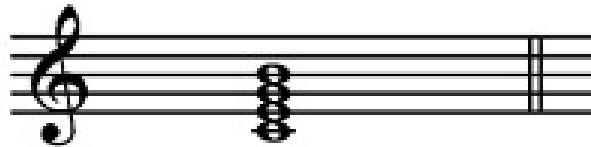
Music is math and math is patterns; any pattern can be altered or manipulated based on a predetermined set of rules. The beginning theory student should begin with the first two that they will encounter in common performance use: *MAJOR* and *Minor* triads. The more notes contained within a chord, the more complex it becomes and how complex it is will determine its function and manipulation.

The following examples show the seventh chord in its three forms in root position. This means the tone that describes the chord is on the bottom of the voicing and the rest of the chord is constructed in *ABC* order so it stacks up right on top of one another on the staff.

First is the Major seventh chord. It is named such because the

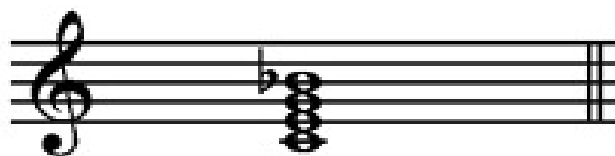
added tone comes directly from the Major scale. It is consonant so it has a pleasant sound aurally and is used as such when a composer wishes to convey a corresponding emotion or tone color.

C M7 (C^Δ7)



If we lower the 7th one half step we get a dominant harmony with the TRITONE dissonance discussed earlier.

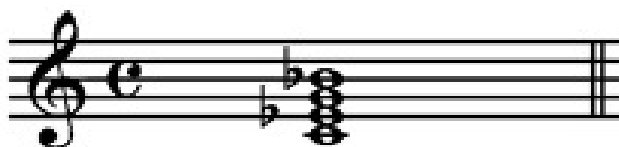
C7



This chord is referred to as dominant because of the arrangement of intervals that function as “key defining intervals.” In other words, these intervals aurally lead the listener to a point of rest or repose within a musical work. These chords can mark structure and form, demonstrate drama, thicken texture, and even represent an emotion. The presence of the tritone requires us in diatonic harmony to “resolve” the tension the interval presented. The dominant chord is a very important chord in both major and minor fields of scale and harmony. For now, identifying it is our goal. Ultimately, one must learn to use it within the confines of the genre of music in which one is working.

Lowering the 3rd one half step with the 7th lowered gives us a Minor seventh chord. This chord has a particular color to it that distinguishes it from the previous two examples.

C-7



In Diatonic Harmony, there are a number of rules that apply to the usage of a specific tone or specific chord. There are also a number of rules that determine which of these notes can be used with a particular chord or follow and precede a tone or chord. This book is not intended to be a thorough study of diatonic harmony or voice leading; for that, the student should look to a method that covers those topics specifically. What we should discuss as beginners is that the more tones one adds to a chord the more one has to keep track of, similar to a playwright who has many subplots within the larger structure. Musical tones represent characters all with their own story arc and trajectory.

In popular music we adopt many chord progressions from diatonic harmony, but usually with a twist unique to the performer. If one were to analyze the earliest forms of American Popular Music they would find diatonic harmony spattered about like batter on the kitchen wall. Pop musicians figured out how to “jailbreak” diatonic harmony and manipulate chords through other means by disregarding diatonic principles altogether while simultaneously using one or two rules for the end or beginning of a song for emphasis. Eventually Popular Music composers would throw Diatonic Rules to the side and construct chord progressions of their own design, thus giving rise to American song form and harmonic structure of Western Popular Music.

The first place in America we look is at the Blues music that originated in the South on plantations in the form of field hollers. This technique utilized the “call and response” method of

communicating. A leader sings a small phrase while the group sings it back to the leader as if to answer a question. Harmonically the Blues breaks the most important diatonic harmony rule by moving from V to IV to I in the last section of the form. The first two sections of the Blues form are considered the call and response with the last section of new lyrics that lead us through the story or to the next set of lyrics. Rock and Roll and Country music would be born out of this marriage of musical approaches. As music progresses through history it evolves with every technological advancement and every intellectual advancement made by a composer or musician. For this reason, the theory student must be familiar with multiple forms of music and with the distinctions and the relationships they share.

