Name:_____ Group: _____ Date: _____

<u>Activity 7: Analysis Questions</u>   (Due Monday 4/30/18)

1. Describe what happened when:
        a. the wave pulses reached the end of the spring.
_____
_____

        b. the transverse wave reached the end of the spring.
_____
_____

2. What happened when the spring was stretched to double its length?
_____
_____

3. What happened to the amplitude of the wave pulse when it traveled along the spring? Suggest an explanation for your observations.
_____
_____
_____

4. Do you think that sound also has a wavelength? Explain why or why not.
_____
_____

5. Look at the diagram shown on the right of a wave made with a spring.
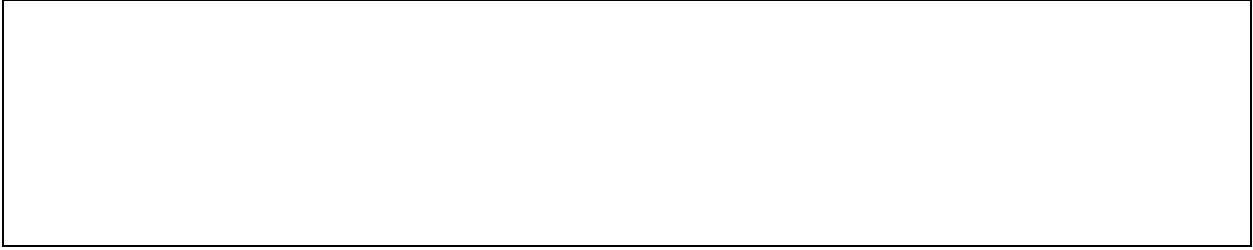   a. Describe the motion of the spring at points B and C.
_____
_____

        b. Is the energy transfer of the wave parallel or perpendicular to the motion of the spring at point B? Explain.
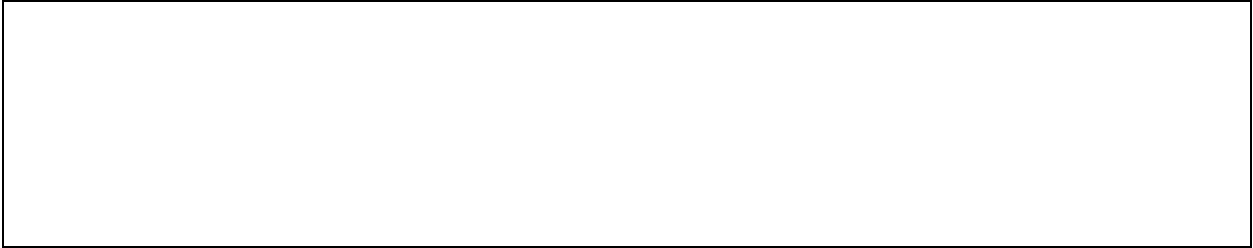_____
_____

6. Trace the diagram from the previous question above, and then
        a. draw what the wave would look like if the amplitude was doubled.

b. draw what the wave would look like if the frequency was doubled.

c. draw what the wave would look like if the wavelength was doubled.

7. Make two tables like the ones below, and fill in the missing diagrams to show changes in wavelength and frequency. Then explain what your diagrams model.

8. For a wave of a given speed, what is the relationship between the wavelength and frequency? Use your diagrams from the activity and the model from the previous item to look for patterns.

_____
_____
_____

9. A transverse wave with constant speed has an increase in amplitude over time, as shown in the left-hand column of the table below. Some of the data for energy and wavelength is missing.

Transverse wave data		
Amplitude (m)	Energy (J)	Wavelength (m)
1	10	0.3
2	40	0.3
3	90	0.3
4		
5		

   a. Look at the patterns in the data and predict the missing energies and wavelengths of the wave. In your science notebook, copy the last two rows of the table and complete the data. Then explain the pattern you followed to fill in the data.

_____
_____

   b. Make a graph of amplitude (x-axis) vs. energy (y-axis) that includes all five times. Make sure to label your graph

   c. Use your graph to predict the energy and wavelength for the amplitude of 7m.