

## GUITAR VOCABULARY

### **Electric Guitars: Brands and Body Styles**

#### Brands: Body Style and Qualities

- Gretsch: Hollow Body (warm dark tone for jazz and country)
- Gibson: Les Paul (darker for jazz or rock)
- Fender: Stratocaster (Brighter, great for bluesy music)

### **Acoustic Guitars:**

#### **Steel String Guitars:**

#### Types of Bodies: Quality of Sound

- Dreadnaught: Larger body (darker, warmer sound)
- Concert: Smaller Body (brighter tone Cuts through band)
- Martin and Taylor are the main brands and build both body styles

**Nylon String Guitars:** Strings are nylon. Strings are softer and easier on the hands. Has a warmer sound which is great for classical. Also has a percussive sound that is great for flamenco and South American music.

### **Guitar String Material and Gauges**

#### Size of String and Quality

**Light Gauge Strings:** Bend easily for bluesy, twangy music. Usually have a bright sound.

**Heavy Gauge Strings:** Warmer, darker sound. Less bend facilitates rapid scalar playing.

#### Material of Strings:

**Nylon Strings (for nylon acoustic guitars):** Softer on the hands, good for classical music because the strings produce a rich warm tone.

**Steel String (for acoustic guitars):** Percussive sound for strumming in a band or as a solo singer/guitarist. Has a bright sound that can be heard in a band and is easy to hear.

**Electric Strings:** Made of steel but lighter gauge than acoustic. Come in both heavy and light gauge.

#### Tuning

### **Types of Tuners:**

Plug in: Uses the guitar cable to plug in to the tuner to hear/tune the guitar.

Clip on: Clips on to guitar body and detects vibrations to discern pitch and tune the guitar.

Aural: Tuners that can "hear" what note you are playing to determine pitch.

**Capos:** Capos are used to allow you to move open chord shapes to different areas of the neck. Clips on to the neck and changes the open string length. Essentially functions as a movable nut.

### **Types of Picks:**

Normal Picks:

**Heavy Picks:** Stiff for rapid scalar playing

**Light Picks:** flexible for percussive sounding strumming.

**Thumb picks:** Great for solo guitar or guitar accompaniment with prominent bass line. Allow you to switch between finger style and normal pick style rapidly. Used frequently for country music and for finger style in other genres.

### **Parts of the guitar you should be able to identify (see page 4 hall Leonard)**

Neck  
Fingerboard  
Frets  
Nut  
Tuning pegs/keys  
Head

Body  
Sound Hole  
Pick Guard  
Bridge

Pick Ups  
Strap Button  
Input Jack  
Volume Control  
Pick Up Selector Switch.

## ACOUSTICS VOCABULARY

**Frequency:** the rate at which a vibration occurs that constitutes a wave, either in a material (as in sound waves), or in an electromagnetic field (as in radio waves and light), usually measured per second. (Symbol:  $f$  or  $\nu$ ). Frequency determines pitch of a string (the note you get).

**Amplitude:** the maximum extent of a vibration or oscillation, measured from the position of equilibrium. The greater the amplitude, the louder the sound. The smaller the amplitude, the quieter the sound.

**Fundamental:** Frequency at which the wave (string) vibrates at.

**Overtones/Harmonics/Partials:** Higher frequencies present within the fundamental.

**Harmonic Series:** All the Harmonics within the fundamental.

**Octave Higher:** double the frequency of the original pitch

**Octave Lower:** half of the frequency of the original pitch.

Harmonic Series of the E string

**E E B E G# B D**

The harmonic series continues beyond D, but I think it is important to note that within the harmonic series is the major triad (highlighted with bold letters), which contributes to why we like the major triad so much. As the series continues past D, many of the notes in the series are also the same notes we find in the major scale, perhaps contributing to the appeal of the major scale. Every pitch has a harmonic series like this.

### **Equal Temperament Tuning:**

Equal Temperament Tuning is where the difference between each frequency (or each number in interval notation, or each pitch in solfège, or each fret of the guitar, or every half step on the staff), is exactly equal from one to the next in terms of vibrations per second (although the actual distance between frets is not in fact equal). In reality, we don't tune so that we get perfectly equal differences in frequencies, but the guitar and most other instruments are tuned very close to that system so we just call it that. This is important because it explains why you find a pattern on guitar like a scale or barre chord and you can simply shift that pattern up one fret and it will sound the same and look the same.

Essentially equal temperament tuning creates a base twelve system: 12 notes that sound identical and are roughly the same difference in vibrations per second from one to the next, and then those same 12 notes are repeated at different octaves. Whereas a metric ruler goes by tens, musical notes divide octaves by 12 frequencies/notes that are roughly equal in vibrations per second from one to the next. So between A440 and A880 (or any other octave, I chose A arbitrarily) are 11 other frequencies (notes) that are roughly equal in difference in frequency as you go up or down the chromatic scale created between A440 and A880.

The reason an orchestra can play the chromatic scale together and it all sounds the same is that our ears hear the same pitch at different octaves as essentially the same. So when you think about music theory, do not think of the octaves and all the sharps and flats as being all these different things that are impossible to remember. Instead, think of it as twelve different pitches that we use to create a variety of patterns with.

In the long run, I think its important to remember that we just organize sound like this because it is a cultural tradition that has solidified. Earlier cultures in Europe did not organize sound the way we do today, and many contemporary cultures in Asia and Africa organize sound in ways very different to the way we do in the west. Is important not to get TOO bogged down in the "why" when it comes to music theory. At some point you just have to accept that this is how we do it.

C	C#	Db	D	D#	Eb	E	F	F#	Gb	G	G#	Ab	A	A#	Bb	B	C
Do	Di	Ra	Re	Ri	Me	Mi	Fa	Fi	Se	Sol	Si	Le	La	Li	Te	Ti	Do
0	1	1	2	3	3	4	5	6	6	7	8	8	9	10	10	11	0

**Above Diagram:** chromatic scale in **musical alphabet, chromatic fixed do solfege, Integer Notation.**

**Enharmonic Equivalents:** notes that are the same frequency but given different letters in traditional notation (example is C# and Db).

**Intervals:** the space in between two notes. For example,

**Half Step:** 1 number away from whatever note you start (0 to 1).

**Whole Step:** two numbers away from whatever note you start on (0 to 2).

**Harmony/chords:** three or more notes sounded together (combinations of intervals).

**Tonic:** The root of the chord (a C major chord has "C" as its tonic)

**Inversions:** When a chord has a note in the bass of the chord that is from the chord and is not the tonic (C major: CEG, 1st Inversion is EGC, second inversion is GCE).

