

Welcome To The Fretboard Memory E-Book!



This E-Book is designed to SUPPLEMENT your Frets 101 course. You won't find each fret image or the audio, but you will see your full fretboard and how it is relevant to the guitar. This is just a great companion!

All About Frets

Frets are any of the ridges of metal set across the fingerboard of a guitar which help the fingers to stop the strings at the correct points.

A fretboard is a fingerboard that is fitted with frets.

The nut of the guitar is the ledge, as of ebony, at the upper end of the fingerboard, over which the strings pass.

We number the frets in relation to their distance from the nut.

The Open Strings

The names of the notes of the open strings are E, A, D, G, B, E.

We call notes deeper in pitch "low" or "lower" and the higher pitch notes "high" or "higher".

Low or high is not referring to the note or string's position, but the note's pitch or frequency.

Low E	A	D	G	B	High E
6th	5th	4th	3rd	2nd	1st

Fretting Notes

To fret a note you place your finger on the fretboard behind the actual fret.

The string will come into contact with the metal fret to sound the correct note.

The 12 Notes In Western Music

In Western music, we use all use a **music system that has a common tuning system of twelve-tones with equal temperament, or 12 notes.**

All of the music we play on the guitar is based off of this 12 note system. That's because the guitar is built with this 12 note system in mind.

The guitar's fretboard may have 126 or more possible note locations, but the SAME 12 notes appear over and over.

Imagine the 12 notes as blocks, as shown below :

1	2	3	4	5	6	7	8	9	10	11	12
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The 12 Notes have two categories that we will deal with.

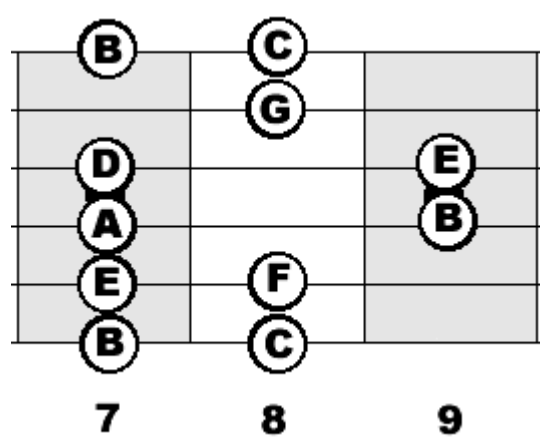
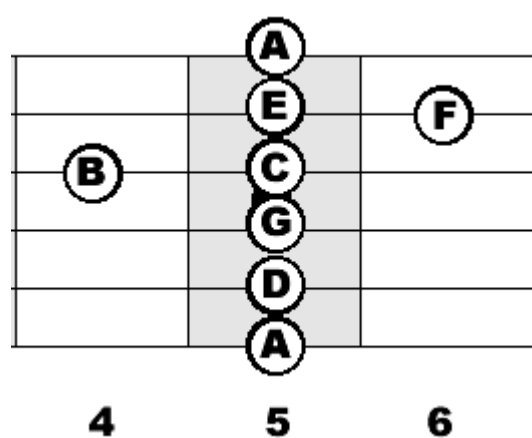
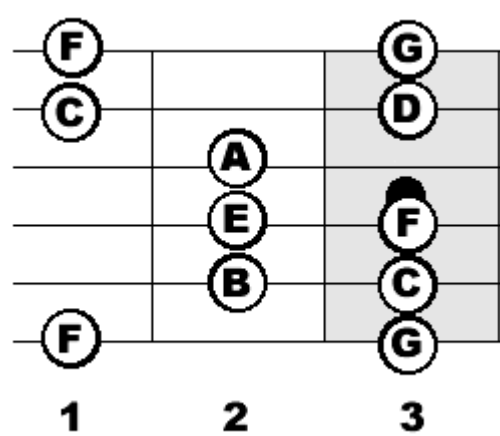
They are Primary Notes and Secondary Notes.

