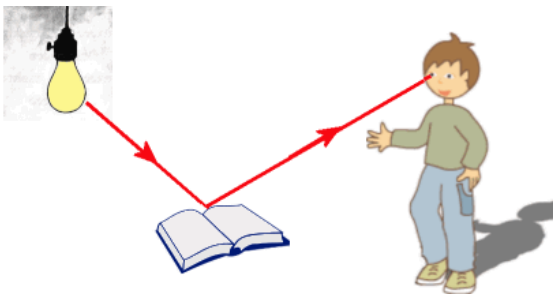
Burlington Junior School - History

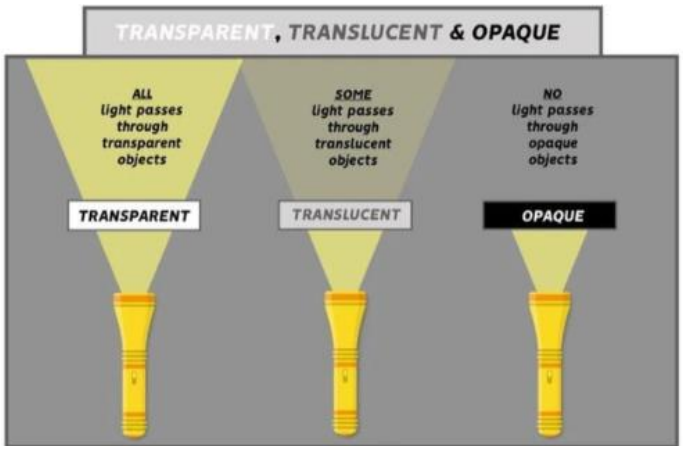
Year 6

Science – Let There Be Light

Key Knowledge - Science

Light travels in straight lines. Objects are seen because they give out or reflect light into the eye.
We see things because the light travels from light sources to our eyes or from light sources to objects and then to our eyes.
Shadows have the same shape as the objects that cast them.
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.
Inside the eye is a lens which focuses the light onto a surface (the retina) at the back of the eyeball.
The retina is made up of special cells which detect light and send messages to our brain, allowing us to see.
Your pupil widens in dim light and is smaller in bright light.
A light source is something that provides light, whether it be a natural or artificial source of light (e.g. the sun, a torch).





Talking points to discuss at home

- How do we know that light travels in straight lines?
- How are shadows formed?
- Why do we need light?

Transferable vocabulary and concepts

Light powers the technology around us: **laser beams** make CD and DVD players and printers possible, microscopes and telescopes use **lenses** to bend light (**refraction**), cameras record light as it **reflects** off objects and fibre-optic cables and lasers allow us to communicate at incredible speed.

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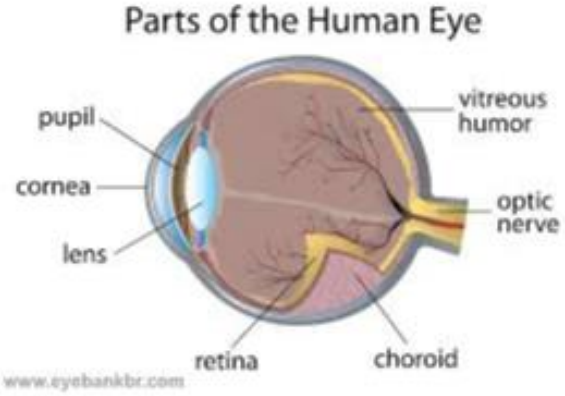
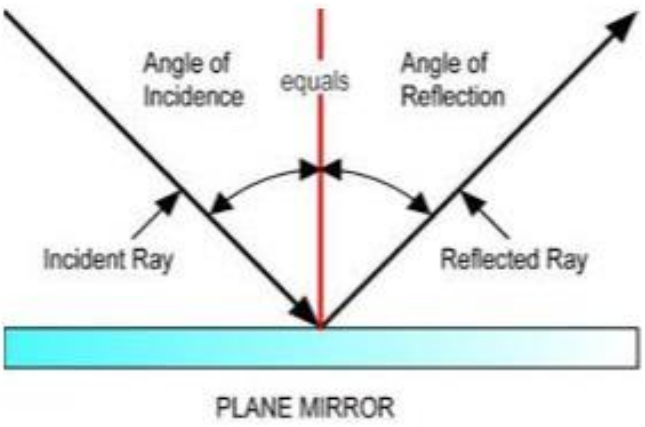
Vocabulary

Eyes – Globular organs of sight in the head of humans and vertebrate animals
Filter – Pass through a device to remove unwanted material (liquid, gas, light or sound)
Light – The natural agent that stimulates sight and makes things visible
Light source – Something that provides light, whether it be a natural or artificial source of light (e.g. the sun, a torch)
Periscope – An apparatus consisting of a tube attached to a set of mirrors or prisms through which an observer can see things that are otherwise out of sight
Rainbow – An arch of colours visible in the sky, caused by the refraction and dispersion of the sun's light by rain or other water droplets in the atmosphere
Reflection – The throwing back by a body or surface of light, heat or sound without absorbing it
Refraction – The bending of light as it passes from one substance to another with the bending caused by the difference in density between two substances
Shadow – A dark area or shape produced by a body coming between rays of light and a surface
Spectrum – A band of colours, as seen in rainbows, produced by separation of the components of light by their different degrees of refraction

What will I know at the end of the unit?

- Light travels in straight lines.
- We see things because light travels from light sources to our eyes or from light sources reflecting off objects and then to our eyes.
- As light travels in straight lines, shadows have the same shape as the objects that cast them.
- Shadows are larger as an object moves closer to the light source, more light is blocked causing a larger absence of light or shadow.