PART IV

SECTION 4: RHYTHM

8. Section 4.1: Notation

Rhythm can be a musician's best friend or their worst nightmare. The symbols that we use in music to outline the rhythm of music are a different language format from melody and harmony but are used in tandem with the two to complete a full song. Rhythm also has its own system of rules so we have to learn a language within a language in order to write music at our fullest intellectual capacity.

In order to really understand rhythm, the theory student must have a separate practice time to focus on learning to count and identify rhythmic figures. To do that the student must understand the building blocks of rhythm that exist and how we apply them to composing music.

NOTATION

Composers and musicians have a standard set of rules that apply to counting and reading rhythm on the written page. There are several symbols that represent units of time that can be straightforward or manipulated in order to create an interesting sound or texture. Those units of time can mean to make a sound for a certain period of time or to not make a sound during a certain duration of time. The indication to not make a sound is referred to as a REST, meaning that the musician has no action to take but to keep track of the time as it unfolds to know when to re-enter the song and perform. For every duration of time, there is a symbol that means play or rest.

Below are the symbols that represent units of time that instruct the performer. It takes time to learn how to identify a particular note and how it is "drawn" on the staff in order to identify it on sight. Then try to connect to that symbol the "rest" symbol that denotes the same amount of time for fast recognition. Quickly analyzing a rhythmic passage allows the brain to focus on the other important factors of music performance. It is up to the student to memorize

the symbols until they cannot be forgotten and then apply that knowledge by practice. Practice comes from getting as much sheet music as one can and counting every single rhythm all the way through. There are several method books for instruments or other theory books one can obtain with hundreds of musical examples to count and challenge the brain. Doing this on a regular basis as part of your practice regimen is the only way to get comfortable with this unique application of alphabet, fractions, and arithmetic.

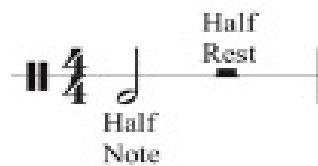
The examples that follow list the rhythms one comes face to face within reading music. Using a single-lined staff, we can focus solely on the rhythm which allows us to absorb information quicker. We start with the largest note value.

Whole Note



The whole note, shown on the left, is a plain circle, which we can place on any space or line on the staff and the performer must play for four counts. If the performer has the symbol on the right side of the example they must remain silent for four counts.

Half Note

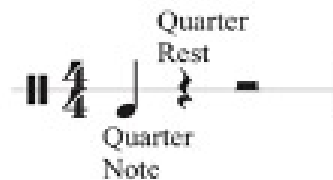


By cutting the whole note in half we get a note that lasts for two counts. This note is a circle with a line connected to it. Musicians refer to this line as a stem. The stem is important as it holds the key to identifying other rhythms as we keep cutting the values in half.

The symbol on the right side of this example means the performer remains silent for two counts.

If one were to compare the half rest and whole rest they would see the whole rest is always hanging below a line and the half rest is on top of a line.

Quarter Note



Next, we cut the Half Note into two equal parts and the product is the quarter note. This note is represented by a filled-in circle with a stem and is one beat or count in duration. The “squiggly” symbol directly next to the note in the example is the quarter rest. The rest is the same time duration as one beat. Notice the half rest all the way on the right in the above example – one-quarter note plus one-quarter rest still leaves us with two counts in the 4/4 time signature we need to know what to do with; silence for those last two counts is indicated by the half rest.

Eighth Note



By cutting the quarter into two, we get the eighth note. This note is represented by a filled-in circle with a stem, but the stem has a small mark at the top musicians call a flag. The more flags on the note the shorter the duration. This is one of the most important notes to understand because it is the underlying rhythmic framework of all of music. This note’s duration is for half of a count.

In fact, the shorter time durations become a tool musicians use to communicate to each other the feel of a song. They refer to this as **SUBDIVIDING** the **BEAT**, which means feeling the space in between the unit of measurement to ensure the groove of a song can be felt by the listener and other performers. The symbol directly to the right of the eighth note – a slash with a reverse flag – is the corresponding rest that has the same duration (an eighth rest).