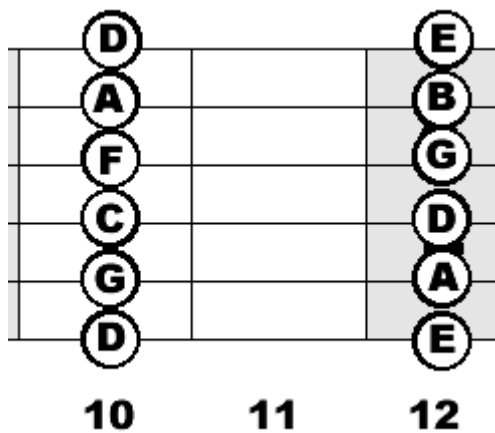
Primary Notes (Overview)

Notes are given a name after the first seven letters of the latin alphabet: A, B, C, D, E, F, and G (in order of rising pitch).

The letter names repeat, so that the note above G is A (at a higher than the first A) and the sequence continues indefinitely:

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





Where the musical alphabet differs from the regular alphabet, is that in the musical alphabet, the letters only progress up to G, upon which,

they begin again at A.

As you continue up the musical alphabet, the pitches of the notes get higher (when you go past G up to A again, the notes continue to get higher,

they don't start at a low pitch again.)

There is an easy-to-remember exception to this rule :

The Exception

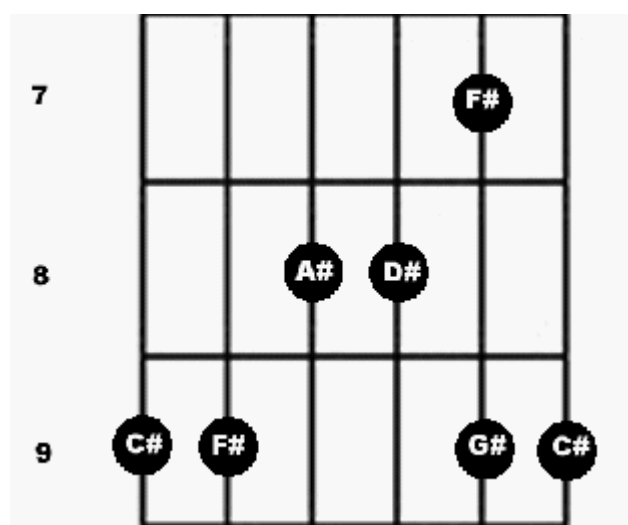
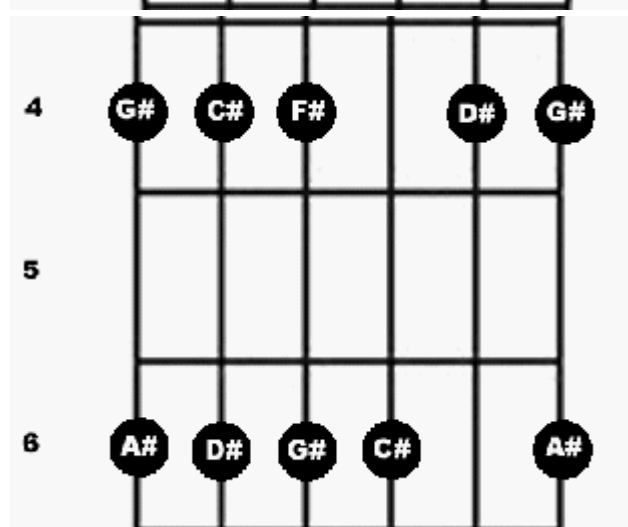
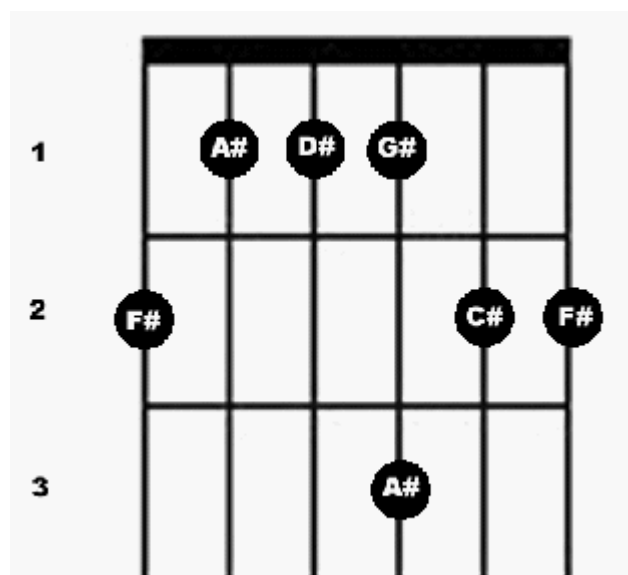
Every note is separated by a whole step, except B and C, and E and F. There are NO spaces between these notes.

