

## Learn2 Tune a Guitar



**Tune it again, Sam--before I wrap that guitar around your neck!**

It's true--you can play a lot of great music without knowing how to tune a guitar. But guitars naturally go out of tune as you play them for a while. And if your guitar-tuning friend isn't around when your guitar starts to go sour, you're stuck! It doesn't matter how much great music you've mastered--it'll sound like madness and confusion on an out-of-tune guitar.

Fortunately for beginning guitar players, guitar tuning is a pretty easy skill to master. And it'll improve your ear (your listening skills) which will become increasingly important as you progress with the guitar.

Note: This 2torial is for acoustic and electric guitars, except those electrics with Floyd Rose whammy bars, in which case you're on your own.

**Before you begin...**

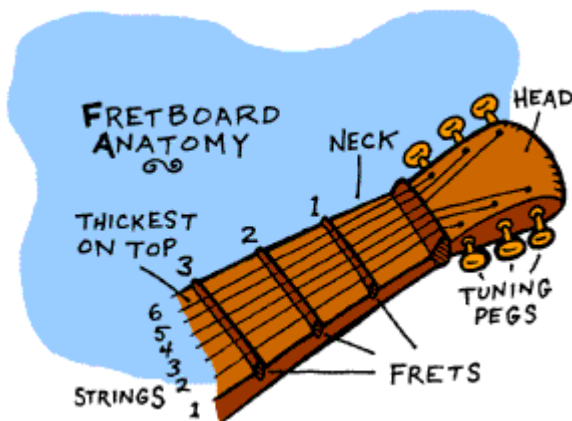
What are notes **in tune**? No notes are actually wrong--they just might not work together for a particular instrument or style of music. Classical Indian musicians play notes that are bizzarely out of tune compared to Western music; yet those notes are entirely correct within that tradition.

With the guitar, **in tune** means that all strings have the proper tension in relation to one another. The proper tension produces the correct pitches, or sounds. These pitches sound good when the relationships are correct, and they sound dissonant (noisy and disorderly) when they're not.

### **Step 1: Understand the fretboard**

You probably have one of three types of guitars: a standard steel-stringed folk guitar, a nylon-stringed classical guitar, or some variety of electric guitar.

- All of these types have six strings, and the strings arranged in size from thickest to thinnest, with the thickest on the top. Confused? If you hold the guitar on your lap horizontally, the thickest string should be closest to the ceiling. The strings are often numbered one to six, with six referring to the thickest string.



- **Frets** are the thin strips of metal that are inlaid on the wood of the fretboard, and the number you have will vary a bit, depending on your guitar. Folk guitars have clearance (you can play notes) to 14 frets, classical guitars to 12, and electrics have up to 24 frets. Frets are numbered one to 12 (or 14, etc.) starting from the head-end of the guitar neck.

- **Tuning pegs:** these are six small, metal mechanisms located on the head of the guitar (which is located at the end of the long, skinny neck). They're responsible for changing the tension of the strings.

## Step 2: Listen for the wave

Interestingly, the main skill for tuning a guitar is to listen and identify notes that are **not in tune**. By listening for the out-of-tune notes and then adjusting the tuning pegs, you can tune those unwanted notes out of existence.

- **What does "out of tune" sound like?** Two strings that are similar in pitch, but not in tune, do something interesting. When two out-of-tune notes are plucked one right after the other, the resulting sound is wavering and wobbly. Think of it as a siren that's yelling "I'm out-of-tune, I'm out-of-tune!" Why this happens is a short lesson in the physics of sound waves, which you might not want right now, but you should understand this image:



- **Diagram A** is the sound of two out-of-tune strings. They pattern of their sound waves don't match up, so the wavy pattern is what results.

- **Diagram B** is the sound of two guitar strings in tune and successfully playing the same note. The sound waves match up, so there's no interference and a smooth, solid tone results.

### **Step 3: Tune the 6th string**

You start the tuning process with the sixth string (the thickest one). Here you have two options. Relative tuning is suitable for the beginner guitarist, or for the intermediate guitarist who's feeling a bit lazy. Concert, or absolute tuning, is for more experienced guitarists who are playing with other musicians, or for the very keen beginner guitar player. Actually, concert tuning isn't much more difficult to do, but if a beginner should avoid taking on too many challenges and possibly becoming frustrated.

#### **Relative tuning**

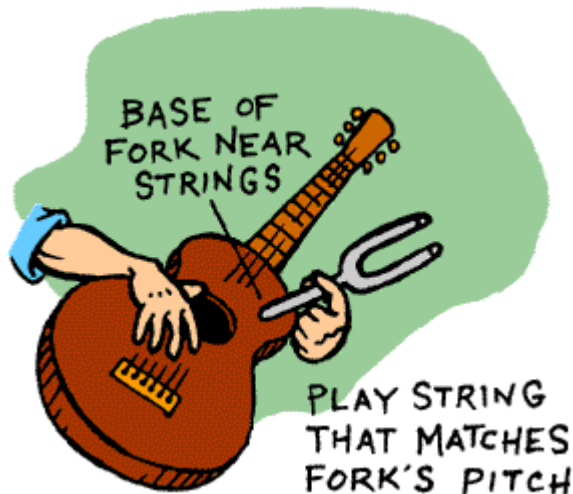
This method doesn't use an external source to certify that, for example, the sixth string is vibrating at exactly the right speed.

