Light

Knowledge

Living Things and their Habitats

I can recognise that they need light in order to see things and that dark is the absence of light

I can notice that light is reflected from surfaces

I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes

I can recognise that shadows are formed when the light from a light source is blocked by a solid object

I can find patterns in the way that the size of shadows change.

Working Scientifically

Looking for patterns in what happens to shadows when the light source moves

The distance between the light source and the object changes.

Key Vocabulary	
light	A form of energy that travels in a wave from a source.
light source	An object that makes its own light.
dark	Dark is the absence of light.
reflection	The process where light hits the surface of an object and bounces back into our eyes.
reflect	To bounce off.
reflective	A word to describe something which reflects light well.
ray	Waves of light are called light rays. They can also be called beams.

Hook into a Book

Key Vocabulary	
pupil	The black part of the eye which lets light in.
retina	A layer at the very back of the eye. The retina takes the light the eye receives. It then changes it into nerve signals to send to the brain.
shadow	An area of darkness where light has been blocked.
opaque	Describes objects that do not let any light pass through them.
translucent	Describes objects that let some light through, but scatter the light so we can't see through them properly.
transparent	Describes objects that let light travel through them easily, meaning that you can see through the object.

Activate Prior Knowledge

EY

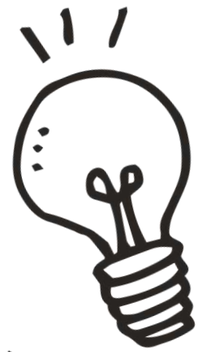
- Children will explore how things work.
- Explore the natural world around them including light and dark.

KS1

- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- Find out about properties such as dull, shiny, reflective, opaque, transparent.

KS2

- I can recognise that light appears to travel in straight lines
- I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

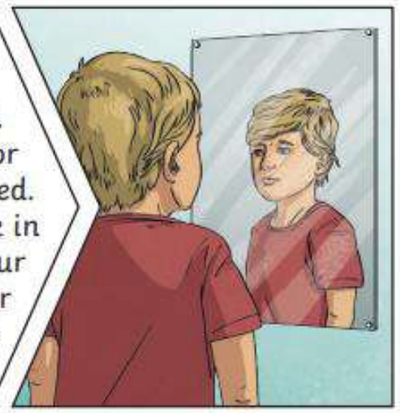


Investing in the UNIQUENESS of each individual

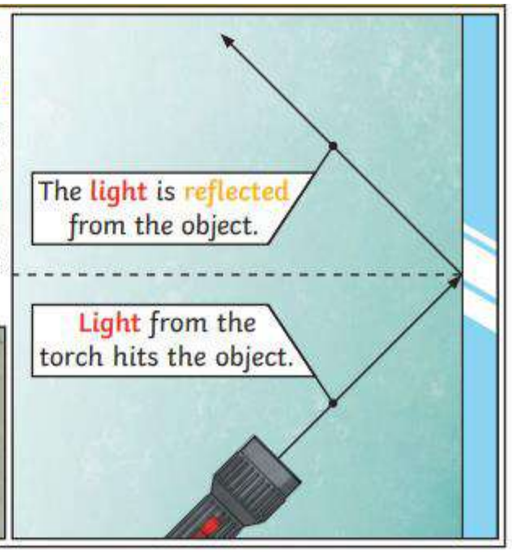
"I Am Fearfully And Wonderfully Made"
– Psalms 139 v14

Reflecting Light

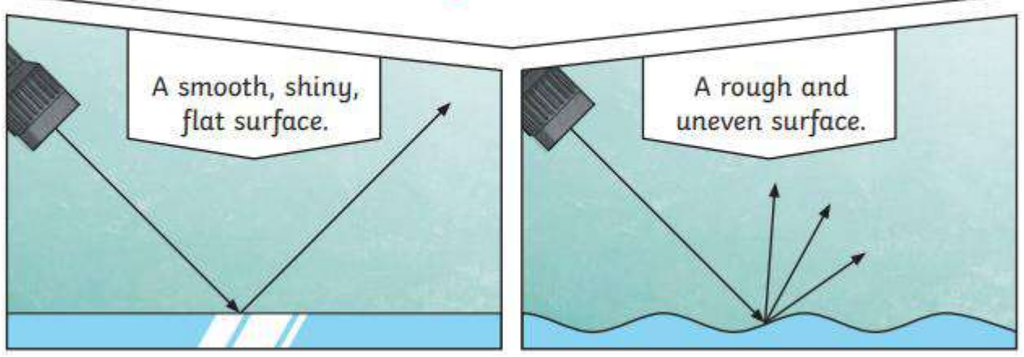
Mirrors **reflect** **light** very well, so they create a clear image. An image in a mirror appears to be reversed. For example, if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.

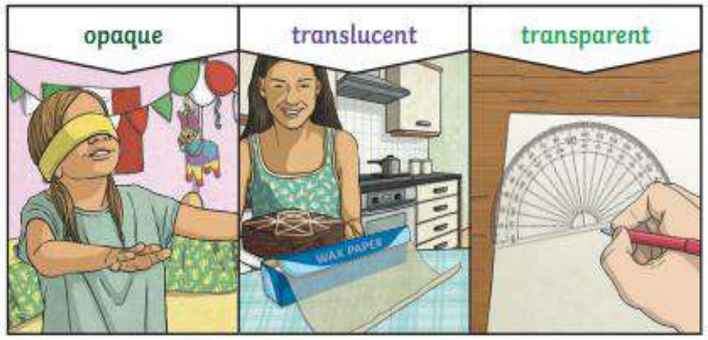


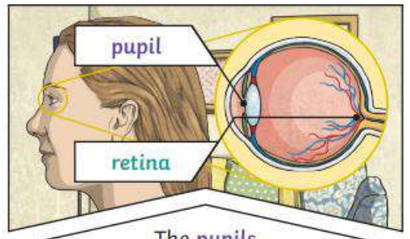
We need **light** to be able to see things. **Light** travels in a straight line. When **light** hits an object, it is **reflected** (bounces off). If the **reflected** **light** hits our eyes, we can see the object. Some surfaces and materials **reflect** **light** well. Other materials do not **reflect** **light** well. **Reflective** surfaces and materials can be very useful...



The surfaces that reflect **light** best are smooth, shiny and flat.



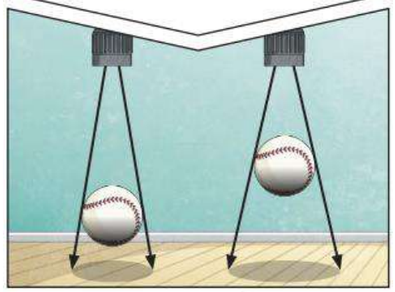




The **pupils** control the amount of **light** entering the eyes. If too much **light** enters, then it can damage the **retina**. To help protect the eyes, you can wear a hat with a wide brim and sunglasses with a UV rating.

Shadows

A **shadow** is caused when **light** is blocked by an **opaque** object. A **shadow** is larger when an object is closer to the **light** source. This is because it blocks more of the **light**.



When the **light** source is directly above the object, the **shadow** will be directly underneath.

When a **light** source is to one side of an object, the **shadow** will appear on the opposite side. The **shadow** will also be longer.