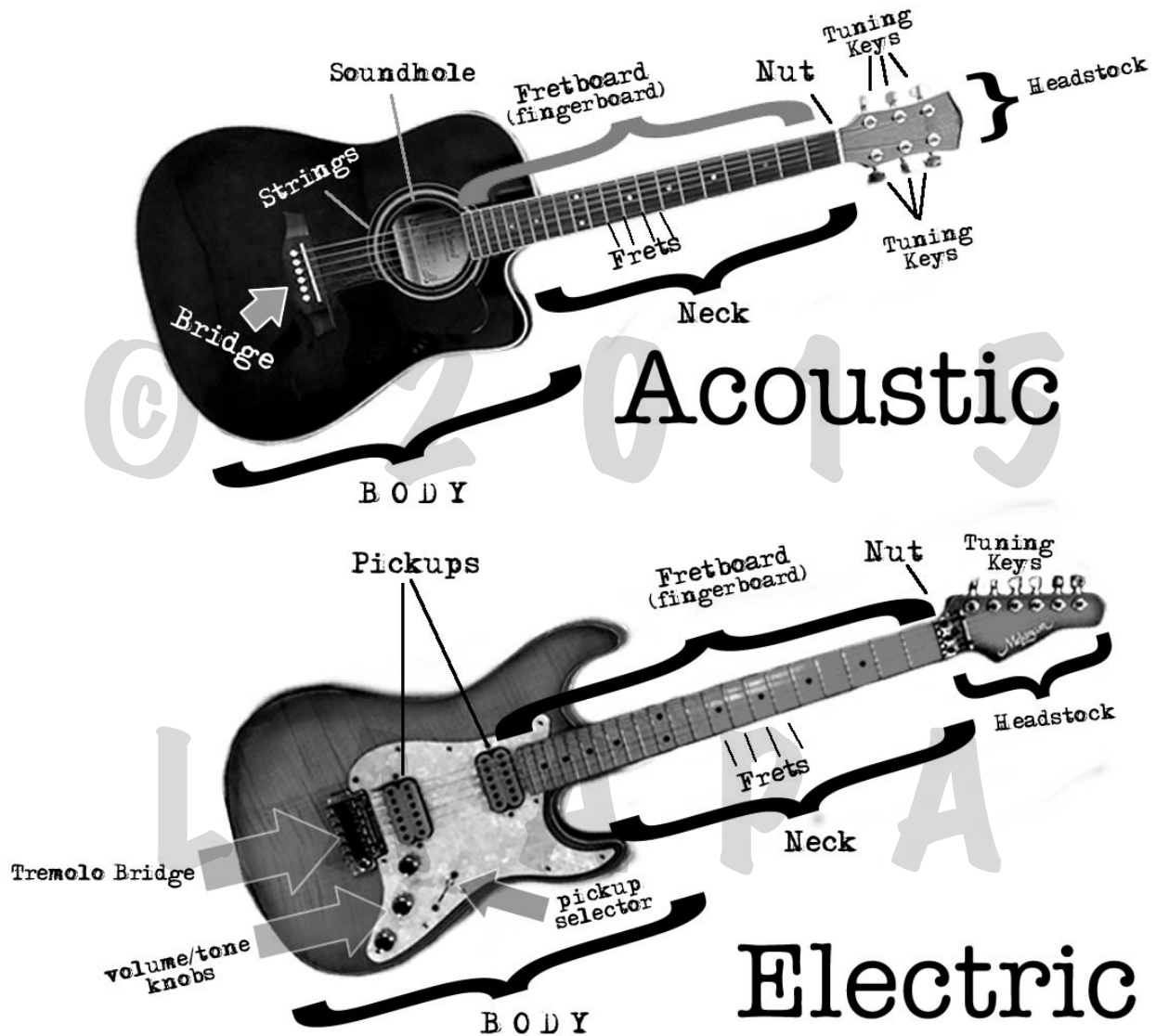


PARTS OF THE GUITAR



CREATING SOUND

The highness or lowness of a musical sound is called **pitch**. Pitches played on the guitar can be changed in two basic ways: The first is changing the tension across the strings. Strings can be tightened or loosened resulting in an increase or decrease in pitch respectively. This is done by **tuning** the instrument (turning the tuning keys on the headstock), bending notes or manipulating the whammy bar on tremolo-equipped instruments. The second involves changing the length of string that vibrates after being struck. A smaller portion of a string will vibrate at a much faster speed (and higher pitch) than a longer portion of that same string at the same tension. This technique is used when a player applies finger pressure to the string at different points on the fingerboard before striking it. This action, known as **fretting**, forces a string to contact the metal frets inserted along the fingerboard. Now the string can only vibrate from the point of fret contact and the bridge. Frets are numbered starting at the **nut**. Most guitars have between 19 and 24 frets, making many pitches possible on any given string.

