

# Light- Year 3- Kapow unit- Light and shadows

## Previous learning

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## Key scientists you could look at...

Albert Einstein

## Scientific skills

Working scientifically	Questioning and enquiry	Observing and measuring	Investigating	Recording	Grouping and classifying
To use practical scientific methods, processes, and skills	Ask some relevant questions and use different types of scientific enquiries to answer them	Begin to make systematic and careful observations. Take accurate measurements using standard and non-standard measurements. Begin to use a range of equipment. Begin to look for naturally occurring patterns and relationships. Help to make decisions on how to carry out an investigation.	Set up simple practical experiments focusing on comparative and fair tests and begin to know when a fair test is necessary and decide how to set it up. Begin to think of more than one variable factor.	Gather, record, and begin to classify and present data in a variety of ways to help answer a question. Begin to record findings using scientific vocabulary, drawings, labelled diagrams, keys, bar charts, and tables. Begin to report on findings including oral and written explanations, displays and presentations. Begin to use notes, simple tables, and standard units to record and analyse data.	Begin to identify similarities and differences related to scientific ideas and processes. Talk about criteria for grouping, sorting, and classifying using simple keys. Begin to compare and group according to behaviour or properties, based in testing.

## Key Vocabulary for Year 3

Light	
Shadow	
Mirror	
Reflective	
Dark	
Reflection	

## Previous vocabulary

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## Useful links

- <https://www.stem.org.uk/resources/community/collecion/12719/year-3-light>
- <https://www.hamilton-trust.org.uk/science/year-3-science/light-light-and-shadows/>
- [https://www.outstandingscience.co.uk/index.php?action=view\\_page&page=view\\_unit&unit=3d](https://www.outstandingscience.co.uk/index.php?action=view_page&page=view_unit&unit=3d)

## Experiment and activity ideas

Create own shadow puppets	Measure shadows on a sunny day	create a torch	Investigate how we see light	Design new sunglasses to protect our eyes from the sun
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## Knowledge- objectives

- Recognise that they need light in order to see things and that dark is the absence of light
- Notice that light is reflected from surfaces
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object
- Find patterns in the way that the size of shadows change.

## Resources in school

Mirrors, torches, electricity- wires, bulbs, switches, batteries, glass prisms, range of materials,

**Key Knowledge**

We need **light** to be able to see things. **Light** travels in a straight line. When **light** hits an object, it is **reflected** (bounces off). If the **reflected light** hits our eyes, we can see the object. Some surfaces and materials **reflect light** well. Other materials do not **reflect light** well. **Reflective** surfaces and materials can be very useful...

The **light is reflected** from the object.

**Light** from the torch hits the object.

**Key Knowledge**

A **shadow** is caused when **light** is blocked by an **opaque** object. A **shadow** is larger when an object is closer to the **light** source. This is because it blocks more of the **light**.

**Key Knowledge**

The **pupils** control the amount of **light** entering the eyes. If too much **light** enters, then it can damage the **retina**. To help protect the eyes, you can wear a hat with a wide brim and sunglasses with a UV rating.

**Key Knowledge**

When the **light** source is directly above the object, the shadow will be directly underneath.

When a **light** source is to one side of an object, the **shadow** will appear on the opposite side. The **shadow** will also be longer.

