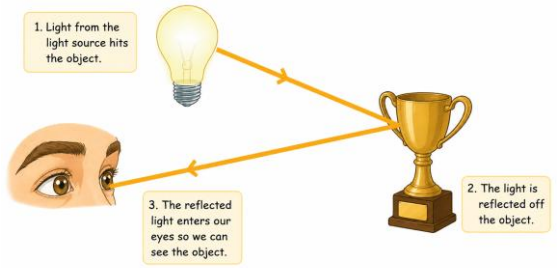
Year 6 Science Knowledge Organiser Autumn
LIGHT

Key Vocabulary

light	A form of energy that allows us to see things. It travels in straight lines.
light source	Anything that produces its own light, e.g. the Sun, bulbs, flames.
transparent	Materials that let almost all light pass through, so you can see clearly through them.
translucent	Materials that let some light pass through, but you cannot see clearly through them.
opaque	Materials that do not let any light pass through.
reflection	When light bounces off a surface.
mirror	A smooth, shiny surface that reflects light clearly.
shadow	A dark shape made when an object blocks light.

LIGHT AND VISION

Light is needed for the eye to see things. It travels in straight lines from a light source and is reflected by objects in the environment. This reflected light then enters the eye, enabling people to see.

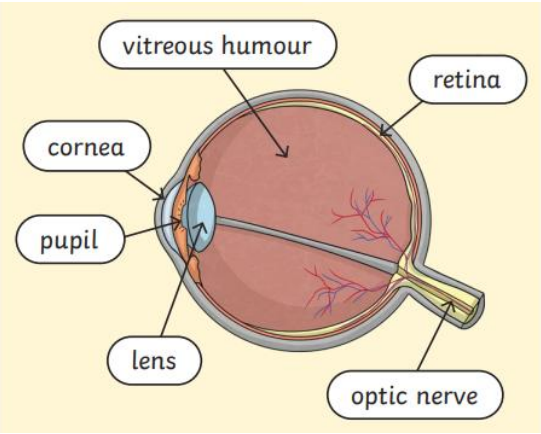


LIGHT SOURCES

A light source can be either naturally occurring or humanmade. Natural light sources include the Sun, lightning and bioluminescence. Artificial light sources include lightbulbs, electronic devices and fireworks.

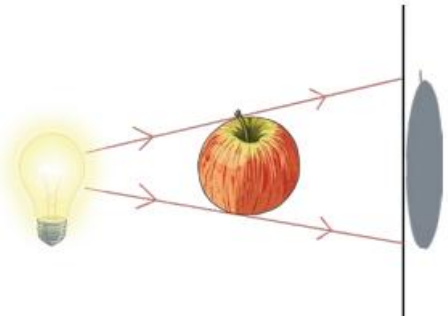
INSIDE THE EYE

Once light enters the eye through the pupil, it is focused by the lens onto the retina at the back of the eye. The retina converts the light into electrical signals, which are carried by the optic nerve to the brain, where they are interpreted as visual images.



SHADOWS

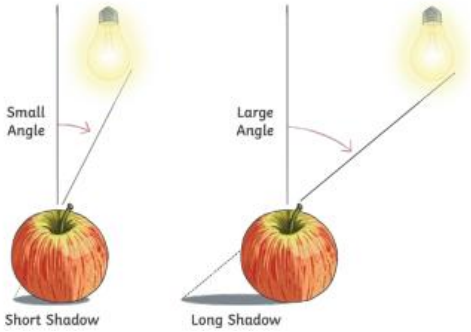
A shadow always takes on the shape of the object that casts it. Opaque objects block the path of light from a light source, creating a dark area behind the object.



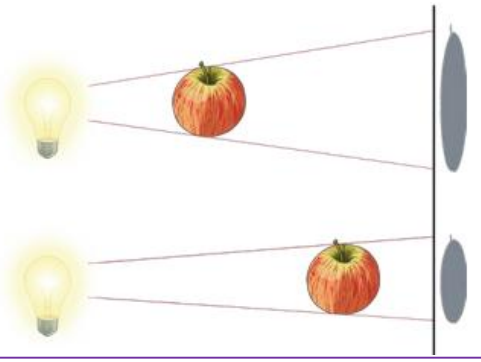
CHANGING SHADOWS

The angle and the size of a shadow can change, depending on a number of factors

Changing the angle of the light source in relation to the object can cause the shadow to appear larger or smaller.

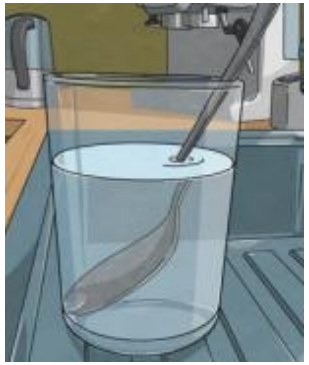


Changing the distance between the light source and the object can cause the shadow to appear larger or smaller.



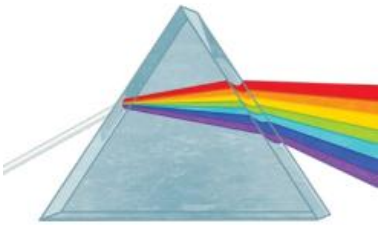
Refraction

Refraction occurs when the direction of light changes as it passes through different materials. We can see this when we observe a teaspoon in a cup of water; as light transitions from air to water, it bends slightly, causing the spoon to appear distorted or bent



Visible Light

Visible light is made up of all the colours in the visible spectrum. When light passes through a prism, it separates into these individual colours: red, orange, yellow, green, blue, indigo and violet.



The Visible Spectrum.

Humans can't see every colour of light. Ultraviolet and infrared light are invisible to the human eye. The colours of light that we can see are known as the visible spectrum.