TUNING THE GUITAR

Open (unfretted) guitar strings should be tuned from largest to smallest diameter in this order:

E – A – D – G – B – e

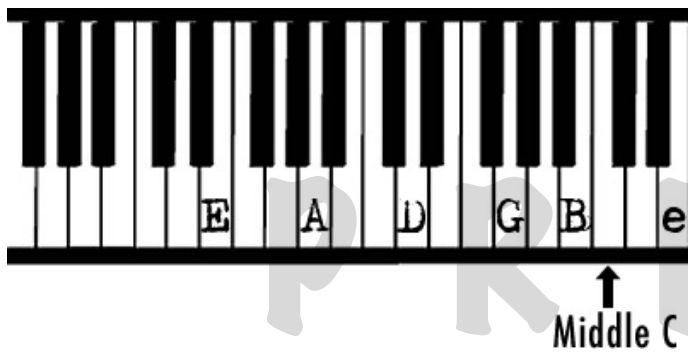
The order can be memorized with this sentence:

Eddy **A**te **D**ynamite **G**ood **B**ye eddy.

The last “e” is lowercase to distinguish it from the ‘E’ on the top 6th string which is bigger. Strings are brought to correct pitch by turning tuning keys on the headstock. Tightening the string will raise the pitch while loosening will lower it.

An **electronic tuner** or **tuner application** for a smartphone or tablet (many are free) is by far the most accurate way to measure the pitch of an open string when tuning up a guitar or making adjustments. Simply match the string being tuned with the one being recognized by the tuner and adjust the tension until the meter lands in the center (usually on zero).

If there is a keyboard nearby, it is possible to tune a guitar to it by matching the pitch of the open strings with specific keys. The pitches on the keyboard should correspond to the open guitar strings as follows:



Notice the distance between the “G” and “B” compared to the distances between the other notes. Every pair of notes is four keys apart except for the “G” and “B” which are three keys apart.

Another method of tuning involves fretting a string at the 5th fret and matching that pitch with the next open string below. *For example:* the E string when fretted at the 5th fret will

produce the pitch of “A” which should be the pitch of the open A string. Once the A string is tuned, the method can be applied to the next pair down. This 5th fret method can be used across all strings but must be altered to the 4th fret when tuning the B string to take the altered tuning of these two strings into account. This method of tuning is great for ensuring that strings are in relative tuning with one another, but relies on the original reference string (the E string) actually being in tune to start.

HOLDING THE GUITAR



FIG. 1



FIG. 2



FIG. 3

A player may choose to use a shoulder strap to stand while playing (*Fig. 1*). There is also the option of sitting while the guitar rests on the lap (*Fig. 2*). For most right-handed players (right hand does the picking, left hand does the fretting), this means the neck of the guitar will be on the left side while the contour under the body will be resting on the right lap. A right-handed classical player may have his/her left foot elevated with a foot stool while the bottom contour of the guitar rests on the *left* lap, resulting in the neck of the guitar being tilted up. This positioning helps to get the playing hand angled correctly for traditional fingerstyle guitar playing (*Fig. 3*). Although there are left-handed players who learned and are proficient with an upside-down guitar, it is highly recommended that a left-handed player invest in a left-handed instrument. All above figures simply reverse for a left-handed player. A player should always be comfortable. Cramping and muscle fatigue are common indications that the instrument is being poorly held.

FRETTING HAND

Fretting hand fingers are numbered as follows:

Index Finger = 1

Middle Finger = 2

Ring Finger = 3

Pinky Finger = 4

(The thumb is sometimes used to fret notes at the top of the fingerboard and labeled with a "T".)

Fingers 1-4 should be positioned over four consecutive frets. A player should be able to press any one of these fingers down and land in its corresponding fret. This way a player can know exactly what fret he/she is playing just from knowing which finger is down. This becomes invaluable when the eyes are needed for sight-reading or watching a conductor.



