

1. What is the source of all sounds?
2. What happens to the pitch of a sound wave as the frequency of the wave is increased?
3. Using both words and diagrams, distinguish between a compression and rarefaction of a wave.
4. Why is a sound wave unable to travel through a vacuum?
5. Why do sound waves travel more quickly through liquids and solids than they do through gases?
6. Describe the motion of the medium at a node and antinode of a standing wave.
7. Two waves with equal frequency, wavelength and amplitude are passing through each other as they are traveling in opposite directions on a string. What would be observed at a point where the two waves are completely out of phase.
8. You see a flash of lightening, and two seconds later, hear the thunder clap. How far from you did the lightening strike?
9. Why is a tuning fork louder when it is held on a sounding board?
10. A crow bar and a tablespoon are both dropped to the floor. Why do they produce distinctly different sounds?
11. Natasha takes a deep breath and belts out a musical note. When she stops singing, she notices that the 512 Hz tuning fork is humming. Explain what happened to cause this.
12. What is resonance?

13. Is it possible for one sound wave to completely cancel out another sound wave?
14. How many beats per second are heard when a 494 Hz and 496 Hz tuning forks are struck at the same time?
15. What range of frequencies can an average young person normally hear?
16. What is an infrasonic sound?
17. What is an ultrasonic sound?
18. What are two examples of how sound travels slower than light?
19. What is the speed of sound in dry air at 0 degrees Celsius?
20. How does water vapor in the air affect the speed of sound?
21. How does the temperature of the air affect the speed of sound ?
22. What is the speed of sound in dry air at room temperature?
23. What does the speed of sound through a material depend upon?
24. How much faster does sound travel in steel than air?
25. How much faster does sound travel in water than air?