

Unit 3 Handout 68

Lesson 2: Testing the Motion of Waves

Purpose: To use a spring to investigate different kinds of waves.

Guiding Questions:

- What is a wave?
- How are the waves generated by an earthquake similar and different to each other?

Instructions. Follow the procedure starting on page 14 of your XPT textbook. A few modifications will be made:

- We will not use string, we will simply hold the spring.
- We will not use construction paper, we will use the floor tiles for measurement.

Question: How does the type of wave affect the time it takes the wave to travel back and forth in a spring?

Ind. variable: _____ Dep. variable: _____

Data Table.

Title: _____

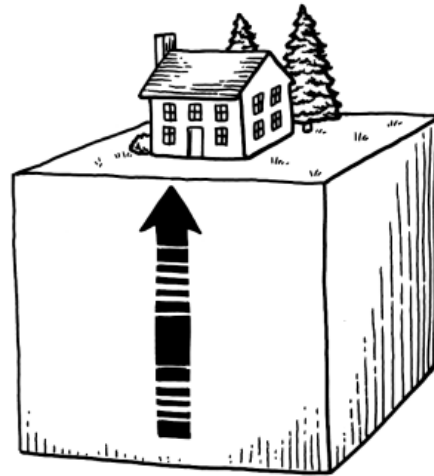
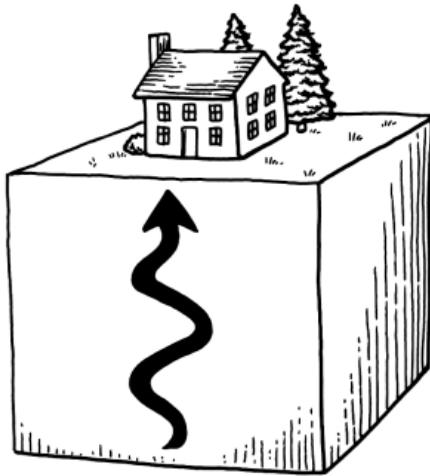
Type of Earthquake Body Wave	Sketch of How Spring Moves	Time for Wave to Travel Back and Forth One Complete Trip (in seconds)			
		Trial 1	Trial 2	Trial 3	Avg.*
Push and Pull (P-Wave), Step 6					
Side to Side (S-Wave), Step 7					

* Average mean. Add trials and divide by 3.

Continue on to the back of the sheet.

Wave Type	Your Average	Class Average
P-Wave		
S-Wave		

Identifying Waves. Below are two illustrations of the body wave types we have learned about. For each picture **a)** say if it is a P- or S-wave and **b)** provide evidence that supports your choice. (See the diagram on p. 17 for additional help.)



Apply Ideas.

1. In the illustrations above, draw arrows on each house to show how the earthquake body wave might move the ground.
2. Which type of wave, P-wave or S-wave, is more likely to cause damage to buildings? Explain.