A **position** is determined by the placement of Finger 1. *For Example:* If a player has Fingers 1, 2, 3 and 4 placed in frets 4, 5, 6, and 7, the player is said to be in 4th Position because Finger 1 is based in the 4th fret. Open or first position has Finger 1 placed over the 1st fret. The thumb is placed on the backside of the neck usually between where Fingers 1 and 2 are located on the front. It is the squeezing action of Fingers 1, 2, 3, and 4 against the thumb (not the palm) that allows pressure to be applied to the string, resulting in the string being fretted. A player must be careful not to use too much pressure when fretting. This may cause a string to detune or buzz.

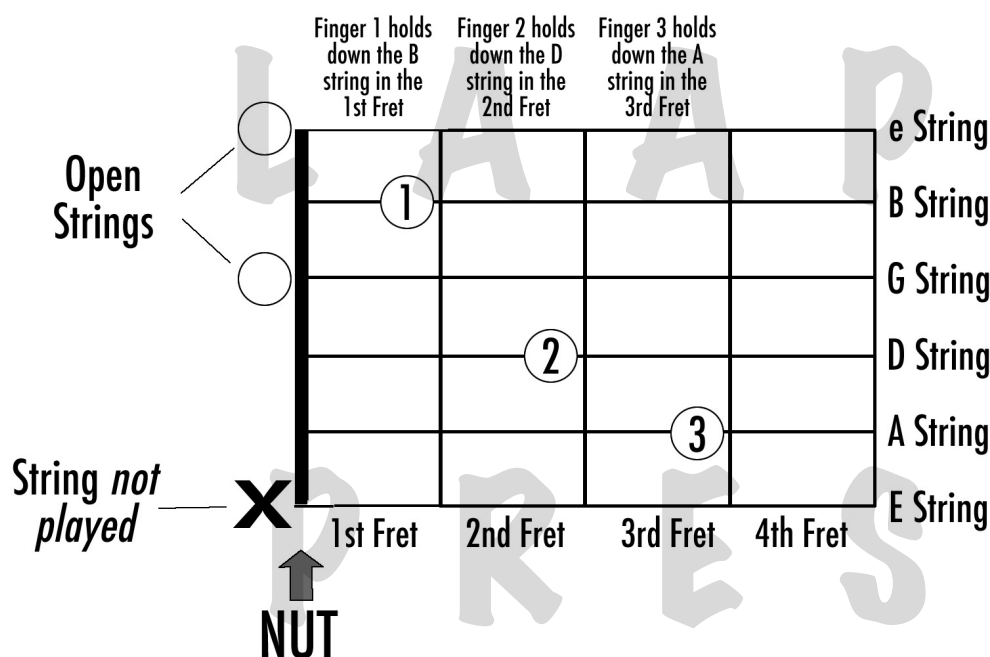
THUMB PLACEMENT



FINGER PLACEMENT



READING FRETBOARD DIAGRAMS

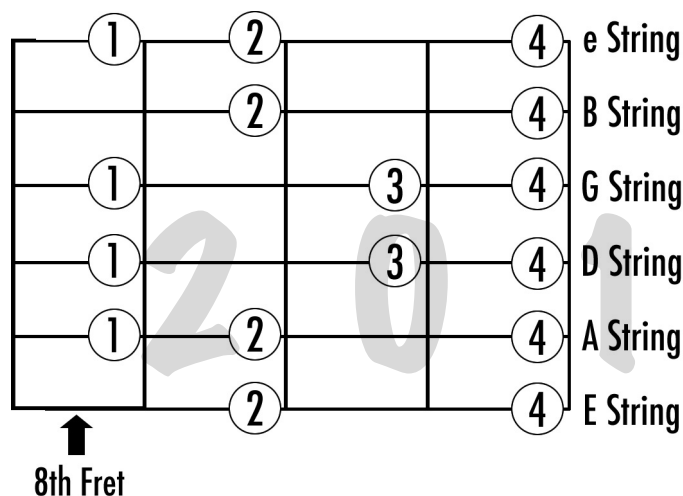


Fretboard diagrams can come in the form of a *Chord* or a *Scale*. Both are made up of more than one pitch but in a **chord** they are all played at the same time. It is impossible to play more than one pitch on the same string at the same time so **chord diagrams** show only one pitch per string.