Sixteenth Note

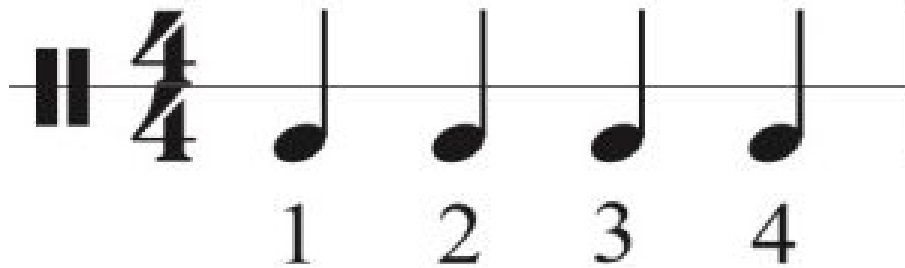


By chopping the eighth note in half we get the sixteenth note, an even shorter duration of time. This note moves quickly, even in slower tempos. It is represented by a filled in circle with a stem that has two flags. The corresponding rest is the same duration and has two reverse flags as its stem counterpart.

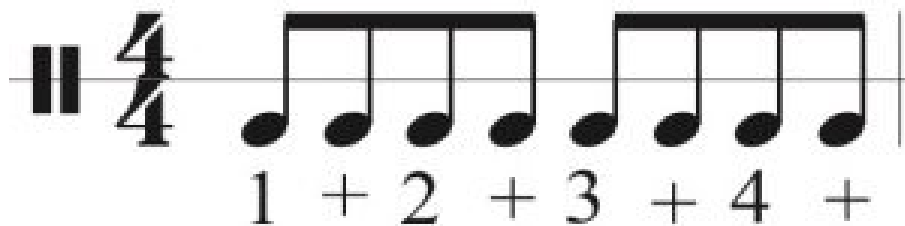
COUNTING RHYTHM

Now that we have identified the symbols used to communicate durations of time called rhythms, we must learn how to group them and communicate that grouping in a way that allows other performers and listeners to make musical sense of what they hear. We achieve this by using a system of numbers and letters to group rhythms into units of time that can be felt or graphically communicated on a staff.

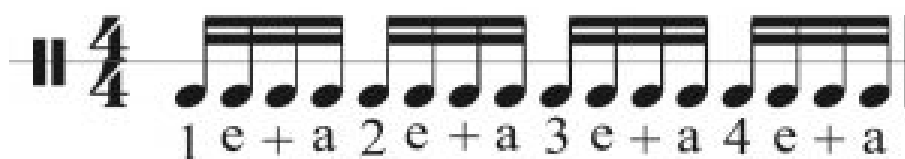
This example demonstrates how we use numbers to identify beats within a measure of music. Once we reach a new measure we begin over 1, 2, 3, 4 and so forth. We do so because the quarter note is the unit of beat. We use numbers to denote units of beat.



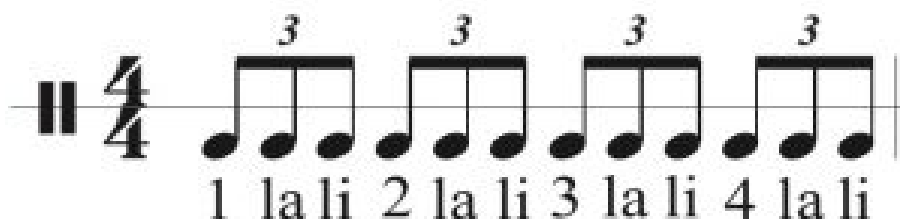
In the event the composer wants the shorter duration of the eighth note then we use the numbers to identify the beats, but we use the + symbol to identify the notes between the numbers. Musicians refer to this symbol using the word “and”.



When we see the sixteenth note used in graphic notation we use the numbers to identify the beats, we keep the + to identify the eighth notes. We must also identify the notes between the eighths. To do this, musicians use the letter “e” right after the number and the letter “a” at the very end of the beat, pronounced “ah.” Counting the sixteenth notes aloud would sound like “one ee and ah, two ee and ah,” and so on.



Sometimes composers like to group the rhythm for a song in threes instead of the 2 by 2 system previously described. We call these TRIPLETS because they are grouped in threes, and we have a slightly different counting system for these. The number is still present to identify the beat, however, the syllables have changed. Musicians use “la” for the second note of a triplet and “li” for the past note of the beat. The example below shows eighth note triplets.