- Instead, you pick a tone that sounds and feels good. It should be a **nice deep tone**, but listen for the signs of excessively low string tension. If a string is too low, it'll rattle on the frets or make a buzzing sound. If you hear that, tighten up the tuning peg for the sixth string until you hear the pitch rise and the buzz disappear.
- If the string is difficult to press down, or heaven forbid, the tuning peg is difficult to turn, you've overtightened the string and you need to loosen the tension. If you've overtightened the string, **loosen the string slowly** or the sudden change of tension may cause the string to break.

#### **Concert tuning:**

With concert tuning you use a separate device to determine the absolutely correct tone for that string, no matter what guitar you play with or where you are in the world. Examples of such devices are tuning forks, pitch pipes, or a piano that is in tune.

- Let's say you're using a **tuning fork**. Take a look at it and see what letter is written on it--usually A but sometimes E. You'll be producing a tone with the tuning fork and matching the string to that tone. Use an A tuning fork to tune the 5th string, or an E fork for the sixth string.
- Strike the fork on some firm but **soft-edged surface**, like your knee. (You never want to strike a tuning fork on something rigid like a bookshelf or a chair leg--that'll eventually ding up the tuning fork and impair its tone.)



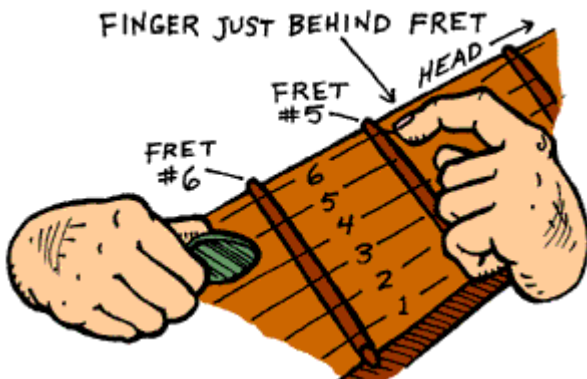
- **Quickly do these two actions:** place the base of tuning fork (not the forked part) on the guitar just by the strings. You should hear the sound of the tuning fork resonate in the guitar. Very soon after that, play the string that matches the pitch of the tuning fork. If it's an A fork, you're tuning the 5th string with it. Afterwards you'll go on to tune the 6th string by matching it with the 5th string. If it's an E fork, tune the 6th string, and tune the rest of the strings as you would with relative tuning.
- **And most important!** Any time you try to match two tones (one which is correct and the other which isn't) start the out-of-tune string **lower** than the tuning fork's tone. That is, loosen the out-of-tune string until it's lower (much lower, if you're

not sure you're going in the right direction) than the correct tone. You should always **arrive at the right tone from below** (by tightening a string that's too loose) and not from above (by loosening a string that's too tight).

### Step 4: Tune three more strings

In this step you'll learn the pattern for tuning the strings that will work for almost all of the strings. The one exception, the 2nd string, is discussed in **Step 5**.

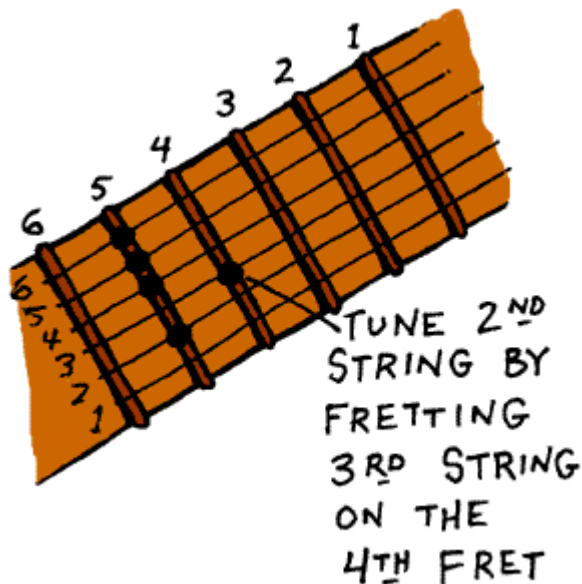
- Assuming you have a good tone with the 6th string, you're ready to begin the actual tuning process. You're going to match the tone of the 6th with the tone of the 5th, and you'll do this by playing the same note on each string, one after the other. This is where you listen for the wave--the wavering, wobbling sound tells you that the two sound waves aren't together and aren't in tune.
- **For concert tuning:** if you have an A tuning fork, you'll fret the 6th string on the 5th fret as shown in the diagram below--but you'll adjust the 6th string's tuning peg, instead of the 5th string's peg. This will match the 6th string to the 5th string.)
- **Which two notes** do I compare? you may be wondering. Place your non-dominant hand's index or middle finger on 5th fret of the 6th string. You don't, however, put your finger exactly on the fret--it should be just behind the fret on the side closer to the head of the guitar (i.e., further away from you.)



