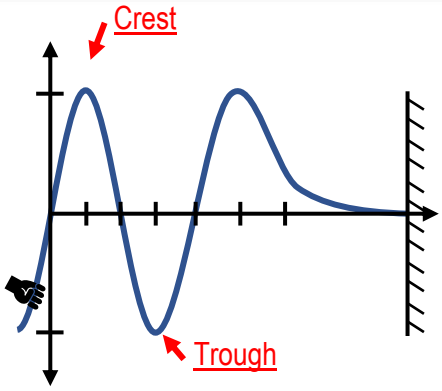
CONCEPT: INTRO TO WAVE TYPES AND WAVE SPEED

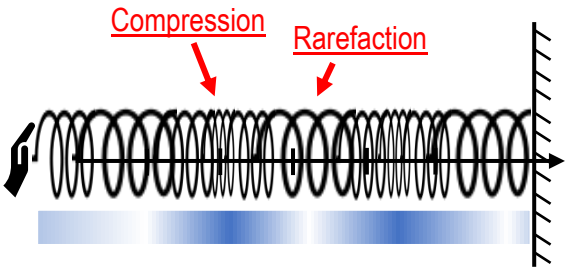
- A wave is a **disturbance in space** that travels through a **medium**, or _____ (like a string, water, or even air).

TRANSVERSE → Whip slinky up & down
Displacement is **[Perpendicular | Parallel]** to wave motion



- Wavelength **λ:** horizontal distance from crest to crest
- Period **T:** time to compete cycle. Frequency $f = \frac{1}{T}$
- Amplitude **A:** ½ vertical distance from crest to trough

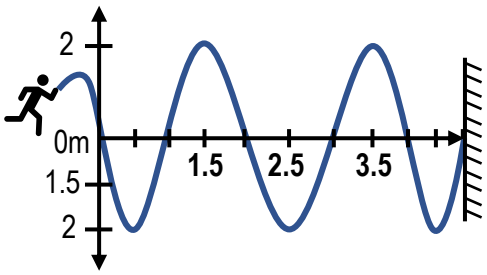
LONGITUDINAL → Push slinky back & forth
Displacement is **[Perpendicular | Parallel]** to wave motion



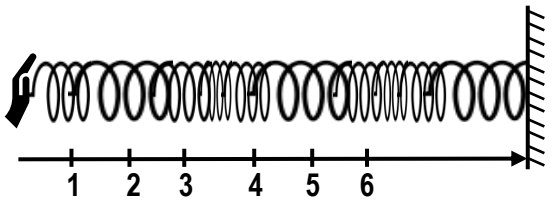
- Wavelength **λ:** distance from compression to compression
- Period **T:** time to compete cycle. Frequency $f = \frac{1}{T}$
- Amplitude **A** not important

EXAMPLE: For each of the waves below: determine the Amplitude & wavelength.

a) determine the Amplitude & wavelength



b) determine the wavelength



- **ALL** types of waves have the same speed relationship: v = ____ = ____ = ____

EXAMPLE: Sound is a longitudinal wave which travels through air with a speed of 343m/s. What is the wavelength of a sound wave with a frequency of 260 Hz?

PROBLEM**:** A wave has a wavelength of 10mm and moves at a speed of 50mm/s**.** What is the frequency of this wave?

A) f **=** 50 Hz/s
B) f **=** 5 Hz
C) f **=** 500 s

PROBLEM**:** A wave travels along a stretched horizontal rope**.** The vertical distance from *crest* to *trough* is 15cm, and the horizontal distance from *crest* to *trough* is 20cm**.** What are the amplitude and wavelength for this wave?