



Key People/Scientists



**Justus Von Liebig
(1803-1873)**

A German scientist who invented the first modern mirror. In 1835 he perfected the technique of using metallic silver to the back of a pane of glass.

Misconceptions/Key facts

Misconception: Light is not needed to see; it is possible to see in the dark.

Fact: Light is necessary for vision. It is impossible to see in total darkness.

Misconception: Only smooth, shiny objects like mirrors reflect light; dull and rough objects do not reflect light.

Fact: Dull objects do reflect light, otherwise we would not be able to see them. Smooth surfaces produce regular reflection while rough surfaces produce scattered, diffused or irregular reflection.

Misconception: Light travels from the source to both the observer and the object, but there is no link between the two.

Fact: Light travels from the source to the object; the object reflects the light from the source into the eyes of the observer; the receptor cells in the observer's retinas detect the light and send the signals to the brain.

Key Questions

How does light travel?	Light is a beam of energy that travels in straight line from a source. There are different sources of light, such as a candle or the sun.
How are shadows formed?	Shadows are created when an opaque object blocks the light. The light cannot go through or around the object, so a shadow is created behind the object.
What happens when light hits a mirror?	When light falls on a mirror, the direction of light changes. This change in direction of light is called reflection.
Why don't we look directly at the sun?	Our eyes are super sensitive to the sun's harmful rays. Staring directly at the sun can be very harmful to your eyes and cause permanent damage.
Why does the moon appear to shine at night?	Although the moon appears to shine brightly in the night sky, it does not produce its own light. We see the moon because it reflects light from the sun.

Diagrams/Visual Aids

How does light travel?

- ☀ Light rays travel in straight lines from the light source.
- ☀ When it hits an opaque object, some light is absorbed and the rest reflects off.
- ☀ If the object is transparent, light rays pass through it easily.
- ☀ If the object is translucent, some light can pass through, but the rest of the light will be reflected.

Key Vocabulary

artificial light	A source of light that is man-made. E.g. A torch.
dark	Dark is the absence of light.
light	A beam of energy that travels in a straight line.
natural light	A source of light that is not man made. E.g. Sunlight.
reflection	When light bounces off an object.
shadow	A shadow is formed when an opaque object blocks light.
star	A huge glowing ball of gases. The closest star to the earth is the sun.
surface	The outer layer of an object.