

Science— Light Y6

Key Vocabulary

light	A form of energy that travels in a straight line from a source.
light source	An object that makes its own light.
opaque	Describes an object which does not let any light pass through it.
periscope	A vertical tube which uses the reflection of light to allow you to see things around a corner. Often used in submarines to see what is above the water.
prism	A block of clear glass or plastic that separates light into the different colours that form it.
reflection	When light bounces off a surface, changing the direction of the ray of light.
refraction	When light bends as it passes from one medium to another e.g. light bends when it moves from air into water.
shadow	An area of darkness where light has been blocked.
translucent	Describes an object that lets some light through but it scatters the light so you cannot see through it properly.
transparent	Describes an object that lets light pass through it easily. You can see through it.
visible spectrum	Light that is visible to the human eyes. It is made up of a colour spectrum.

Key Facts

We need light to be able to see things. Light waves travel out from sources in straight lines. These lines are often called rays or beams of light.

Light travels as a wave. But unlike sound waves, light does not need a medium to travel through. This means that light can travel through a vacuum (an airless space).

The law of reflection states that the angle of incidence is equal to the angle of reflection. Whenever light is reflected from a surface, it obeys this law.

A shadow is always the same shape (but not always the same size) as the object that casts it. This is because an opaque object is in the path of the light travelling from a light source, it will block the light rays that hit it, while the rest of the light continues to travel.

Shadows can also be elongated or shortened depending on the angle of the light source. A shadow is larger when the light source is closer to the object. This is because it blocks more of the light.

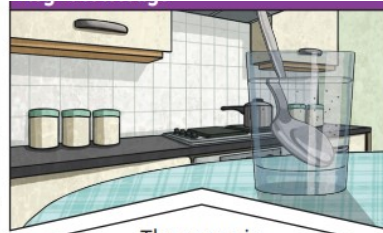
We see things because light travels to our eyes from a light source or from a light source and reflects off an object into our eyes.

Key people—Isaac Newton (1643-1727)



Sir Isaac Newton carried out experiments into light and refraction and was the first to discover the light spectrum.

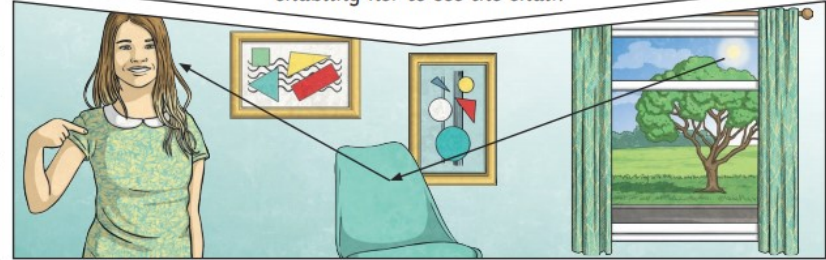
Newton published a series of experiments in 1672 where he was the first to understand the rainbow — he refracts white light with a prism, resolving it into its component **colours**: red, orange, yellow, green, blue, indigo and violet.



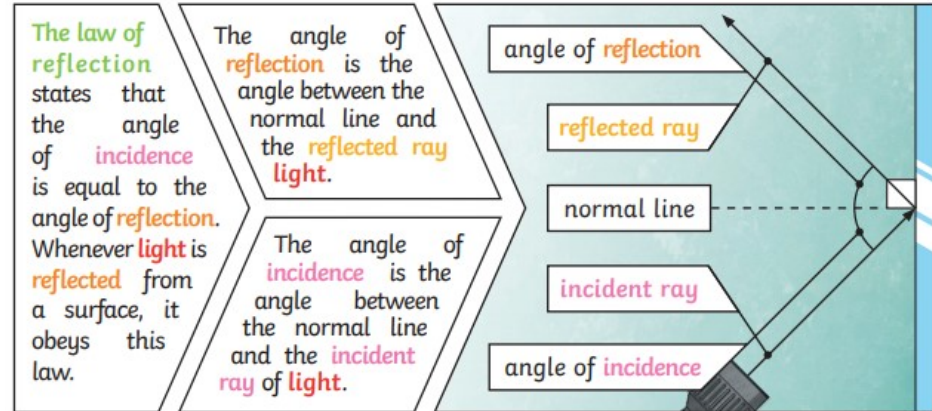
The spoon in this water looks as if it is bent. This is because **light** bends when it moves from air to water. When **light** bends in this way, it is called **refraction**.

How we see things

Light from the sun travels in a straight line and hits the chair. The **light** ray is then **reflected** off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.



The laws of reflection



Tier 2

Vocabulary

concept	An idea.
hypothesis	An idea that you think is true that you have some proof about.
interpret	To explain what you think something is or why you think something happened using evidence from the past.
investigate	To find out what something is or why something happens by testing out ideas.
vary	Changing things.