SPRING/SLINKY ACTIVITY

Submit group report on full sheet of paper addressing the following explorations. Be careful not to deform slinkies and springs! Use either spring or slinky to get best results.

1. Place spring/slinky flat on tile floor and, holding each end, stretch carefully. Experiment with creating longitudinal and transverse waves. What happens to a transverse wave upon reflection from the other end (relative to the incident wave)? Describe and draw each type of wave.

2. Send 2 pulses toward each other from opposite ends. Do the pulses appear to reflect off of each other or to pass through each other?

3. Try producing a standing wave (transverse and longitudinal). Describe how it is formed.

4. Explain what happens to wavelength when frequency of oscillation is increased.

5. Using the spring, make the following measurements (let 3 tiles = 1 meter):
    a. Time a transverse pulse over a set distance and calculate its speed (m/s).
    b. Now send a pulse of different amplitude and calculate wave speed. Is it different?
    c. Now increase the tension by stretching farther, send a pulse, and calculate wave speed. Is it different?
    d. Experiment with longitudinal pulses. Do you note any difference to transverse pulses?