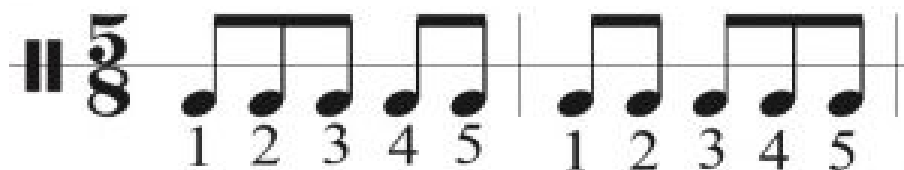


It is possible to cut these notes into halves as we did in previous examples and we need a different language to help identify each separate note of the beat. Sixteenth note triplets are called Sextuplets because they come in groups of six. We retain the number to identify the beat or count and we keep “la” and “li” but add “ta” to each note between la and li.

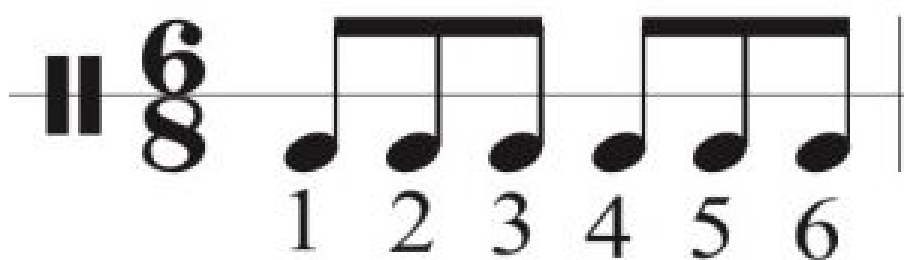


Counting odd and compound meters can be daunting at first, especially if the tempo is fast. However, the same rules and principles explained above apply to different numeric systems. The following example outlines a rhythmic passage written in 5-8 meter. An odd grouping and a smaller note value as the unit of beat. We still use numbers to identify the individual beats. However, because of the odd grouping, the 5-8 meter can be grouped in two different

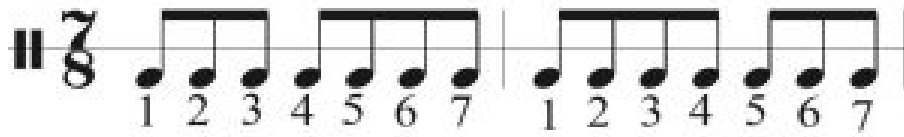
manners, which musicians refer to as a 2-3 grouping or a 3-2 grouping.



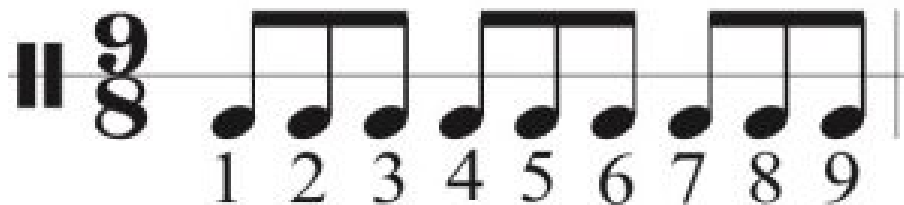
Especially difficult for beginning theory students is the 6/8 time signature. It is very straightforward in explanation, however, application during performance can cause frustration. We still use the numbers to identify the individual beats within a measure. The problem tends to occur with the grouping of the rhythm. The two groupings of three can be felt musically as two big units and mislead the listener or theory student if they are unaware. Performing within large bodies of instruments like a band or orchestra, everyone must subdivide the beat to know how their particular part fits within the entire group. The feeling of two large beats against the actual unit of 6 individual beats can be difficult to feel and perform.



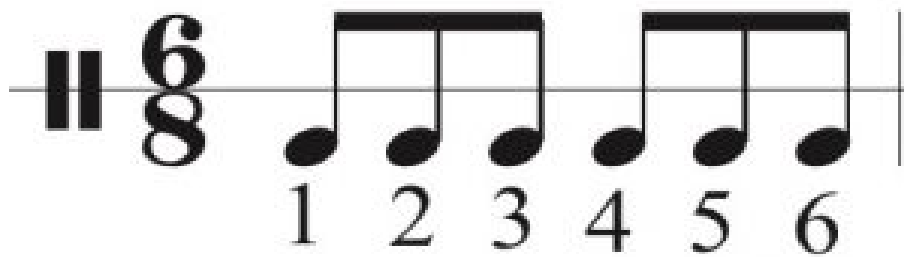
Other odd meters like 7/8 can also be grouped in two ways. In 7-8 we can group them by a 3-4 grouping or a 4-3 grouping. Either way the number is still identifying the individual beat within the measure.



