Knowledge Organiser

Year 3 Light

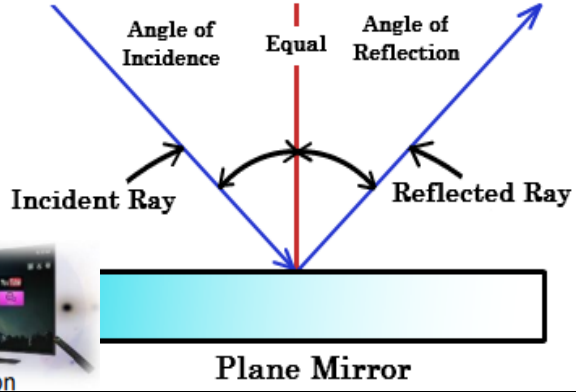
VOCABULARY

Light- Light is a type of energy that makes it possible for us to see.
Source of light- The sun and other stars, fires, torches and lamps all make light are examples of light sources.
Dark- with little or no light
Absence of light- refers to darkness. No or little light
Transparent- allows light to pass through
Translucent- allows light but not detailed shapes to pass through- diffuses light.
Opaque- An opaque material does not let light through. It does not reflect light.
Shiny- reflect light, typically clean and polished.
Matt- dull and flat without a shine.
Surface- outside part of uppermost layer of something
Shadow- dark area or shape produced by an object coming between rays of light and a surface.
Reflect- throw back light without absorbing it.
Sunlight- light from the sun.

Light Sources

Natural	Artificial
 Sun	
 Candle	 Television
 Fire	 Light bulb

Reflection



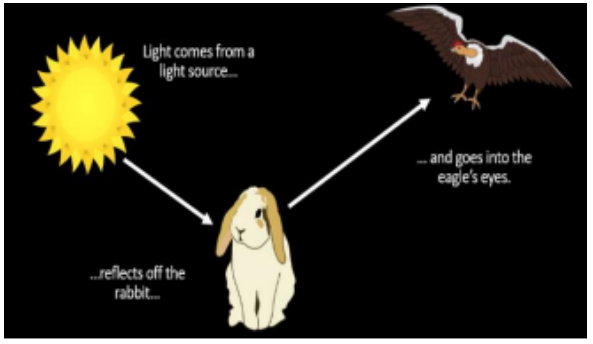
Light bounces off surface and changes direction as a result.

Facts

-Light travels in straight lines.
-Light from the sun can travel to Earth through a vacuum in 8 minutes.
-We need light to see.
-Light is a beam of energy.
-Plants turn light energy into food.
-Light travels at 300,000 km/second.

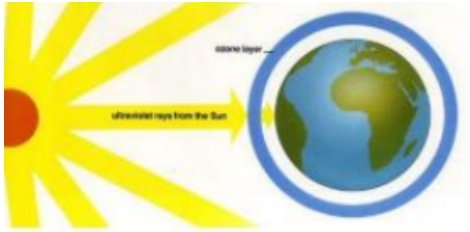
How we see things

White light is made of a spectrum of colours with different wavelengths: red, orange, yellow, green, blue, indigo and violet.



Light comes from a light source, reflects off the object and enters the eye.

UV Light



Electromagnet radiation from the sun or man-made objects such as sunbeds.

It is very dangerous to look directly at the sun.

Plymouth Science

Year 3
Light

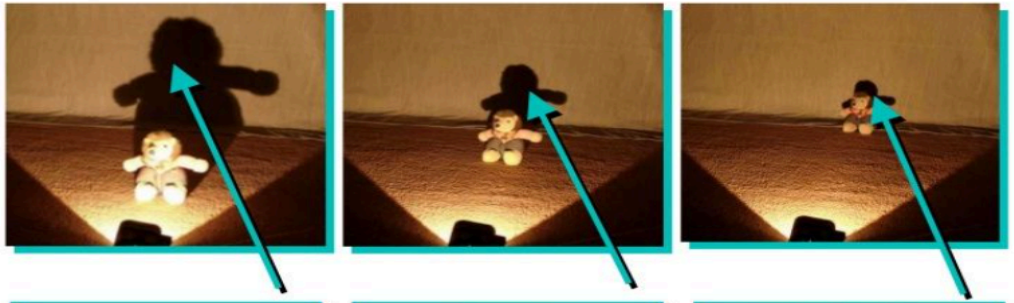
Shadows

A shadow is made when an object blocks light since light cannot get to the area behind the object blocking it, a shadow appears.

Sun Shadows

The earth spins once on its axis every 24 hours. As places on Earth spin into sunlight, the sun appears to rise in the East and travel across the sky until it sets in the West. As the height of the sun above the horizon increases during the morning, shadows cast by opaque, vertical objects (such as children!) reduce until they are smallest at midday, when the sun is highest. Our shadows lengthen again through the afternoon as the sun's height in the sky reduces.

Size of shadows



LARGE SHADOW when the toy is **close** to the light

SMALLER SHADOW when the toy is **further** from the light

TINY SHADOW when the toy is a **long way** from the light

When the earth rotates about its axis, the sun appears to 'move' across the sky, causing objects to cast shadows.

A sundial contains a gnomon, or a thin rod, that casts a shadow onto a platform etched with different times. As the sun changes relative positions over the course of a day, the rod's shadows change as well, which reflects the change in time.

Sundials