KNOWLEDGE ORGANISER
BIG IDEA: ENERGY AND WAVES
TOPIC: WAVES EFFECTS AND PROPERTIES

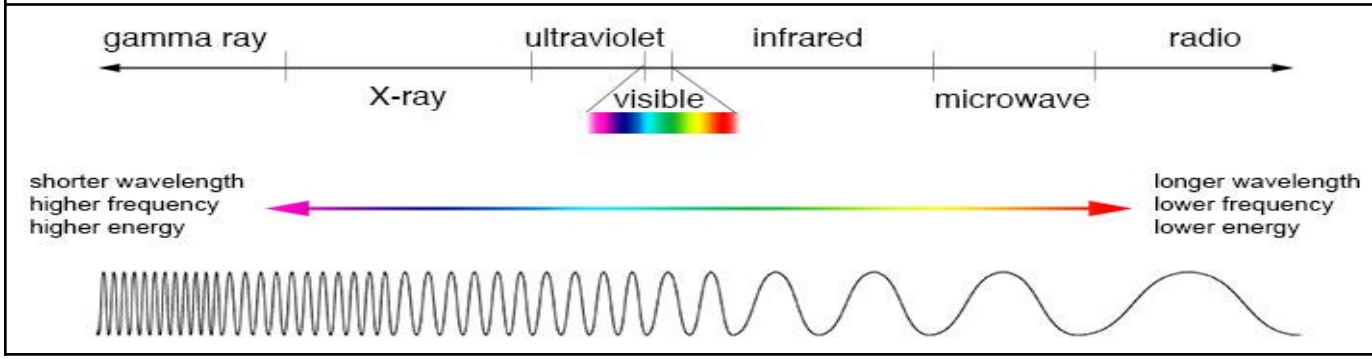
Key Terms

Term	Definition
waves	Vibrations that transport energy from place to place without transporting matter.
transverse waves	Where the direction of vibration is perpendicular to the direction of the energy transfer.
longitudinal waves	Where the direction of vibration is parallel to the direction of the energy transfer.
rest position	The undisturbed position of particles when they are not vibrating.
crest (peak)	The highest point above the rest position.
trough	The lowest point below the rest position.
amplitude	The distance from the rest position to the crest or trough.
wavelength	The distance from one point of one wave to the same point on the next wave. Usually measured from crest to crest or trough to trough. Wavelength is measured in metres (m)
frequency	The number of waves passing a point each second. Frequency is measured in hertz (Hz)
perpendicular	Lines that form an angle of 90° when they meet.
parallel	Lines that do not meet.

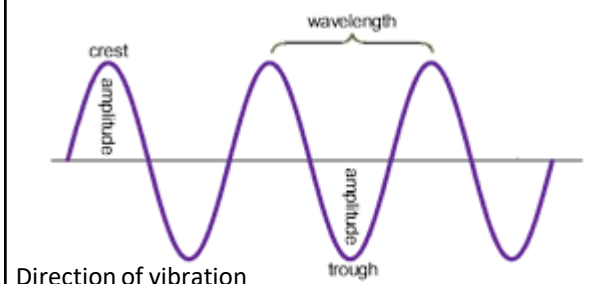
Equations

Key Word	Definition	Equation
Wave speed (m/s)	The distance a wave travels every second	Wave speed = frequency x wavelength **v = f x λ**
Frequency (Hz)	The number of waves passing a point each second	Frequency = number of waves ÷ timr **f = number of waves / t**

The Electromagnetic Spectrum

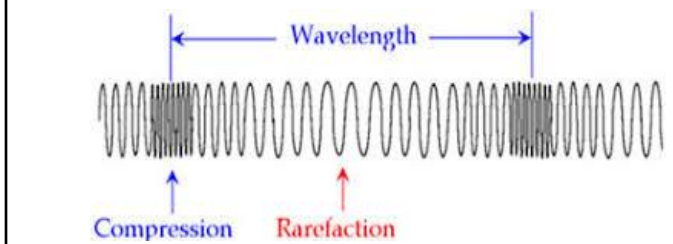


Transverse Waves e.g. Light



For a transverse wave the direction of vibration is perpendicular to the direction of energy transfer.

Longitudinal Waves e.g. Sound



For a longitudinal wave the direction of vibration is parallel to the direction of energy transfer.