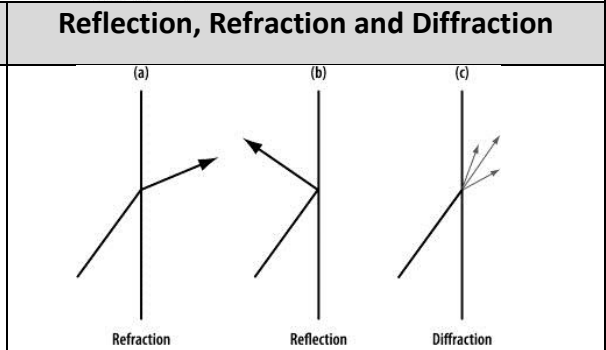
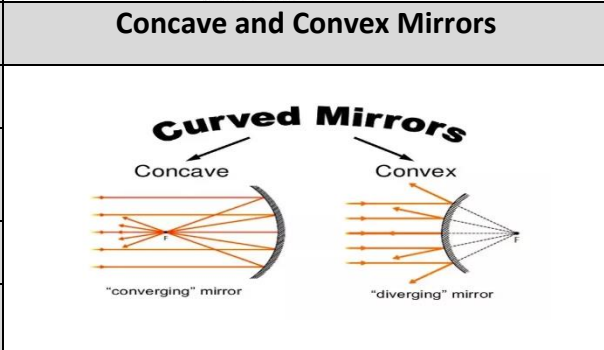
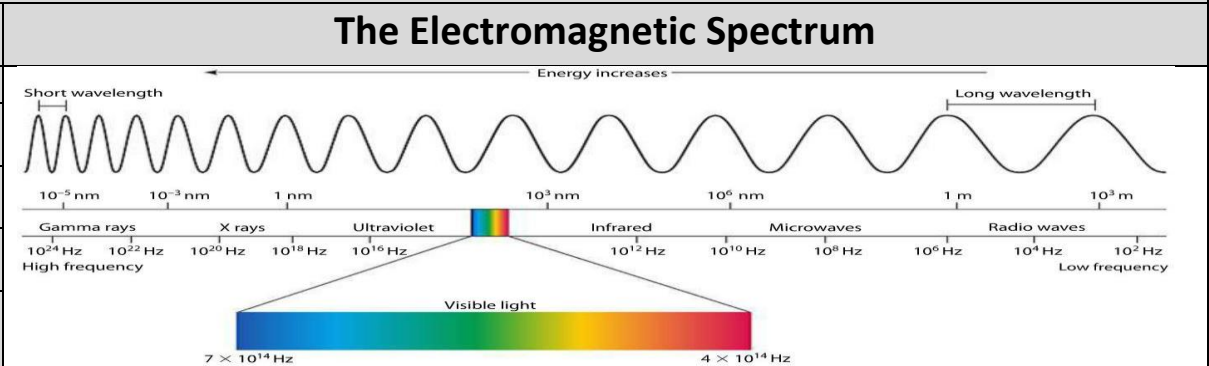


## Waves Knowledge Organiser – GCSE PHYSICS

<b>Wave</b>	Any disturbance that transmits energy through matter or space.
<b>Medium</b>	A solid, liquid or gas that is vibrated
<b>Transverse Wave</b>	The <b>oscillations</b> are perpendicular to the direction of energy transfer.
<b>Longitudinal Wave</b>	The <b>oscillations</b> are parallel to the direction of energy transfer.
<b>Wavelength</b>	The distance between any adjacent crests or <b>compressions</b> in a series of waves.
<b>Frequency</b>	The number of waves produced in a given amount of time.
<b>Wave Speed</b>	<b>wave speed (metre per second) = frequency (hertz) × wavelength (metre)</b>
<b>Diffraction</b>	The bending of waves around a barrier or through an opening.
<b>reflection</b>	obeys the law of reflection: the angle of incidence equals the angle of reflection. The normal is a line drawn at right angles
<b>Refraction</b>	Waves pass through a different medium and change direction
<b>Decibel (dB)</b>	The most common unit used to express loudness.
<b>Vacuum</b>	space entirely devoid of matter.
<b>Frequency</b>	Number of oscillations per second (Hz)
<b>Time Period</b>	one complete cycle of vibration to pass a given point
<b>Oscillation</b>	A motion that repeats itself – IE vibrations
<b>Ultrasound</b>	Frequencies above about 20kHz (20,000Hz).
<b>Sonar</b>	Ultrasound pulse is emitted and timed how long it takes to be returned.
<b>Seismic Waves</b>	Produced by earthquakes. P waves are longitudinal and S waves are transverse (can not travel through a liquid)