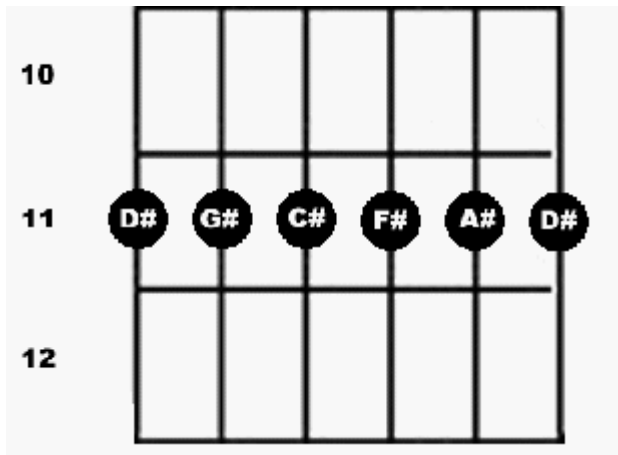
***Remember : No spacing between the B and C note, and the E and F note!!**

(Overview)

Remember that there are actually 12 notes needed, and we have only covered 7. Those 7 notes were Primary, and they were A, B, C, D, E, F, and G.

What about the Secondary Notes?





The 5 secondary notes are called G# or Ab, A# or Bb, C# or Db, D# or Eb, and F# or Gb

Secondary notes are simply modifiers.

They are modifiers because they take the original primary note and add either a sharp or flat to that note. (sharp = #, flat = b)

Remember that the Primary Notes are A, B, C, D, E, F, and G.

You also know that they repeat. Logically, this is ALSO the case for secondary notes.

These secondary notes respectively raise or lower the pitch of a note by a half step.

These are used to create the additional five notes necessary to complete the chromatic scale.

The sharp symbol is #, the flat symbol is similar to a lower-case italic b, as shown in parentheses above. These accidentals are written after the note name; for example F# represents the note F sharp, Bb is B flat.

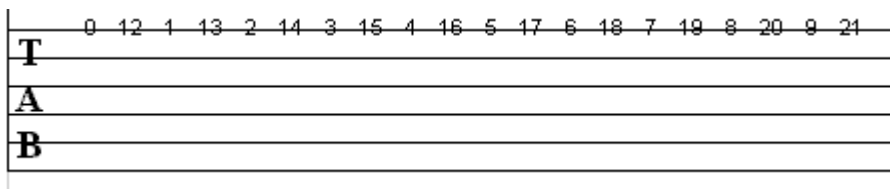
These secondary (modified) notes have dual names, meaning one note can be called either sharp or flat.

Think of a sharp as meaning "go up one fret" and a flat as "go down one fret".

The main thing to remember is that every note is separated by a whole step, except B and C, and E and F.

You may remember looking at this in Week 1, but now it should make a lot more sense.

Inlay Exercise



Here's a great way to really drum the dot inlay system in your head. On the high E string play the open string then the octave at the 12th fret. Go up to the first fret play that note and then play it's octave at the 13th fret. Work your way all the way up the fretboard until you run out of frets. Then do it with the other strings.

Since the notes on the 12th fret and up mirror the notes on the lower end of the fretboard you only need to memorize 72 frets. That makes things a little easier, don't you think? Plus, realizing this will help you read tab a lot faster.

