

Tuning Forks

Tuning forks and resonance boxes make it possible to hear a usually undetectable phenomenon: waves transferring energy from one medium to another.



Do not drop the tuning forks. They are very easy to break. They are very delicate. Hold them only by the handle, and strike them only against rubber. If you don't have a sounding block, you can use the sole of your shoe as a striking surface.

1. Strike a tuning fork on the rubber block (never on a hard surface). Hold the vibrating end to your ear.
2. Listen for the differences you hear between the different tuning forks and the numbers on them. Record what you hear in your lab book.
3. Strike a tuning fork on the rubber block before gently touching the vibrating tines to each of these trial materials or locations:
 - Your fingertips
 - The ball hanging from a length of string
 - Near the water surface
4. Strike a tuning fork on the rubber block before gently touching the handle to each of these trial materials or locations.
 - The top of your head
 - On the skull bone just behind one of your ears
 - The top of an empty desk or table
 - In the shallow tray of water
5. Repeat all the trials in steps 3 and 4 with all of the different frequencies of tuning forks (if you have more than one frequency of them).
6. Resonance boxes:
 - a. Space the resonance boxes about 20 cm apart. Be sure the open parts of the boxes are facing each other.
 - b. Strike one of the tuning forks with a striker. Immediately grab the tuning fork that you hit.
 - c. Listen to the other tuning fork.
 - d. Repeat steps a–c with a weight on the second tuning fork.



Turn and Talk

Think about it. How does this station work? Discuss these questions with a partner.

What do the numbers on the tuning forks represent? Do the numbers correspond to the size of each fork? Why or why not?

Which tuning fork had the highest pitch? Why do you think that is?

What happened when you touched the tuning fork to the desk?

Do you hear the vibrations that went through your skull to the tiny bones in your ear?

What happened to the ball after it was touched by the tuning fork? Why do you think that is?

Which tuning fork had the greatest effect on the ball? Why do you think that is?

What happened to the second tuning fork after you struck the first one with the striker? Why?

What happened when you tried this with a weight on one tuning fork? Why?