

Ear Training Lesson #1

Tonality & Solfege

Tonality

To begin this course we will start by learning what a tonality is and how to hear the individual notes within it. This part of the course is by far the most crucial to study because EVERYTHING we study for the rest of the course will rely on your ability to hear the notes within a tonality. We will start by looking at a major key tonality.

Major Scales

To begin this study you should have a very thorough knowledge of your major scales. This can easily be acquired by taking a look at the “Understanding Keys” lesson found in the prerequisite lessons on the Ear Training lessons page. It will teach you how to spell every major scale found in music. So be sure to get that down before studying this lesson. :)

Tetrachords

A tetrachord is a musical term for the collection of four adjacent notes within a scale. When we take a look at the notes of any major scale we will see that it is made up of two tetrachords. Lets take a look at a C Major scale to see this in action.

C D E F	G A B C
Lower	Upper
Tetrachord	Tetrachord

Hopefully, after learning all of your major scales you will know how to determine the distance between two adjacent notes. You should know that an A to a B is a whole step, and an E to an F is a half step. If you don't know all of these, review the “Understanding Keys” lesson one more time and pay special attention to knowing the distance between every adjacent note within a scale. You will find that the interval formula for every major scale is identical. That formula is W-W-H-W-W-W-H (W stands for whole step and H stands for half step). So by looking at this formula and comparing it to the C Major Scale above we will know that the distance from the 1st note C to the 2nd note D is a whole step. D to E is a whole step and E to F is a half step.

Take a quick look at the two tetrachords above, you will notice that they both have the exact same formula W-W-H. The two tetrachords are separated by a whole step. Tetrachords are important in music because they basically form the connection between all keys. Let me explain this a little bit. If you are familiar with your circle of fifths you will know that we start with C at the top of the circle then make our way clockwise in 5ths until we go through every major key in music. So starting with the key of C at the top of the circle we have no #'s or b's. Moving clockwise one step or a 5th interval (hence the name circle of 5ths), we reach the key of G major. We will also add our first sharp to this key in the form of an F#. Continuing to the next clockwise key we get to D major. In D major we will now have 2 sharps to deal with F# and C#. On the next page lets see if we can learn to understand why each successive key has a new sharp added to it OK.. Believe it or not, this has A LOT to do with how we hear music!!

How Tetrachords Tie Keys Together

The reason it is so important to understand tetrachords and how to hear them is because they form the build blocks within key relationships. Remember our basic tetrachord formula W-W-H ? Lets see what happens when we start to string a lot of them along in a row.

C D E F G A B C D E F# G A B C# D E F# G# A B C# D# E F# G# A# B
|-----C Major-----| |-----D Major-----| |-----E Major-----|
|-----G Major-----| |-----A Major-----| |-----B Major-----|

By looking at the tetrachords laid out above you will see that the upper tetrachord in every major scale is also the lower tetrachord of the next key in the circle of fifths. All we did here was lay out the same W-W-H tetrachord formula over and over again always separating each tetrachord with a whole step. This may be a strange way of looking at things for now, but just try to absorb the information because you will find it very valuable shortly.

Moveable Do Solfege

If you have ever done any kind of music when you were in school, you would have probably heard solfege syllables before. It is the familiar vocal warmup exercise we all know and love that goes like this. DO-RE-MI-FA-SO-LA-TI-DO. When you sing this familiar phrase what you are actually singing is a major scale. Every note in the scale has been assigned a solfege syllable. There are two different solfege schools of thought. The first is what we call Fixed DO Solfege. In fixed DO solfege, DO is always the note C. RE is always the note D and so forth. That is why in some classical music scores you will see that it may say the piece is in RE Minor. That would mean D Minor. This fixed do system is used by many ear training methods and to be honest, I have no idea why. It doesn't help you know the sound of each note within they key very well since the solfege syllables in every key would be placed on a different note of the scale.

THE WAY TO USE SOLFEGE (in my opinion :)), is to use what is referred to as the “Movable DO Solfege System”. What you do in movable DO is always make the root note or 1st note of a major scale DO no matter what the key. The 2nd note within a major key would be RE, the 3rd note MI and so forth. What this enables you to do quite quickly is relate the syllable MI to the 3rd note of the key regardless of what key you are in. Lets lay out a couple of keys real quick to make sure you understand what we will be doing.

C Major Scale

C D E F G A B C
DO RE MI FA SO LA TI DO

F Major Scale

F G A Bb C D E F
DO RE MI FA SO LA TI DO

You will find that by practicing all of your major scales by singing them all the same way, it will start to tell your ear that each solfege syllable has it's own particular quality, and that quality is the same no matter what key you are in. FA will always sound like FA no matter what major key you are in and it is this quality that we want to learn to memorize. By knowing this quality you can internalize the sound of every note of the major scale must faster that you would have ever believed.

Solfège Syllable Characteristics

When beginning your practice of the different ear training exercises towards the end of this lesson, you will want to pay close attention to the sound of each note in the major scale. The key to hearing each note correctly is to understand WHAT to listen for in each note within the scale. Below is an overview of the sound characteristics of each Solfège syllable of a major scale.

