Topic: **Light**	Year: 3	Strand: **Physics**

What should I already know?

Observe and describe weather associated with the seasons and how day length varies Y1

Materials that are shiny reflect light and are not light sources—Y1 Materials

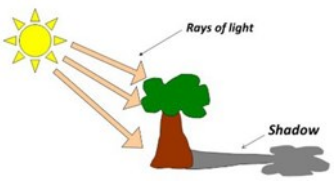
What will I know by the end of the unit?

What is a **light source**?	A **light source** is something that **emits light** (burning, electricity or **chemical reactions**) Burning **light sources** include the Sun, flames from a fire and stars. We must never look at the sun and should wear sunglasses to protect our eyes. 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.
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.

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 provides 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 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
shadow	a dark shape on a **surface** that is made when something stands between a **light** and the **surface**
source	where something comes from
surface	the flat top part of something or the outside of it
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

How are shadows formed?



When **light** is blocked by an **opaque** object, a **dark shadow** is formed. **Opaque** material block **light** so we can't see through it.

When **light** is shone onto a **transparent** object, the **light** travels through it so 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.