Name: _____ **Date:** _____

Making Waves: A 4th Grade Shimmer and Shout Quiz

Identify how energy moves through whale songs and flashlight beams in this quick formative assessment on mechanical and electromagnetic waves.

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1. Imagine you are watching a humpback whale sing underwater. What is the whale's sound traveling through to reach your ears?

A. Solid rock
B. Empty space
C. Liquid water
D. Heat waves

2. True or False: Light from a flashlight can travel through a completely empty vacuum where there is no air.

A. True
B. False

3. When you look into a calm pond and see your own face, the light is bouncing off the water. This is called _____.

A. Refraction
B. Reflection
C. Absorption
D. Vibration

4. If you play a very high note on a flute, you are changing the wave's pitch. What part of the wave determines if a sound is high or low?

A. Frequency
B. Brightness
C. Volume
D. Thickness

5. True or False: Sound waves travel faster than light waves.

A. True
B. False

6. Which of these is the best example of a translucent object that lets some light through but scatters it?

A. A clear glass window
B. A heavy wooden door
C. A piece of frosted wax paper
D. A shiny metal spoon

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7. A sound wave is created by back-and-forth movements called _____.

A. Reflections
B. Shadows
C. Vibrations
D. Beams

8. Why does a straw look 'broken' or bent when you put it in a glass of water?

A. The water reflects the light
B. The light waves slow down and bend
C. The straw is actually breaking
D. Sound is pushing the straw

9. True or False: Increasing the amplitude of a sound wave makes the sound quieter.

A. True
B. False

10. If you yell into a deep canyon and hear your voice come back a few seconds later, you have created a(n) _____.

A. Echo
B. Rainbow
C. Shadow
D. Prism