

Sound and Light Waves

Grade 4 • SCIENCE • Explaining that sound travels through vibrations and that light can reflect from objects and travel to the eye. • Standards: 4-PS3-2, 4-PS4-2

Read each question carefully and write your answer on the line. Think about how sound travels through vibrations and how light reflects off objects to reach your eyes.

1. When you pluck a guitar string, it moves back and forth quickly. What is this back-and-forth motion called?
2. You look at a red apple on the table. Does light travel FROM the apple TO your eye, or FROM your eye TO the apple?
3. Marcus taps a drum with his hand. What must happen to the drum surface for it to make a sound?
4. A flashlight shines on a mirror. What does the mirror do to the light?
5. Sofia hears a bell ringing in the classroom. The sound travels from the bell to her ear through vibrations in what substance?
6. You see a blue backpack hanging on a hook. Light from a lamp bounces off the backpack and then travels where?
7. A tuning fork is struck and placed on a wooden table. The table begins to make sound too. Explain why the table makes sound.
8. In outer space, there is no air or other matter. Would an astronaut be able to hear another astronaut shouting nearby? Explain why or why not.
9. A student stands in front of a calm pond and sees her reflection in the water. Describe the path light takes for her to see her own reflection.
10. A teacher strikes a large gong. Explain how the sound travels from the gong to a student sitting across the room, including what vibrates.

Answer Key — Sound and Light Waves

For the teacher / parent. Do not distribute with the worksheet.

1. vibration
2. from the apple to your eye
3. it must vibrate
4. reflects it
5. air
6. to your eye
7. the vibrations from the tuning fork travel to the table and make it vibrate
8. no, because sound needs matter to vibrate and carry the sound waves
9. light travels from a source to the student, reflects off the student to the water, reflects off the water, and travels to the student's eye
10. the gong vibrates, which makes the air particles around it vibrate, and those vibrations travel through the air to the student's ear