

## Light and Shadows Lesson 7

L.O. To investigate shadows

### Activity 1

On a bright day, go outside and look at your shadow. Where is it pointing? Why? (Shadow will depend on where the sun is). What do people often wear on their eyes when it is bright? Why? (Sunglasses/ hat to stop the strong light damaging your eyes. Your eyes are delicate parts of your body and need to be looked after).

<https://watchkin.com/b53b8211fc> - a video about why you should wear sunglasses.

### Activity 2

- Have you ever noticed that your shadow changes size depending on the day? Do you know why?
- Carry out this investigation to help you find out.

### Why do shadows change size?

#### Method

Place an opaque object in front on a torch. Measure the shadow that is created. Set up an experiment to measure the shadow formed when the torch is 5 cm, 10cm, 15cm, 20cm, 25cm and 30 cm away from the object.

#### Fair Test

To make this a fair test ensure the position of the torch is the same and the object remains the same. Ensure the room is dark so that the shadow can be seen clearly.

#### Conclusion

What have you found?

Write a short conclusion about what you have found in your exercise book. Try to use data to explain your answer.

#### Extension

Encourage children to test what happens when they move the light source (torch) or change the position of the torch, e.g. to the side, above. This will allow them to re-create the shadows formed by the sun during the day. You

could carry out an experiment by placing an object outside and measuring the length and direction of the shadow throughout the day.

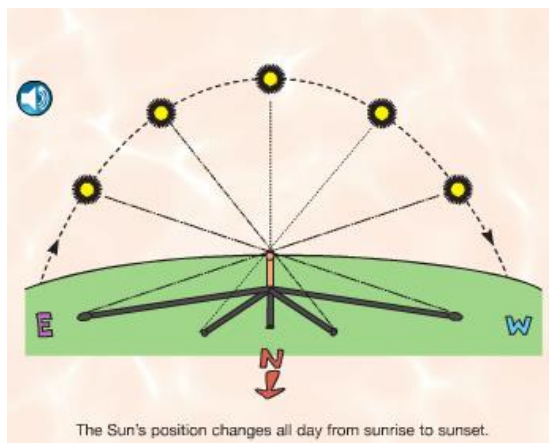
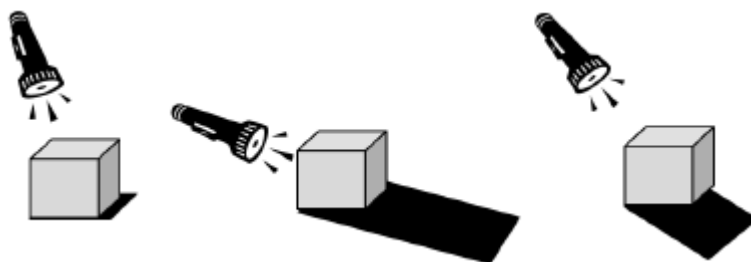
### Answers

Children should note that shadows get bigger when an object is close to the light source and get smaller when an object is far away from the light source

### Extension

Sunshine answer:

<http://www.scottle.edu.au/ec/viewing/L756/index.html> - Australian Website but you can move the sun to make the different shadows.



The Sun's position changes all day from sunrise to sunset.

### Shadows move during the day

- Watch the shadow of the stick
- to tell the time
- like a sundial.

6.00 pm 12.00 noon 6.00 am

15

### Example

<p><u>During the early morning</u></p> <p>Shadow is <u>long</u></p>	<p><u>During the Mid day</u></p> <p>Shadow is <u>short</u></p>	<p><u>During the sunset</u></p> <p>Shadow is <u>long</u></p>
---	--	--

Final activity just for fun...

## Light and Shadow

This is a fun way to end our unit on Light and shadow. Create a person out of foil. Stick the person to a piece of card and then draw on their shadow with a black pen. Make sure your person is doing a funny action!

Please email us pictures of your people.

What have you learnt about Light and Shadow? Share what you have learnt with someone in your family.

