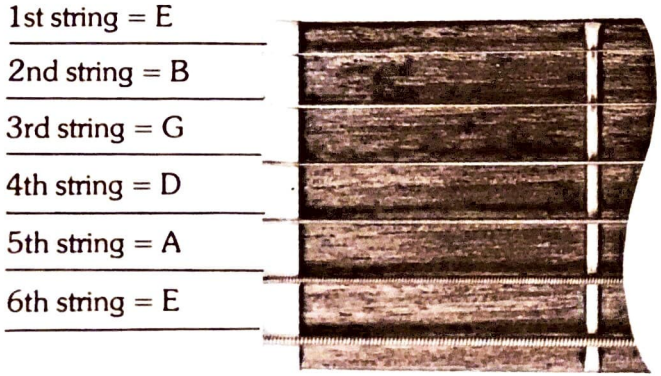
Standard open-string tunings

Over the years, a standard has evolved for how the six open strings of the guitar are tuned in relation to one another. The thickest or 6th string is tuned to E, the 5th to A, the 4th to D, the 3rd to G, the 2nd to B, and the thinnest or 1st to E. The two Es are the same note but they have a different pitch; the top E is two octaves higher than the bottom E. In other words, this convention establishes the difference or "interval" that there is between each string – E to A to D to G to B to E.

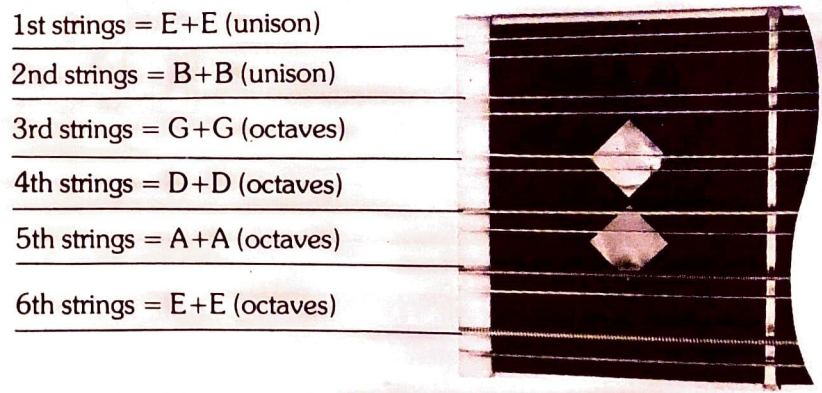
Twelve-string guitars are tuned to the same standard pattern. However, they are sometimes set a tone lower, and the tuning of each pair of strings varies. The 1st and 2nd strings are tuned in "unison", giving identical notes of the same pitch; the other four pairs are each tuned to give the same notes but an octave apart.

Of course, this standard tuning is not the only way a guitar can be tuned. There are many variations and alternatives which might be better suited to a particular tune or style, or which might be used to create a specific sort of "sound". Some of these are covered on p. 158.

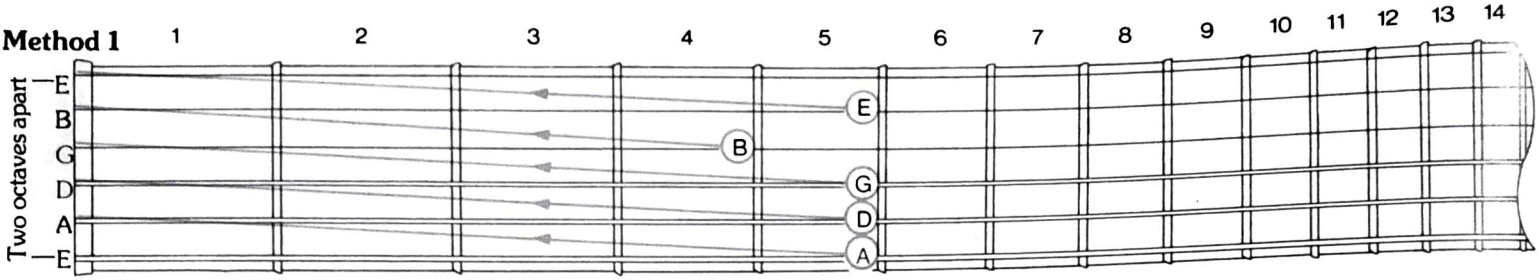


Six-string tuning (*left*) With top and bottom strings both tuned to E, there are 2 octaves between high and low open strings.

Twelve-string tuning (*right*) Although the tuning is the same, a twelve-string guitar produces a much fuller, richer sound.

