**Waves**

A **wave** is...

Ex.

Medium:

Crest:

Trough:

Amplitude (A):

Wavelength (λ):

There are 3 types of mechanical waves:

(1) Transverse

(2) Longitudinal

(3) Surface

Remember that frequency and period are reciprocals, that is:

Ex: An air horn sounds at a frequency of 220 Hz. If the speed of sound in air is 330 m/s what is the wavelength of the sound wave?

Remember that velocity is:

If we look a single wave then:

(1)

(2)

This gives us the **Universal Wave Equation**:

Ex: The distance between successive crests in a series of water waves is 4.0 m, and the crests travel 8.6 m in 5.0 s. Calculate the frequency of a block of wood bobbing up and down on these water waves.

Ex: Sound travels at approximately 340 m/s, and light travels at 3.0 x 108 m/s. How far away is a lightning strike if the sound of the thunder arrives at a location 2.0 seconds after the lightning is seen?

Ex: Playing middle C on a piano produces a sound with a frequency of 256 Hz. What is the period of the sound wave?



Time graph

Example

Position graph

1. What is the amplitude of this wave?

Which graph did you use to find the answer? Time/position/either/both

1. What is the wavelength of this wave?

Which graph did you use to find the answer? Time/position/either/both

1. What is the period of this wave?

Which graph did you use to find the answer? Time/position/either/both

1. What is the frequency of this wave?

Which graph did you use to find the answer? Time/position/either/both

1. What is the wave’s speed?

Which graph did you use to find the answer? Time/position/either/both