

# Bell Work

- Complete 1-6 of the Section 1 Review on p. 458.

# Chapter 15 section 3

## Properties of waves

GLE: Investigate the types and fundamental properties of waves

**SPI 0707.11.5 Compare and contrast the different parts of a wave.**

# **What** You'll Learn

- The difference between amplitude and wavelength

# Essential Questions

- *How do we measure and describe waves?*
- How does knowing these properties help engineers?

# What Mastery Looks Like

Reporting Category: PHYSICAL SCIENCE: Motion

Performance Indicator: 0707.11.5 Compare and contrast the different parts of a wave.

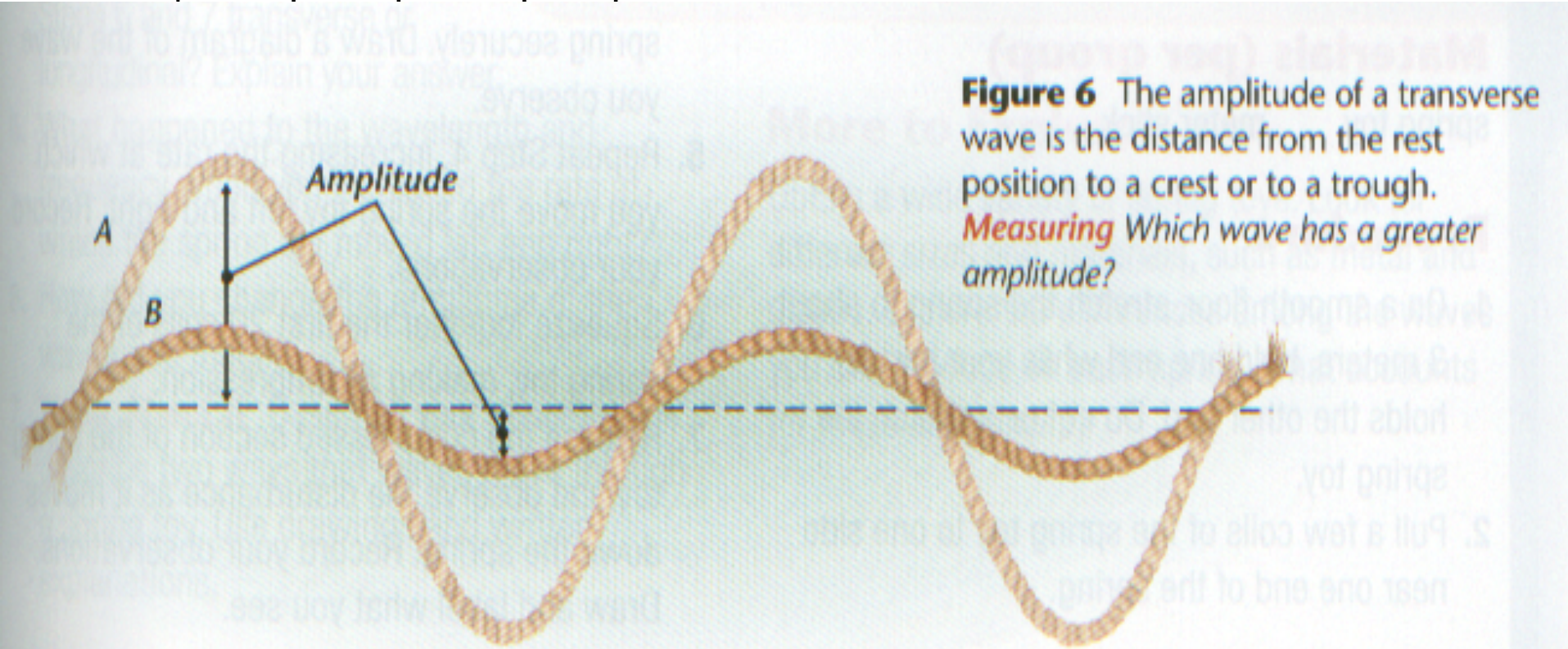
**35** As a wavelength decreases, the crests of the wave

- A** become wider.
- B** become shorter.
- C** get closer together.
- D** get farther apart.

# I. Amplitude

- Can we measure how high a

- How can waves be used in



**Figure 6** The amplitude of a transverse wave is the distance from the rest position to a crest or to a trough.  
*Measuring* Which wave has a greater amplitude?

