What are waves?

Multiple Choice

Directions: *On the line before each question, write the letter of the correct answer.*

_____ **1.** What does a wave transfer?
- **A.** power
- **B.** matter
- **C.** energy

_____ **2.** Which type of wave is a radio wave?
- **A.** mechanical
- **B.** longitudinal
- **C.** electromagnetic

_____ **3.** Which type of wave has rarefactions and compressions?
- **A.** transverse
- **B.** longitudinal
- **C.** electromagnetic

_____ **4.** Which type of wave is produced by movement at cracks in Earth's upper lay
- **A.** seismic
- **B.** ultraviolet
- **C.** electromagnetic

_____ **5.** What is the name for the lowest point on a transverse wave?
- **A.** crest
- **B.** trough
- **C.** wavelength

Matching

Directions: *On the line before each definition, write the letter of the term that matches it correctly. Each term used only once.*

_____ **6.** the highest point on a transverse wave

_____ **7.** Waves do not transfer this.

_____ **8.** Sunlight produces these.

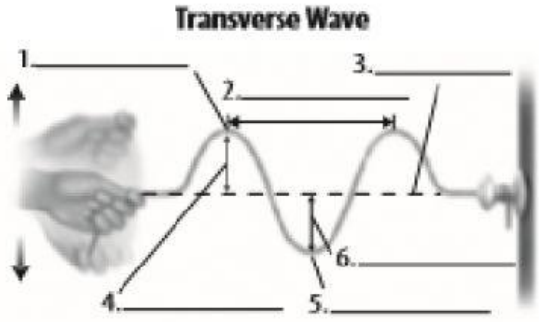
_____ **9.** type of wave that travels only through matter

_____ **10.** Waves in which the disturbance is perpendicular to the direction the waves travel.

- **A.** matter
- **B.** mechanical waves
- **C.** electromagnetic wa
- **D.** transverse waves
- **E.** crest

Wave Properties

Directions: *Label this diagram by writing the letter in front of each term from the word bank on the correct l Some terms may not be used, and some may be used more than once.*



A. amplitude
B. compression
C. crest
D. rarefaction
E. rest position
F. trough
G. wavelength

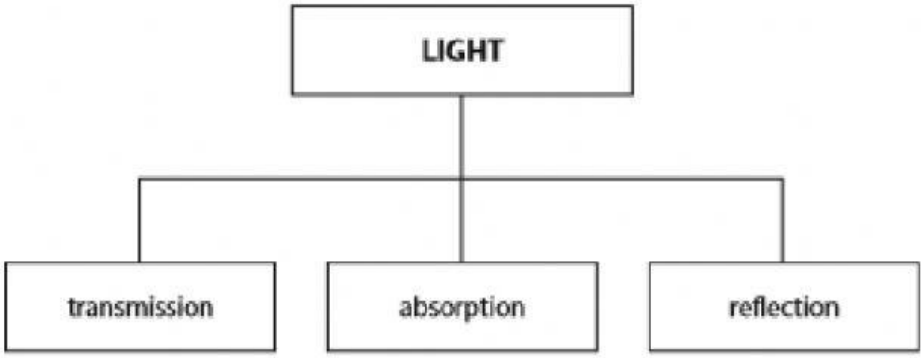
Directions: *Complete this paragraph by choosing terms from the word bank above and writing them in the correct spaces. Some terms may not be used, and some may be used more than once.*

In a transverse wave, a(n) **(7.)** _____ is the distance from one **(8.)** _____ to the next crest or from one **(9.)** _____ to the next trough. In a longitudinal wave, the **(10.)** _____ is the distance from one **(11.)** _____ to the next compression or from on **(12.)** _____ to the next rarefaction.

Question	Answer
What is true about the speed of waves as they travel through different materials?	**1.**
What is usually true about the speed of mechanical waves in solids compared with their speed in gases?	**2.**
What is usually true about the relationship between the speed mechanical waves travel and the temperature of the medium?	**3.**
What happens to the speed of electromagnetic waves as they travel through different media?	**4.**
Where do electromagnetic waves move fastest?	**5.**
Where do electromagnetic waves move slowest?	**6.**

Light, Matter, and Color

Directions: *Use the terms from the diagram to answer each question or respond to each statement on the line provided. Some terms will be used more than once. Some terms might need to be changed to the plural form.*



1. Light from the Sun that bounces off the surface of the Moon is a(n) _____.
2. Light that travels in wavelengths through clear plastic wrap is a(n) _____.
3. Seeing your image in the mirror is a(n) _____.
4. The movement of light waves through an object is a(n) _____.
5. Your friend is standing in the bright sunlight and wearing a red jacket. What is happening to the red wavelengths of light? _____
6. You reach for the black crayon in a box of crayons. What is happening to the wavelengths of color striking the black crayon? _____
7. Light waves that spread out in all directions when you shine a flashlight through a window are _____.
8. An image of your friend in the window next to where she is standing is a(n) _____.
9. You shine a red light on a blue object, and it turns black. What happens to the red wavelengths of light when they strike the object? _____
10. You shine a blue light from a flashlight on white paper, and the paper appears blue. What is happening to the blue wavelengths of light? _____