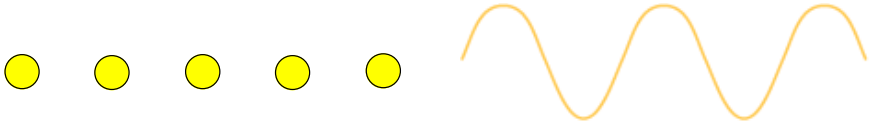
CONCEPT: WAVELENGTH AND FREQUENCY (SIMPLIFIED)

● Light energy can travel through space as *electromagnetic radiation* in the form of particles or waves.

□ In the vacuum of space light moves at a speed of _____ (speed of light).



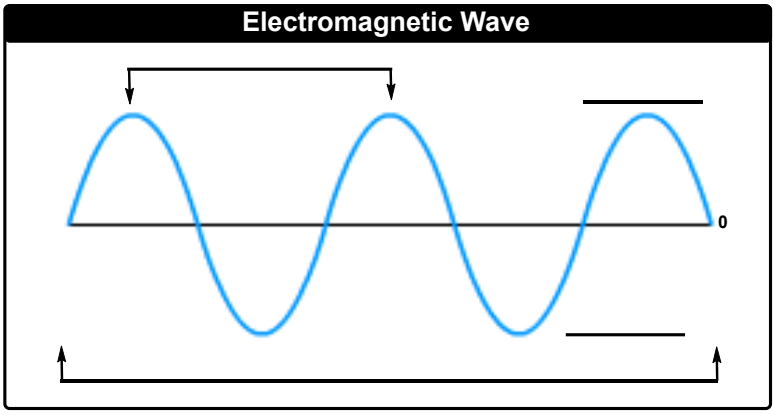
□ In terms of a wave, the top is called the _____ and the bottom is called the _____.

□ **Wavelength** (____ , Greek *lambda*): The distance from one crest or trough of a wave to the next wave.

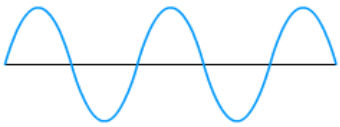
- It is expressed in units of _____.

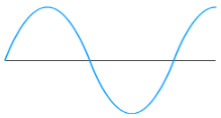
□ **Frequency** (____ , Greek *mu*): The number of waves you have per second.

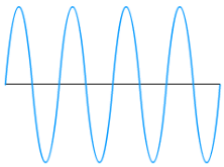
- It is expressed in units of _____ (Hertz).



EXAMPLE: Based on the images given below, which electromagnetic wave has the highest frequency?

I. 

II. 

III. 

Wavelength & Frequency Relationship

● At a fixed speed, the *frequency* of a light wave is _____ proportional to *wavelength* and _____ proportional to energy.

□ _____ frequencies have _____ wavelengths and _____ energies.

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PRACTICE: Which light wave would have the highest frequency from the wavelengths provided?

a) Wave A (453 nm) b) Wave B (707 nm) c) Wave C (325 nm) d) Wave D (910 nm)