- Waves transfers energy from one place to another. (The amount of energy is related to amplitude)
- Large amplitudes = more energy

# Tsunamis

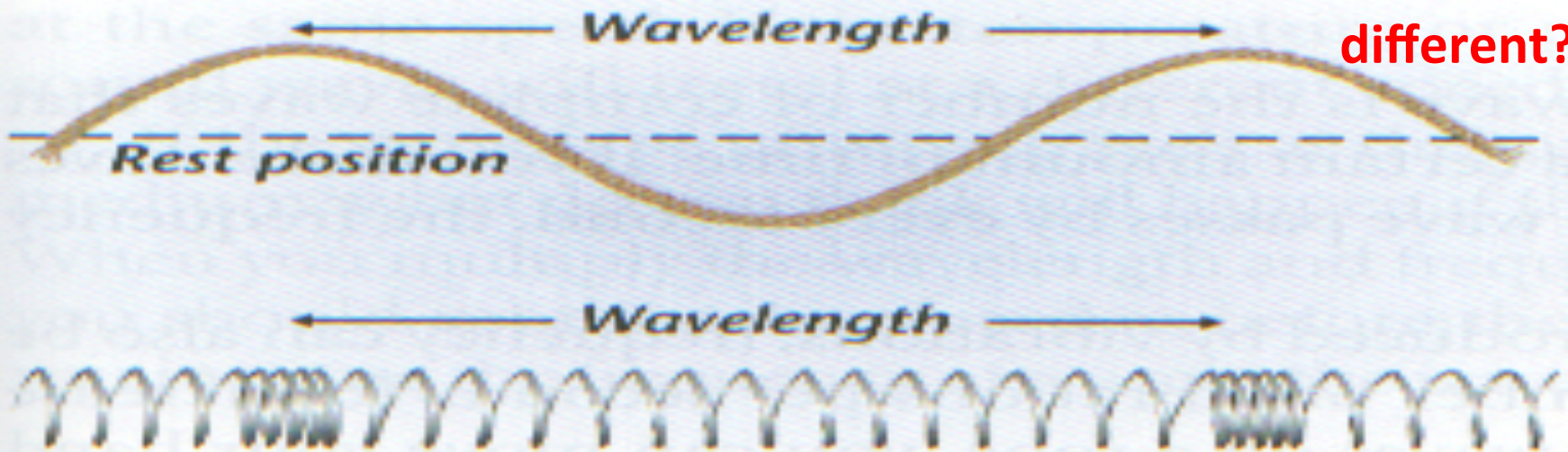
- Tsunamis are large amplitudes that have devastating effects.
- They are caused by underwater earthquakes along faults on the seafloor.
- As waves move toward shallow water and slow down, the amplitude grows.
- What are some ways that we can protect ourselves from Tsunamis?
- <http://science360.gov/obj/video/26970abc-47e0-4618-aa14-b4ef87987006/tsunami-research>



## II. Wavelength

- Another way to describe a wave is by its **wavelength**.
  - In transverse waves – wavelength is measured from **crest to crest** and/or **trough to trough**
  - In compressional waves – measure from **center of rarefaction to rarefaction** or **compression to compression**

How are the wavelengths similar and different?

