



Topic: Investigating light

Investigating sources of light

Lesson concepts

- Light is produced by a range of sources and can be sensed
- People use science in their daily lives
- Questions can be responded to
- Investigations can explore and answer questions
- Observations can be collected and recorded
- Information can be sorted
- Observations can be compared with others
- Observations and ideas can be represented and communicated

Today students will:

- ▶ understand that light can be produced by a variety of sources but that not all bright objects are sources of light
- ▶ understand that light can have different properties that can be described.

Resources

Digital

Slideshow — Sources of light

Sheets

Sheet 2 — Light sources sorting cards (cut out)

Sheet 3 — Sorting objects

Find and prepare

Word cards (cut from Sheet 1 in the previous lesson)

Selection of objects to sort — including some that are light sources and some that are not, including reflecting objects (for example: torch, toy with lights, book, peg, keyring, mobile phone, house phone, pen, small mirror, desk lamp, doll/teddy)

Key terms

light, observe, property, reflect, science, senses

For definitions and explanations of terms, please see the [Glossary](#).

Learning alerts

Be aware of:

- students thinking that sources of light include only those that can be turned on and off (electrical)
- students thinking that the moon is a source of light
- students thinking that anything that shines is a source of light
- students confusing fire as a source of *light* with fire as a source of *heat* (for example: fire is used to cook).

Suggested next steps for learning

- Explain to students that light sources include all objects that provide light (for example: fire and the sun).
- Explain to students that the moon does not produce its own light, but rather light from the sun shines on the moon and is reflected by it.
- Explain that many objects shine because the material they are made from reflects light from other sources.
- Explain to students that fire may be used as a source of *light* and a source of *heat*; however, the focus of this learning is fire as a source of *light*.

Lesson

Share prior knowledge about light

Say to students

“ In this lesson, we are going to look more closely at light. ”

Focus questions

Q. *What do you know about light?*

A. For example: It's bright, it helps you see in the dark, it can be different colours, it can flash, it shines from light bulbs, it shines from the sun

Q. *What things give out light?*

A. For example: The sun, the ceiling light, the lamp, the torch, the TV

Q. *How is light used?*

A. For example: To light up a dark room, to make it easier to see, to help you see in the dark

Q. *How do you observe light?*

A. For example: Sight, seeing, using our eyes

Q. *What is darkness?*

A. For example: No light or not much light

Say to students

Science involves the study of light and how light is sourced, sensed and used in everyday life.

Examine objects as light sources or light reflectors

Say to students

We will now view a slideshow to understand what a source of light is.

1. Display and discuss **Slideshow — Sources of light**.



Say to students

In this slideshow, we can see that there are sources of light that produce light and there are objects that don't produce but instead *reflect* light.

2. Display the word card *reflect* (cut out from **Sheet 1** in the previous lesson), read the card with students and attach it to the Science words display area.

Say to students

We are now going to examine some objects as sources of light. Before we conduct our investigation, we need to remember how to be safe when observing light.

We will need to follow these safety rules:

- Never look directly into a light, as it could hurt your eyes and damage your eyesight.
- Always be safe when using light around other people. Shining light into people's eyes may hurt or damage their eyesight.

Note

The following sorting activity is best done using real objects. However, **Sheet 2** — [Light sources sorting cards](#) is provided if suitable objects are not available or if a combination of real objects and pictures suits best.

3. Display a collection of objects (or pictures from **Sheet 2**).

Say to students

‘ Examine each object and decide whether it is a source of light or not. If it is a source of light, think about how and why it would be used. When you have examined the objects, sort them into two groups — a source of light and not a source of light. ’

- a. Display **Sheet 3** — [Sorting objects](#).

Say to students

‘ Now draw or write the name of some objects that belong in each group on **Sheet 3**. ’

Explore and describe properties of light

Say to students

‘ A **property** is an attribute or feature of an object or material that can be used to describe the object. For example, red, smooth, heavy and wooden are all property descriptions. Light also has properties that can be described. ’

Focus questions

- Q. *Think about a fire. How could you describe the light of a fire?*
 A. For example: Orange, flickering, glowing, changing
 (**Note:** ‘Hot’ is not a property of the light — it is a property of the flame and the burning process.)
- Q. *What about the lights on a fire engine or police car?*
 A. For example: Flashing, red/blue, bright
- Q. *And a torch?*
 A. For example: Focused, yellow, bright if the battery is charged, dull if the battery is going flat, portable

4. Display the word cards *property, bright, dull, coloured, shadow, flashing, flickering, stationary, glowing* and *focused*.

Say to students

‘ This is the word *property* and the others are some property words we can use to describe light. ’

- a. Read the word cards.

Say to students

‘ Look around you or think of a light source you know and try to describe the light’s properties. ’

Focus questions

Q. *Which light source have you chosen?*

A. For example: Desk lamp

Q. *Which property words could you use to describe the desk lamp?*

A. For example: Bright, focused, white, stationary



Say to students

‘ The different properties of light are very important, because they suit different situations in which we use light. For example, can you imagine a fire engine with a dull stationary light on its roof? Or a desk lamp that flashed and was coloured red? ’

Focus question

Q. *Why do you think we use different lights in everyday life?*

A. For example: Because some types of lights are good for some things but not for others.

Say to students

‘ Science has helped us understand how we can change the properties of light to suit the particular purpose we need it for. ’