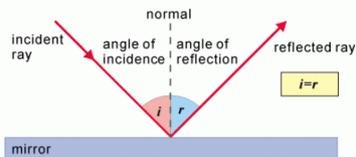
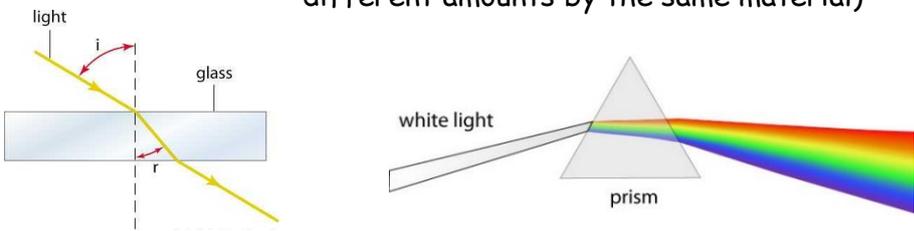
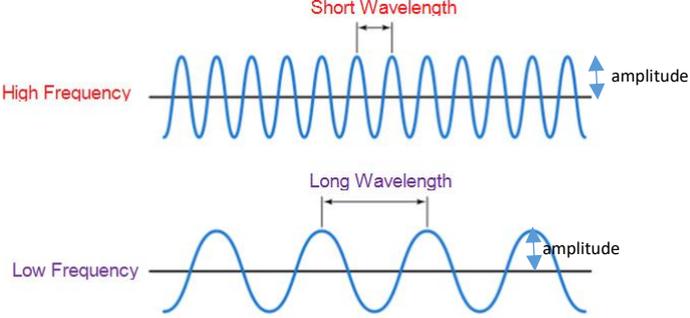


## KS3 Light topic Core Knowledge

<p>Light waves travel <u>very</u> fast in straight lines, which we call 'rays'</p>		
<p>Know that the frequency of light waves sets the colour and the amplitude of light waves sets the brightness</p>		
<p>Light travels fastest in a vacuum and air, but slower in when travelling through more dense materials like water or clear glass and perspex. The material sets the speed of light.</p>		
<p><u>Luminous</u> objects emit light. Objects which do not emit light are non-luminous</p>		
<p>Know that when light encounters a new material (medium), the light can be partially or fully reflected, transmitted/refracted (see below) or absorbed, depending on the material. Different colours of light may behave differently for the same material.</p>		
<p>Know that <u>opaque</u> materials do not transmit any incident light, but transparent materials transmit all incident light.</p>		
<p>Know that shiny and smooth objects (like mirrors) reflect light in a regular way to produce reflections ("specular reflection"), but most objects reflect light in a random way - they <u>scatter</u> the light in all directions, because their surfaces are not perfectly smooth.</p>		
<p>Know how we can see objects: rays of light from a light source reflect/are scattered from objects and some of the scattered light enters our eyes</p>		
<p>Know the <b>law of reflection</b> and be able to draw it</p> <p>angle of incidence = angle of reflection</p>		
<p>Know how light waves can be <b>refracted</b> in a glass block and <b>dispersed</b> by a prism (this is where the different colours that make up white light are refracted by different amounts by the same material)</p>		
<p>Know that lenses focus light by refracting light rays</p>		
<p>Know that white light is a mixture of all the colours of light</p>		
<p>Know that white objects reflect all colours of light, black objects absorb all colours of light and coloured objects reflect just one colour of light and absorb other colours (e.g. green leaves only reflect green light and absorb all other colours)</p>		

## Sound

Know that sound waves are caused by <b>vibrations</b> of a medium (material) - so if there is no medium, no sound waves can travel		
Know that frequency means the number of waves arriving per second, and is measured in Hz.		
 <p>The diagram illustrates two sound waves on a horizontal equilibrium line. The upper wave is labeled 'High Frequency' and has a 'Short Wavelength' indicated by a horizontal double-headed arrow between two consecutive peaks. The lower wave is labeled 'Low Frequency' and has a 'Long Wavelength' indicated by a horizontal double-headed arrow between two consecutive peaks. Both waves have a vertical double-headed arrow labeled 'amplitude' indicating their height from the equilibrium line.</p>		
Know that the frequency/wavelength of the vibrations/waves sets the pitch of the sound		
Know that the amplitude (size) of the vibrations sets the volume of the sound		
Know that echoes are reflections of sounds		