

Home Learning - Science

W.B. 27/04/20

Light

Look at image - read the comments that have been made about the torches.
Who do you think is correct?

Why do you think this?
Do you disagree with anyone? Why?

Kim

The big torch shines further than the little torch



Lucy

They both shine the same distance



Claire

The big torch lights up a bigger area



They both shine the same distance, but the big torch shines more brightly

Sam



Light



Light is a beam of energy that travels in a wave from a source.

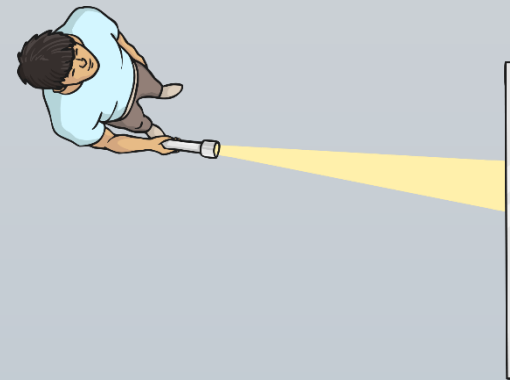
A wave of light can only travel in a straight line.

Waves of light are called light rays.

Try this activity to demonstrate how light travels:

- Punch holes in the centre of three equal-sized pieces of card.
- Hold the pieces of card so that the holes line up.
- Shine a torch so that the beam of light can travel straight through the holes.

What happens if you move one of the pieces of card so the holes don't line up?



Blocking Light

When you moved one of your pieces of card so the holes did not line up, the card blocked the ray of light. This is because light can only travel in a straight line, so it can not travel around the card.

Some objects, like the card, block light well and don't let any get through. These objects are called opaque.

Other things let some light through, but scatter the light so we can't see through them properly. These things are called translucent.

Transparent objects let light travel through them easily.

Can you think of some items that are opaque, translucent and transparent?

Look around your classroom for ideas!

What's the Use?



Opaque, translucent and transparent materials are all useful for different things. Look at the items below and decide which type of material would be best for each one:

bathroom
window

living room
curtains

car
windscreen

sun hat

window with a
lovely view

shower
curtain

Making Shadows

Opaque objects do not let any light through.

They completely block the light and stop it travelling any further.

These objects create shadows.

Shadows are areas of darkness where light has been blocked.



Activity...

On a sunny day, try this activity. Use the sun to create a shadow. Can you take a picture of the shadow that you have created?

What happens if you move your item?

Does the time of day affect the shadow that is created?

Making Shadows

What do you need to make a shadow?

You need a source of _____
and an object that _____
the _____.

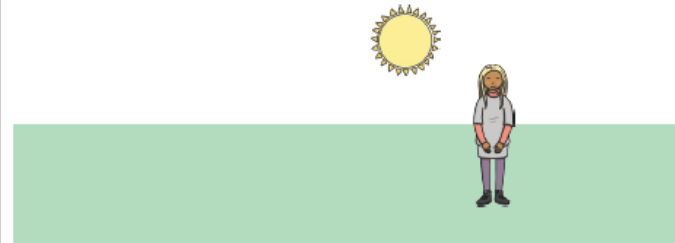
Draw an example of how to make a shadow:

Draw where the shadow should be:



Circle: I stand with my face to the sun. My shadow is:
in front OR behind me.

Draw where the shadow should be:



Circle: I stand with the sun behind me. My shadow is:
in front OR behind me.