

Name: _____ Date: _____

Wrangle the Waves: A 1st Grade Sound and Light Challenge

Young scientists engineer solutions for dark rooms and silent signals using shadows, vibrations, and reflective surfaces during hands-on station rotations.

1. You want to send a secret message across a big, sunny field using only a small mirror. How could you make the message move?

- A. Hide the mirror in your pocket
- B. Tilt the mirror to bounce sunlight to your friend
- C. Wait for the sun to go behind a cloud
- D. Break the mirror into tiny pieces

2. If you are in a room with no windows and the lights are turned off, you cannot see your favorite toy because ___ is needed to see objects.

- A. A loud noise
- B. A mirror
- C. Light
- D. Heat

3. True or False: If you touch a ringing bell very tightly with your hand, the sound will stop because you stopped the vibrations.

- A. True
- B. False

4. Imagine you are building a puppet theater. Which material would be BEST for creating a very dark, clear shadow on the wall?

- A. Clear plastic wrap
- B. Thick black cardboard
- C. A piece of thin tissue paper
- D. A glass of water

5. To make a drum sound much louder, you should hit the drum skin with ___ force to make bigger vibrations.

- A. Less
- B. Zero
- C. More
- D. Soft

6. True or False: Using a flashlight is a way to communicate words to someone far away if you use a pattern of long and short flashes.

- A. True

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B. False

7. Two friends are talking through a 'telephone' made of two tin cans and a long string. What is carrying the sound wave from one friend to the other?

- A. Electricity in the air
- B. The vibrating string
- C. The color of the cans
- D. Invisible magnets

8. When you put a straw into a glass of water, the straw looks like it is broken or bent. This happens because light ___ when it moves from air into water.

- A. Changes direction
- B. Disappears
- C. Stays the same
- D. Becomes a shadow

9. True or False: A shadow always stays the exact same size regardless of how close the object is to the light source.

- A. True
- B. False

10. If you want to design a way to warn people a train is coming without using sound, which of these would work best?

- A. Blowing a loud whistle
- B. Ringing a heavy bell
- C. Flashing bright red lights
- D. Shouting very loudly