How to create chords using integer notation

Inversions:	Root Position	1st Inversion	2nd Inversion	3rd Inversion
Chord Equations:	Root	3rd	5th	7th
Major Triad/7th chord:	X C	X+4 E	X+7 G	X+11 B
Minor Triad/Minor 7th chord	X C	X+3 Eb	X+7 G	X+10 Bb
Dominant 7th Chord	X C	X+4 E	X+7 G	X+10 Bb
Half Diminished Chord	X C	X+3 Eb	X+6 Gb	X+10 Bb
Diminished Triad/7th Chord	X C	X+3 Eb	X+6 Gb	X+9 A
Augmented Dominant Chord	X C	X+4 E	X+8 G#	X+11 X+10

Simpler format, just add the intervals to the note in question

Major triad/7th chord: x+ 4, 7, 11

Minor triad/7 chord: X+ 3, 7, 10

Dominant 7th chord: X+ 3, 7, 10

Half Diminished: X+ 3, 6, 10

Diminished 7: X+ 3, 6, 9

**Whole Tone Scale in Integer Notation:** The whole tone scale is just going every other note, or moving up the chromatic scale in whole steps.

0, 2, 4, 6, 8, 10, 0

1, 3, 5, 7, 9, 11, 1

Consonant intervals that can move in parallel motion:  
 $X+(3, 4, 8, 9)$ . In some cases also  $X+(5, 6)$ .

Consonant Intervals that can't move in parallel motion.  
 $X+(7, 0)$

How to Visualize:

Imagine:

String/fret #  
Left hand finger #  
Note letter  
Fixed chromatic do solfegge  
Integer number  
Staff location

A great way to learn the fretboard is to do this process on each string, going up the string using one whole tone scale and going back down the string using the other whole tone scale.

## Visualization Process

### Step 1

- Segment music into phrases and sub phrases
- Clarify rhythm and phrasing (analysis)
- Clap the passage's rhythm in time
- Fix any rhythmic issues
- Read+visualize at tempo saying solfegge out loud and seeing motions of both hands in your mind

### Step 2

- Play on guitar while singing solfegge once technical and phrasing issues are resolved
- Solve significant errors or hesitations.

### Step 3

- Don't try to play from memory on the guitar until you can visualize it from memory and do solfegge.
- Wait until you can visualize the whole phrase or section two times before playing on guitar from memory.
- Find spots you forget and review the score without the guitar, then go through previous steps again for these trouble spots.
- Always study score away from guitar.

### Step 4

- Now play the whole passage from memory on guitar.
- Stop and go back if you have repeated/frequent mistakes or hesitations
- Visualize measure one, play measure two, visualize measure three, play measure four. Do again but reverse order.

## TIME AND RHYTHM VOCABULARY

**Pulse:** a series of reoccurring, precisely equivalent stimuli. Usually the mind adds accents to give these equal pulses some organization. Tick of a metronome is an example.

**Beats:** when pulses are counted within a metric context. Can be strong (accented) or weak (unaccented).

**Meter:** measurement of the number of pulses between more or less regularly occurring accents. In order for meter to exist, some pulses in a series must be accented.

### **Accent:**

In order for a tone to appear accented, it must be set off from other tones of the series in some way. If all notes are alike, there will be no accent. At the same time, however, accented tones must be similar and near enough to other tones of the series that it can be related to these, so that it does not become an isolated sound.

Accents are a relational concept. there can be accents (strong beats) only if there are unaccented notes (weak beats). If all stimuli are alike, then it is a series of pulses. There is no such thing as a series of accents or a series of unaccented notes.

Accented notes are set apart from other stimuli by a difference or combination of differences in intensity, duration, pitch, and timbre.

Accents can be strong or weak.

**poetic feet/symbols** that give examples of different accent patterns.

Weak/unaccented: u

Strong/accented: - -

Spondee - -

pyrrhic u u

iam: u - -

trochee: - u

dactyl: - u u

amphibrach: u - u

anapest: u u -

### Levels of Rhythm

**Time:** Double Whole Notes and Whole Notes Per Minute. Time is constant and does not vary unless full rubato is applied or tempo is changed.

**Rubato:** when time stays constant but the half note or lower levels are not perfectly metric.

**Phrasing:** Accent Patterns at the level of the half note. Sometimes this occurs at the level of the quarter note because quarter notes 1 and 3 are the same as half note 1 and two.

**Articulation/Phrasing:** Accent patterns at the level of the quarter note

**Articulation:** Accent patterns at the level of the 8th and 16th notes. Articulation is how individual notes are attacked (their exact duration, and the time between successive notes)

**Hypermeter:** The Strong and weak accents given to the half notes, whole notes, double whole notes, which probably often corresponds to harmonic rhythm (harmonic rhythm also usually moves at half, whole, or double whole note intervals). You could create your hyper meter to emphasize harmonic rhythm or chord progressions. Hypermeter is a key element in phrasing.

**Harmonic Rhythm:** How fast the chords change (how many beats each chord gets).

**Phrase Rhythm:** How many measures typically constitutes a phrase. Phrase rhythm can sometimes be felt/tapped/counted if a small enough duration. In some instances it is the same duration as the double whole note.

**The Two Bar Phrase:** Common in many styles of music, a very fundamental unit that is often felt/counted by musicians. Combinations of two bar phrases are often used to create larger phrases. This concept is related to double whole notes per minute, as the double whole note is two measures in common time. Different cultures sometimes have different names for this like Compas in Flamenco and Clave in Cuban music and Latin Jazz.

#### Types of Articulation

**Staccato:** Note is attacked in a detached manner. The result is that the note duration is shortened, being held for less than its full value. Staccato dots are placed on the note head side, within or outside the staff: .

**Accent:** >

**Strong Accent:** ^

**Tenuto:** “held” or “sustained.” No separation should be perceived between notes. A tenuto marking is placed on the note-head side, within or outside the staff: \_

**Brief Tenuto:** \_

**Accented Tenuto:** ≥

**Slurs** (described in technique portion of course).

**Glissando:** sliding from one note to another.

**Sforzando (sFz):** sudden, hard attack.

**Double Sforzando:** sFFz

**Forte-Piano (Fp):** loud, then immediately soft.

**Sforzando-Piano (sFp):** hard attack, then immediately soft.



### How to improve your time and rhythm:

Take any rhythmic pattern (start with just quarter notes) and try to keep a steady pace at various tempos with a diminishing click.

**Diminishing click:** reducing the metronome so that the tempo stays the same but you are being given by the metronome half notes per minute, then whole notes per minute, then double whole notes per minute.

Say you want to get better keeping time or doing a rhythmic pattern at  
Quarter notes per minute = 120

Practice this tempo gradually shifting the metronome to longer measurements of time. The quarter note tempo stays the same but the metronome begins giving you longer spaces between clicks so that you have to do more of the time keeping:

Half notes per minute = 60  
whole notes per minute = 30  
Double whole notes per minute = 15

Good Tempos for this exercise: 80, 100, 120, 140, 160, 180, 200

Trying to maintain a tempo at double whole notes per minute is a great goal because you are essentially learning to feel the two bar phrase (Similar terms such as compas in flamenco and clave in Latin Jazz are often used). This ability is critical to both time keeping and phrasing.

Another great exercise is **Accent Shifting:** place an accent on beat one and only accent there while clapping in time. Then shift the accent to beat two, then beat three, etc. Then add two accents and shift those around

> 1 2 3 4, 1 > 2 3 4, > 1 2 > 3 4

Mary Had A Little Lamb is a great tune to practice phrasing at different levels and playing with accents (half note, whole note, etc).

