

Tuning

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When you complete this lesson you will be much better at playing in tune.

Tuning is both a science and an art. Before the advent of small electronic tuners and tuning apps for smart phones, tuning was a tedious process.

People practicing at home rarely checked with a tuning fork and didn't realize that they were not playing in tune. It is also difficult to match pitch with different timbres, such as a trumpet to a tuning fork. They got used to the feeling and sound they were playing and it didn't feel right or sound right when they were asked to change.

In bands and orchestras, the practice typically started with the director taking a long time—between 10 and 30 minutes—to check a tuning note for each player. The director would then declare the note to be in-tune, sharp, or flat. Directors were sometimes wrong and only one note was tuned, which might not be representative of the other notes on that instrument.

The Science of Tuning

If you play an instrument with keys to produce the notes (piano, clarinet, flute, trumpet, etc.), the science of tuning is very important to get your instrument in tune. If you play an instrument that does not have keys (trombone, vocalists, violin, cello, timpani, etc.) the science of tuning is less important, but it is still worth understanding and using. Have you ever heard a singer who is mostly below pitch? Have you ever heard a string player who is way off on some notes? Using a tuner can help.

A tuner measures the exact number of vibrations per second to determine if a note is in tune to a standard reference note, usually A: 440 (440 vibrations per second). Using a tuner is one aspect of the science of tuning. The way you use a tuner will make a big difference.

Everyone should have a chromatic tuner (tunes any note) and use it frequently. Tune several different notes at every home practice session. First warm-up and then play the notes as naturally as possible. It is the responsibility of every player

to learn to play their instrument in tune. It is not okay to neglect tuning in home practice and then let it become a problem for the director to solve, wasting the time of everyone in the ensemble.

The Art of Tuning

Singers and instrumentalists who play instruments that do not have a key mechanism may practice the art of tuning, but those who play instruments with a key mechanism also need to understand the difference between the science of tuning and the art of tuning.

The art of tuning sometimes involves deliberately playing some notes a little higher or lower, depending on their musical context. The final step in tuning depends on very careful listening and making adjustments in embouchure or breath support to play in tune.

A well-tuned piano is deliberately out-of-tune. That is, the octaves of each note are not an exact multiple of the lower octave in the upper and lower part of the keyboard. If the highest notes were mathematically in tune, they would sound flat to us, so they are tuned a little higher. If the lower notes were mathematically tuned, they would sound a little sharp to us, so they are tuned a little lower. These adjustments are often made with the use of a tuner, so in that sense, it is still scientific.

There are tendencies for notes in a scale to want to pull or gravitate to other notes. Writing all about this would be a long chapter, but you can get a taste by playing up a scale and stopping on the seventh note. Notice how you want to hear the eighth note. Some very artistic players give that pull more feeling by playing the seventh note a little higher. Try the same thing by playing down a scale and stopping on scale degree 2. For many people, this is instinctual—they feel it that way. The result can be very exquisite.

When you are playing in an ensemble you will need to make adjustments to the tuning by listening. Don't pull out your tuner and say "I am right."

Conditioning

When I was in college I played saxophone for a wedding reception pretty much every week. Sometimes the reception was in a hall with a piano that was badly out of tune, always flat—sometimes by more than a half step. It was impossible to solve the problem by pulling the mouthpiece out or by transposing. I did the best I could, but it sounded terrible. After playing for a few hours, it didn't bother me as much—and that really bothered me. If I really listened, it was as bad as when we started, but I was becoming conditioned to the sound.

If a person practices alone and s/he is playing flat, for example, it will eventually sound and feel right. Changing will feel wrong at first. That's why it is important to spend time using a tuner everyday.

Play with Accompaniments

One of the big advantages of spending some time with a recorded accompaniment, such as those provided by many method books or by computer programs is that you will instinctively want to play in-tune with the accompaniment. It is more challenging to play in-tune in an ensemble, because others around you may not be in tune.

Checking Your Tuning

The staves below go beyond the usual range of your instrument. Start by picking a note in the mid- range of your instrument. After warming up play the note 3 times, holding it the last time and check the tuner. If it is sharp, put a plus above the note, if it is in tune put nothing above the note, and if it is flat, put a minus above the note.

Next try notes above and below your starting note, continuing to mark them.

After playing more than 12 notes, you may decide to change your tuning mechanism and do it again.

Do this several times for the full range that you play. No wind instrument plays naturally in tune. Set your instrument to get as many notes in tune as possible. Then remember the notes that are out of tune and see if you can adjust your embouchure or throat opening (think "ee" to raise the pitch and "oh" to lower the pitch).

Sometimes an instrument can be the problem. On a woodwind, if the first key of the open hole after the closed keys raises too high, it can make the note sharp. If it does not raise enough, it can make the note flat. Have a look after you know which notes need adjustment. Take your instrument to a repair shop if you see a problem.

Print more copies of this page and repeat this process once or twice a week until most of your notes are in tune. Use this to recheck your tuning periodically.