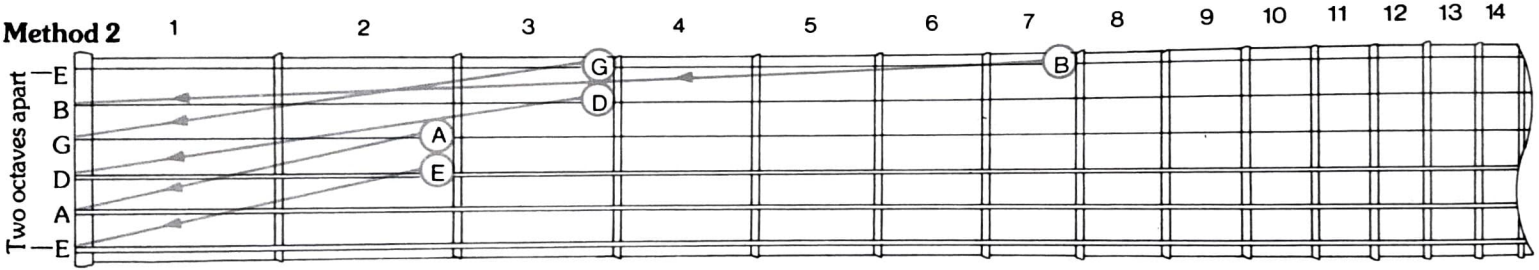


Method 1



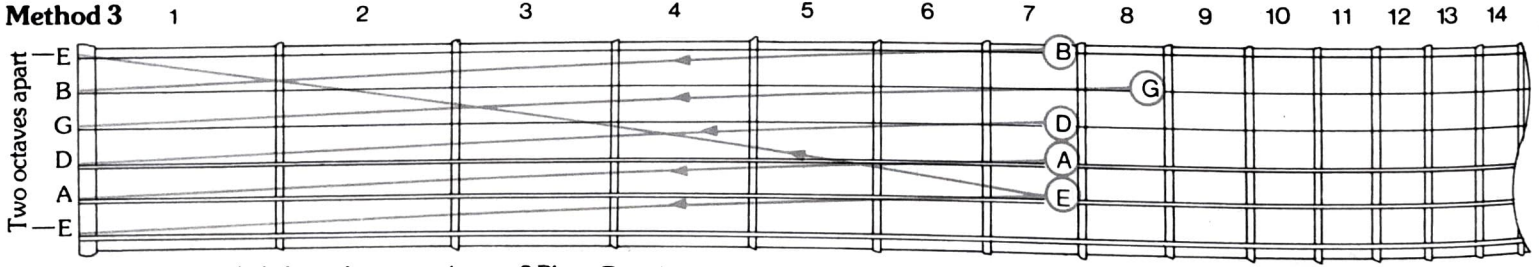
1 Beginning with the open E (1st) string at the right pitch, tune the open E (6th) string to the same note but two octaves lower.
2 Play an A on the 5th fret of the 6th string and tune the open A (5th) string to it.
3 Play a D on the 5th fret of the 5th string and tune the open D (4th) string to it.
4 Play a G on the 5th fret of the 4th string and tune the open G (3rd) string to it.
5 Play a B on the 4th fret of the 3rd string and tune the open B (2nd) string to it.
6 Finally, play an E on the 5th fret of the 2nd string and check the open E (1st) string against it. Do not move on to the next string until you are certain that the one you are tuning is correct.

Method 2



1 Beginning with the open E (1st) string at the right pitch, play a B on the 7th fret and tune the open B (2nd) string to it.
2 Play a G on the 3rd fret of the 1st string and tune the open G (3rd) string to it.
3 Play a D on the 3rd fret of the 2nd string and tune the open D (4th) string to it.
4 Play an A on the 2nd fret of the 3rd string and tune the open A (5th) string to it.
5 Play an E on the 2nd fret of the 4th string and tune the open E (6th) string to it.
6 Finally, check the open 1st and 6th strings.

Method 3



1 If you have a tuning fork, begin by tuning the open A (5th) string to it.
2 Play an E on the 7th fret of the 5th string and tune both open E (1st and 6th) strings to it.
3 Play a B on the 7th fret of the 1st string and tune the open B (2nd) string to it.
4 Play a G on the 8th fret of the 2nd string and tune the open G (3rd) string to it.
5 Play a D on the 7th fret of the 3rd string and tune the open D (4th) string to it.
6 Finally, play an A on the 7th fret of the 4th string and check the original open A (5th) string.

