Directions: Study Figure 1, then identify each part by filling in the blanks below.

Figure 1

1. 
2. 
3. 
4. 

Directions: Answer the following questions on the lines provided.
5. List three characteristics of a wave that you can measure.

6. What is meant by the frequency of a wave? What is the unit?

7. If the frequency of a given wave increases, what happens to the wavelength?

Directions: Fill out the following table by describing how to measure each of the quantities for the two types of waves.

<table>
<thead>
<tr>
<th>Wave</th>
<th>Wavelength</th>
<th>Amplitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. transverse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. compressional</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. What is the velocity of a wave with a frequency of 6 Hz and a wavelength of 2 m?
Chapter Review (continued)

Part B. Concept Review
Directions: Use the diagram below to answer questions 1–5.

1. What type of wave is wave A?

2. Which wave carries more energy?

3. What do points a and c represent?

4. What do points b and d represent?

5. How does the frequency of wave B compare with that of wave A?

Directions: Using the equation \( v = \lambda \times f \), find the missing values.
6. What is the velocity of a wave with a frequency of 760 Hz and a wavelength of 0.45 m?

7. A wave with a wavelength of 15 m travels at 330 m/s. Calculate its frequency.

Directions: Answer the following questions on the lines provided.
8. How do scientists know that seismic waves can be either compressional or transverse?

9. Why do surfers like water waves with high amplitudes?

10. Will loud sounds from traffic near a school break glass objects inside the school? Explain.
Directions: Determine if each statement is true or false. If it is false, change the italicized word(s) to correct the sentence.

1. Waves transfer matter as they travel.

2. A wave will travel only as long as it has energy to carry.

3. Anything that moves up and down or back and forth in a rhythmic way is vibrating.

4. All waves need a medium in order to travel.

5. Transverse and congressional waves are the two types of mechanical waves.

6. In a longitudinal wave the matter in the medium moves back and forth at right angles to the direction that the wave travels.

7. In a transverse wave the matter in the medium moves back and forth in the same direction that the wave travels.

8. In a transverse wave, the peak of the wave is the crest and the lowest spot is the trough.

9. The refraction of a wave is how many wavelengths pass a fixed point each second.

10. The speed of a wave is determined by multiplying the wavelength by the frequency.

11. In a longitudinal wave, the denser the medium is at the compressions the smaller its amplitude.

12. In a transverse wave, the higher the amplitude, the more energy it carries.
Characteristics of Waves

Use this worksheet to study Lesson 11.2.

1. a. In the diagram, the wavelength is labeled ______.
   b. The crest of the wave is labeled ______.
   c. The trough of the wave is labeled ______.
   d. The amplitude of the wave is labeled ______.

2. The number of waves that pass a point in one second is called the __________ of the waves.

3. The speed of the waves can be calculated using the following formula.

   wave speed =

4. A boat at a dock rocks up and down with a frequency of 1.5 hertz. The waves are 5 meters long.
   a. What is the wavelength of the waves?

   ____________________________

   b. What is the frequency of the waves, in waves per second?

   ____________________________

   c. Substitute the data in the formula for wave speed and solve.

   ____________________________

   d. The speed of the waves is _______ meters per second.