It is easy to think of a chord diagram as a

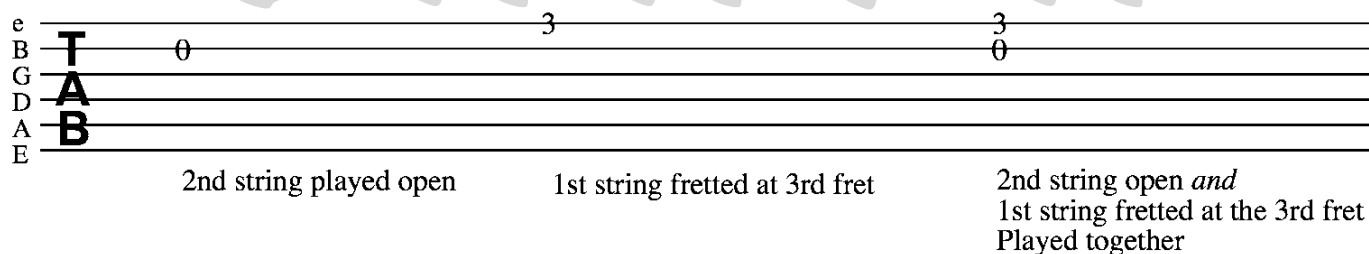
photograph of the guitar neck taken from the perspective of a right-handed player looking down over the guitar neck. The six horizontal (side to side) lines show the six strings of the guitar with the bottom line being the big E String. The **bold** vertical line on the left shows where the nut is and each column after represents a different fret. **Open circles** placed on string lines behind the nut indicate that the string is to be played open while an “X” on a string line means the string should NOT be played or muted if possible. The circles on string lines in front of the nut show where a string is to be fretted and usually include a finger number to let a player know how the chord is typically fingered.

A **melody** is any series of single musical pitches. Melodies are often pulled from a special collection of pitches called a **scale**. The pattern for a scale may go across all strings and frets so a *scale diagram* will show more than one pitch on the same string. Neither chord nor scale diagrams have to be in open position. Some may start a bit higher up on the neck, shown by labeling the first fret column. In the example, the first column is the 8th fret, the second is the 9th and so on.



READING TABLATURE NOTATION

Tablature (“tab”) is another method for graphically illustrating the fretboard.



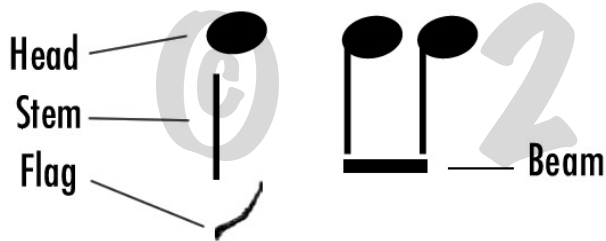
The six horizontal lines represent the six strings of the guitar. Here again the lowest line represents the big E String. Numbers on the string lines show what fret to hold the string against. A zero means the string is open. Chords are written in tablature by stacking the multiple fret numbers on top of each other showing that they are struck at the same time. Tabs are read left to right just like a sentence and are used to show chords and scale notes played over time whereas a diagram can only show an instant snapshot of a chord or scale.

The movement of sound over a period of time in this way is called **rhythm**. The numbers on tabs are sometimes written close together to show faster rhythms, but since interpreting an exact speed this way differs quite a bit from player to player, tabs alone can’t really show how fast or slow to play. In fact, most tabs (especially those found online) rely on the player being familiar enough with a song to instinctively know the speed and length of pitches. This is where standard notation becomes very useful.

READING STANDARD NOTATION

PARTS OF A NOTE

When a rhythm is applied to a pitch it is called a **note**. The exact length of a note is referred to as a **note value**. Because there are many different note values, there are also many different symbols to represent them although most share the same basic elements. All note values have a note **head** that can be solid black or hollow. Most will have a solid line extending either up or down from the note head called a **stem**.



Notes with smaller values will appear with “**flags**” extending up or down from the tip of the stem. These smaller notes may also be grouped together with a **beam** that takes the place of the flags. The more flags or beams, the smaller the note values.

NOTE AND REST VALUES

Where notes are periods of sound, a musical **rest** is a period of silence. For every note value there is a corresponding rest value that lasts the same length of time.

	Whole	Half	Quarter	Eighth	Sixteenth
Notes					
	4 Counts	2 Counts	1 Count	1/2 Count	1/4 Count
Rests					

As shown in the above example the shape of a note or rest will determine its length. The length of a note value is measured in **counts**. To play a note or group of notes, a player strikes the string(s) on the count of “one” and allows the string(s) to continue vibrating while steadily counting at the speed of the music (**tempo**) until reaching the count number of the note value.

