

Frogwell School Years 5 and 6
Science Knowledge Organiser Term 3
Light

Working Scientifically:

- I can ask further questions to develop understanding following an enquiry.
- I can carry out fair tests, recognising and controlling variables.
- I can report and present findings from enquiries, including conclusion, causal relationships and explanations of the degree of trust in results.

Key vocabulary:

light	A form of energy that travels in a wave from a source.
light source	An object that makes its own light
reflection	Reflection is when light bounces off a surface, changing direction of a ray of light.
reflected ray	A ray of light that has bounced back after hitting a surface.
refraction	This is when light bends as it passes from one medium to another. EG light bends when it moves from air to water.
visible spectrum	Light that is visible to the human eye. It is made up of a colour spectrum.
prism	A prism is a solid 3D shape with flat sides. The tow ends are an equal size and shape. A transparent prism separates out visible light into all the colours of the spectrum.
shadow	An area of darkness where light has been blocked.
transparent	Describes objects that let light travel through them easily, meaning you can see through the object.
translucent	Describes objects that lets some light through, but scatters the light so we can't see through them properly.
opaque	Describes objects that do not let any light pass through them.



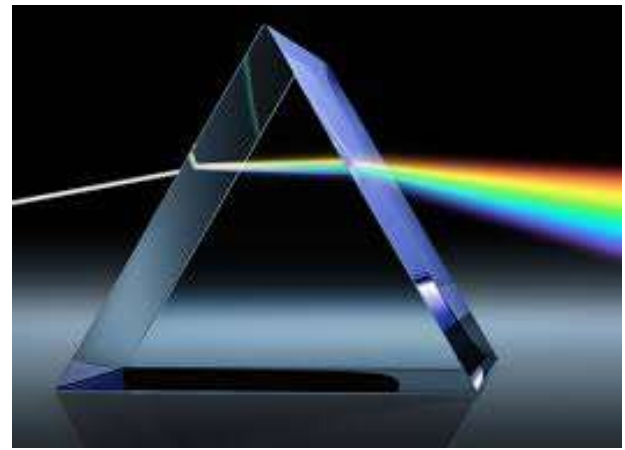
Light travels in a straight line and hits the apple.



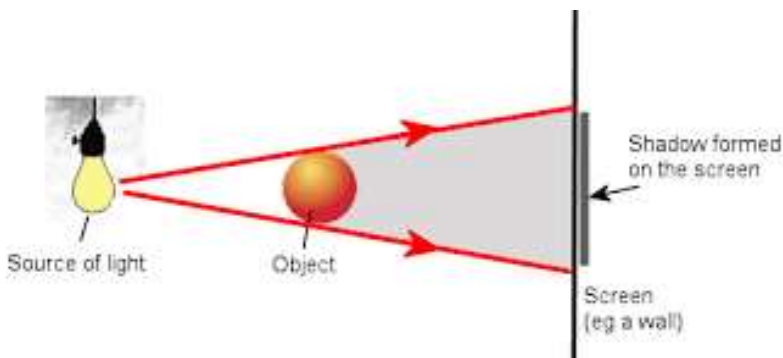
The ray of light is reflected off the apple and travels in a straight line to the eye allowing it to see the apple.

We need to be able to see things. Light waves travel out from a source of light in straight lines. These lines are often called rays or beams of light.

Isaac Newton shone a light through a transparent prism, separating out light into the colours of the rainbow (red, orange, yellow, green, blue, indigo, violet) -the colours of the spectrum. All the colours together merge and make 'white' light.

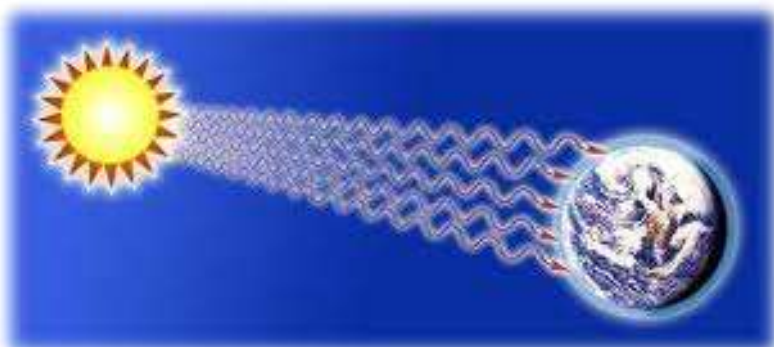


Light seems to bend as it travels from one medium (air) to another (glass). This is known as **refraction**.



Shadows are always the same shape as the object that casts it. This is because when an **opaque** object is in the path of light travelling from a source, it will block the light rays that hit it, whilst the rest of the light can continue travelling.

Shadows can also be elongated or shortened depending on the angle of the light source. It can also be larger or smaller, depending on how close the light source is to the object.



Light travels as a wave. But unlike waves of water or sound, it does not need a medium to travel through. This means light can travel through a vacuum – a completely airless space.