- Using your dominant hand's thumb (or a guitar pick) **play the 6th string at the 5th fret**. Very soon after that, **play the 5th string open**--no fingers on any fret. Listen to the two tones. Hear the wave? The wobbly sound?
- **Now what?** Amazingly, the slightly obscure theory in **Step 2** has a very practical application to guitar tuning. Try to change the 5th string to match the sound of the 6th string--you can do this by playing the notes with your dominant hand, and then very quickly reaching over to adjust the 5th string's tuning peg. Listen now for the speed of the wavering sounds. If the waves seem to **speed up**, you're putting the string even further out of tune. If you hear the waves **slow down**, you're getting closer to the right pitch. Once you hear the waves slow down and gradually disappear, you've got it. Well done!
- **And most important!** Any time you try to match two tones (one which is correct and the other which isn't) start the out-of-tune string **lower** than the string that's in tune. That is, loosen the out-of-tune string until it's lower (much lower, if you're not sure you're going in the right direction) than the correct one. You should always **arrive at the right tone from below** (by tightening a string that's too loose) and not from above (by loosening a string that's too tight).
- **Repeat** this process with the 4th and 3rd strings. Once the 5th string sounds good, fret it at the 5th fret, and play the 4th string open. Again, listen for the waves and adjust the 4th string's tuning peg to match the sounds. Keep going to tune the 3rd string: fret the 4th string on the 5th fret, and play the 3rd string open, and match the sounds. You'll tune the first string the same way: fret the 2nd string on the first fret and playing the first string open (but hold off on that for now).
- **For concert tuning:** if you have an A tuning fork, you'll fret the 6th string on the 5th fret as shown in the diagram above--but you'll adjust the **6th string's tuning peg**, instead of the 5th string's peg. This will match the untuned 6th string to the tuned 5th string.)

## **Step 5: Tune the second string**

Now all hell breaks loose--prepare for your world to turn upside-down as you try to tune the 2nd string. Actually, it's not bad at all.

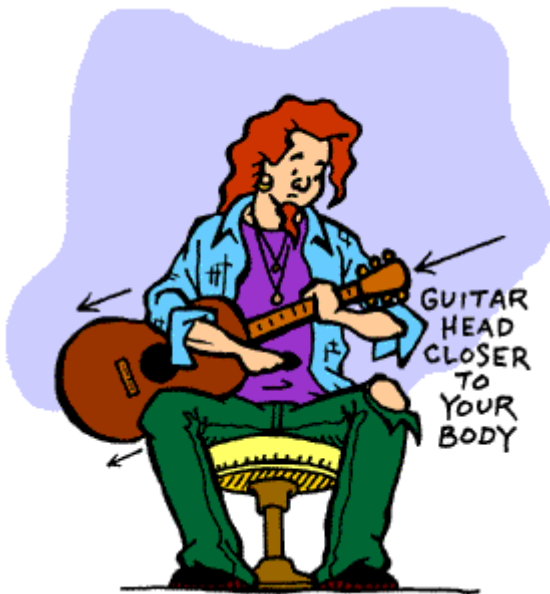


- **What's the difference?** When you tune the 2nd string, you have to fret the 3rd string on the 4th fret (not the 5th, as you have been doing), and play the second string open, and adjust the 2nd string's tuning peg. It's that easy. And remember-- any time you try to match two tones (one which is correct and the other which isn't) start the out-of-tune string **lower** than the string that's in tune. You should always **arrive at the right tone from below** (by tightening a string that's too loose) and not from above (by loosening a string that's too tight). So, loosen the out-of-tune string until it's lower (much lower, if you're not sure you're going in the right direction) than the correct one.
- **Listen again** for the speed of the wavering sounds. If the waves seem to **speed up**, you're putting the string even further out of tune. If you hear the waves **slow down**, you're getting closer to the right pitch. Once you hear the waves slow down and gradually disappear, you've got it.
- **The final string:** Tune the first string by fretting the 2nd string on 5th fret, and play the first string open. Match the two tones, and you're done.

### **Step 6: Tune to a chord (optional)**

Due to the laws of music theory and the limitations of guitar construction, a guitar cannot be tuned perfectly to every chord at the same time. To tune it perfectly to one chord will make the guitar slightly out of tune in another chord, although not offensively so. For this reason, try out your tuning skills in a chord that you might be playing in the near future, or just an open chord that you find easy to play, like the major chords of A, C, D, E, or G.

- Choose a chord you'd like to play, and **slowly** play each note successively.
- **Hear any sour notes?** If something doesn't sound right, play all of the notes of the chord again, and identify which notes are the bad apples.
- **Fix the bum notes.** Play the whole chord again, and quickly reach over with your dominant hand (which has just strummed the chord) to the tuning peg of the out of tune string. Give it a quick twist down to loosen the string, and turn it back up with the chord still ringing. You should hear the note match with the rest of the chord as you bring it up to the correct pitch. If it still doesn't sound right, repeat this action as necessary.



- Here's an alternate posture for tuning to a chord: Push the guitar across your lap so that the head is closer to your body. It'll be easier to adjust the tuning peg right after you play the chord.

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