A great way to help you keep time in any context is to tap quarter notes using both feet. The more your body moves, the better you will keep time.

## Technique Vocabulary for MUS 118

### The Body

**Relaxed Spine and Spine Movements:** When the spine is neither flexed/extended, leaning left or right, or rotated left or right. The spine can and should move a bit while playing so that the work of holding the spine is shifted between the various core and back muscles involved in keeping the spine relaxed. Bring the guitar to the relaxed spine/body, not the spine/body to the guitar.

#### Sitting Positions

-Folk Position

-Flamenco Position (cross legged and old style)

-Paul Galbraith Position (cello position). Allows left arm to shift primarily with flexion/extension, and right arm to string cross primarily using horizontal flexion/extension. This reduces the amount of abduction/adduction and rotation needed in both shoulder joints to execute guitar techniques.

-Supports: pillows, tables, other supports

-Foot stool: Causes spine/hip motion that brings the torso back and to the right. Without correction the spine flexes and rotates to the left or the right thigh is abducted to counteract the raised left leg. The height of the stool should be such that it brings the rim of the guitar to about the mid-point of the sternum.

**Poised Arm (Both Arms and Spine):** This describes an arm that is ready to act, but has the least amount (or zero) tension. It is impossible to have absolutely no tension at all times. Poise is the minimal amount of muscular tension needed for readiness. The poised spine is the same, but also implies a bit of motion. This eliminates muscle contraction from holding the spine in place, passing the tension around the muscles of the torso. We can think of pose as the mid-point between total relaxation and maximum tension. Our goal is to have relaxed hands and wrists and forearms with poised elbow and shoulder joints.

**Angle of the Guitar Neck:** As the angle of the neck increases (the neck becomes more elevated, with the head of the guitar moving more towards eye level), less abduction/adduction is necessary to hold the guitar and you can rely on the stronger muscles of that flex and extend the shoulder joint for left hand motions. The right hand contact point also becomes more short arm, allowing the right hand to shift using horizontal flexion and extension of the shoulder thus utilizing a similar action and stronger muscles.

**Slant of fingerboard:** Finger board/guitar body should be slightly slanted back so that gravity helps you push the strings down and to aid the right hand in getting over the rim of the guitar. THIS SHOULD BE VERY SLIGHT. Many beginners tip the guitar body/

neck too far backwards in an effort to see what their left hand is doing which creates problems in overall posture and ease of execution.

### **How the guitar can be moved in relation to the body**

The position of the guitar in relation to the relaxed torso effects the ability of the the right arm to get over the rim of the guitar and the ability of the left hand/arm to execute techniques.

- 1) The head/neck of the guitar can move away from the body or towards it.
- 2) The bottom of the guitar (opposite side of the head) can move towards or away from the body (this the same thing as 1, only from the view point of the body of the guitar).
- 3) The body of the guitar can be tilted either forward or backward so that the back of the guitar is more or less flat against the stomach.
- 4) Raising or lowering the guitar head/neck. Starting with the neck and guitar body perpendicular to the body, you can raise or lower it so that the neck is closer or further from your left leg.
- 5) Moving the entire guitar left or right in relation to the body, adjusting nothing else.
- 6) Moving the guitar up or down in relation to the body, adjusting nothing else.

All of these motions effect the ease of playing. Usually most combinations of these positions are not inherently bad or good, they are usually a tradeoff. For example, when the head of the guitar is moved forward, away from the body, the right forearm is more naturally positioned further over the body creating a long arm approach. On the other if the guitar head is not moved so far forward, the right forearm is more naturally in short arm position.

Generally, these motions in combination or individually effect how much abduction and adduction is required in both arms (particularly the left arm) and whether the right arm is in long arm or short arm technique.

**Right forearm contact points with guitar: Long Arm** is where 3/4 or more of the forearm is beyond the rim of the guitar. **Short arm** is when the 2/3 to 1/2 of the forearm in front of the rim of the guitar, creating a see-saw like lever. The elbow should not be beyond the rim. If the contact point is too long arm (or the elbow is beyond the rim), it will be difficult to get in Anatomical Position with the thumb in front of the index finger.

### **3(4) Displacement Types (moving the right hand/string crossing):**

- 1) Elbow flexion/extension.

- 2) Shoulder rotation with abduction/adduction + wrist flexion/extension, creating a lever system with the fulcrum being the point where the right forearm comes into contact with the guitar.
- 3) Forearm horizontal flexion and extension. This is the only one where the contact point shifts significantly. The right hand moves almost perpendicular to the strings without wrist flexion/extension or deviation. The elbow and forearm move passively in response to the shoulder.
- 4) Combinations of these motions.

**Setting the wrist (relaxed/neutral wrist):** bring the wrist into relaxed (no passive or active flexion, extension, or deviation). This can be experienced by holding the hand in front of you so that it is palm down and passively flexed and then rotating the forearm until you feel a sensation in the wrist when it goes into the relaxed position. When actually playing the guitar, this is not achieved with forearm rotation. Instead, this is achieved by finding the proper spine alignment, bringing the guitar to the body, finding the right forearm contact point, and then using the shoulder to bring the right hand to the strings. The wrist is correctly aligned when you feel it “set” to its neutral position from the motions of the shoulder.

**Setting the forearm:** similar to the wrist, the forearm can also be “set” into its neutral position by the shoulder.

Passive movement of the elbow, forearm, and wrist are driven by the shoulder. In many cases the elbow, forearm, and wrist move but their muscles are not acting, they are just responding to shoulder motions. The reason this occurs is because gravity is acting on the joints as an external force that causes them to flex/extend/rotate/deviate without their corresponding muscles exerting any effort. While little or no effort is being exerted, some tension may be caused by slight muscular effort, stretching, or simply the bringing of the joint out of neutral/relaxed position/alignment (even if no wrist or finger muscles are engaged, if the shoulder motion brings the wrist out of neutral position tension in the fingers and wrist can result because tendons are brought out of alignment).

**Bigger Joint/Muscle Principle:** Try to achieve any action utilizing the larger joints and stronger muscles before utilizing the smaller joints and muscles of the fingers and wrist. In the right hand this means using the shoulder to move the hand for string crossings. In the left hand this means using abduction/adduction to aid the fingers in intrapositional shifts and shoulder flexion/extension for interpositional shifts.

Effectiveness: How the executed technique sounds musically.

Efficiency: Measured by how much tension is experienced.

## Right Hand

**Basic Rosgados:** Strumming: p i, and p ima. Driven by forearm rotation.

**Anatomical Position (AP)(s):** Thumb on G string, index on B string, middle and ring finger on high E string. Anatomical position is about the arrangement of the fingers, not the strings they are placed on. This arrangement could be done on the D G and B string. AP has 6 positions determined by where the thumb is placed with the high B string being the 2nd position and the low E string being sixth position.

Note that AP changes between rest stroke and free. In rest stroke, a and m are not planted on the higher strings and the thumb location still determines the position number, but now the thumb is going to be several more strings behind the string being plucked by the fingers (often it stays on the low E or A string). Also, in free stroke the first joint (medial joint) of i and m is below the string being plucked, whereas in rest stroke it is above the string being plucked.

