

Science

How is light reflected?

Previously we learnt that light travels into our eyes and enables us to see objects which is why you cannot see things in the dark. We also know that light travels in straight lines.

Websites to look at


<https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zqdx82>

<https://www.youtube.com/watch?v=vt-SG7Pn8UU>

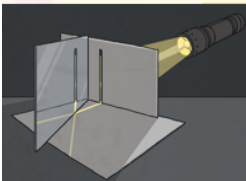
How Is Light Reflected?

Reflection is when light bounces off a surface, changing the direction of a ray of light. All objects reflect light; smooth and shiny surface reflect all the rays of light at the same angle, rather than scattering the rays of light like rough or dull surfaces.

The light ray that hits the mirror or other object is described as the incident ray, and the ray of light that bounces off is known as the reflected ray.



Try this challenge to prove the law of reflection!



Use modelling clay to stand a mirror up on a piece of white paper.

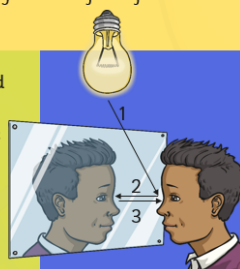
Make a very narrow slit in a piece of card.

Dim the lights and shine a torch through the slit towards the mirror.

Seeing reflections

The law of reflection is what allows us to see an object reflected in a mirror.

Look at the way light travels to enable the boy to see his face reflected in the mirror:



1. Light from the bulb hits the boy's face and bounces off.
2. The light reflected from the boy's face hits the mirror.
3. The light reflected from the mirror travels to the boy's eyes, so he can see the image of his face reflected in the mirror.

Your Task

Follow the instructions to make your own periscope and post a photo of your finished one.

A periscope is a device for seeing over or around something.

Periscopes were first used by sailors in around 1860, who used them in submarines to see above the surface of the water. They were also used by soldiers in the First World War, to see over the top of their trenches. They are still used today by tanks and some submarines.



Follow these instructions to make your own working periscope.



You will need:

A cereal box



A pair of scissors



2 safety mirrors



Sticky tape



Step 1

Carefully open up your cereal box and lay it out flat.



Step 2

Stick the 'mirror' templates in the centre of the wide panels of the cereal box.



Step 3

Stick the 'window' templates in the centre of the narrow panels of the cereal box.



Step 4

Carefully cut along the lines for the mirrors, and cut out the windows.



Step 5

Use sticky tape to stick the cereal box back together.



Step 6

Push the mirrors through the mirror lines you cut, and out the other side of the box so they are held firmly in place.



You should now be able to use your periscope to look around or over things!
Look through one viewing window to see an image from the other window.