Tuning with harmonics

"Harmonic" notes are described on p. 116, together with instructions on how to play them. They are often used to check tuning and intonation due to the fact that they have a purer sound than open strings or fretted notes and because of the phenomenon of *beat tones*. Beat tones are generated when two pitches are close but not quite the same. If one note is an A vibrating at 440 Hz and the other is just a little flat, vibrating at, say 436 Hz, you will be able to hear 4 beat tones or pulses per second when you play the two notes together. As you bring the second note up to the pitch of the first, the beats will slow down – and will eventually disappear when the two notes are in tune with one another. Recognizing the beat tones may be slightly difficult at first, but, with practice, you will quickly develop an "ear" for them. The method is as follows.

Checking 5th and 7th fret harmonics

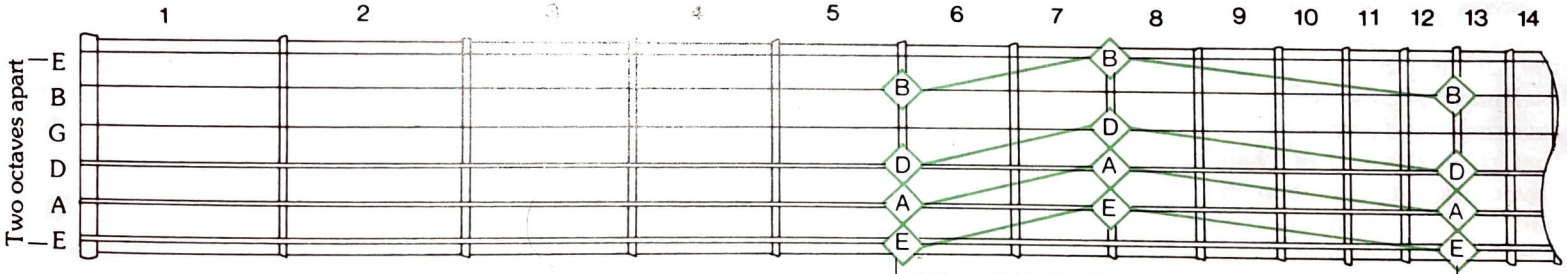
- Play a 5th fret harmonic E on the 6th string quickly followed by a 7th fret harmonic E on the 5th string so that both notes are ringing together. Tune the strings by bringing the beats together.
- Play a 5th fret harmonic A on the 5th string and a 7th fret harmonic A on the 4th string. Tune these two together.
- Play a 5th fret harmonic D on the 4th string and a 7th fret harmonic D on the 3rd string. Tune these two together.
- Finally, play a 5th fret harmonic B on the 2nd string and 7th fret harmonic B on the 1st string. Tune these two together.

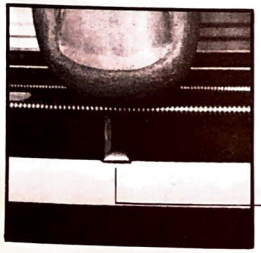
Checking 7th and 12th fret harmonics

- Play a 12th fret harmonic E on the 6th string and a 7th fret harmonic E on the 5th string. Tune these two together.
- Play a 12th fret harmonic A on the 5th string and a 7th fret harmonic A on the 4th string. Tune these two together.
- Play a 12th fret harmonic D on the 4th string and a 7th fret harmonic D on the 3rd string. Tune these two together.
- Finally, play a 12th fret harmonic B on the 2nd string and a 7th fret harmonic B on the 1st string. Tune these two together.

Double checking

To prevent a gradual accumulation of error when tuning, here is an excellent check for ensuring that the two top strings (1st and 2nd) are in tune with the bass string (6th). First, play the 5th fret harmonic E on the 6th string against the 12th fret harmonic E on the 1st string. Next, play the 7th fret harmonic B on the 6th string against the 12th fret harmonic B on the 2nd string.





How to play a harmonic note
Place the tip of your finger lightly on the open string exactly over the top of the fret in question. Pluck the string and then remove your finger immediately to let the harmonic note ring (see p. 116).

String is not actually pushed down to fret.

5th and 7th fret harmonics
The harmonic note on the 5th fret of a string is always identical to the harmonic note on the 7th fret of the next string up – except in the case of the 2nd and 3rd strings.

7th and 12th fret harmonics
The harmonic note on the 12th fret of a string is always identical to the harmonic note on the 7th fret of the next string up – except in the case of the 2nd and 3rd strings.