

Cunningham Hill Junior School - Science Knowledge Organiser - Light - Year 3

Key Vocabulary:

1	light	A form of energy that travels in a line from a source and enables us to see.
2	light source	An object that makes its own light . Light sources can be natural or artificial.
3	dark	Dark is the absence of light .
4	shadow	A dark area or shape caused by blocking the light .
5	reflection	When light hits the surface of an object and bounces back.
6	reflect	To bounce off
7	reflective	A word that describes objects that reflect light well.
8	ray	Waves of light are called light rays , they can also be called beams.

Light Sources:

These are **light sources**. **Light** is emitted by these things. We can see when **light** from a **light source** enters our eye.

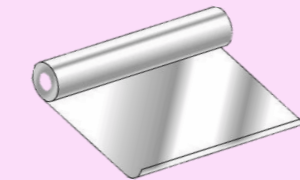


Sun	Fire	Torch	Bulb	Screen
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Reflection:

Shiny objects that **reflect light** can be mistaken for **light sources**. These objects do not create **light**, they **reflect light** that is shone onto them.

We need **light** to be able to see things. **Light** travels in a straight line. When **light** hits an object it is **reflected** (bounces off). If the **reflected light** hits our eyes, we can see the object. The surfaces that **reflect** the most **light** are smooth, flat and shiny.



Silver Foil



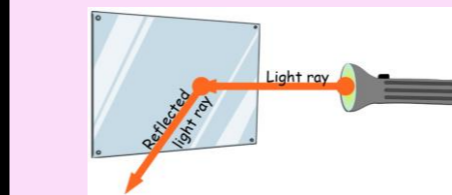
The Moon

We cannot see shiny objects in the **dark** due to lack of **light sources**

Cat's eyes are **reflective** domes and were invented by Percy Shaw to improve safety on the roads.



Retro-reflective materials **reflect light** straight back at the **light source** - this is used to keep people safe when they are working in the **dark**.



When a **light source** shines on a mirror, the **light** hits the mirror and is **reflected** off again.

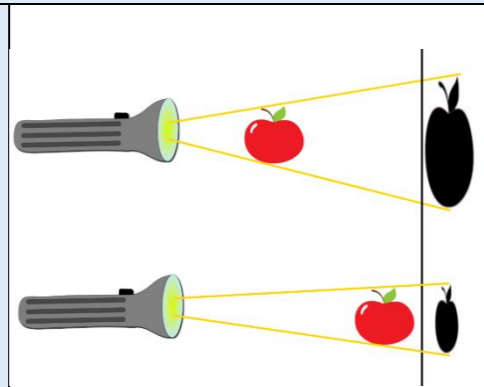
Different objects allow different amounts of **light** to pass through them.

a	transparent	An object that lets light through easily, we can see through transparent objects.
b	translucent	An object that some light can travel through, but the light is scattered so we cannot see through translucent objects properly.
c	opaque	An object that no light can travel through, it means that we cannot see through opaque objects

transparent	translucent	opaque
 All light passes through a window.	 Some light passes through these sunglasses.	 No light passes through a backpack.

Shadows:

Darkness is the absence of **light**.
Shadows are created when **light** from a **light source** is blocked.
 You can change the size and shape of a **shadow** by placing the **light source** further away or closer to the object.



Protecting our eyes:

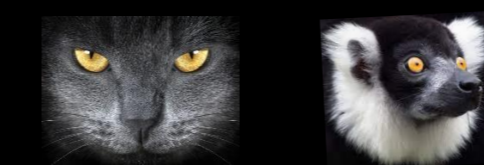
Light from the sun can be dangerous and cause damage to our eyes. There are several ways to protect ourselves from the sun.

Wear UV sunglasses and a cap with a peak that covers your face.



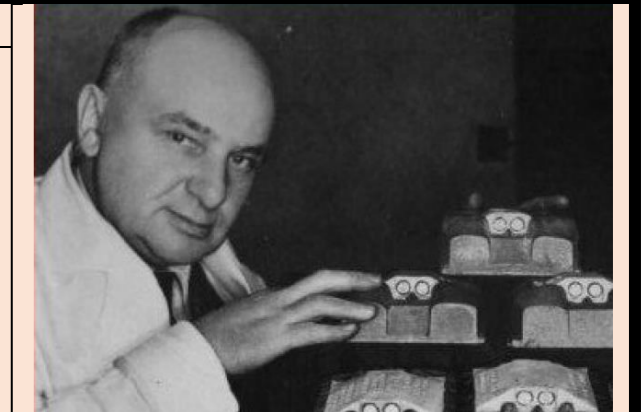
Animals:

Nocturnal animals are adapted to use what little **light** there is or their other senses in the dark (e.g. cats and lemurs), but they cannot see in total darkness.



Significant Scientist:

Percy Shaw lived between the 15 April 1890 and the 1 September 1976. He invented a device he called 'the cat's eye' to mark out the lines on the road to keep cars safe at night.



Transparent

- | | | |
|---------------|-------------|-----|
| glass windows | clean water | air |
|---------------|-------------|-----|

Translucent

- | | | |
|---------------|---------------|---------------------|
| frosted glass | tracing paper | plastic milk carton |
|---------------|---------------|---------------------|

Opaque

- | | | |
|--------------|------|-------|
| wooden table | sofa | brick |
|--------------|------|-------|