



Year 3 Science

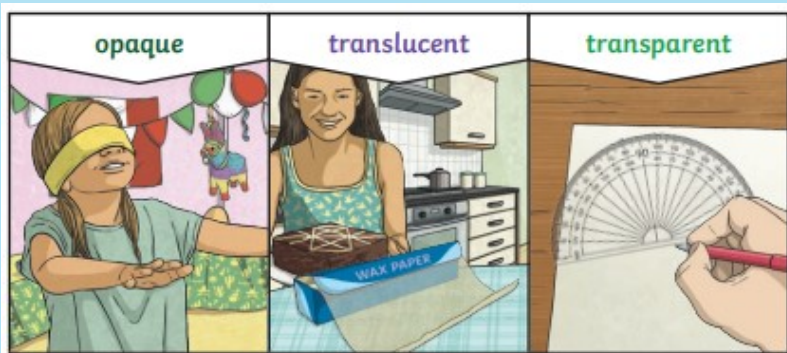
Light & Shadow

Things you should already know:

- Materials have describable properties
- Different materials have different properties.
- The properties of a material determine whether they are suitable for a purpose

Key Knowledge

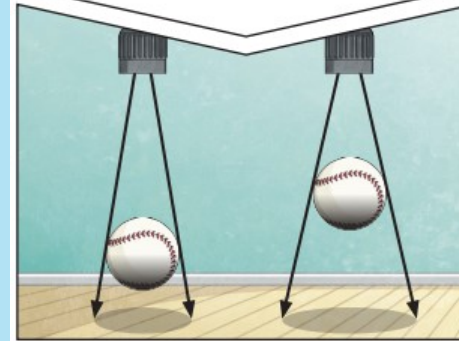
- There must be light for us to see. Without light it is dark.
- Light comes from a source.
- We need light to see things, even shiny things.
- Transparent materials let light through them and opaque materials don't let light through.
- Beams of light bounce off some materials (reflection).
- Shiny materials reflect light beams better than non-shiny materials
- If the material is translucent it will allow light through but we won't be able to see through it.



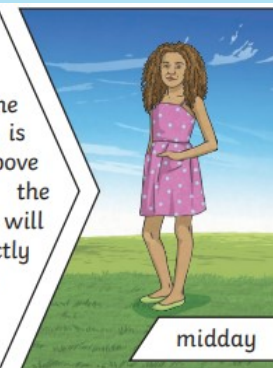
New Learning for Year 3

- Recognise that we need light in order to see things and that dark is the absence of light
- Notice that light is reflected from surfaces
- Recognise that light from the sun can be dangerous and that there are ways to protect our eyes
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object
- Find patterns in the way that the size of shadows change.

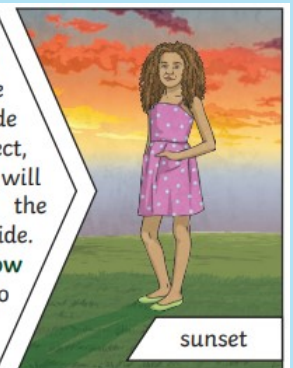
A **shadow** is caused when **light** is blocked by an **opaque** object. A **shadow** is larger when an object is closer to the **light** source. This is because it blocks more of the **light**.



When the **light** source is directly above the object, the **shadow** will be directly underneath.



When a **light** source is to one side of an object, the **shadow** will appear on the opposite side. The **shadow** will also be longer.





Year 3 Science

Light & Shadow

Key Vocabulary

Light	A form of energy that travels in straight lines from a source
Light source	An object that makes its own light
Dark	The absence of light
Shadow	An area of darkness where light has been blocked
Reflect	To bounce off
Reflection	The process where light hits the surface of an object and bounces back into our eyes
Reflective	A word to describe something that reflects light
Rays	Waves of light are called light rays or light beams
Transparent	Describes an object that lets light travel through it easily so you can see through it; does not create a
Translucent	Describes an object that lets some light through, but not enough that we can see through it properly; creates a light shadow
Opaque	Describes a material that doesn't let any light pass through it; creates a dark shadow.

Draw and label diagrams to help you write an explanation of how shadows are made.

Name two things you can do to protect your eyes from the sun's harmful UV rays.

Sticky Learning.

Can you answer any of these questions in your book?

Some surfaces and materials reflect light well and can be very useful. Match the material/ object to its description:

cat's eye

Used on coats or bags so you can be seen at night.

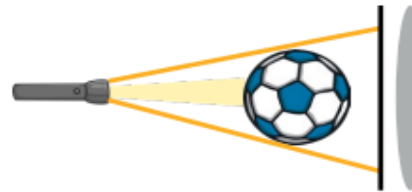
mirrors

Help drivers see the road by reflecting light from headlamps.

reflective strips

Let us see ourselves and allows drivers to see behind them.

Look at the shadow the ball makes.
What will happen to the shadow if the torch is moved closer to the ball?



- A. The shadow will get bigger.
- B. The shadow will get smaller.
- C. The shadow will stay the same.



Scan this to explore how we get day and night.

Scan this to find out more about where light and shadows come from.

