

LKS2 – How have scientific ‘cracking ideas’ changed the world?

Procedural knowledge

Ask relevant questions and use different types of scientific enquiries to answer them
Make systematic and careful observations

Factual and Conceptual knowledge

What is a light source?

A light source is something that emits light by burning, electricity or chemical reactions.

Burning light sources include the Sun, flames from a fire and stars.

Electric lights include lamps, car headlights and street light.

Lights that are caused by chemical reactions are much less common. This happens when different chemicals react and light is a product of that reaction. Examples can include glow sticks and fire flies.



Why do we need light?

We need light so that we are able to see in the dark.

This is because the dark is the absence of light. The Sun and stars always give us light but we can only see the stars when it is dark. At night time we cannot see the Sun's light as the Earth turns and our part of the Earth is not lit up by the Sun at night.

What are not sources of light?

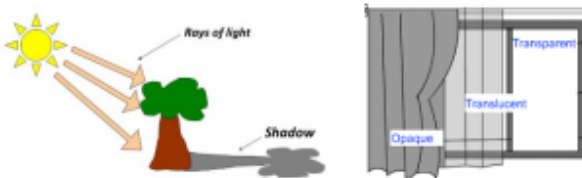
The Moon is not a source of light even though we can see it in the dark. This is because the Sun's light reflects on the surface of the Moon making it appear as though the Moon emits light.

Shiny things are not light sources - they appear to be sources of light as they are bright.

How does light travel?

Light travels in straight lines. When light is blocked by an opaque object, a dark shadow is formed.

How are shadows formed?



When light is blocked by an opaque object, a dark shadow is formed. An opaque material blocks light so we can't see through it and shine a light through it.

When light is shone onto a transparent object, the light travels through it, we can see through it and it makes a very faint shadow.

When light is shone onto a translucent object, some of the light travels through it, we can see bright light sources through it and it makes a fairly dark shadow.

The size of a shadow changes as the light source moves.

The further away the light source is, the smaller the shadow is. The closer the source of the light, the bigger the shadow.



How can the eyes be protected?

The pupils control the amount of light entering the eye. If too much light enters, it can damage the retina. To protect the eyes, you can wear a hat with a wide brim and sunglasses with a UV rating but must still not look directly at the Sun or a light source when wearing them.

Key Vocabulary – Light

Light source, reflect, reflection, reflective, ray, shadow, opaque, translucent, transparent