

**Willerby Carr Lane Primary School - Science**

**Topic: Light**

**Year: 6**

**Strand: Physics**

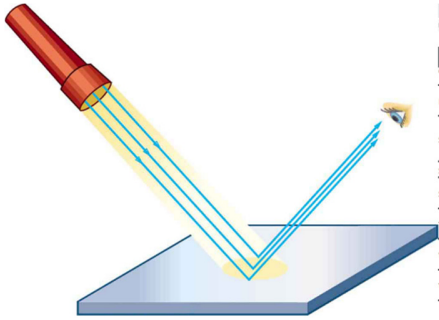
**What should I already know?**

- What a light source is
- Shiny materials do not make light but do reflect it.
- Why we need light
- Shadows are caused when certain materials block light

**What will I know by the end of the unit?**

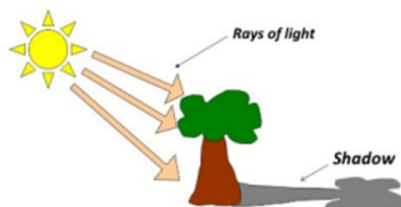
How does light travel?

- Light travels in a straight line.
- When you place a torch on a table in a dark room, the beam travels in a straight line.
- Reflection is when light bounces off a surface - this changes the direction in which the light travels.

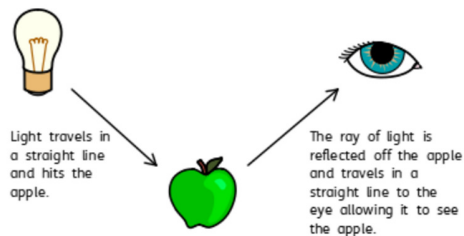


What is the relationship between light sources and shadows?

- Because light travels in straight lines, when there is an opaque object blocking the light, a shadow is formed.
- These shadows have the same shape as the objects that cast them.



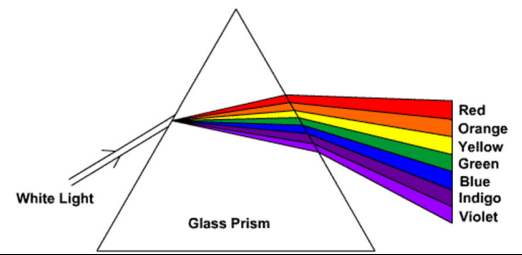
How do we see?



What happens when light passes

- Light is refracted (bent) when it passes through a prism
- This can be used to show that white light is made up of a spectrum of colours

through a prism?



**Vocabulary**

angle	the direction from which you look at something
dark	the absence of light
dim	light that is not bright
emits	to emit a sound or light means to produce it
light	a brightness that lets you see things.
mirror	a flat piece of glass which reflects light, so that when you look at it you can see yourself reflected in it
opaque	if an object or substance is opaque, you cannot see through it
prism	a solid glass object that light can pass through. A prism splits a ray of light into the colours of the rainbow.
reflects	sent back from the surface and not pass through it
refraction	how light is bent when passing through a translucent material
shadows	a dark shape on a surface that is made when something stands between a light and the surface
source	where something comes from
spectrum	a band of colors that is formed when light is passed through a prism, or in some other way.
surface	the flat top part of something or the outside of it
torches	a small electric light which is powered by batteries and which you can carry
translucent	if a material is translucent, some light can pass through it
transparent	if an object or substance is transparent, you can see through it

### Investigate!

- Design an experiment to measure shadow length by changing a variable. Show your results in a line graph to show the relationship between distance of light source and shadow length. Explain your findings using scientific vocabulary
- What happens when light is reflected from a mirror?
- What happens when the angle of the mirror (or light source changes?) Measure the angle of 'incidence' and angle of reflection.
- Make a periscope and explain how it works using diagrams and scientific vocabulary.
- Explore what happens when light passes through a prism. Or through water.
- Explore what happens when red, yellow and blue light are combined.

### Common misconceptions

Some children may think:

- we see objects because light travels from our eyes to the object.

