

Chapter 12 Exploring Sound Lab

Objectives:

- to compare the sounds produced by tuning forks
- to observe the behavior of sound waves in different media

Procedure :

1. Take a tuning fork and hit it on a rubber stopper. Listen carefully to the sound produced. Repeat until you have heard all 4 forks. Do **not** hit the forks on any other surfaces!
2. Rank the sounds from highest to lowest.
3. Now place a tuning fork (stem end) on the block of wood. Listen to the wood, compare the sound. Repeat for all four. .
4. Place a tuning fork , upside down, into the low cup of water, record behavior of water. Have your partner hold the cup next to their ear, then place fork in water, how does the sound compare? Repeat for all 4 and heights of water.
5. Strike the tuning fork that is attached to the box.

1. What is different about the sound produced by the tuning fork attached to the box? How does it compare to those not attached to the box?



Data :

Table 1 - Observations

Tuning Fork (Hz)	Sound (High, Med, Low, very low)	Thin Block of Wood	Low Water Level	Med Water Level	High Water Level	Wavelength in meters
125 Hz						
250 Hz						
500 Hz						
1000 Hz						

Analysis/Results :

1. Which tuning fork had the highest sound?
2. Lowest sound?
3. How did the sounds relate to the frequencies?
4. What happened to the sound when it traveled through the Thin wood?
5. What happened to the water when you placed the in the forks?
6. Which fork was the most reactive?
7. Describe what happened to the sounds in the different heights of water.
8. You know the frequency of each tuning fork, find the speed of sound through air in meters per second (on a nice day!), use the appropriate equation and find the wavelength for each fork. Show all calculations!