**Arpeggio Position(s):** Starting in AP and shifting the middle finger to the B string, index to the G string, thumb to the D string. There are again 6 positions (only 3 of them are actually practical) all determined by which string the thumb is placed on, with low E being 6th position and high E being first position.

**Pulgar (thumb) rest and free stroke and scales:** Use wrist (carpalmetacarpal joint) to execute thumb strokes. Use of forearm rotation and elbow flexion to aid thumb strokes in arpeggios and scales for greater speed and volume. To do the limb supported strokes effectively, the right forearm must shift to long arm position to facilitate the elbow driven stroke (this makes thumb more parallel to strings). Circumduction (rotation motion of the thumb's wrist joint) is used for free stroke. When doing isolated thumb work on the bass strings such as scales where no finger is involved, the middle finger or all three fingers in arpeggios position may be used as anchor fingers.

### **Right hand finger symbols:**

p: thumb  
i: Index  
m: middle  
a: ring  
c: pinky

**Right Hand Groups (p, i, mac):** These three groups can move independently of one another. What is more important about this grouping is to note that movement in any individual finger in mac causes sympathetic tension in the other fingers of the group. Often it is useful to flex/extend mac as one single unit to avoid unnecessary tension caused by holding fingers that are not being used. Your goal is to alternate between groups, not within (pi, im, ia, etc).

**Main right hand finger combinations:** pami (pi, im, ia and ami, ima).

**Anchor Fingers:** In both hands they help you travel vertically up the strings. In the right hand you place your thumb and/or ring finger on the strings. In some instances it is acceptable to place the pinky or ring finger on the top of the guitar, usually when finger work is limited to pim. Free stroke scales use both planting of p individually and p+a.

Rest stroke scales only uses P. In free stroke the thumb follows mi on the next lower string below the string being plucked as i and m ascend strings. In rest stroke the thumb either stays planted on the low E or A string or it moves along with im but two or three strings back. You can also rest the bottom side of the thumb (palm down portion) against the string when doing free and rest stroke scales in some limited instances where you can't place the thumb anywhere consistently.

The fleshy part below the pinky (hypothenar eminence) or the pinky side of the wrist may be placed on the strings when plucking the string with a pick.

**Guide Fingers:** In both hands they help you travel on the strings/neck horizontally. Again this is typically p or a in the right hand. This is usually done to change tone color by placing the right hand fingers over the sound hole or closer to the bridge.

**Constant Contact:** using right hand guide and anchor fingers to always remain in contact with the strings/guitar.

**Touch, Push, Pull, Release, Relax:** **Touch** the string with knuckle flexion and finger joint extension, **Push** the string with the same knuckle joint flexion and finger joint extension, **Pull** the string to the adjacent lower pitched string by flexing joint of the finger, **Release** the string by continuing the flexion of the fingers first joint, **Relax** the knuckle and finger joints after the stroke is completed.

**Rest Stroke (apoyando or push stroke):** After the release of the string being plucked the finger tip comes into contact with the lower adjacent string. Push with the finger that is resting on the lower adjacent string to aid the plucking finger in an ascending string crossings. Use the shoulder to pull the finger during descending strings crossings to bring the plucking finger to the lower string. The first joint of the finger must be above the string being plucked.

**Free Stroke (tirando or pull stroke):** Finger does not come into contact with the next adjacent string. Angle must be oblique to the string to avoid hitting the next string. Play off left side of finger tip/nail. The first joint of the finger must be below the string being plucked. Playing off the left side of finger tip/nail and finger angle are determined by shoulder horizontal flexion and extension (essentially the fingers are positioned by the shoulder). This gets the proper angle of attack without tension from forearm rotation.

**Playing from the string (touch pressure release):** a phrase describing contact with the string before displacing it. A less complete version of Touch, Pressure, Pull, Release, Relax.

**Preparation:** The action of preparing a finger to pluck a string. This can be done either through contact with the string or by closely hovering over it. Be aware that the act of relaxing the fingers and other joints often creates preparation because the point of relaxation is the beginning of any technique. Relaxation must be considered a part of preparation.

**Planting:** placing the right hand finger tips on the strings they are to play before they are going to be used. Planting is one form of preparation. Guide and Anchor fingers are also examples of planting, although in this case the goal is both preparation and the release of muscular activity, because planting the anchor finger in the right hand relieves the right arm from holding the hand up.

**Hovering:** preparation that does not involve contact with the strings.

**Placing:** When the finger(s) are placed but muscular activity to hold or stabilize the hands are not released in the forearm and arm.

**Sequential Planting:** Used in right hand arpeggio technique: when one finger is planted, then that same finger plucks the string, and as that finger plucks the next finger is planted on the next string to be plucked.

**Sequential Group Planting:** same as sequential planting, but now this occurs between the three groups of the right (p, i, mac)

**Full Plant:** Usually used in ascending arpeggios. This is when all fingers are planted in preparation for what is to be played.

**Plucking Chords:** (Opening The Jar (radial wrist deviation), Elbow flexion). pim and pima. A time of limb supported stroke for plucking multiple strings for chords.

**Arpeggios:** 4 and three finger. Use of forearm rotation to aid planting. Forearm rotation is sometimes an active part of the process, meaning that the forearm is consciously rotated to aid the thumb and fingers. In other instances, the forearm simply remains relaxed and moves passively as a result of the activities of the fingers. In effect, the forearm in this second case becomes a shock absorber, preventing tension from building up in the forearm as result of trying to hold it place by moving with the fingers pluck when they pluck.

## Left Hand

**Shoulder abduction/adduction (elbow in, elbow out):** Used to aid left hand finger placement. Old technique methods advocate for the elbow/arm to always remain close to the body, but this limits the amount of motion capable by the whole shoulder, forcing weaker muscles of the shoulder rotators and weaker muscles of the forearm rotators to exert more in order to place the fingers on the neck and shift from one position to another.

**Shoulder Extension (dumbbell row):** to aid fingers in pushing the strings into the soundboard. 70/30 split between shoulder extension and finger flexion to press strings into fingerboard.

**Placement on Fingertips:** left hand fingers should be placed on finger tips.

**Weight Release:** The amount of exertion required to depress the string into the soundboard is less than the amount required to maintain that depression.

**Thumb:** Thumb should not squeeze 95% of the time. Any flexion of the thumb joints that creates creases in the palm of the hand or noticeable movement in the thinner eminence should be eliminated whenever possible.

**Forearm Relaxed:** unless you are trying to depress a string with the pinky or execute a slur, the forearm should not be supinated (palm up). It is commonly said that the forearm should be maintain a supinated (palm up) position so the fingers have a uniform (perpendicular) angle of attack. This creates static tension in the forearm as one holds it in a supinated (palm up) position that impedes left hand finger action. When the forearm/arm is relaxed, the finger knuckle joints will be slightly diagonal to the strings, with the pointer finger knuckle being closest to the fretboard and the pinky knuckle being furthest.

