**Learning Goal: I will plan and conduct inquiries to determine the speed of energy in a medium**

At each station you are to send an energy pulse through the medium and measure the speed at which energy propagates (moves) through the medium. Record your values in the chart below:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance energy travelled | Time taken  (average 3 trials) | Speed of energy propagation, venergy |
| surgical tubing | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |
| wave machine 1 | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |
| wave machine 2 | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |
| water in a tank | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |
| Thin metal slinkie | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |
| Wide metal slinkie | d= \_\_\_\_\_ m | taverage =\_\_\_\_\_ s | venergy = \_\_\_\_\_ m/s |

**Analysis**

1.Were you surprised to find the speed of energy propagation to be different in each media? Explain.

2. Look at the pattern of data, from fastest to slowest. Can you think of a reason why energy would travel differently in each media?

3. Sound energy travels through different media. Do you think the speed of sound would be fastest when it propagates through solid, liquid or gas? Justify. Then do some internet research to see if your intuition is correct, citing one source.

Source #1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_