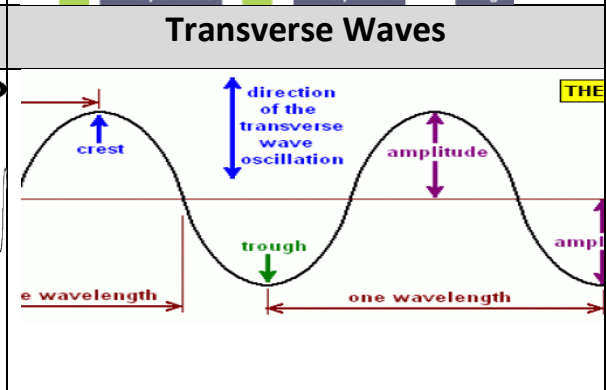
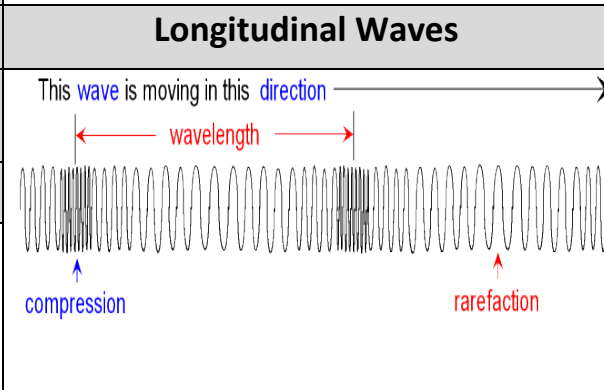
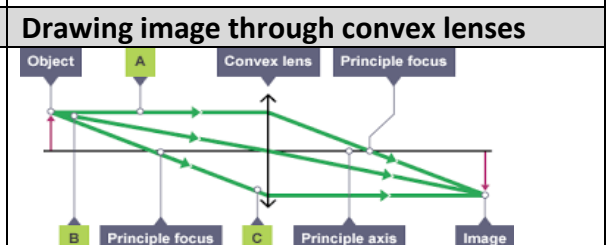
<b>The Wave Equation</b>				
$v$	$=$	$f$	$\times$	$\lambda$
<b>WAVE SPEED</b> (m/s)		<b>FREQUENCY</b> (Hz)		<b>WAVELENGTH</b> (m)



