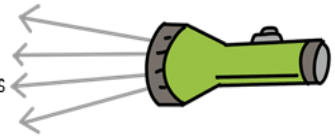
Year: 6
Term: Autumn 2
Topic: Physics - Understanding light and seeing

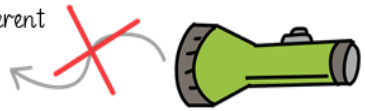
St Dennis Primary Academy

"Everyone matters, everyone succeeds, every moment counts"

Light travels very fast in **straight lines** called **light rays**. Even though light travels in straight lines, it travels in different directions.



Light rays from a torch travel in different directions but always in straight lines.

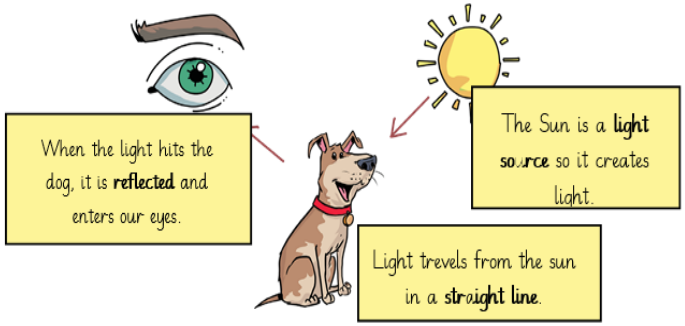


Light doesn't always travel in straight lineslike it wants to; it can change direction. **Light rays** change speed when they pass across the boundary between two states of matter, such as gas and liquid. This causes them to **change direction**, and this effect is called **refraction**.

We can see things because light is **reflected**. Some materials reflect light better than others.

Light travels in straight lines. When light from an object is reflected by a surface, it changes direction.

Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well.



When light hits an object, it is **reflected** (bounces off) and enters our eyes. This is how we see the object.

We need **light sources** to be able to see; otherwise, there is no light to reflect off surfaces and into our eyes. This is why we cannot see in the dark.

A **shadow** is made when an **object blocks light**. A shadow is a **dark area** or **shape** caused by a solid object blocking the rays of light from a light source.

Glossary

absorption	When light strikes a surface and is retained within it.
dark	The absence of light.
luminous	Giving off light, bright or shining.
opaque	Opaque materials do not let any light pass through them and they block the light.
reflect	A surface (or body) that throws back light without absorbing it.
refraction	The 'bending' of light when it passes from one transparent material to another.
scattering	When light is returned from a surface.
shadow	An area where direct light from a light source cannot reach due to obstruction by an object.
translucent	Translucent materials let some light through, but scatter the light in all directions so that they cannot see clearly through them.
transparent	Transparent materials let light pass through them in straight lines so that you can see clearly through them.

Light travels in straight lines from light sources. This is reflected from objects and travels into the eye through the **cornea** and the **pupil**.

The light travels through the **lens**, which focuses it on the back of the eye. It **refracts** the light, which projects an upside-down image onto the **retina**.

Photoreceptors (sensors) in the retina translate the image into electric impulses, which travel along the **optic nerve** and into the brain.

The brain makes sense of the signals and tells us what we can see.