Name _____ Date _____ Class _____

SECTION 1 Reinforcement

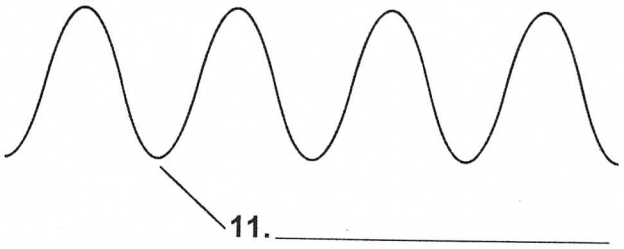
What are waves?

Directions: *Write the kind or kinds of waves*—**mechanical, electromagnetic, transverse,** *or* **compressional**—*that apply to each term or description.*

1. has areas where particles are spread out _____
2. water waves _____
3. X rays _____
4. transfer energy but not matter _____
5. has peaks and valleys _____
6. can travel only through a medium _____
7. can travel through a vacuum _____
8. matter moves in same direction as wave travels _____
9. matter moves at right angles to direction wave travels _____

Directions: *Study each of the following diagrams. Then label each one and give an example of each kind of wave.*

A.



10. _____

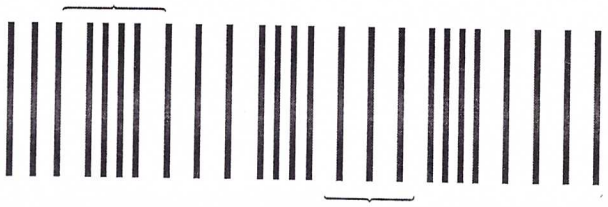
11. _____

12. _____ wave

13. Example: _____

B.

14. _____



15. _____

16. _____ wave

17. Example: _____

Meeting Individual Needs

Name Date Class

SECTION 2 Reinforcement

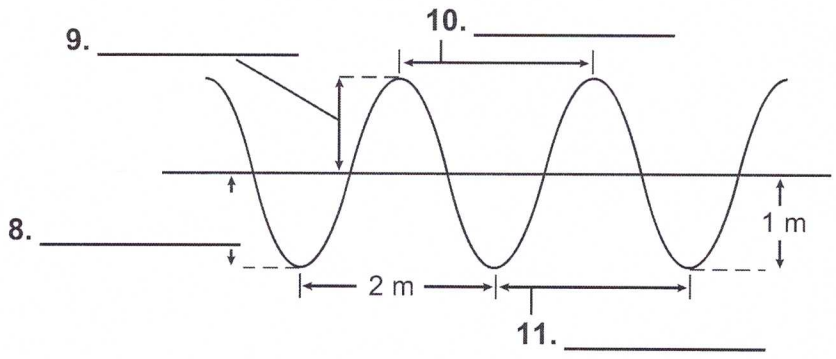
Wave Properties

Directions: *Circle the term that correctly completes each sentence.*

1. The wavelength of a transverse wave is often measured from (crest to crest, crest to trough).
2. Waves with greater amplitudes carry (more, less) energy than waves with smaller amplitudes.
3. The amplitude of a wave can be measured from the (medium, crest) or the (trough, wavelength) to the rest position of the wave's medium.
4. The number of waves that pass a point in one (second, minute) is the wave's (amplitude, frequency).
5. Waves with longer wavelengths have a (lower, higher) frequency and waves with shorter wavelengths have a (lower, higher) frequency.
6. A group of molecules that are squeezed together is called a (rarefaction, compression).
7. Electromagnetic waves travel faster in (gases, solids).

Directions: *Use the words below to label the diagram. You will use each term more than once. Then answer the questions.*

amplitude **wavelength**



12. What is the wavelength of the wave shown in the diagram?

_____

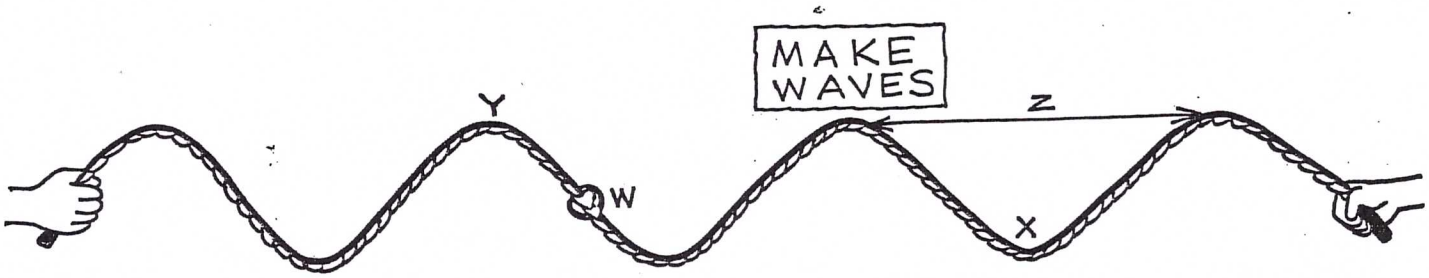
13. What is the amplitude of the wave shown in the diagram?

_____

Meeting Individual Needs

PROFILE OF A WAVE

Sound waves, water waves, radio waves, microwaves, electromagnetic waves, light waves, X-rays, gamma rays, and more! These are some (but not all) of the different kinds of waves traveling in the world. A wave is a rhythmic disturbance that carries energy from one place to another. The many different kinds of waves share many characteristics. Some of them are shown on this wave that's being made by kids shaking a rope up and down. Answer the following questions about wave characteristics.



1. What is the distance called that is represented by the arrow Z?_____
2. What letter is labeling the wave's trough?_____
3. What letter is labeling a wave's crest?_____
4. The number of waves that pass the poster per second is called the _____ of the waves.
5. If the knot (W) travels 2 meters in 1 second, we say it has a _____ of 2 m/s.
6. If the wavelengths were shortened, would the frequency be higher or lower?_____
7. The greatest distance the knot (W) travels from its resting position is called the wave's _____.
8. What kind of waves are these in the rope?_____
9. A wave in which vibrations from the first disturbance set off a series of collisions followed by calm empty spaces is called a _____ wave.
10. Radiation is the transfer of energy by _____ waves.
11. If the kids were wobbling this rope up and down through pudding instead of air, the _____ would change.
12. The rapid, back and forth movements of any object are called _____.
13. The frequency of a wave is measured with the unit _____, which is _____ wave per _____.
14. If the waves in the rope have a frequency of 2 hertz, how many waves pass a point per second?____

Name _____