**Positions:** in the left hand, these are any 4 finger/fret span. The position is determined by what fret the 1st finger is on and there are as many positions as there are frets. A scale or pattern that is positional does not require the left hand to shift, it all falls within one four finger/fret span. Each finger is assigned to each fret in the position. So in 5th position, 1st finger plays the 5th fret, 2nd finger plays the 6th fret, 3rd finger plays the 7th fret, 4th finger plays the 8th fret.

**Left hand finger patterns:** 1234, and 124 (1 2 and 4 can stretch the most. It is difficult to spread finger 3 from either finger 2 or 4. If you wanted to make a 5 or 6 fret stretch it is best to use fingers 1 and 4.

**Interpositional Shifts:** When the hand moves from one fret position to another, parallel to the strings



**Intrapositional Shifts:** when the hand changes attitudes within a given fret position, transversally across the strings

**Compound Shift:** where both types are present.

**Constant Contact:** the use of anchor and guide fingers to remain constantly in contact with the neck. This is used in scales in the left hand in multiple contexts. First, when ascending a string in a scale, such as a G type major scale, when finger 3 is placed after finger one, finger one releases its contraction and is pushed up by the string so that it is no longer pressing the string down but still in contact with the instrument (the string). This prevents an opposing motion that would occur if finger one were lifted off the string while also allowing finger 1 to relax.

Second, As one continues in the scale crossing from the G string to the B string, finger 3 does not lift off the string until finger one has come into contact with and depressed the B string. This ensures that even during a string crossing, the left hand is always in contact with the guitar.

**Left Hand Neck Contact:** The radial side of the pointer finger or the fleshy part on the palm beneath the index should usually be in contact with the neck. This acts as another point of stability. The guitar neck should essentially fall in between the horse shoe of the index finger and thumb. The thumb should not be kept in the center of the back of the neck as older methods propose. This middle of the neck positioning of the thumb forces the wrist to flex and fingers to extend more to reach the bass strings, creating unnecessary tension.

**Anchor Fingers:** In both hands, anchor finger help you travel vertically. In the left hand, an anchor finger is any finger that you keep placed on the neck/fret or strings/frets as you move the other fingers within a position.

**Guide Fingers:** Help you travel horizontally from bridge to nut in both hands. In the right hand these are again p and a (thumb and ring). In the left hand these can be any of the fingers that stay in contact with the fret board or string while shifting.

**Bar Chord:** first finger is placed on a single fret on 2 or more strings, essentially acting as a capo. This also utilizes shoulder extension to aid fingers in pushing the strings into the soundboard (dumbbell row). 70/30 split between shoulder extension and finger flexion to press strings into fingerboard.

-Full Barre: All six strings are barred

-Partial Barre: Only a portion of the strings (1/2, 2/3, etc) are barred

-Hinge Barre: When the first finger is extended but only depresses the high E string. usually used to prepare the hand for another type of full or partial barre to follow.

-Arche Barre: when the 1st finger depresses a single note on the low A or E strings and a note on the high E string but none of the other strings in between. A perfect use case for this is the A type major barre chord. By not pressing down the strings in between the bass and high E string the index finger exerts less to hold the chord shape.

-Barre with other fingers: uses fingers 2, 3, or 4.

-Cross Fret Barre: when the index finger is aligned so that it barres two different frets (like the tip of the finger is on the third fret and the base of the finger (near the knuckle) is on the 2nd fret).

-Inner String Barre: when the finger only barres inner strings but not the high or low e strings. An example of this is the flamenco version of the open A major chord where the index barres the second fret of the D and G strings, the middle finger is placed on the second fret of the B string, and the low A and high E strings remain open.

### **Slurs:**

- 1) Hammer ons: left hand finger “smacks” into the soundboard without a corresponding pluck in the right hand.
- 2) Pull Off: left hand finger pulls the string, like a left hand rest stroke, then releases the string without a corresponding pluck.
- 3) Both slurs are aided by forearm rotation.

### **Vibrato**

- 1) String bending (vertical vibrato, elbow flexion/extension)
- 2) Horizontal vibrato (shoulder rotation)

## **Types of Passive Flexion/Extension**

### **The Shoulder Joint**

Shoulder Flexion-Elbow Extension-Forearm Pronation-Wrist Flexion-Thumb Extension and Abduction with no opposition-fingers more perpendicular to strings.

Shoulder Extension-Elbow Flexion-Forearm Supination-Wrist Extension-Thumb Flexion and Adduction with more Opposition-Wrist extended or neutral-Fingers more oblique to strings.

Shoulder-Abduction-Forearm Pronation

Shoulder Adduction-Forearm Supination

Outward Rotation- Forearm Supination

Inward Supination- Forearm Pronation

Horizontal Flexion/Extension: minimal motion of other joints, used mainly for changes in tone color, causing slight Ulnar Wrist Deviation

### **The Elbow Joint**

Flexion-Wrist Ulnar Deviation-Fingers less perpendicular to strings

Extension-Wrist Neutral or slight Ulnar Deviation-Fingers More Perpendicular to string

### **The Wrist Forearm**

Pronation- Thumb Extension with Palmer Adduction and no Opposition-Fingers more perpendicular to strings.

Supination-Thumb Flexion with Palmer Adduction and Opposition-Fingers more oblique to strings.

### **The Wrist**

Deviation creates minor tension in thumb and fingers

Flexion-Thumb Extension and Abduction-Finger Extension (particularly at knuckle joint)

Extension-Thumb Neutral or slight Flexion with Adduction-Fingers are neutral or slightly flexed.

## LEARNING AND PRACTICING

Some general principals about learning:

- 1) Each recollection of a memory adds a new layer of memory to what is being recalled.
- 2) Forgetting helps you learn by showing you what has not been internalized. When something is recalled or revisited that has been forgotten, it sticks better. Active recall is more valuable than repetition (trying to recall something and then looking only when or where you absolutely cannot remember).
- 3) Change where you learn something or how you learn it (don't just repeat, learn to sing it, learn it through visualizing, learn it using fixed DO or practice just the rhythms, learn the music on a different instrument, etc). Link as many of your senses to what you are learning as possible (sight, smell, sound, touch, taste).
- 4) At first you should revisit material frequently, as time passes, less frequency is required for retention.
- 5) Testing yourself is a form of learning. Don't just recite or review material, try to recall from memory or create some kind of test.
- 6) When you get stuck, take a brake.
- 7) It is better to do short sessions every day on a particular skill or passage then one or a couple large ones.

### Words For Rhythms

- 1 Life, Love, one, on, no.
- 2 purple, perfect, pizza
- 3 Chocolate
- 4 takadimi, television
- 5 University
- 6 overpopulation, capitalization, Mesopotamia
- 7 unconventionality

## PRACTICING CHECKLIST/METHOD

The following is a suggested method of practicing. My goal is to teach students how to think in regards to preparing guitar music. I believe both the things in this list and the order they are given will help students prepare for any assignment, quiz, or test. If you pay attention to and execute the following things throughout my course in the order presented here, you will likely always be prepared for any test or quiz.

