Science Knowledge Organiser

Year 5	Light	Summer 1

dark - the absence of light

direction - the way that something is moving

light - a source of energy that allows you to see

light ray - an imaginary line that represents the line of light

light beam - a group of light rays

light source - something that makes light

opaque - cannot see through

reflect - bounces off or changes direction

reflective - something that reflects well

refraction - when light changes direction when going through the boundary of a state of matter

see - to perceive with the eyes

shadow - a dark area or shape produced by an object coming between rays of light and a surface

transparent - can see through

translucent - can see through partially, but not in detail

Light sources

A **light source** makes light. The **Sun** and other **stars**, **fires**, **torches** and **lamps** all make their own light, so they are examples of sources of light.



Refraction

Light doesn't always travel in straight lines like it wants to; it can **change direction**.

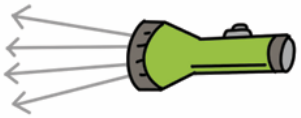
Light rays change speed when they pass across the boundary between two states of matter, such as gas and liquid. This causes them to **change direction**, and this effect is called **refraction**.

An example of refraction is a straw in a glass of water.

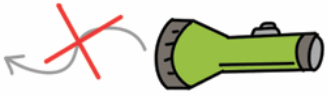


Travelling light

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**.

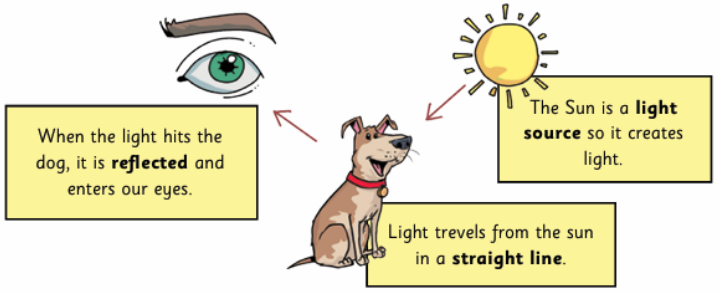


Reflective light

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.

Shadows

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.