### Equations

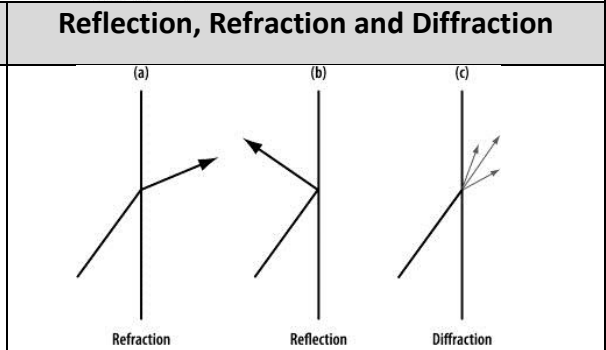
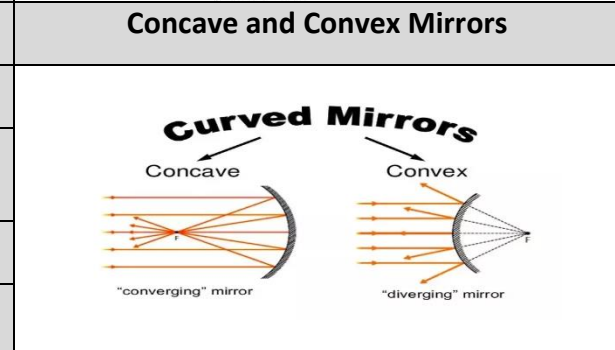
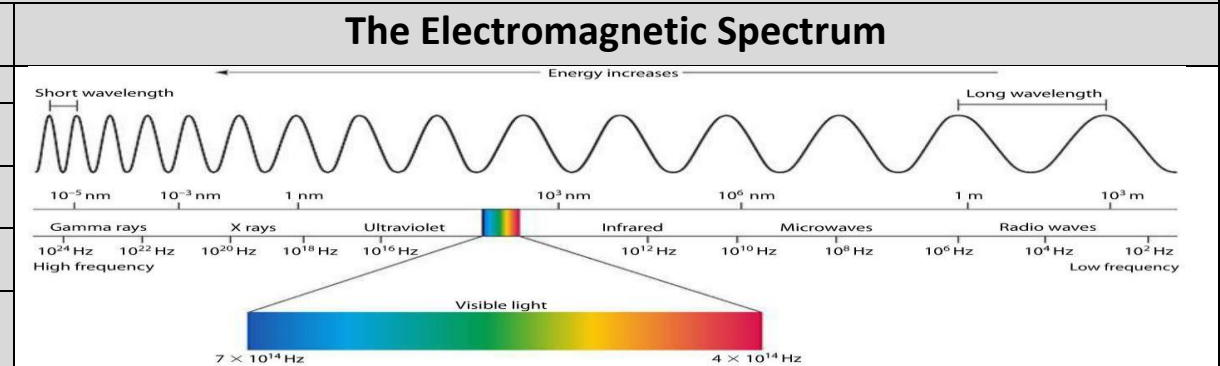
$$\text{Frequency} = \frac{1}{\text{Periodic time}} \quad \text{or} \quad f = \frac{1}{T} \text{ Hz}$$

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## Waves Knowledge Organiser – GCSE PHYSICS

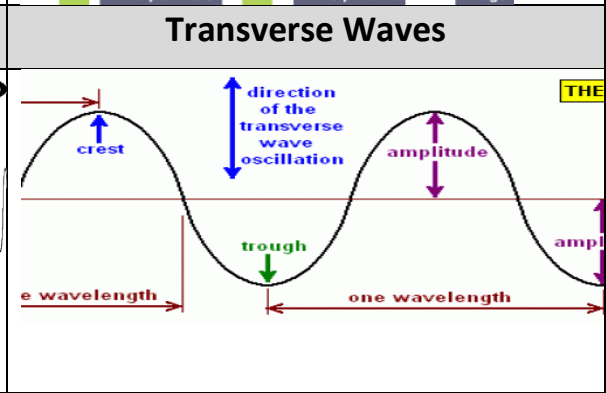
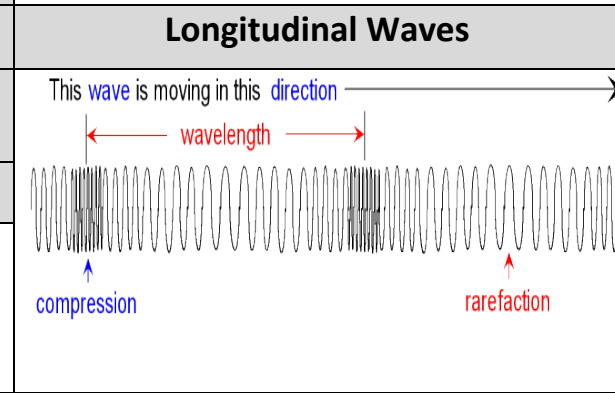
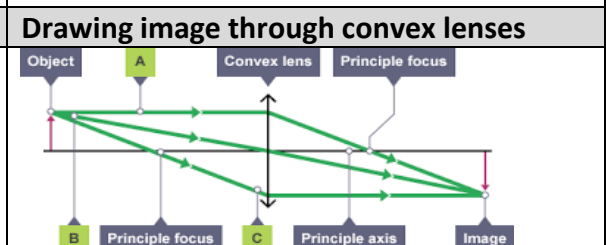
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### The Wave Equation

$$v = f \times \lambda$$

**WAVE SPEED = FREQUENCY X WAVELENGTH**  
 (m/s)                      (Hz)                      (m)

