

Name: _____ Date: _____

Answer Key: Bouncing Beams and Silent Spacewalks: 3rd Grade Waves Quiz

Solve puzzles about how whale songs travel through water and why mirrors show our faces in this introductory physics challenge.

1. If you are standing in a large, empty gym and shout loudly, you might hear your voice again a second later. What is this called?

Answer: B) An echo

An echo happens when sound waves hit a flat surface and bounce back to your ears.

2. True or False: Sound waves can travel through water.

Answer: A) True

Sound waves need a medium to travel through; whales and dolphins communicate by sending sound waves through the water.

3. Light waves allow us to see our own face when we look into a ___ because the light bounces off the shiny surface.

Answer: C) Mirror

Mirrors have very smooth, shiny surfaces that reflect light waves directly back at us.

4. When you pluck a rubber band, it moves back and forth very fast to make a sound. This fast movement is called a:

Answer: B) Vibration

All sound is created by vibrations, which are quick back-and-forth movements.

5. True or False: Light waves can travel through the empty space between the Sun and the Earth.

Answer: A) True

Unlike sound, light waves do not need air or water to travel; they can move through the vacuum of space.

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6. If you go behind a large tree, you enter a dark area where the tree blocks the light waves. This dark area is a ____.

Answer: C) Shadow

Shadows are formed when an opaque object like a tree blocks light waves from passing through.

7. Which of these things does NOT make its own light waves?

Answer: D) A metal spoon

Flashlights, the Sun, and candles are light sources, while a spoon only reflects light from other things.

8. When a drummer hits a drum softly, the sound is quiet. To make a louder sound, the drummer must hit it with more ____.

Answer: A) Energy

Bigger vibrations created with more energy result in louder sound waves.

9. What happens to sound if there is absolutely no air, water, or ground for it to move through?

Answer: C) It cannot travel at all

Sound waves are mechanical waves that require a 'medium' or material to travel; they cannot move through empty space.

10. True or False: We can see objects because light waves bounce off them and enter our eyes.

Answer: A) True

Vision works because light reflects off the things around us and travels to our eyes.