



### Key People/Scientists



**Thomas Edison  
(1847-1931)**

An American inventor who invented the light bulb in 1879. He has been described as America's greatest inventor.



**Dr Patricia Bath  
(1942-2019)**

An American inventor who invented the Laserphaco Probe for the treatment of cataracts (an illness of the eye common in the elderly).

### Key Questions

<b>What is a light source?</b>	A light source is something that provides light. They can be natural (like the sun or fire) or artificial (man-made, like torches or phone screens).
<b>In what direction does light travel?</b>	Light always travels in a straight line until it hits something else. It is then either reflected or absorbed. If an object blocks light, a shadow is formed.
<b>How do we see?</b>	Light rays travel from a light source, reflects off an object and light from the object travels into the eye.
<b>Is the moon a light source?</b>	The moon does not emit light so it is not a light source. It reflects the sun's light to the earth.

### Key facts/Misconceptions

**Misconception:** Light is not necessary for vision; it is possible to see in the dark.

**Fact:** Light is necessary for vision. It is impossible to see in total darkness.

**Misconception:** Only smooth, shiny objects like mirrors reflect light; dull and rough objects do not reflect light.

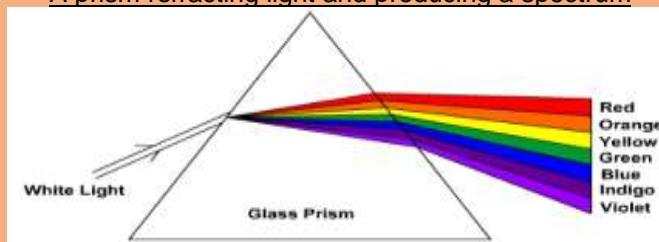
**Fact:** Dull objects do reflect light, otherwise we would not be able to see them.

### Diagrams/Visual Aids

#### How we see



A prism refracting light and producing a spectrum



### Key Vocabulary

<b>filter</b>	A transparent material that absorbs some colours but allows others to pass through. It can change visible colour of light.
<b>incidence</b>	The angle between the light ray and the surface it is shining on before it reflects.
<b>light source</b>	Something that provides light (can be natural like the sun, or artificial like a torch).
<b>opaque</b>	An object that doesn't let light pass through and creates a shadow (like a curtain or person).
<b>periscope</b>	An object made of a tube/box and mirrors to allow people to see things that are out of sight.
<b>rainbow</b>	A spectrum of colour.
<b>reflection</b>	When light from an object is reflected by a surface, it changes direction. It bounces off the surface at the same angle as it hits it. Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well.
<b>refraction</b>	When light enters a transparent object, it appears to bend and change direction.
<b>shadow</b>	A dark area or shape produced by an object blocking light.
<b>spectrum</b>	A band of colours, such as a rainbow, produced by the separation of light waves during refraction.
<b>translucent</b>	An object that lets some light pass through but does not allow you to see detail, only shadow. (like a bathroom window).
<b>transparent</b>	An object that lets most light pass through (like a window or glasses).