We hope you can now see how the guitar's dot inlay system works and how important it is to utilize.

Notes:

If you have a 24 fret guitar, then you'll have another octave at the 24th fret (usually marked by another double dot inlay).

Some guitar manufactures sometimes use different fretboard inlays, but the dot inlay system discussed here is the most common.

What If...?

What if we wanted to play, say the 17th fret on the Low E string?

Even though we aren't going into detail about this, we DO know that at the twelfth fret of any given string, the A,B,C,D,E,F,G pattern starts over.

Thus, we can say that :

Fretted 12 = Fret ZERO's note (open)

Fretted 13 = Fret 1's note

Fretted 14 = Fret 2's note

In this case, let's say we are playing the 17th fret on the Low E string. What note would that be?

Well, as we know, there are 12 total notes that can be played. Since that is the case, by subtracting, like this :

Fret Number = 17

Number Of Notes = 12

$$17-12 = 5$$

That means that the 17th fret's note is the same note as the 5th fret on the same string.

Let's reverse that.

Now, if you wanted to play the 4th fret on the same string, what would the equal note be on the same string?

$$\text{Fret Number} = 4$$

$$\text{Number of Notes} = 12$$

Since we are needing to move from a lower pitch to a higher pitch, instead of subtracting, we are adding :

$$4+12 = 16$$

That means that the 16th fret on that same string is the same note as one that was played on the fourth fret.

Cool huh?

Note Order

The notes will always follow each other in the same order.

Note order using all sharps: A, A#, B, C, C#, D, D#, E, F, F#, G, G#

Note order using all flats: A, Bb, B, C, Db, D, Eb, E, F, Gb, G, Ab

If you start on C, it's always followed by a C#, then D, and so on.

The History Of Music (1900-Present)

In the 20th century, another evolution in the musical world surfaced. While some of the early 20th century music can be seen as extensions of the late Romantic style, much of 20th century music can be seen as a rebellion. Composers did not look to build on what was standard but again created music freely and used sounds that went against the current grain. Twentieth century music can be described as being more refined, vague in form, delicate, and having a mysterious atmosphere.

Twentieth century music is an era that is hard to define in terms of musical style. The only easy way to define 20th century music is that it does not fit into the Romantic era's requirements. And because of its own expression and orchestral technique it does not fit into any other category but its own.

This time period spawned many new terms for musical styles because of the diversity of music that was being written. Some common examples are atonality, expressionism (seen in Schoenberg's early music), neo-Romanticism , and neo-Classicism .

As was true in the Romantic era, nationalism was still an important musical device used during the first half of the 20th century. Composers utilized folk songs to enrich their music. Examples can be seen in the music of Ralph Vaughan Williams (England), Bela Bartok (Hungary), Heitor Villa Lobos (Brazil) and Aaron Copland (USA). Jazz and popular musical styles influenced composers from both the United States and Europe.

In 20th century musical styles traditional forms and structures were broken up and recreated or composed using non-Western musical techniques and abstract ideas. Technology also became an extremely important factor in the music making during this time period. Composers have been known to use recording tape as a compositional tool. Electronically created sounds are used in combination with other electronic sounds or played together with traditional music instruments. Most recently, the use of computer technology has affected the world of music making. Some ways in which computers currently alter the face of the music world are by manipulating the performance of instruments in real time.

Trends

Throughout the twentieth century, many trends developed. These trends permeated all the different areas of music and did not specifically happen at a given point in time or take on a strict form. Some of these trends were incorporated together into the same piece of music. The twentieth century broke all the musical rules of the past and let one form and style flow right into another. It is still important to note that although much change came with the turn of the century, Romantic music continued throughout this era, and remained the dominant form for quite some time.

Impressionism

Impressionism was the very first trend of significance which moved away from Romanticism and towards Modern era characteristics. Though this type of music was programmatic, it still started the movement away from the Romantic era. Impressionistic music was vague in form, delicate in nature, and had a mysterious atmosphere to it.