**Analysis:** these things should all be observed in writing, mentally, or both by the student before practicing:

- Mood/style/genre.
- Written measure numbers in the music.
- Have a final tempo goal for performance.
- Note changes of meter (3/4 versus 4/4).
- Note any key changes.
- Have chords written in or if they are already there know what they are. Be able to play the chords either way.
- Be aware of and chord progressions (II V I, IV V I, etc).
- Note how fast the chords typically move and any significant changes (harmonic rhythm).
- Where are the phrases based on your previous analysis and how many measures long are they (phrase rhythm).
- Have an idea of the basic form as a result of the previous analysis (Song Form, ABA, etc).
- Know what dynamics/articulation/tone color you will likely do.

### **Preparation/Practice**

- Can you answer identify all the points of analysis above?
- Can you clap the rhythms the with the metronome set at whole notes per minute? This exercise usually creates phrases by giving strong and weak accents at the level of whole notes per minute and half notes per minute, which I believe is ultimately the definition of phrasing. It has been my experience that the students start phrasing as a result of this exercise.
- Do you know all the notes and chords in the music (solfege and letter names)?
- Are all your LH and/or RH fingerings written in the music?
- Visualization: can you tell me what the left hand and/or right hand will be doing without the guitar in your hands while looking at the music?
- Can you play the piece at a very slow practice tempo (16th on the metronome = 40-80 beats per minute.

-Can you sing the melody with fixed DO syllables at a slow tempo while playing the part at the same time. Can you do this with the metronome set at whole notes per minute?

For a music student, I believe fingering should take place after the student has learned to sing the piece without the instrument and has done visualization. Those steps are the preparation for fingering. It is during the singing that you develop your interpretation of the piece (phrasing and articulation).

However, I want this process to work for students who have less sight singing and solfège experience. Thus I place it last and have it done only while playing at the same time. In either case, it is best to sing first, and then later sing while playing. This process develops a habit of putting the music on the guitar, not the guitar on the music.

## **Performance**

-Can you sing using fixed DO solfège with the guitar, while strumming the chords, and without the guitar (I think singing without the guitar is perhaps too much for non majors, perhaps singing with the chords is also too difficult depending on the experience of the students)?

-Can you play in time not necessarily perfectly clean but with few time or rhythm mistakes at the assigned tempo?

-Are your notes connected?

-Is it memorized? Most assignments will not require memorization in guitar 101 courses for non majors.

How to solve problems technical problems (you can do this with both hands):

“After making a mistake, the top performers would play the passage again, but slow down or hesitate – without stopping – right before the place where they made a mistake the previous time.”

## GUIDELINES FOR IMPROVISING

### As Soloist:

- 1) Accurate/consistent time keeping is the most important skill to master: it allows you to plan your rhythm in advance and then fill in the notes as you go along so you do not have to think about so many things as you solo. It also lets you focus more on note selection and not be distract by trying to stay in time, giving you less to think about in the moment.

Accurate and consistent time also keeps you in sync with the other people you are playing with, and makes you sound better to the audience. Always remember that rhythm, unlike melody or harmony, creates a very strong physical sensation. People don't tap their feet or dance to the notes, they do so to the rhythm and they do so in time. The audience hears notes but *feels* time and rhythm.

The point of time keeping exercises like the diminishing click is that you are learning to feel the "big beat" (accents on the level of the half note and whole note) that marks the beginning of every measure (or every two measures). Listening for the big beat while you improvise is an important tool in helping you figure out where you are. Eventually you will learn to feel the higher level rhythmic accents that mark larger units like sections in AABA form'.

-In addition to feeling these large beats, your goal is also to create these as improviser and accompanist. The accompanist typically uses big beats to mark the beginnings and endings of phrases and sections. The accompanist also uses big beats on the level of the half note and the whole note to mark the changing of chords (chords normally change every half measure (half note) or every whole measure (whole note)). This helps the soloist hear/feel the chord changes.

For the improviser, nailing the changes is not just matching the correct note with the correct chords, it also has a rhythmic component. You need to create "big beats" in your improvised melody on the level of the half and whole note and at the beginnings of sections that align with the large accents (big beats) being created by the pianist. This ensures that your solo "rhythmically aligns" with the pianists accompaniment.

- 2) Rhythmic structures: The following are the most common structures, and it is easier to understand them when they are compared to written language.

Sub Phrases, similar to parts of sentences: 2 measures, 3 measures, 4 measures.

Phrases, similar to sentences: 4 measures and 8 measures.

Forms, similar to paragraphs: 12 measures, 16 measures, 32 measures.

Performances, similar to musical essays: playing a song and then improvising over a its form several times, to continue our analogy to written language, is similar to writing a musical essay by combining paragraphs. The song is a paragraph, each time the melody is played or the chords improvised over it is like writing paragraphs, and those paragraphs are taken together and when the performance is finished and heard as a musical essay.

- 3) Your goal as a soloist is to create arches in the melody and in the dynamics in each phrase (and even between phrases or sections of music). Your improvised melody and its dynamic contour should go up and down or down and up within the phrase you are on.
- 4) Content of your phrases: slow, quiet, lower pitch, silences/breaths and less dramatic material should come at beginning of your solo. Faster, more dramatic, flashy, and high pitch material with less breaths/silences should come at the end of your solo. Thus your solo starts somewhere and ends somewhere different. This creates narrative to the solo and a sense of drama.

5) rhythmic structure: outline sub phrases 2, 3, and 4 measures (and sometimes 8 measures for longer musical thoughts) with long notes or breaths ( breaths means no sound, pauses) at beginnings and ends of the sub phrases. Place faster/rapid passages within the sub phrases in between the long notes and breaths that mark the beginnings and endings of sub phrases and phrases. This will create an outline for each phrase and provides structure to your solo for the listener. The sub phrases get shorter breaths between them than the full phrases. This helps articulate the greater significance of beginnings and endings of phrases in relation to sub phrases.

You can also stick with a single melodic and rhythmic idea (motive, or in jazz “riff”) for a phrase, even modifying it only slightly and continuing it for an additional phrase or phrases. When not using a riff, you will often want a contrast between phrases or sub phrases. If you had a really fast idea in sub phrase 1, use sustained longer notes or more breaths to balance it out in the following sub phrase. The same can be done on the level of the phrase. This creates a kind of dialogue or call and response between phrases or sub phrases. You can also think of it as a kind of musical question and answer.

You group sub phrases of 2 and 4 measures in many ways to create 4 or 8 measure phrases (1+1=2) (2+2=4) (4+4=8). Depending on the speed of the piece and the way you structure your solo you can also have 2 or 16 measure phrases, depending on how you look at it. most important is that you are thinking structurally about your improvisation, the labels to your structure and the structure you choose are secondary and part of the experience..

You shape your rhythmic phrasing, melodic contour, and dynamics based on how you decide to create phrases with the sub phrases. So, for example, your melody might rise in 2 measures and fall in the subsequent 2 measures (creating a 4 measure phrase). Alternatively, your melody can rise over the course of 4 measures and fall over the course of the following 4 measures, creating an 8 measure phrase. You may also use slower notes in the first 4 measures and faster notes in the last 4 measures, creating narrative to your solo within that phrase.