Rests are counted in the same way, but instead of setting the strings into motion on count “one,” the player lightly places either hand onto the strings to prevent them from making a sound. This action is called **muting** or **dampening**. The player continues to mute the string until finishing the count on the rest. **It is important to remember not to accidentally mute the strings on longer note values before the count is complete.**

THE STAFF

The system of five horizontal lines with four spaces in between is known as the **staff**. Both lines and spaces in a staff can indicate specific pitches. A **clef** is a music symbol that assigns a specific pitch range to the staff. Because of the guitar's limited but high note range, music for the guitar is written using the **treble clef** (see below for example) which assigns the pitches "E", "G", "B", "D" and "F" for the lines while assigning "F", "A", "C" and "E" for the spaces. An easy way to remember the order of treble clef lines is by memorizing the sentence "**Every Good Boy Does Fine**" (see Ex. 1). A player seeing a note on the 3rd line can use the first letter of the 3rd word in the sentence to determine that the note is in fact a "B". The spaces in treble clef spell out the word "FACE" (see Ex. 2). This can be memorized and used in the same manner. Pitches climb the staff in alphabetical order going from space to line to space and so forth (see Ex. 3). After reaching the "G," the pitch letters restart at "A". Pitches moving down the staff would run backwards through the musical alphabet (see Ex. 4). When a pitch is too high or low to be placed in the staff, **ledger lines** are used to add extra lines and spaces. Ledger line notes follow the same alphabetical rules as those inside the staff (see Ex. 5).

5th Line	_____
4th Line	_____ 4th Space
3rd Line	_____ 3rd Space
2nd Line	_____ 2nd Space
1st Line	_____ 1st Space

Treble Clef

Ex. 1: (E)very (G)ood (B)oy (D)oes (F)ine

Ex. 2: F A C E

Ex. 3: E F G A

Ex. 4: D C B A

Ex. 5: F G A E D C

Labels: Bar Line, Measure, Double Bar Line, Ledger Lines

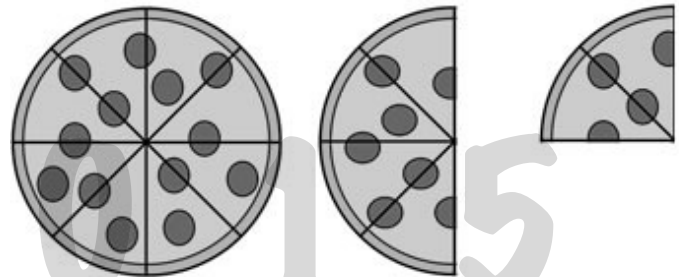
Bar Lines are the vertical lines that divide the staff. Each section of music they divide off is called a **measure**. Two parallel vertical lines together (with one usually thicker) are called a **double bar line**, which is used to indicate the end of a section or piece.

A group of pitches is said to be **ascending** when moving up the staff and **descending** when moving down. Ascending pitches on a staff will indicate the player will either be moving to a smaller string to play the higher pitch in the same position **or** moving up the fretboard towards the bridge to play the higher pitch on the same string but in a higher position. Descending pitches move to bigger strings or towards the headstock.



A **Time Signature** (or meter) is a pair of stacked numbers at the beginning of the staff that gives the size of each measure in **beats**. The bottom number defines the *size* of a beat with a specific note value. The top number tells how many of those beats the measure needs. Relating time signatures to fractions helps. **For example:** The fraction $1/1$ is a *whole* (as in *whole* note), the fraction $1/2$ is a *half* (as in *half* note) and $1/4$ is a fourth (or a *quarter* note). Imagine notes changed to pizzas:

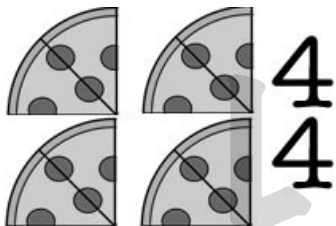
Bones' Pizzeria is giving away free pizza! There are three sizes to choose from. In this example the bottom number tells *what size* pizza the customer wants while the top number tells *how many* orders of that size the customer wants.