Compound meters such as the one shown below in 9/8 are also problematic. We can group these in units of three for efficiency but the individual beats are still numbered. The problem here is the even grouping of three; if they are not aware, the listener or theory student can feel the big units of 3 as the beat when in fact it is the smaller units. The same can be said about the 12/8 example.

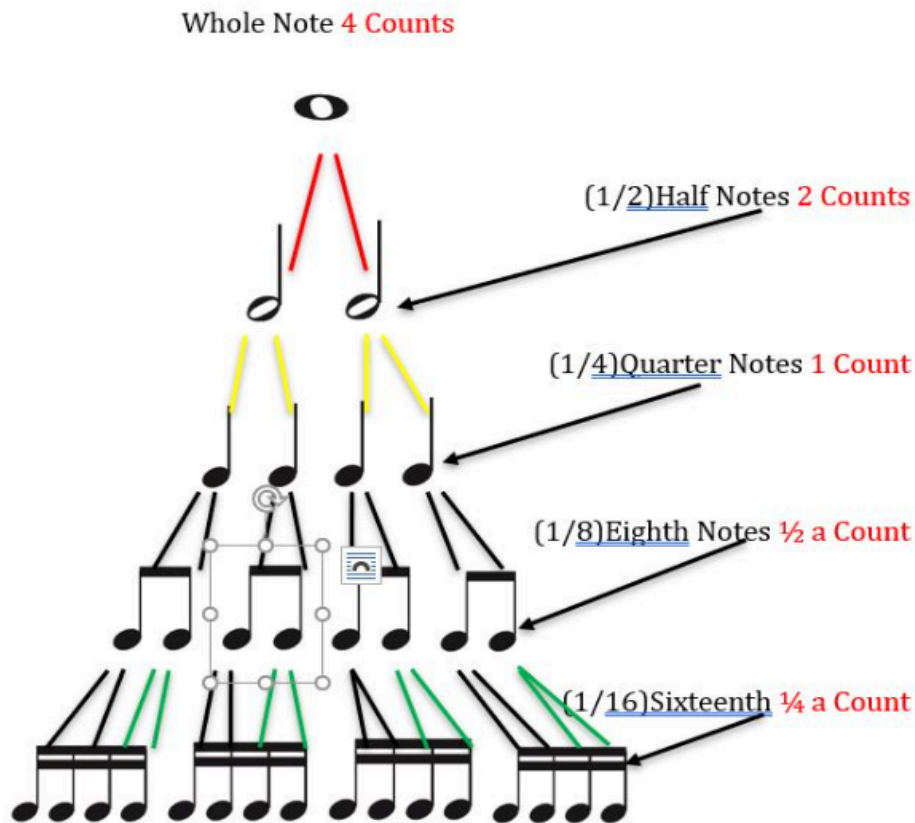


When it comes to subdividing compound meters we follow the same formula as before in which the numbers identify specific beats within a measure and the symbol for “and” (+) is used to mark the subdivision as seen in the example below.



By studying the building blocks of creating rhythms and how they work as a unit to define a musical selection, we can gain a deeper understanding of music as a whole. This is achieved through the study of “The Whole Note Break Down.” The following graphic demonstrates how the rhythmic symbols are related and how they define the rhythmic rules one must use to create or read rhythm. Beginning with the Whole Note, each symbol represents a unit of time. Those durations have a mathematical relationship with each other that allows multiple rhythms to exist within a single time frame.

THE WHOLE NOTE BREAKDOWN



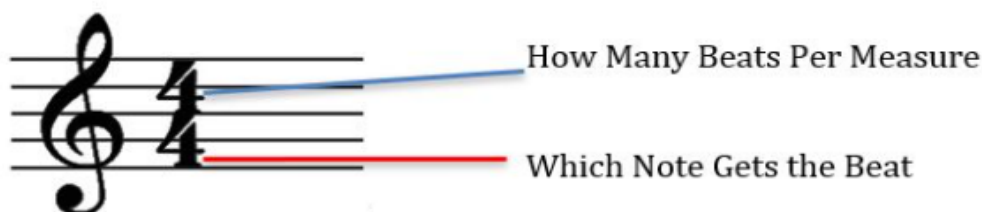
METER AND TIME SIGNATURES

The previous graph shows the symbols we use to denote amounts of time (durations) we desire a specific note to be performed. One of the most important tools in reading music is understanding how time signatures work. We get our numeric representation from the math that exists from slicing everything in half until we have very small chunks of time starting with the Whole Note. It has 4 counts that we divide to get $\frac{1}{2}$ (one half), divide this to get $\frac{1}{4}$ (one quarter), divide this to get $\frac{1}{8}$ (one eighth), and divide this to get $\frac{1}{16}$ (one-sixteenth). We then use these groupings based on simple fractional math to define large areas of music.