You create rhythmic variety in your improvised solos by using a rhythmic pattern inside each sub phrase or phrase and then changing what pattern you use as you move on to another sub phrase or phrase. Usually you do this in groups of four measures (or 8 for larger rhythmic ideas). So once you establish a rhythmic pattern within a 4 measure phrase/sub phrase, you maintain it for that 4 measures of your solo. When you get to the next 4 measure phrase/sub phrase you can change what rhythmic pattern you are emphasizing in your solo. This creates clear divisions and a sense of form or “musical grammar/syntax” to your improvisation while also creating variety.

Thinking even more big picture, you may choose in the context of a 32 bar form to start with slow, low pitched, mellow improvisations, gradually build the piece by increasing the amount of rapid notes, high pitches, and your volume throughout, and then saving your most rapid, high pitched, high volume dramatic material in your improvised solo for the last 8 measures, giving the larger form a sense of narrative and structure.



## **As Accompanist:**

- 1) Your primary role is to make the soloist sound better, be they singer or instrumentalist, and both in the context of improvising and playing the written melody. You do this by maintaining consistent time, appropriate rhythm to the style you are performing, good chord voicings and voice leading that facilitate the soloists singer or instrumentalist, and by articulating the form of the piece with the rhythmic patterns you use in your accompaniment.
- 2) Chord voicings should facilitate singing (if you can't sing over the chords you are using, your singer probably cant either and it may be harder for your improvising soloist to create a good solo).
- 3) Within each 4, 8 or 16 measure phrase (depending on the structure of the piece), keep a consistent rhythmic pattern in your accompaniment. You change accompaniment patterns to articulate the form and changes within the form.
- 4) So, in a 32 bar form with an AABA structure (very common in jazz), it is typical to maintain a consistent rhythmic pattern in your strumming for all the A sections, and change it for the B sections. An example of this in jazz is free comping in the A sections and Freddie Green comping in the B section. This approach creates a rhythmic structure for the audience to hold on to and allows them to more clearly hear and understand the form and when it changes. This also gives the soloist a structure to work with and helps them know where they are at.
- 5) This Also provides a rhythmic narrative to the piece. By changing the rhythm in your accompaniment at the B section and then returning to the original accompaniment pattern at the reprise of the A section, you help the soloist and listener hear the form change to the B section and then the return to the A section. It creates a rhythmic narrative and sense of drama to the song.
- 6) Remember, think macro when you are thinking about changing your accompaniment's rhythmic pattern. Keeping a rhythmic pattern for an entire A section or multiple A sections might seem boring or pedestrian, but in reality its not as much time as you might think, and for the audience and the soloist it can make the music a lot easier to understand. You are not the soloist when you are accompanist, and you are not the primary voice people are listening to in the music. Your goal is to HELP the soloist and make the music enjoyable for the audience. You are "playing the band" when you are an accompanist, not your instrument.
- 7) MAKE SURE YOU ARE QUIETER THAN THE SOLOIST
- 8) Always be listening to the soloist. Don't just strum away and space out. You should be able to remember specific parts of their solo because you are listening. Listening will also help you create a musical dialogue between you and the soloist. Look at the soloist so they know you are following. For sure look up and not at your instrument, always listen to everyone.

The Following diagram shows the most common keys on guitar that use “open” strings. This system is remembered by the acronym CAGED (+ F). I also add the key of F to it, along with the keys Em, Am, Dm. This graph is meant to help you memorize this material and also give you an Exercise. I would recommend each day practicing through these, going through each key, playing 1 measure for each chord of the following progression: I IV V I.

I	C	A	G	E	D	F	(i)	Em	Am	Dm
IV	F	D	C	A	G	Bb		Am	Dm	Gm
V	G	E	D	B7	A	C		B7	E	A

ii	Dm	Bm	Am	F#m	Em	Gm		F#m7b5	Bm7b5	Em7b5
iii	Em	C#m	Bm	G#m	F#m		III	G	C	F
vi	Am	F#m	Em	C#m	Bm		VI	C	F	Bb

Please note that the same order of chords in each key will occur when we add 7 chords, accept we will have, for example, CMaj7, Am7, G7, etc.

A 12 measure (bar) blues progression is another great way to practice these. Give each numeral a full measure in 4/4 time (note that there are 12 numerals, thus 12 measures):

4/4 I IV I I IV IV I I V IV I V

Example in CAGED keys plus Em and Am

C	F	C	C	F	F	C	C	G	F	C	G
A	D	A	A	D	D	A	A	E	D	A	E
G	C	G	G	C	C	G	G	D	C	G	D
E	A	E	E	A	A	E	E	B7	A	E	B7
D	G	D	D	G	G	D	D	A	G	D	E
Em	Am	Em	Em	Am	Am	Em	Em	B7	Am	Em	B7
Am	Dm	Am	Am	Dm	Dm	Am	Am	E	Dm	Am	E

**Other Progression (Examples are of each progression are given in G major)**

ii      V      I  
Am    D      G

iii     vi     ii     V     I  
Bm    Em    Am    D     G

I      vi     ii     V     iii    vi     ii     V     I  
G      Em    Am    D     Bm    Em    Am    D     G

Going forwards every 4th note or down backwards every 5th note (This pattern can also be done in reverse)

I      IV     vii    iii    vi     ii     V     I  
G      C      F#    Bm    Em    Am    D     G

All chords in any of the above progressions can be turned to dominant seven chords except the diminished vii chord .

Example in the key of G: B7 E7 A7 D7 G  
                              III7 VI7 II7 V I

I      IV     vii    iii    vi     ii     V     I  
G7    C7    F#    B7    E7    A7    D7    G

**Other Chord Progressions**

I      ii     iii     IV     V      (can be done in reverse)  
C      Dm    Em    F      G

V      vi     vii    I  
G      Am    Bdim C

I      vi     IV     ii     bVII    V     iii     I  
C      Am    F      Dm    Bb    G     E      C

## Phrygian Cadences (Flamenco Chords)

It is important to use play these using open CAGED+F Em Am Dm chords when playing Flamenco. The sounds of those open chords doing these progressions is a big part of the style. If you want to change keys, you do so with a capo in flamenco. Other styles (like Renaissance music) use this progression but with different voicings.

I have notated it with the minor chord as the one chord (as we are familiar with the minor key), but in reality this progression ends on a the last chord which is a phrygian dominant chord (a major chord built on the 3rd note of the major scale, or the 5th note of the minor scale). The scale that this progression and its chords are derived from is the harmonic minor scale, which is the same as the normal minor scale but with the last (7th) note of the scale raised. So for example, D harmonic minor is D(1) E(2) F(3) G(4) A(5) Bb(6) C#(7) D(8), A harmonic minor is A(1) B(2) C(3) D(4) E(5) F(6) G#(7) A(8).

Dm    C        Bb or Gm    A(b9)

i        VII      VI        iv        V

Am    G        F        E(b9)

i        VII      VI        V

You can also add chords in between the original progression.

