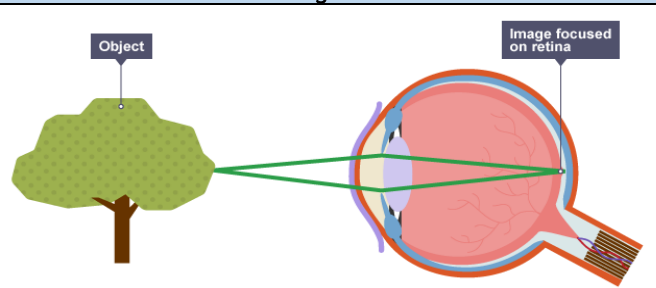


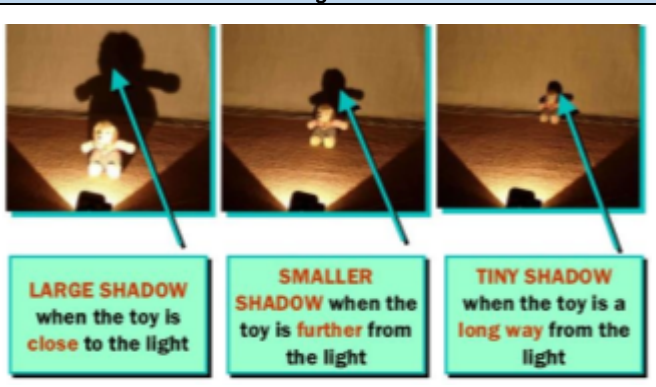
Key Knowledge

Light travels in a straight line.
Light travels faster than sound.
Darkness is caused by the absence of light.
Sources of light can be natural or artificial.
The moon does not emit light – it reflects light from the Sun.
Objects are seen because they give out or reflect light into the eye.
The lens in the eye focuses light into the eye and the retina receives the image and transforms this image into electrical pulses that are carried by the optic nerve to the brain.
A shadow is formed when an opaque object blocks rays of light.
The size and shape of a shadow changes depending on the distance from and angle to the light source.
The direction of a light ray can be changed by reflecting it in a mirror.
When light travels between different materials (e.g., air, glass and water), it's direction of travel is altered. This is called refraction.
Optical instruments such as telescopes and periscopes use lenses and mirrors to manipulate light and allow the eye to see images.

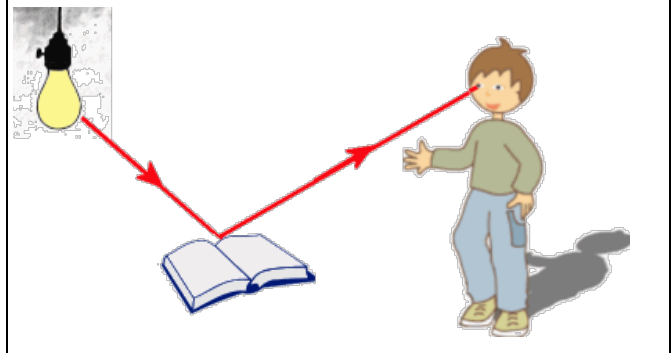
Diagram



Diagram



How light sources allow us to see



When light hits a surface, some of the light is absorbed and the rest is reflected. It is the reflected light that reaches our eyes and allows us to see the object. If red light is reflected back to our eyes, we see a red object etc.

Investigate

Find sources and reflectors of light and identify natural and artificial light sources.
 What happens to pupils when there is more light?
 What happens to the size of a shadow when the distance from the light source is changed? How do you make this a fair test?
 How does a periscope work?

Key Vocabulary

Eyes	Globular organs of sight in the head of humans and vertebrate animals.
Lens	Part of the eye that can change its shape to focus the light rays that pass through it.
Retina	The light-sensitive layer at the back of the eye that triggers nerve impulses, allowing us to see.
Light	A form of energy that stimulates sight and makes things visible.
Light source	Something that provides light, whether it be natural or artificial.
Opaque	Does not allow any light to pass through.
Translucent	Allows some light to pass through, but objects cannot be clearly seen.
Transparent	Allows all the light to pass through so that objects can be seen clearly.
Shadow	A dark area or shape produced by an opaque body coming between rays of light and a surface.
Reflection	The return of light from a surface.
Refraction	The change in direction of a ray of light when it passes from one transparent material to another.
Periscope	An optical instrument containing lenses and mirrors by which an observer can get a view that would otherwise be blocked.