DO – resting
RE – active whole step
MI – resting
FA – leading half-step (resolving to MI)
SO – active tone (resolving to DO)
LA – active whole step
TI – leading half-step (resolving to DO)

Let's take a closer look at all of these syllables. DO is always the root of the key. This note is obviously very important because the sound characteristic of every other syllable is that way because of its relationship to DO. In other words, we are dealing with relative pitch ear training here. All of these notes within the scale sound the way they do because of their position in the key as compared to DO. That is why when you are trying to practice hearing all of the notes within a key, you should always be giving yourself DO or a major chord built from DO since that is the foundation of the key. THEN you will be able to locate specific notes within the key since you now have your root note that establishes your tonality. This will become easier to understand after you start the exercises.

The most important notes within any key are the two leading half-steps. It is these half-steps that you will mostly be listening for in figuring out where you are within a key. They are also the easiest notes to hear within a key since they are so strong and definitive. If you sing DO-RE-MI-FA-SO-LA-TI and just stop there you will have a feeling that TI very much wants to resolve up to DO the octave of where you started. This tendency is because TI is only a half-step away from DO and DO is the root of the tonality or key. That is why we refer to TI as being a leading half-step because it has the sound characteristic of wanting to resolve a half-step up to DO. You will want to memorize the sound of this characteristic so you will be able to hear a TI in your head after being given any DO or root tone.

The other leading half-step is FA. Real quickly before we talk about FA we need to learn that just like the fact that DO has a resting quality to it since it is the root of the key, MI also has a resting quality as well. The reason it has this quality has to do with something called the “overtone series” which I recommend you researching but would be a whole tutorial in itself so we won't cover it here. But if you know your basic triads you will know that MI is the 3rd of a Major Triad and it is that 3rd that actually determines whether the triad is major or minor. What I mean by resting is that both the DO and MI have a sense of finality to them. They don't suggest or require movement at all. That is why you will see most music ending on the I chord of a particular key because it is that chord that gives the greatest sense of finality. The reason it seems so final is because it has DO and MI in it. Now back to FA. FA is only a half-step above MI and since MI has a strong resting quality, the sound characteristic of FA is to want to resolve DOWN to MI. This is our other leading half-step. When doing the exercises at the end of this lesson try to hear how FA is always trying to lead to MI. Something that is leading in a certain direction doesn't mean that it always will, we are just referring to its characteristic sound, that is all.

We have yet another active tone that predicts it's movement within a major tonality and that is SO. This is a very powerful active tone since it actually resolves to DO either down a 5th or up a 4th. Because of this larger interval leap that SO seems to want to make it has a very powerful sound that you will want to become familiar with.

The last two notes that we have available within the major scale solfege system to analyze are RE and LA. Both of these tones are referred to as active whole steps. What we mean by active whole steps is that each of these notes is a whole step from it's closest note both above it and below it. In the C Major scale RE would be D. D is a whole step away from both C and E. LA would be A in the key of C Major. A is a whole step away from both G and B. Because of the fact that we have whole steps on both sides with an active whole step it takes on a kind of floating quality that doesn't predict it's movement. This floating quality creates a sense of movement, but since it is an equal distance from each surrounding note in the scale it doesn't have a definitive direction that it would like to go. Because of this, RE and LA are the hardest solfege syllable to hear. But you will still become sensitive enough to their sound characteristics that you will recognize them quite quickly.

Finally Some Exercises!!

Below you will find a series of exercises that will help you be able to hear the sound characteristics of each of the solfege syllables. At first the exercises will just focus on hearing the four solfege syllables of each tetrachord. Then we will begin to combine the two tetrachords with exercises that utilize the entire tonality. Each exercise is meant to enable you to hear specific characteristics of each syllable, especially the leading half-steps. Watch the accompanying video lesson where I will show you how to play these exercises on the guitar using your 3-notes per string major scales. By the way, if you don't know your 3-notes per string major scales yet, you can find the lesson on them in the prerequisite section at the top of the Ear Training page. You don't even need a guitar to do these exercises though, you should be doing them as much as you can in your head throughout the day. The reason for the video lesson is just to show you how to relate your ear training studies to the guitar.

Give yourself DO before each exercise. DO can be the root of *ANY* key that you want. The solfege syllables will still have the same characteristics no matter what the key.

Lower Tetrachord Exercises

DO-RE-MI-FA-MI-FA-MI-RE-DO
DO-MI-FA-MI-DO
DO-FA-MI-RE-DO
DO-RE-MI-RE-DO

Whole Tonality Exercises

DO-SO-DO-FA-MI-RE-DO
DO-RE-MI-FA-MI-FA-SO-DO
DO-TI-DO-SO-LA-SO-FA-MI-DO

Upper Tetrachord Exercises

DO-TI-DO-TI-LA-SO-DO
DO-SO-LA-TI-DO
DO-LA-TI-DO-TI-DO-SO-DO
DO-SO-DO-TI-DO