

Key Concepts

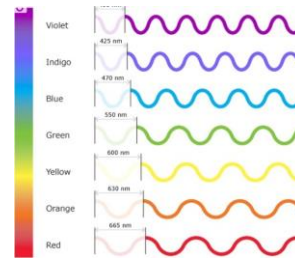
Key Vocabulary

What is light and how does it travel?

• Light is a type of energy. Something that produces light is called a light source. Some objects reflect light but do not produce it.

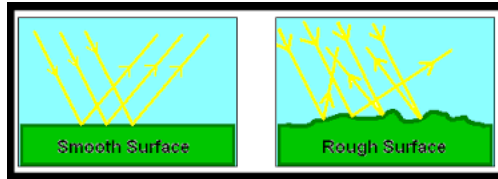


- Light is made up of wavelengths of light, and each wavelength is a particular colour. The colour we see is a result of which wavelengths are reflected back to our eyes.
- Light appears to travel in a straight line.
- When you place a torch on a table in a dark room, the beam travels in a straight line.



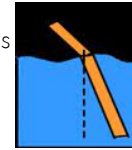
What is reflection?

- Reflection is when light bounces off a surface - this changes the direction in which the light travels.
- If the surface is smooth, the light will bounce off in one direction.
- If the surface is rough, the light will bounce off in lots of directions.

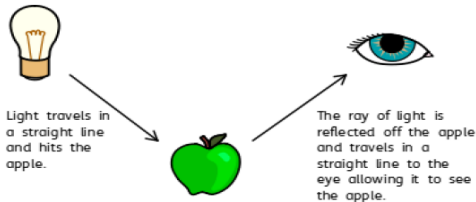
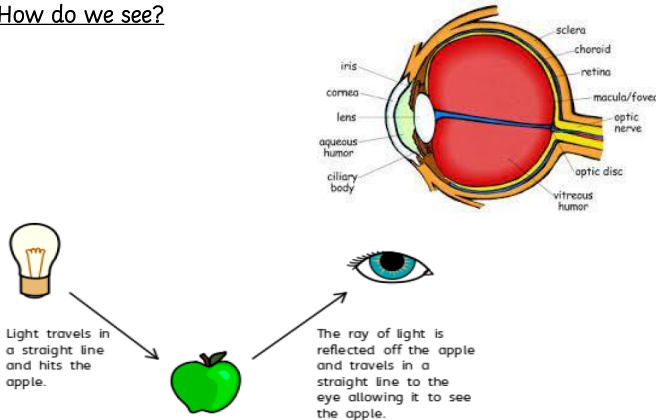


What is refraction?

- Refraction is when light travels through transparent materials like water or glass.
- This causes the rays of light to change and bend.

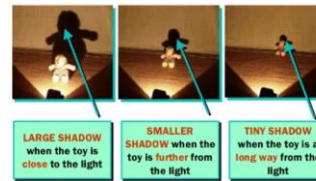
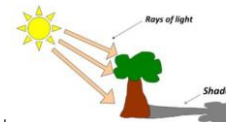


How do we see?



Light & Shadows

- Because light travels in straight lines, when there is an opaque object blocking the light, a shadow is formed.
- These shadows have the same shape as the objects that cast them
- The size of a shadow changes as the light source moves.



cones	Sense cells that help us see colours.
dim	light that is not bright
emits	to emit a sound or light means to produce it
iris	Coloured circle around the pupil. It controls the size of the pupil.
lens	This focuses light onto the retina.
opaque	if an object or substance is opaque, you cannot see through it
optic nerve	Carries messages from the retina to the brain. The brain turns these into an image of what we are looking at.
pupil	Black part of the eye. This is an opening that lets light in.
reflection	When light bounces off a surface, changing the direction of a ray of light.
refraction	When light waves travel at a different speed when they go through other transparent materials, such as water or glass. This causes the rays of light to change direction and bend.
retina	Light sensitive layer at the back of the eye. It is made up of rods and cones.
rods	Sense cells that help us see the shapes of things.
shadows	a dark shape on a surface that is made when something stands between a light and the surface
source	Where something comes from.
surface	The flat top part of something or the outside of it
translucent	if a material is translucent, some light can pass through it
transparent	If an object or substance is transparent, you can see through it

Working Scientifically Skills

Famous Scientists



Using Scientific knowledge to ask questions.

Recognising when to use other sources to answer questions and separating opinion from fact.



Using scientific language to draw conclusions.



Planning different types of enquiry controlling variables where necessary



David Brewster (1781-1868) a Scottish physicist who is known for being the inventor of the kaleidoscope and an improved version of the stereoscope applied to photography.