

Light and eyes

Learning objectives

QCA Unit 6F 'How we see things'

- To know that light travels from a source.
- To understand that we see light sources because light from the source enters our eyes.
- To use knowledge about light to explain observations.

Resources



'Light and shadow' Notebook file; photocopiable page 131
'Light and eyes' for each child; torch or other light source for each group of children.

Links to other subjects

Speaking and listening





Objective 58: To use a range of oral techniques to present persuasive argument.

Objective 59: To analyse and evaluate how speakers present points effectively through use of language and gesture.

- Invite the children to make polished presentations using a variety of resources to enhance their contributions. Encourage excellent listening skills.

Whiteboard tools

Use the Pen or Lines tool to draw arrows. Add labels to the diagram with the On-screen Keyboard.


-  Pen tray
-  On-screen Keyboard
-  Select tool
-  Lines tool

Starter

Open the Notebook file at page 2. Invite individuals to come to the board and press the sources of light. Correct answers will be cheered and mistakes greeted with a groan.

Ensure that the children understand the difference between a light source and light that is reflected. To emphasise the point, darken the room and switch a torch on: a torch is a light source. Switch off the torch and hold up a reflective material; emphasise that it only *seems* to light up when a light shines on it.

Whole-class shared work

- Tell the children they will be investigating how light allows us to see objects. The organ of sight is the eye, and it is very sensitive. Show the children the diagram of the eye of page 3.
- Because the eye is a sensitive organ, emphasise that it is very important that the children do not shine torches directly into someone's eyes. Similarly they should never look directly at the Sun.
- Go to page 4 and discuss how people are able to see objects. Referring back to the diagram on page 3, point out that light enters the eye via the pupil and through the lens. The children should begin to understand that they can see when light enters the eyes.
- Look at the second question on page 4. Ask the children what happens when they enter a dark room. How easily can they see objects? What will help them to see objects?
- Arrange for the children to work in a darkened room. Remind them about using torches safely: never shine a torch into a person's face.
- Group the children in mixed-ability pairs and ask them to investigate what happens to a beam of light when it is stopped by a piece of card.
- Encourage them to think about how people are able to see objects in the light and how visibility decreases as the amount of light decreases.
- Ask the groups to present their ideas to the rest of the class for discussion. Any misconceptions should be addressed.
- Invite children to come and draw their ideas on page 4. Place emphasis on drawing arrows (by using a Pen from the Pen tray or the Lines tool  to indicate the direction in which the light travels.

Independent work

- Provide each child with a copy of photocopiable page 131 and ask them to label the eye diagram. They must then draw and label a diagram of what happens when a light source is stopped by a piece of card.
- Ask the children to draw arrows to show the direction of the rays. In the third box they should draw a diagram showing how people are able to see objects.
- Provide a word bank for lower- and middle-ability children to use and provide plenty of adult support for lower-ability children.
- More confident learners should be encouraged to work independently.

Plenary

- Invite the children to present their work to the rest of the class, using scientific knowledge and understanding to explain their diagrams. Any misconceptions should be discussed. Use page 5 to make notes.
- Discuss the use of arrows in the diagrams.
- Use the unlabelled diagram on page 6 to assess the children's knowledge of the parts of the eye.