Dog Kennel Hill Primary School - Science

Topic: Light	Year: 3	Strand: Physics

What should I already know?

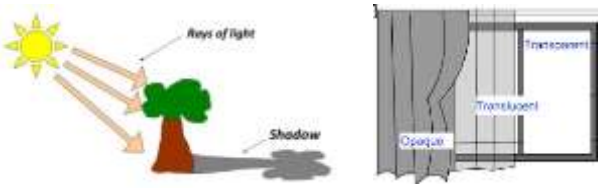
- Some things produce **light**, such as lamps or candles.

What will I know by the end of the unit?

What is a **light source**?	• A **light source** is something that **emits light** by burning, electricity or **chemical reactions**. • Burning **light sources** include the Sun, flames from a fire and stars. • We must never look directly at the Sun as the **light** produced is very **bright** and can be harmful to our eyes. This is why we wear **sunglasses**. • **Electric lights** include lamps, car headlights and street **light**. • **Lights** that are caused by **chemical reactions** are much less common. This happens when different chemicals react and **light** • is a **product** of that reaction. Examples can include glow sticks and fire flies. 
Why do we need **light**?	• We need **light** so that we are able to see in the **dark**. • This is because the **dark** is the absence of **light**. The Sun and stars always give us **light** but we can only see the stars when it is **dark**. At night time we cannot see the Sun's **light** as the Earth turns and our part of the Earth is not lit up by the Sun at night. • When we are driving, we need car headlights or street **lights** to help us. • If we are walking or out in the dark, we would need **torches** to help us see. You should not look directly into the **torch** as this is dangerous. 
What are not **sources** of **light**?	• The Moon is not a **source** of **light** even though we can see it in the **dark**. • This is because the Sun's **light reflects** on the **surface** of the Moon making it appear as though the Moon **emits light**. • Shiny things are not **light sources** - they appear to be **sources** of **light** as they are **bright**.
How does **light** travel?	• **Light** travels in straight lines. • When **light** is blocked by an **opaque** object, a **dark shadow** is formed.

Diagrams

How are **shadows** formed?



Vocabulary

Angle	the direction from which you look at something
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
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 lookat 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**
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 it 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

Key information

- When **light** is blocked by an **opaque** object, a **dark shadow** is formed. An **opaque** material blocks **light** so we can't see through it and shine a **light** through it.
- When **light** is shone onto a **transparent** object, the **light** travels through it, we can see through it and it makes a very faint **shadow**.
- When **light** is shone onto a **translucent** object, some of the **light** travels through it, we can see **bright light sources** through it and it makes a fairly **dark shadow**.
- The size of a **shadow** changes as the **light source** moves. The further away the **light source** is, the smaller the **shadow** is. The closer the **source** of the light, the bigger the shadow.

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Question 1
Question 2
Question 3
Question 4
Question 5