Waves: Properties and Behavior

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Understanding Transverse and Longitudinal Waves

Name: _____ Date: _____

Answer the following questions based on what you've learned about waves.

1. What direction does a transverse wave move?

- **A.** Up and down
- **B.** Side to side
- **C.** In a straight line

2. What is a longitudinal wave, and how does it move?

3. Transverse waves move parallel to the direction of energy transfer.

◯ True ◯ False

4. In a longitudinal wave, the particles move ___ to the direction of the wave.

5. Which of the following is an example of a transverse wave?

- **A.** Sound waves
- **B.** Water waves
- **C.** Seismic P-waves

6. Both transverse and longitudinal waves can transfer energy.

◯ True ◯ False

7. Where might you see transverse waves in nature?

8. Longitudinal waves can be seen in ___ waves, which compress and expand.

9. What is the main difference between transverse and longitudinal waves?

- **A.** The medium they travel through
- **B.** The direction of motion
- **C.** Their speed

10. How does understanding waves show God's design in creation?

Answer Key

1. Up and down 2. A longitudinal wave moves in a compression and rarefaction pattern, parallel to the direction of energy transfer. 3. False 4. parallel 5. Water waves 6. True 7. You might see transverse waves in ocean waves or when shaking a rope up and down. 8. sound 9. The direction of motion 10. Understanding waves shows God's design because it reveals how intricately energy moves and interacts in our world.

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