Dm    G7      C        F7      Bb      A

i        IV      VII      III      VI      V

Am    D/F#    G7      C7      F        E(b9)

**Melodic Minor Scale (Example in C minor):** Yields 2 dominant seven chords that are used frequently: V7#4 and V7Alt or V7#5 b9 b13

Original Minor Scale

C D Eb F G Ab Bb C

Ascending Melodic Minor Scaled (descending is just the original minor scale)

C D Eb/D# F G A B C

The two dominant and one m7b5 chord that come from the ascending melodic minor scale (Examples from the C melodic minor scale):

VII7, B7Alt: B D#(3rd) F(#5th) A(7th) C(b9th) D/Cx(#9th) G(#5/b6/b13)

F7#4: F(root) A(3rd) C(5th) Eb(b7th) G(9th) B(#4th)

A-7b5: A C Eb/D# G

Other Chords from melodic minor scale: C-M7 (C Eb G B G), EbMaj7#5 (Eb G B D)

### **The other scales (Chromatic, whole tone, diminish scales)**

#### **Chromatic Scale**

Integer notation (chromatic scale in numbers)

C	C#/Db	D	D#/Eb	E	F	F#/Gb	G	G#/Ab	A	A#/Bb	B
0	1	2	3	4	5	6	7	8	9	10	11

#### **Whole Tone Scale (2 scales, 6 notes, divides the chromatic scale by 2)**

C	D	E	F#/Gb	G#/Ab	A#/B	C
0	2	4	6	8	10	0

C#/Db	D#Eb	F	G	A	B	C#/Db
1	3	5	7	9	11	1

Augmented Chord: C E G#

Dominant Seven Augmented: C E G# Bb

**Diminished Scales and Diminished 7th chords and Dominant 7 flat 9 chords.** 8 note scales. Divides the chromatic scale by 4.

1) C Diminished Scale

C	D	D#/Eb	F	F#/Gb	G#/Ab	A	B	8 notes	(C)
0	2	3	5	6	8	9	11	8 notes	(0)

The chords from the C diminished scale:

1) D7b9: D F# A C Eb

C# diminished 7th: C A F# Eb

D7(b9)	F7(b9)	G#7b9/Ab7b9	B7(b9)	D7b9
2	5	8	11	2
Cdim7	D#dim7/Ebdim7	F#dim7/Gbdim7	Adim7	Cdim7
0	3	6	9	0

2) C#/Db Diminished Scale

C#/Db	D#/Eb	E	F#/Gb	G	A	A#/Bb	C	(C#/Eb)
1	3	4	6	7	9	10	0	(1)

3) D Diminished Scale

D	E	F	G	Ab	Bb	B	C#/Db	(D)
3	4	5	7	8	10	11	1	(3)

**TOTAL SCALES: 6 (7, if you include the chromatic scale)(Note that major, melodic minor, and harmonic minor all have different modes).**

- 12 transpositions
  - Major/Minor
  - Harmonic Minor
  - Melodic Minor
  - Pentatonic

- Two transpositions
  - Whole Tone

- 3 transpositions
  - Diminished Scale

## I IV V PROGRESSIONS IN INTEGER NOTATION

### Major I IV V I Progressions

I	IV	V	I
Major	Major	Major	Major
X	X+5	X+7	X
C	F	G	C

### Minor i iv V i Progressions

i	iv	V	I
Minor	Minor	Major	Minor
X	X+5	X+7	X
C-	F-	G	C-

### Major ii V I Progressions

ii	V	I
Minor	Major	Major
X+2	X+7	X
Dm	G	C

### Minor ii V i Progressions

ii	V	i
Diminished	Major	Minor
X+2	X+7	X
Ddim	G	C-

In this diagram we are building 1 octave scales. An octave is the distance between two pitches that are given the same letter name in traditional musical notation. Mathematically, a note an octave higher is roughly double the frequency of a note an octave lower. A note an octave lower is roughly half the frequency of a note an octave higher.

In this system, X is the note you wish to start building a scale on. The Ys are all different notes of the scale. Scales vary in the amount of notes in them. We will primarily focus on the major and minor scales which are both seven note scales. Thus we will have seven different Ys, Y1-Y7, plus Y1 in which we get back to the octave and get to the end of our scale. Although the scale is represented from octave to octave (so 8 Ys), there are only 7 different notes (pitches, frequencies) in the scale, which is why it is called a seven note scale instead of an eight note scale.

To find our Y values, we take x plus a specific number that is different for each note of the scale to find all the notes of the scale. The number in the X+(number) represents the interval distance between the note we start on (our X value, called the tonic of the scale) and the note/degree of the scale we are trying to find.

The subscript number assigned to the different Ys (Y1, Y2, etc.) is a different numbering system based on the scale itself and how many notes are in it. "Degree" is another name for notes of the scale. So in a seven note scale for example, there are seven notes (called degrees). Scale degree 2 is the second note of the scale, scale degree 3 is the 3rd note of the scale, etc.

This is a big part of where our I IV V nomenclature comes from. For example, if we build a major chord on the fourth degree (IV) of a major scale, this is the IV chord of the scale. Chord progressions are ultimately a result of the relationships between notes within each scale, but that is beyond the scope of this course.

## Major Scale X

Major Scale: 7 note scale.

If X=0, C, Do

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1
Scale Intervals	X+0	X+2	X+4	X+5	X+7	X+9	X+11	X+12(0)
Example Key X=C	0	2	4	5	7	9	11	12
Note Letters	C	D	E	F	G	A	B	C



### Minor Scale X, another 7 note scale

If X=0

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1
Scale Intervals	X+0	X+2	X+3	X+5	X+7	X+8	X+10	X+12(0)
Example Key X=C	0	2	4	5	7	9	11	12
Note Letters	C	D	E <sub>b</sub>	F	G	A <sub>b</sub>	B <sub>b</sub>	C

As a point of reference, lets do the whole tone scale. The whole tone scale is a six note scale that divides the 12 chromatic notes of the octave in half, creating two six note scales.

Whole Tone Scale, 6 Note Scale. There are only two whole tone scales.

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y6	Y1
Scale Intervals	X+0	X+2	X+4	X+6	X+8	X+10	X+12(0)
Example Key X=C	0	2	4	6	8	10	0
Note Letters	C	D	E	F <sub>#</sub> /G <sub>b</sub>	G <sub>#</sub> /A <sub>b</sub>	A <sub>#</sub> /B <sub>b</sub>	C

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y6	Y1
Scale Intervals	X+0	X+2	X+4	X+6	X+8	X+10	X+12(0)
Example Key X=C <sub>#</sub>	1	3	5	7	9	11	1
Note Letters	C <sub>#</sub> /D <sub>b</sub>	D <sub>#</sub> /E <sub>b</sub>	F	G	A	B	C <sub>#</sub> /D <sub>b</sub>

The Pentatonic Scales are 5 note scales

### Major Pentatonic

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y1
Scale Intervals	X+0	X+2	X+4	X+7	X+9	X+12
Example Key X=C	0	2	4	7	9	0
Note Letters	C	D	E	G	A	C

### Minor Pentatonic Scale

Scale Degree	Y1	Y2	Y3	Y4	Y5	Y1
Scale Intervals	X+0	X+3	X+5	X+7	X+10	X+12
Example Key X=C	0	2	5	7	10	0
Note Letters	C	E <sub>b</sub>	F	G	B <sub>b</sub>	C