



Topic: Light

Year 3

Strand: Physics

What I should know by the end of this unit:

- We need light in order to see things. Dark is the absence of light.
- Light can be reflected from some surfaces
- Light from the sun can be dangerous and we shouldn't look straight at it. There are ways to protect our eyes when it is very sunny.
- A shadow is formed when light is blocked by something that is opaque.
- Shadows change in size and shape during the day

Key Vocabulary

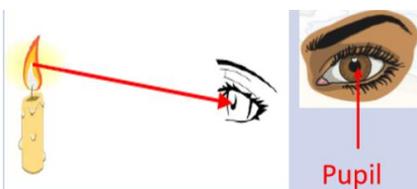
Spelling	definition
electricity	A form of energy that provides power to devices
opaque	Opaque materials do not let any light through. They block the light. E.g. wood
reflection	When light bounces off a surface
shadow	A dark area which is formed when light from a light source is blocked by an opaque object.
source	A thing from which something starts
Translucent	Translucent materials let some light through, but they scatter the light in all directions so you cannot see clearly through them. E.G tissue paper
transparent	Transparent materials let light through them, in straight lines, so that you can see clearly through them. E.g glass
warning	Something that is said or written to tell people of danger

Things you need to know about light

What is a light source?	Something that makes its own light
<p>Common sources of light</p> <p>The sun</p>  <p>The stars</p>  <p>Flames</p>  <p>Electric lights</p>  <p>Some animals (fireflies and glow worms make their own light)</p>  	
Things you may think are light sources but aren't	The moon A mirror Shiny objects
How does light travel?	In straight lines. It travels very, very fast – 300,000km per second. That's like travelling around the world over 7 times in one second!

How we see things

We see things when light from a light source enters our eyes through the pupil



Light travels from the light source and into the eye.



Light travels from the light source, bounces off the object and into the eye.



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The sun



If too much light comes through the pupil, it can damage the retina.

It causes pain, so that you instantly close your eyes or turn away from a bright light.

It is very important that you never look directly at the sun, as the light can damage your eyes very quickly.

It's never safe to look directly at the sun, even when wearing sunglasses.

Bright lights indoors can also damage your eyes, so you should never look at them, or shine lights into anyone's eyes.

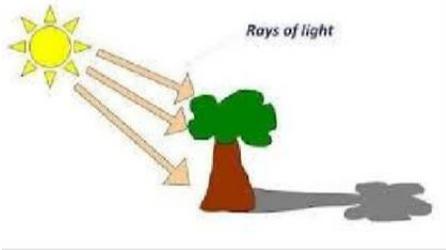
Shadows

A shadow is formed when an object does not allow the light to pass through it.



How a shadow is made

Shadows are made when there is an object blocking the light from hitting the surfaces. This means that the shadow will always be on the opposite side of an object to the sun or light.



The object needs to be a solid object. If it is clear then the light will pass through it, whereas a solid object will block it.

Some light passes through translucent objects. Although some light is blocked some gets through and so a shadow is formed. These shadows are not as dark.

Shadows made by the sun change as the earth moves

The position of the sun affects the position and length of the shadows created.





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How does light travel?	Start of unit	End of unit
Straight lines		
Curvy lines		
Light is everywhere		
Light does not travel		

Shadows are formed when ...	Start of unit	End of unit
Light is let through an object		
Light is blocked by an object		
It is dark		
Light cannot travel through an object		

match these words to their meanings	Start of unit	End of unit
translucent		
transparent		
opaque		
You cannot see through it and a dark shadow is formed		
You can see a little light through it and a fairly dark shadow is formed		
You can see through it completely and a faint shadow is formed		

Looking at the sun is ...?	Start of unit	End of unit
Safe		
dangerous		
Ok if there are clouds		
Ok if the sun is rising or setting		

Sources of light include ...? (Tick 3)	Start of unit	End of unit
The sun		
The sun		
Street lights		
torches		

When light bounces off a surface, it is ...	Start of unit	End of unit
absorbed		
dissolved		
reflected		
bounced		

Dark means ...	Start of unit	End of unit
When there is a little light so you can see		
The absence of light		
You have to eat carrots so you can see		