Expressionism

Although not as important as Impressionism, Expressionism was a prominent early twentieth century movement. Stylistically, expressionistic music was very atonal and dissonant. It was a German movement away from French Impressionism. It was emotional and had a somewhat Romantic feel to it.

Neo-Classicism

Neo-Classicism can be defined as the new classical movement. This movement started in the early 1920s and continued to be a leading musical movement throughout the century. This trend is still popular today. Neo-Classicism is a movement which incorporated the music of the Classical era, in terms of clarity of texture and objectivity. This trend not only based its music on the Classical era, but it also mixed Renaissance, Baroque, and some modern trends in with it.

Jazz

Jazz is a musical movement which dominated the 1900s. It is mainly an American form and remains popular to this day. Jazz can be defined as anything from popular music of the twentieth century to the improvised sounds of a dance band. Some prominent forms of Jazz throughout the century have been Ragtime, Blues , Swing , Dixieland Jazz, Bop, and Boogie-Woogie. Since the second half of the 1900s, new forms and techniques of Jazz have come about. These include funky hard bop regression, cool jazz, progressive jazz, and rock and roll. Generally these newer styles have a greater range in harmony, rhythm, and melody, and are less oriented to dance music. They also sometimes borrow techniques and forms from classical music, and vice versa, as modern classical music often contains Jazz elements.

Aleatory Music or Chance Music

Aleatory music is an extremely random style of music. The composer and/or the performer will randomly pick musical materials and make it into a piece of music. There are no rules to this form of music, and, thus, any kind of music can be created as a result. After the composer writes a piece in this unusual style, the performer then improvises on it, to make it stranger and more unique. Some techniques involved in aleatory music are having the audience improvise along with the performer, using electronic or computer media, or reading poetry somewhere inside of the work.

Electronic

The newest trend of the twentieth century lies in electronic music. Electronic music takes electronically generated sounds and turns it into a work of music. Like conventional music, electronic music has four general properties to it. These are amplitude, pitch, duration, and timbre. Electronic music is typically composed on either a synthesizer or a computer. The most current trends in this form of music show electronic music in combination with Jazz.

WHY There Are Only 12 Notes In Music - A Theory

WARNING - This is ALL Theory, and some of it is mind-boggling! We have D. White to thank for these collections of theories.

There may be no mathematical explanation why there are 12 notes. In the same way, science can't decipher what it feels like to see the color blue. Maybe the notes of the scale are beyond mathematics, and reach into *the internal "muscle memory" mind*.

(In other words, we may have just established the system in the past, and chose not to deviate from it.)

Some have argued that the importance of the number 12 in music is due to the fact that the 12 equal-tempered pitches approximate simple ratios such as $\frac{4}{3}$ or $\frac{5}{4}$ very closely, but other numbers are quite good at this too. Also, you can use progressively ever **more complex ratios** - producing an infinite amount of possible pitches.

Others argue how successive powers of 3 will 'complete' the scale after 12 iterations (the basis behind Pythagorean tuning), ***but this can't be the full story, since the twelfth iteration (3^{12} or 3^{-12}) - known infamously as the 'wolf' note - is a fraction over (or under) the octave.*** As a result, you could quite easily iterate further, and divide the octave nicely into 53 notes, 306 notes and beyond. Actually, even if 3^{12} directly intersected the octave, this wouldn't be 100% proof, but it would be a good sign of 'mathematical evidence'.

(Now that is just confusing, huh?)

A neat honeycomb lattice appears to fit around the major/minor 12 note system. ***This seems an interesting coincidence until you realize a similar pattern can be achieved with the 16 note scale and beyond.*** There still might be something unique about the 12-lattice though.