Size 1
Whole Pizza

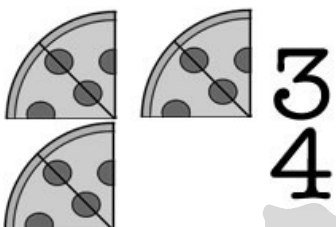
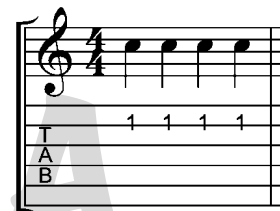
Size 2
Half Pizza

Size 4
Quarter Slice



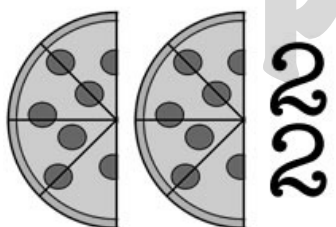
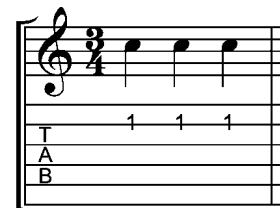
The first customer would like **4** orders

Of Size **4** pizza



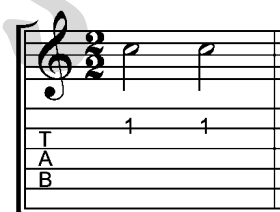
The next customer wants **3** orders

Of Size **4** pizza



The last customer wants **2** orders

Of Size **2** pizza



It's easy to see that the first and last orders are for the same amount of pizza and either could fit in the same box. Notes/rests work the same way. Measures **MUST** be filled with notes, rests or a combination that will total the time signature count. So a single half note *could* fit alone in a $4/4$ measure but it would need a half rest along with it to fill up the remaining two beats.

PLAYING HAND

Blowing the reed in a saxophone, striking a cymbal or bowing a cello string are all actions that initiate a series of vibrations that produce musical sounds. Any action that initiates a musical sound is referred to as an **attack**. As one might imagine, there are also many ways to attack a guitar string and they all sound a little different.

A **pick** is a small (usually teardrop shaped) piece of plastic or metal used to attack guitar strings. It is held firmly between the thumb and index finger on the playing hand.

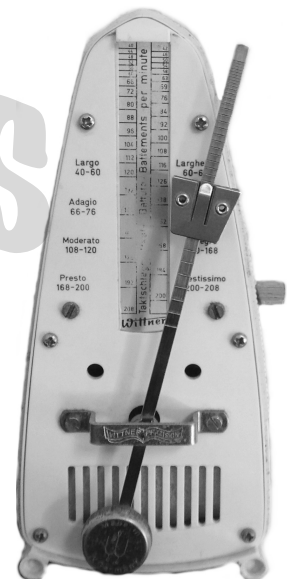
The narrow side should point inward toward the guitar body. This is the part of the pick that is intended to strike the strings while the broad part of the pick is gripped.



It is very helpful to anchor the playing hand to the guitar so that it is not freely floating over the strings. This can be accomplished by placing the fingers not holding the pick on the body of the guitar. Resting the base of the palm on the bridge (not on the strings!) or wrist on the top of the body will work well also. It's important for the player to have a base of reference for feeling where each string is. Learning to feel the location of different strings will increase accuracy while eliminating the need to constantly look at the *playing hand*.

A **metronome** is a device used to generate a steady beat at various speeds. There are all sorts of mechanical or electronic metronomes available but perhaps the easiest to get is a digital metronome application for a smartphone or tablet (again, most are free). The speed on a metronome is set in units called BPM or Beats Per Minute. So a metronome set to 60 BPM is actually pulsing every second. The higher the BPM the faster the tempo it creates. Some written music will indicate a tempo in exact BPM. Others will use an Italian tempo indication, (i.e. Andante, Presto, etc.) which indicates a range of speeds rather than a specific one. The greatest benefit of practicing with a metronome is the ability to perfect musical passages at gradually increasing speeds.

Practice Tip: Begin counting for a note value right as the string is picked. This means counting “one” exactly as the pick passes through the string. Remember to count evenly (a metronome is highly recommended) and allow notes to ring out for their full note value. This means keeping finger pressure on fretted notes **throughout** the note's count. Avoid muting strings that are being played by accidentally touching them with the playing hand. **Even resting the pick** on a string in anticipation of playing it again has the nasty side effect of dampening it. The only time a pick should be touching a string is for an attack on that string.



Pitches on the e String

First String

Staff	Tablature	Diagram	
E			
F			
G			

NUT
Open
Fret number: 1 2 3 4

WHOLE NOTES – 4 COUNTS

Count: 1 – 2 – 3 – 4*

HALF NOTES – 2 COUNTS EACH

QUARTER NOTES – 1 COUNT EACH

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