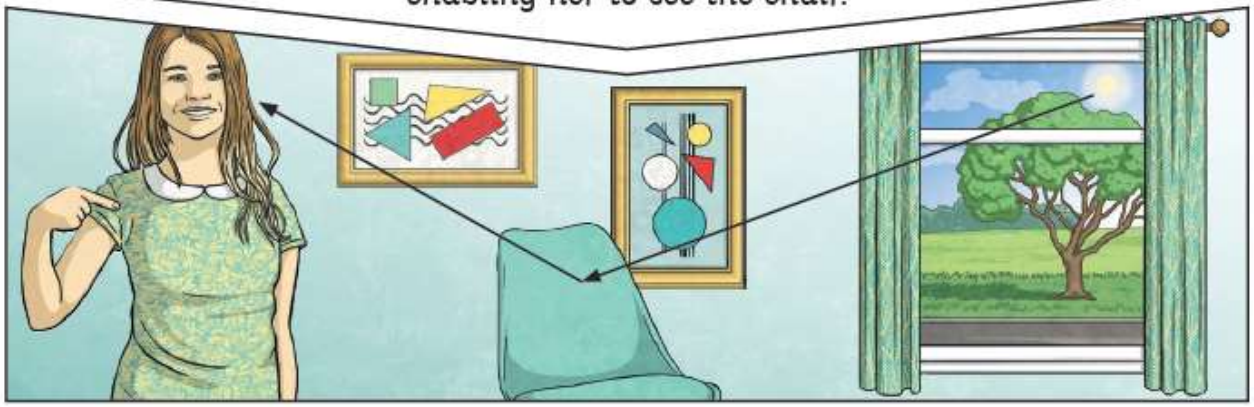
Key Vocabulary

light	A form of energy that travels in a wave from a source.
light source	An object that makes its own light.
reflection	Reflection is when light bounces off a surface, changing the direction of a ray of light.
incident ray	A ray of light that hits a surface.
reflected ray	A ray of light that has bounced back after hitting a surface.
the law of reflection	The law states that the angle of the incident ray is equal to the angle of the reflected ray.

Key Knowledge

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

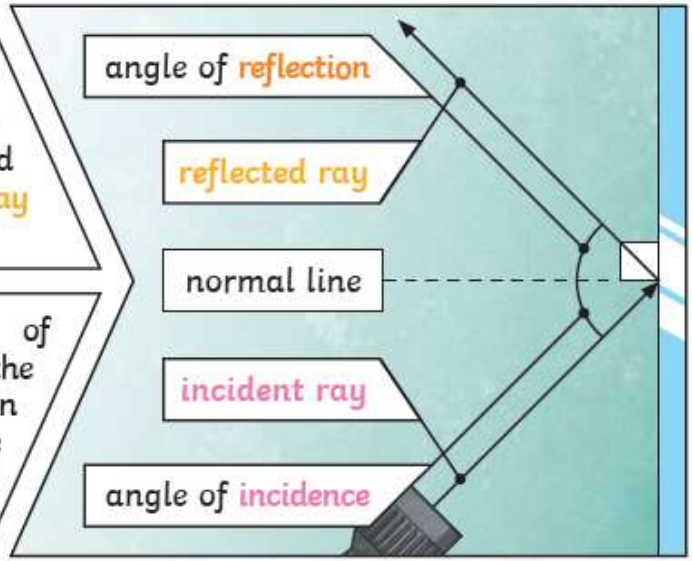
Light from the sun travels in a straight line and hits the chair. The light ray is then reflected off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.



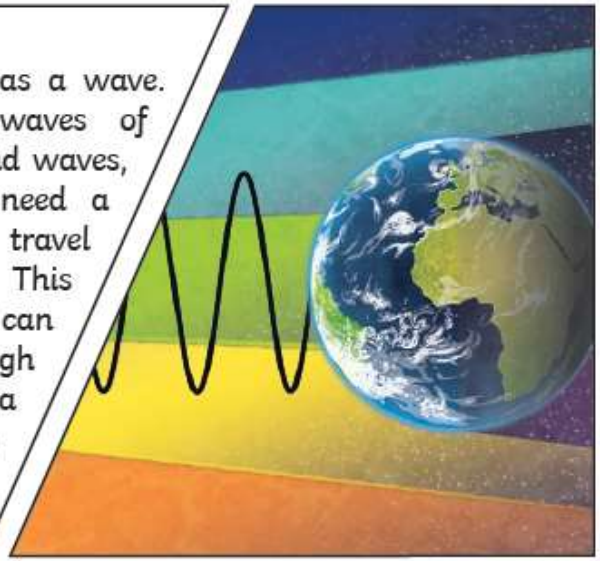
The law of reflection states that the angle of incidence is equal to the angle of reflection. Whenever light is reflected from a surface, it obeys this law.

The angle of reflection is the angle between the normal line and the reflected ray of light.

The angle of incidence is the angle between the normal line and the incident ray of light.



Light travels as a wave. But unlike waves of water or sound waves, it does not need a medium to travel through. This means light can travel through a vacuum - a completely airless space.



Light

Science

Year 6

Key Vocabulary

refraction	This is when **light** bends as it passes from one medium to another. E.g. **Light** bends when it moves from air into water.
visible spectrum	**Light** that is visible to the human eye. It is made up of a colour **spectrum**.
prism	A **prism** is a solid 3D shape with flat sides. The two ends are an equal shape and size. A **transparent prism** separates out visible **light** into all the colours of the **spectrum**.
shadow	An area of darkness where **light** has been blocked.
transparent	Describes objects that let **light** travel through them easily, meaning you can see through the object.
translucent	Describes objects that things let some **light** through, but scatters the **light** so we can't see through them properly.
opaque	Describes objects that do not let any **light** pass through them.

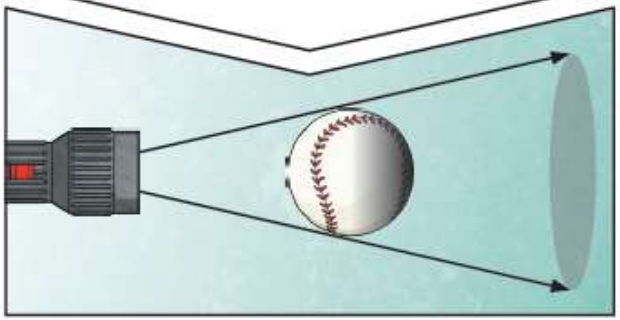
What careers can I achieve through this?

Photographer Optician

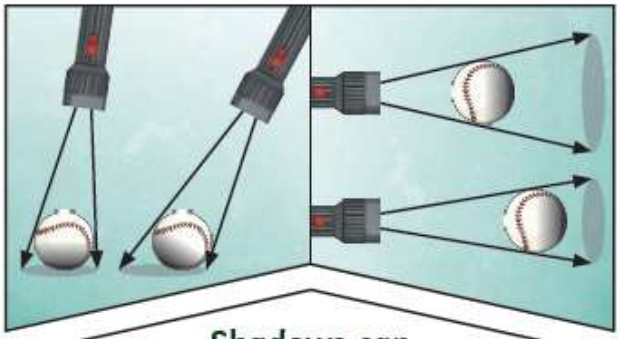
Key Knowledge

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**.

A **shadow** is always the same shape as the object that casts it. This is because when an **opaque** object is in the path of **light** travelling from a **light source**, it will block the **light** rays that hit it, while the rest of the **light** can continue travelling.



Isaac Newton shone a **light** through a **transparent prism**, separating out **light** into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) - the colours of the **spectrum**. All the colours together merge and make visible **light**.



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