

Knowledge Organiser
Subject: Science Unit: Light

Overview:

During this sequence of learning, pupils will recognise that we need light in order to see things and understand how light is reflected to enable us to see objects. Pupils will understand the harmful effects of the sun and the process of shadow formation as well recognising ways shadows change.

What should I already know?

- Opaque materials are those you cannot see through.
- Transparent materials are those you can see through e.g. glass.

What will I know by the end of the unit?

- Light is a form of energy.
- We need light in order to see things and the absence of light is darkness.
- Light only travels in straight lines.
- A light source is something that gives out light such as the sun, a lightbulb, torch, candle etc.
- We can see light sources as the light travels from them in a straight line into our eyes.
- Some objects like high visibility jackets are reflectors rather than light sources.
- We can see light sources as the light bounces off them and then into our eyes.
- The sun is a light source but the moon isn't as it just reflects the light from the sun.
- Many light sources also give off heat at the same time.
- The sun gives off light and heat when it turns hydrogen (a gas) into helium (another gas).
- The sun can be very harmful to both the skin and the eyes. You should never look directly at the sun as it can damage your eyes.
- The sun can also burn your skin and in some cases cause skin cancer.
- You can protect your eyes by wearing sunglasses and your skin by keeping it covered, staying in the shade or using sun cream.
- Opaque objects block light and cause a shadow to form where the light cannot reach.
- Transparent objects allow light to pass through and translucent objects allow some light through.
- When you move the light source closer to an object the shadow becomes larger in size.
- How to carry out an investigation and write a report.

Vocabulary:

reflection	When light bounces off an object allowing us to see it.
transparent	Allows light to pass through it e.g. a window pane.
translucent	Allows some light to pass through e.g. a pair of sunglasses.
opaque	Doesn't allow light to pass through e.g. a brick wall.
mirror	A surface usually made from glass that reflects a clear image.
incident ray	A ray of light that points towards and hits a surface.
image	A picture or reflection of something produced by a device.
beam	A ray of light.
photons	Particles which transmit light
solid	Something that keeps its shape and size.
source	The starting point of something.

