

Year 3 Week 5 Day 2 Science

To explore shadows

When there is a light source you will nearly always have a shadow somewhere close by.

A shadow is made when an object blocks light.

The object must not be seen through or the light will pass through and you will end up with no shadow.



Take a look around and see what objects you can see that form shadows. You will notice that swings, trees, cars, tables and almost everything else has a shadow!

We are going to look a little closer at shadows and see if we can find out some other interesting things that happen when you have a light source and a shadow.



For your lesson today you will need:



- A pencil
- Card (thick card if possible)
- Felt-tips
- Cotton wool
- Glue and scissors
- Lolly pop stick or straw
- A torch (or another light source as the projector)

Task 1- Follow these instructions below to see what you need to do:

1 Draw a character – it could be a person, an animal or an object - onto a piece of thick cardboard.

2 Cut out your character.

3 Place the lollipop stick on the back of your character.

4 Stick it in place with the sticky tape.

5 Hold your puppet up next to a wall, preferably a white wall.



6 Shine the torch or whatever light source you are using onto your puppet. A large shadow of your puppet will appear on the wall.

7 Now, move your character towards the light.
What do you notice?

8 Move your character further from the light.
What do you notice?

9 Move the light source to one side whilst you hold the character still.
What do you notice?

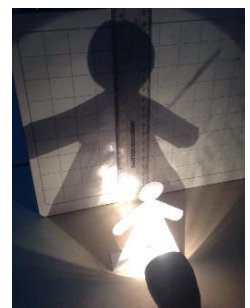


In your home learning books:

When you get to steps 7-9, in your Home Learning books draw a picture and write a sentence to explain what is happening at each of these stages.

For example:

-Step 7) *When my character is closer to the light, I notice that the shadow is larger.*



Task 2- Writing a conclusion

In your Home learning books:

Mild/Spicy- use the words in the box below to complete the cloze procedure. You can use the same word more than once.

Hot- Write your own paragraph using scientific vocabulary to explain what happened during your shadows experiment.

When you move your character _____ to the light source, your _____ gets _____. This is because you are _____ out more of the _____ coming from the _____. Therefore when a space has no light, the _____ gets _____.

When you move your character _____ away from the light source, your _____ from the character gets _____. This is because there is _____ light coming from the light source making the shadow from the character get _____.

When you move the light source to one side and then another, the shadow should move in the _____ direction. This is because light travels in _____ lines towards the _____ so the shadow will always be _____ the lines of light from the light _____.

towards	object	light	larger
smaller	further	closer	shadow
more	bigger	light source	blocking
opposite	behind	straight	source

Task 2 Answers

When you move your character **closer** to the light source, your **shadow** gets **larger**. This is because you are **blocking** out more of the **light** coming from the **light source**. Therefore when a space has no light, the **shadow** gets **bigger**.

When you move your character **further** away from the light source, your **shadow** from the character gets **smaller**. This is because there is **more** light coming from the light source making the shadow from the character get **smaller**.

When you move the light source to one side and then another, the shadow should move in the **opposite** direction. This is because light travels in **straight** lines towards the **object** so the shadow will always be **behind** the lines of light from the light **source**.