

Name(s): \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

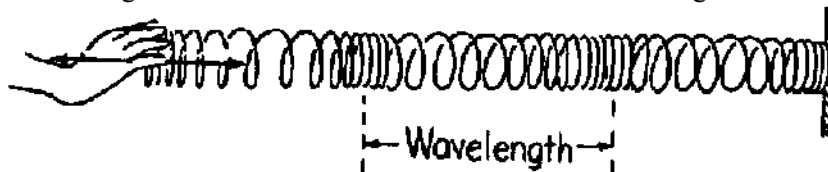
### ACTIVITY #3 WAVE AT ME

**Problem:** Which type of wave travels the fastest for a given medium?

**Materials:** meter stick, stopwatch, slinky™.

**Procedure:**

1. Send a pulse down a slinky™ by pinching together several coils of a slinky and then release them. On the diagram<sup>1</sup> below note the characteristics of a wavelength.

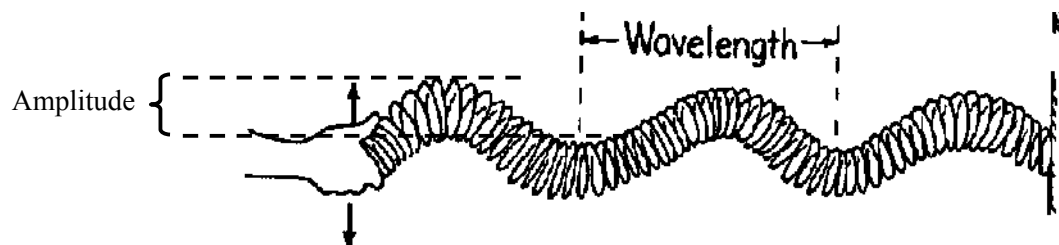


What happens to the shape of the pulse as it travels down the spring? \_\_\_\_\_

Look up and record the name of this type of wave motion. \_\_\_\_\_

Give another example of this type of wave motion. \_\_\_\_\_

2. Quickly pull an end of a slinky™ to one side and then release it. On the diagram<sup>1</sup> below note the characteristics of the amplitude and the wavelength.



Look up and record the name of this type of wave motion. \_\_\_\_\_

Give another example of this type of wave motion. \_\_\_\_\_

Collect the data needed to calculate the speed of a transverse pulse and a longitudinal pulse. Construct a data table and enter the data you collect.

How does the speed of a longitudinal pulse (pinched coils) compare to the speed of a transverse pulse (pulled to the side) for the same stretch? \_\_\_\_\_

**3. Summing Up:**

- A. How do the coils in a longitudinal pulse move relative to the direction in which the wave is traveling? \_\_\_\_\_
- B. How do the coils in a transverse pulse move relative to the direction in which the wave is traveling? \_\_\_\_\_
- C. Based on the above descriptions, suggest a reason why different pulses travel with different speed? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<sup>1</sup> Diagrams from clip art Hewitt Drew It™, Laserpoint, 1328 West Palo Alto, Fresno, CA 93711