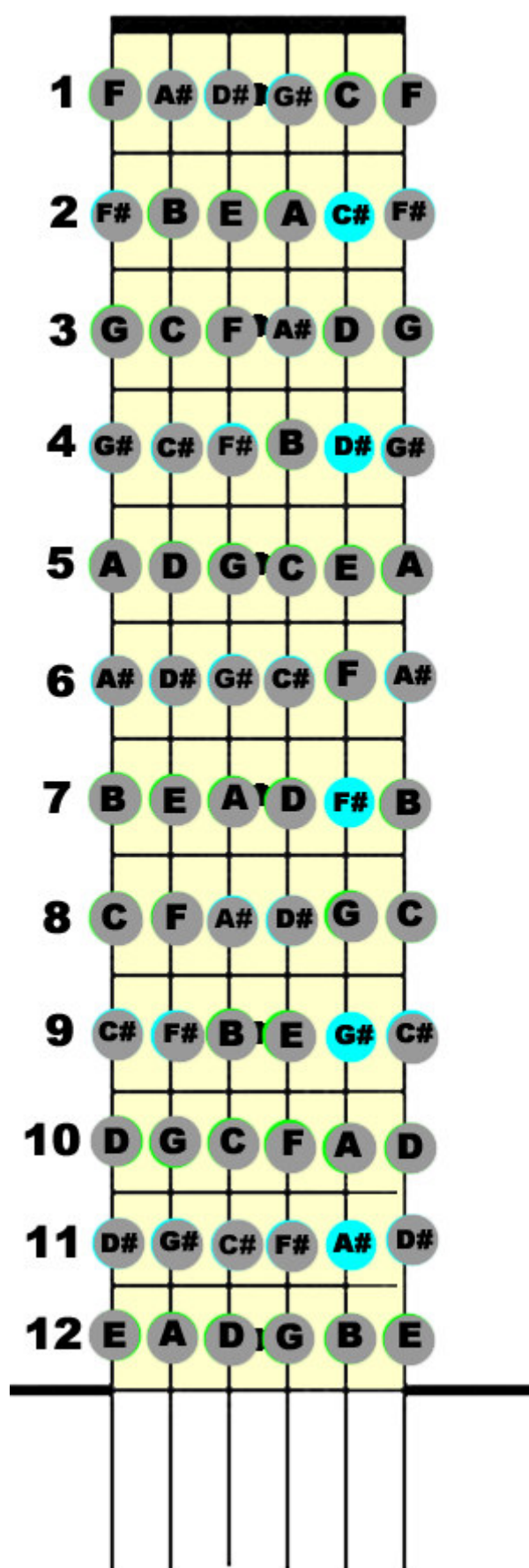
According to Schoenberg (who promoted the idea of atonal 12-tone style music), there are 12 notes because if you take the ***sum*** of its digits: ***1 and 2, they make 3.***

A more convincing idea is the way you can surround a single sphere perfectly with 12 identically sized spheres - ***with each sphere perfectly touching its neighbouring spheres (this forms the points of the cuboctahedron, or the faces of its dual - the 'rhombic dodecahedron').*** Twelve also has the exclusive property of being the Gravitational Symmetry Limit - another sphere arrangement based on the icosahedron.

A number of ***amazing relationships*** exist between ***simple ratios and 12.*** For example, $(3^7)/(2^{13}) \times 5$ is very close to the equal tempered perfect fourth (1.000000739402 off).

Actually, there ***may be no single 'reason why' there are 12 notes***, but instead, lots of 'little' coincidences - all of which might appear to hint at twelve. Either way, it would be easy to believe the number 12 is a universal, almost 'magic' number. ***Obviously, others still, could argue that music scales with more than 12 notes are indeed valid.***

Your Full Fretboard



A Special Thanks...

We would like to congratulate ***and*** thank you for your interest in Fretboard Memory.

I am sure that there were times you may have been frustrated, or didn't like the way we approached a given week, but this is all part of a giant process.

This was our first attempt at creating an online weekly course, but with all the feedback we have gotten, I am sure that our next course will be even better.

Again, thank you for your continued support, and we hope that you fully understand each and every note on your guitar.

Feel free to access this site at any time to brush up on what you have learned.

Also, don't forget to continue to USE what you have learned so that you never forget it! You will **always** need to know the notes on your fretboard, regardless of how you play, who you play with, or what style of music you are interested in!

Thank you for your time,

Nathan Wilson

Course Developer