

UKS2 Knowledge Organiser - Science- Light (Year 6 Unit)

Careers connected to Light: Photonics, Lighting technician, Optometrist, Photographic Processor



What I already know

- I can identify the difference between light sources and non light sources
- I have explored the light from the sun and how to stay safe
- I have explored materials which are reflective
- I have discovered how shadows are formed
- I have investigated how shadows change throughout the day
- I have investigated how you can change the size of a shadow

Sticky Learning

How We See



Light travels in **straight lines**. The light **rays** from a light source **reflect** off the object we are looking at. The light travels in a **straight line** and enters the eye through our **pupil**.

Bending Light



Reflection

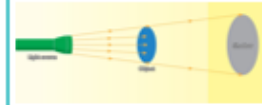
Light reflects off shiny, bright or light surfaces. That is why you can see your reflection when you look in a mirror.



Refraction

Water and bent shiny surfaces cause light rays to be reflected at different angles, meaning the reflection of the image is distorted.

Shadows



Opaque objects block the light rays so they can only travel around the edges of the object in straight lines. That is why a shadow is the same shape as the object.

The **closer** an object is to the light source, the **bigger** the shadow.

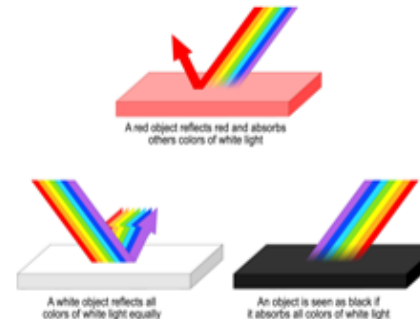
The **further away** the object is from the shadow, the **smaller** the shadow.

Colours



Absorption and reflection of light

White light is made up of the colours of the rainbow. When light is refracted through a transparent object, a rainbow is formed.



Core Learning



1. Explore how light travels



2. Explore reflection



3. Explore reflection and explain how it can be used to help see things



4. Investigate how shadows can change



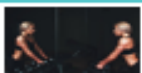
5. Investigate how we can show why shadows have the same shape as the object that cast them



6. Explore light phenomena



Rocket Words

	light	a form of energy
	light source	an object that provides its own light
	reflected	when light shines on a surface and bounces back
	variable	any one of the elements of an experiment which could be changed
	angle	the space between 2 intersecting lines
	mirror	a surface that reflects a clear image
	opaque	it describes materials which do not allow light to travel through
	transparent	it describes materials which allow all light to travel through
	sunshade	a device giving protection from the sun
	rotate	to turn an object around a <u>centre point</u>
	optical	relating to the science of optics
	spectrum	a band of several <u>colours</u>

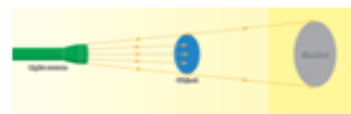


Add arrows to the diagram below to show how we see things.



Use these words to help you write an explanation of how we see:

Light rays straight lines pupil reflect



Describe how a puppet's shadow changes if it is moved closer to a light source.

Label the statements below 'reflection' or 'refraction'.

Light reflects off shiny, bright or light surfaces. That is why you can see your reflection when you look in a mirror.

Water and bent shiny surfaces cause light rays to be reflected at different angles, meaning the reflection of the image is distorted.

True (T) or False (F) ?

Light rays reflect off shiny surfaces.

☐

Light travels in wavy lines.

☐

An iPhone is a light source.

☐

The moon is a light source.

☐

White light is made up of 5 different colours.

☐

Green objects look green because the green is reflected into our eyes, but the other colours are absorbed by the object.

☐

Why doesn't glass create a shadow when a light source is shining on it?