The most common meter used in popular music production is referred to as COMMON TIME or 4/4. This meter is easy to feel for non-musicians and is evenly divisible so that the rhythmic structure

is memorable. We call it common because of its virtual dominance of all music creation.

Common Time



We use the Whole Note Breakdown chart to give meaning to the bottom number. Because there is a 4 on the bottom of the time signature, the Quarter Note is the unit of beat. If an 8 resides there then the Eighth Note is the unit of beat per measure. We can mix and match our meters based on simple mathematical formulas to create complex and diverse groove patterns that help to define the composition in a more efficient, clear format.

We divide METER into two different categories, *SIMPLE METER* and *COMPOUND METER*. Simple meter is even and divisible by even units, usually 2's and 4's. Compound meter is grouped into odd number groupings such as 5, 6, or 7.

Simple Meters:



Compound Meters:



When composers need to alter the time scale to fit musical needs, they often take simple and compound meters and mix them together in some type of pattern that is a smaller unit of the form or a smaller part of the whole that makes the entire composition. Mixed meters can be very tricky when one is just learning to count and feel time. Go slowly because sometimes even though the math is simple, it won't work out the way you think.

MIXED METER



The previous example demonstrates compound meter composition that moves between even and odd meters creating a specific type of groove and feel. There are two ways composers can alter rhythm by applying different forms of math to the rhythmic modulation:

1. The original unit of beat remains constant all the way through so that the rhythmic groupings become flexible in relation to where it began.
2. We change the unit of beat with each meter change meaning that the original feel will be altered by speeding or slowing of rhythmic time.

In compositions with metric modulation or rhythmic modulation, the composer will denote their intentions in the music at the moment the meter changes. They can choose to keep the original unit of meter in place and the meter changes will yield a specific groove or rhythmic product that sounds more relatable to the overall composition. If, on the other hand, they desire a more dramatic change in the rhythmic aspect of the song they can choose

to change the unit with each rhythmic modulation. This is particularly difficult to perform and you may not experience this unless you attend a music school and become a music major. Music majors must practice constantly and play many songs that challenge their rhythmic skill set in order to be able to call themselves professional musicians.

It is of great importance that the new theory student obtains a metronome. It will help keep consistent time in order to practice rhythm alone without harmony or melody. Any student can do this by using pre-existing sheet music or method books, especially percussion method books. Many percussion method books are devoted solely to rhythmic understanding because so much of a percussionists' job is providing the feel and groove of a song for the rest of the group to play over.

PART V

SECTION 5: PUTTING IT
ALL TOGETHER

9. Section 5.1: Practice, Application, and Performance

Practice

PRACTICE

It can be easy to become overwhelmed by everything a musician has to remember in order to properly perform a musical work, especially if they did not write it. However, it is possible to use all the building blocks of music together. It just takes time and practice until one feels comfortable looking at sheet music and deciphering the meaning of all the symbols and rules shown to you in this book. To that end, one must practice daily each component of music by itself in order to truly grasp what it does and how it functions within large musical environments.

It is the author's opinion that practice should contain some form of isolation of a specific topic or technique which is studied vigorously until mastery is obtained. This ensures that you can divert more brainpower to new techniques or practices within music performance without becoming panicked or overwhelmed. Honestly, all of us have felt this discomfort at some point in our musical journey, and it is quite natural for the beginning musician. It takes a great amount of time before one can truly "feel comfortable" writing, arranging, composing, or transmitting music to others, either in written notation or during a performance.

Each study session the student should focus on one area of music theory with which they feel uncomfortable. This is how true growth occurs intellectually and physically. The student who only does what they can already do during their practice time only inhibits themselves from growing as a musician. If the desire is to one day become a professional musician, then it is absolutely necessary for the student to attack their weaknesses in the practice room. Take a

mental inventory of the things that you wish to be better at during music performance. That inventory then informs you of what to focus on and how to proceed during practice time.

