

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Sonic Mayhem vs. The Speed of Light: A 3rd Grade Secret Science File

Third graders apply wave mechanics across 10 challenges to determine how echoes bounce off canyon walls and why submarine lights change color underwater.

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**1. Imagine you are deep in a canyon and yell 'Hello!' A few seconds later, you hear your voice again.**

**What is happening to the sound waves?**

- A. The waves are being absorbed by the rock
- B. The waves are bouncing off a flat surface
- C. The waves are turning into light
- D. The waves are stopping mid-air

**2. In a dark room, a flashlight beam looks like a straight line. This happens because light waves usually travel in \_\_\_\_.**

- A. circles
- B. zigzag patterns
- C. straight lines
- D. backward loops

**3. True or False: Sound waves can travel through a solid wooden door.**

- A. True
- B. False

**4. If you are playing a drum very softly, and then you hit it much harder, what property of the sound wave did you change?**

- A. Color
- B. Amplitude (Volume)
- C. Speed
- D. Echo

**5. When you put a straw in a glass of water, the straw looks like it is broken or bent. This is caused by light \_\_\_\_.**

- A. refraction
- B. reflection
- C. shadows
- D. vibration

**6. True or False: If a space explorer's hammer hits a rock on the moon, a nearby astronaut would hear a loud 'bang' through the empty space.**

- A. True
- B. False

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**7. Which of these objects would be the BEST at reflecting light waves to create a clear image?**

- A. A piece of black paper
- B. A clear glass window
- C. A shiny silver tray
- D. A rough brick wall

**8. The highness or lowness of a sound, like a bird chirping versus a lion roaring, is called \_\_\_\_.**

- A. brightness
- B. rhythm
- C. echo
- D. pitch

**9. A stained-glass window looks beautiful because it lets some light through but blocks other light. This type of material is:**

- A. Transparent
- B. Opaque
- C. Translucent
- D. Invisible

**10. True or False: Light waves travel much faster than sound waves.**

- A. True
- B. False