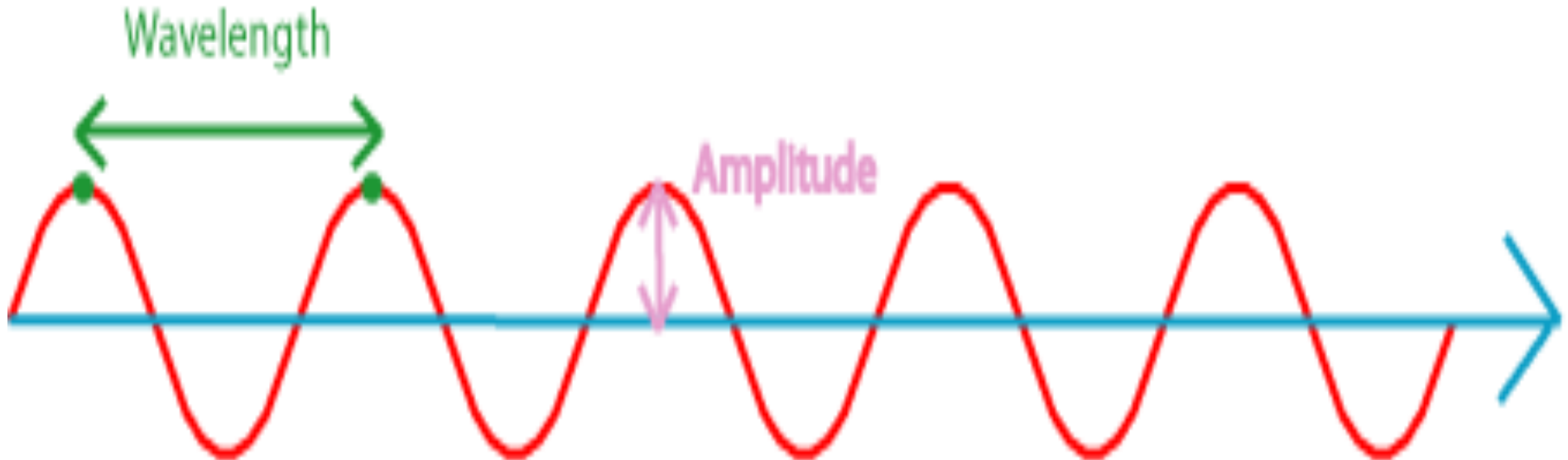




What do you know? In you own words

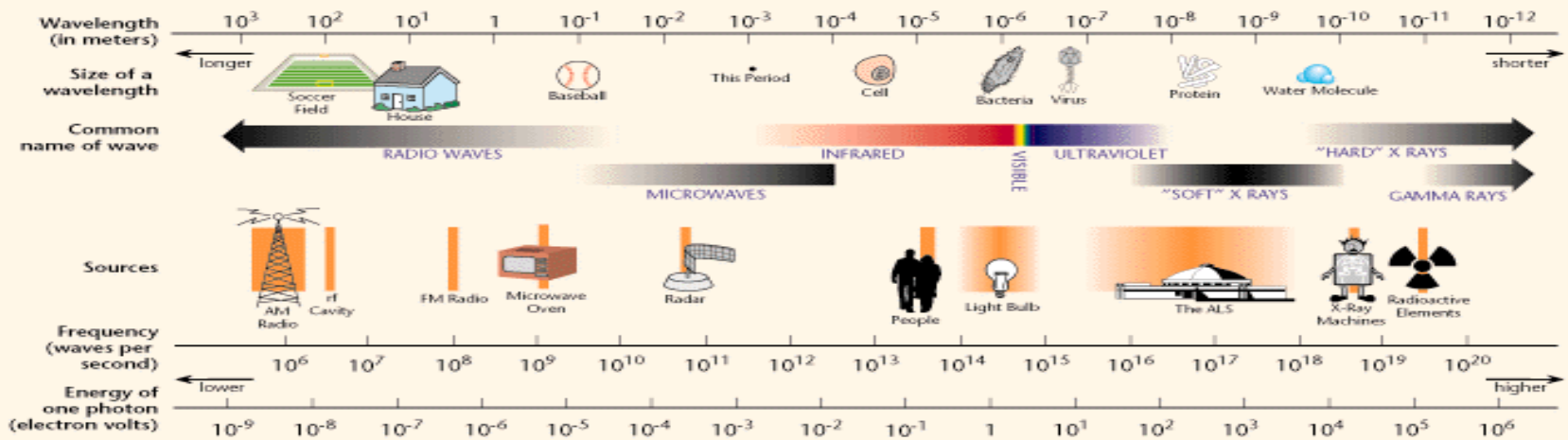
**Partner A:** Explain what **wavelength** is

**Partner B:** Explain what **amplitude** is



Wave is moving from left to right

# THE ELECTROMAGNETIC SPECTRUM



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Using the table on p. 460. Answer the following questions.

1. In each of the following pairs, which of the form of radiation with the LONGER WAVELENGTH:

- a. red light **or** blue light
- ✓ b. microwaves **or** radio waves
- c. infrared radiation **or** red light
- d. gamma rays **or** UV radiation

# Exit Ticket

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Explain your answer using information discussed in class.