

## Physics Chapter 6: Waves

Properties of waves	
Two types of wave	Transverse or Longitudinal
Amplitude	The height of the wave crest or the depth of the wave trough from the position at rest
Wavelength	The distance from one point in the wave to the next identical point e.g crest to crest or compression to compression
Frequency	The number of wave crests passing a point in one second
Period	The time it takes to complete one wavelength
Speed	Frequency x wavelength
Hertz	Unit of frequency
Rarefaction	The area where the longitudinal wave is spread out
Oscillation of a transverse wave	Is perpendicular to the direction of travel
Oscillation of a longitudinal wave is	Parallel to the direction of travel

The Electromagnetic Spectrum	
Electromagnetic waves are all	Transverse waves
Electromagnetic waves all travel	at the speed of light

Uses of waves	
We use waves for	Transferring energy and information
Long wavelengths have a	heating effect and are used for communication. e.g radio waves and microwaves
Short wavelengths have an	ionising effect and are used for medical treatments, e.g X-rays and Gamma rays

Reflection	
The normal line	The point on a surface that is perpendicular to the mirror
The angle of incidence	The angle between the normal and the ray of incidence
The angle of reflection is the angle	Between the normal and ray of reflection
Ray of incident	Ray from the object going towards the mirror
Ray of reflection	Ray coming away from the mirror

<b>Refraction</b>	
Refraction	e.g. is when a light ray when it crosses the boundary between two substances such as air and glass
Change in direction	Is caused by the change in speed of the waves passing from one material to the other
Speed is reduced (e.g. air to glass)	Refracted ray goes closer to the normal
Speed is increased (e.g. glass to air)	Refracted ray goes away from the normal
Explain colours in refraction	Different colours of light have different wavelengths and are refracted by slightly different amounts.
Violet light	Refracted the most
Red light	Refracted the least