



*Knowledge is Power...*

## Ivington CofE Primary and Preschool

*Reaching together... stand firm in your faith, be courageous and strong - 1 Corinthians 16:13*



### SUBJECT Science – Light

TERM: Spring 2022

YEAR GROUPS: 4/5

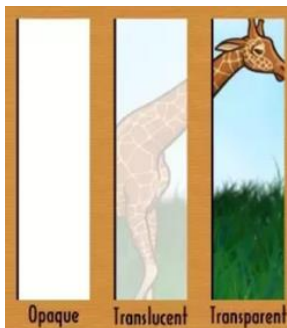
#### What I should already know:

- Certain things produce **light**, usually by burning (e.g. the Sun) or **electricity** (e.g. street **lights**)
- Shiny materials do not make **light** but do reflect it.



### Overview

- Light is a **form of energy** that makes it possible to see.
- Light is **given off some objects** (for example the Sun). Darkness is when there is no light.
- Light can **reflect** off surfaces (e.g. mirrors)
- Objects can be labelled as **transparent, translucent, or opaque**, depending on the amount of light that they let through.
- Shadows** are formed when light is blocked by an opaque



### Transparent, Translucent and Opaque

When light hits an object, it can be absorbed by the object, reflect (bounce off) the object, or (transmit) pass through an object.

The three key terms below tell us how much light objects let through them.

**Transparent** – Transparent objects allow all of the light to pass through them. This means that we can clearly see through them.

**Translucent** – Translucent objects only allow some light to pass through them. This means that we can partially see through them.

**Opaque** – Opaque objects do not allow any light to pass through them. This means cannot see through them at all.

### Light – Key Terms

#### Dark

Darkness is the absence of light. In other words, where there is no light, it is dark!



Human vision is unable to see colours when there is high levels of darkness (too little light).

At nighttime, the sky is darker because there is a lack of light from the sun.

#### Absorption

When light hits an object, it may be absorbed into the object.



This means that it doesn't bounce off or pass through the object.

Some examples of materials/objects that absorb light include wood, brick and stone.

#### Reflection

Light may also reflect off the surface of an object. This means that light bounces off the object, sending it in another direction



Some examples of materials/objects that reflect light include mirrors or polished metal surfaces.

#### Transmission

Light can also be transmitted through certain objects.

This means that it passes through the object. It can be seen from the others side of the object.



Some examples of materials/objects that transmit light include windows and clean water.

Windows

Water

Air

Frosted Glass

Tracing Paper

Flower Petals

Plastic Milk Carton

**Transparent Objects**

**Translucent Objects**

**Opaque Objects**



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Vocabulary		Why do we need light?
angle	the direction from which you look at something	<ul style="list-style-type: none"> <li>We need <b>light</b> so that we are able to see in the <b>dark</b>.</li> <li>This is because the <b>dark</b> is the absence of <b>light</b>. The Sun and stars always give us <b>light</b> but we can only see the stars when it is <b>dark</b>. At night time we cannot see the Sun's <b>light</b> as the Earth turns and our part of the Earth is not lit up by the Sun at night.</li> <li>When we are driving, we need car headlights or street <b>lights</b> to help us.</li> <li>If we are walking or out in the dark, we would need <b>torches</b> to help us see.</li> <li>You should not look directly into the <b>torch</b> as this is dangerous.</li> </ul>
bright	a colour that is strong and noticeable, and not dark	
chemical reactions	a process that involves changes in the structure of something	
dark	the absence of light	
dim	light that is not bright	
electricity	a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for machines	<h3>What are NOT sources of light?</h3> <ul style="list-style-type: none"> <li>The Moon is not a <b>source</b> of <b>light</b> even though we can see it in the <b>dark</b>.</li> <li>This is because the Sun's <b>light reflects</b> on the</li> <li><b>surface</b> of the Moon making it appear as though the Moon <b>emits light</b>.</li> <li>Shiny things are not <b>light sources</b> - they appear to be <b>sources</b> of <b>light</b> as they are <b>bright</b>.</li> </ul>
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	
product	something that is produced reflects sent back from the surface and not pass through it	
shadows	a dark shape on a surface that is made when something stands between a light and the surface	<h3>How does light travel?</h3> <ul style="list-style-type: none"> <li><b>Light</b> travels in straight lines.</li> <li>When <b>light</b> is blocked by an <b>opaque</b> object, a <b>dark shadow</b> is formed.</li> </ul>
source	where something comes from	
sunglasses	glasses with dark lenses which you wear to protect your eyes from bright sunlight 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	