In order to achieve musical goals, practice must happen every single day. For best results, the student should set aside the same time every day or create a repeating rotation of time in which to practice. This conditions the brain to become more receptive to certain types of information and the tasks we are asking it to complete. By assigning a time every day to practice the brain is trained to only “look” for a specific type of information during that time of the day. This in turn allows the student to retain a greater percentage of the information, thus growing at a measurable rate each practice session. The brain is a cyclical organ that functions much like a muscle in that the first time one attempts a new task they have a difficult time and can get discouraged so deliberate repetition is a must. Life is hectic so one may need to use a schedule to ensure that daily practice happens.

APPLICATION

Mistakes often occur during music performances, due to several reasons. One, there was no practice applied before said performance. Sometimes the student will practice a moderate amount, have some successes and come to a place where they truly believe they are ready. However, when the music begins a sense of dread sets in and renders the brain of the student temporarily incapacitated and many of us are not great actors which lets the audience know something happened. Then, there are moments professionally when we are thrown into the “deep end” so to speak in which we learn in a “trial by fire” approach in which the other professionals on stage guide us through the music but expect us to know it after that. Finally, there are some students who cannot break through certain practice walls that would allow for growth and evolution of skill set. This is not as common but still can have a very damaging impact on the psychology of the player.

The psychology of a musician who performs live for a living is

complex and, depending on the personal experience, sometimes intense to handle. The ability to hold it together on stage or in a performance at a competition is just as important as the notes on the page. Even though a student may make a mistake during a performance, the listener will have a deeper appreciation for the performer if they recover elegantly and avoid allowing the mistake to have any effect on the rest of the song. One has to train for a long time to achieve this state but it is possible. First, one has to be aware that this mindset exists and accept that it is impossible to please everyone all the time. The ability to turn off the part of the brain that keeps track of approval is hard because as humans we are hardwired to want the approval of the ones we love and sometimes the ones we don't even know yet. Intense focus and discipline are required because of the distractions that exist in the everyday world. Throwing off those distractions can be difficult if they involve loved ones and friends or even an activity the student thoroughly enjoys. So, if one desires professional-level ability, professional-level dedication is required. If, however, the student wishes to use music to enrich their personal life or as a hobby then they must move at their own pace.

PERFORMANCE

It is the author's opinion that performance is a fun activity. I genuinely love to see others having a good time because of the sounds I am making. That feeling can be intoxicating and when you encounter it you will want to replicate it. Musicians who are performing in front of an audience should have stages of practice they evolve through before playing in front of an audience. The first stage should be a thorough study of the sheet music, if obtained in time, to study the form, key centers, rhythmic requirements, and any other abrupt changes that occur over the course of performance. After thorough intellectual study, the student should move to their instrument and begin slowly. I cannot stress this enough: begin at a very slow tempo to allow your brain time to process the various operations that are necessary for music

performance. One of the biggest mistakes a student can make is attempting to go faster than their brain and fingers will move because they still need more deliberate repetitions to polish off any blemishes. Next, isolate problem areas and attack them vigorously during practice time, and do not shy away from them because they seem daunting. When these things are in place the student may begin to speed up the metronome, but no more than 5 clicks at a time, staying at the new tempo until mastery is achieved. Advancing too fast can do lasting damage to the technique which will reveal itself during performance. Eventually, the student should be able to perform a technique or piece at tempo with the metronome on and off.

Turning off the metronome is an important step for the student to eventually take. While it is true that the student should always use a metronome for practice, it is just as important for them to turn the metronome off and play the technique or the piece confidently and with artistic mastery. In other words, allowing the performer to rise above recognizing daunting rhythms, harmonies, and scale identification to release the brain to focus on artistry. Eventually, the performer must learn to decide whether or not to speed up or slow down the pace of music due to an intuitive feeling from another performer in the group or the emotional environment of an audience.

All of this is required for a good performance. Knowing technique, theory, rhythm, harmony, form, and style. Soloists have it the hardest because they have to provide all of these elements. An entire ensemble that rehearses regularly can progressively sound better and better when the individuals are doing the work on their own. This takes the whole musical group higher and has a dramatic impact on the listener which in turn gets you more gigs and so forth.

Final thoughts: stay calm, be tenacious, be attentive, be sensitive, be detail-oriented and give yourself enough time to achieve these goals. Each achievement will surprise the student and when the student discovers something on their own that technique tends to stay with them longer and evolves into many usable licks or

techniques that can be called on to fulfill a performance requirement. Whatever you do, do not give up.

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