

# Year 3 Science Summer 2 Unit Light

## Progression of Knowledge

| Unit  | YEAR 3   | YEAR 6   |
|-------|--|--|
| Light | <p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p> | <p>Recognise that light appears to travel in straight lines.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> |

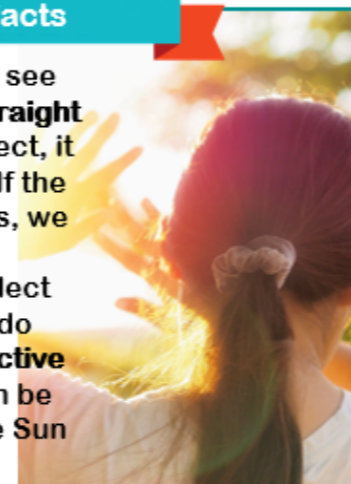
| Key Scientific Skills   | Year 3 |
|---|--------|
| Ask relevant questions and using different types of scientific enquiries to answer them   | Light  |
| Set up simple practical enquiries, comparative and fairtests  |        |
| Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers |        |
| Gather, record, classify and present data in a variety of ways to help in answering questions   |        |
| Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables   |        |
| Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  |        |
| Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions   |        |
| Identify differences, similarities or changes related to simple scientific ideas and processes  |        |
| Use straightforward scientific evidence to answer questions or to support their findings  |        |

### Lesson Sequence

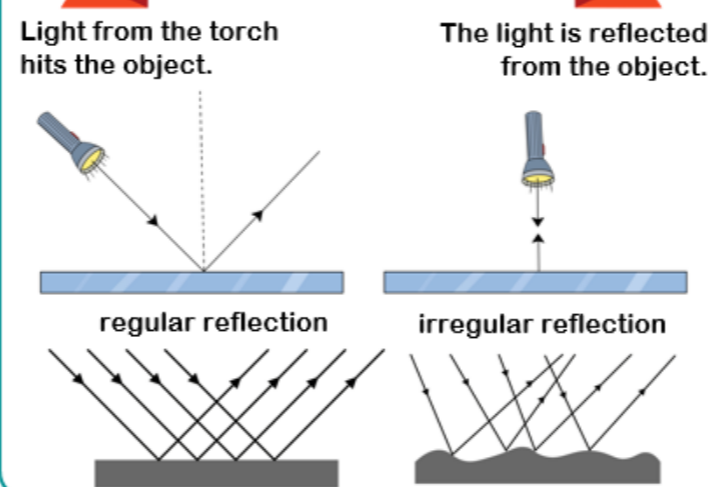
1. Identify the difference between light sources and non-light sources
2. Explore the light that comes from the sun and how to stay safe
3. Explore materials which are reflective
4. Discover how shadows are formed
5. Investigate how shadows change throughout the day
6. Investigate how you can change the size of a shadow

### Key Facts

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. Remember the Sun can be dangerous.



### Light is reflected from surfaces

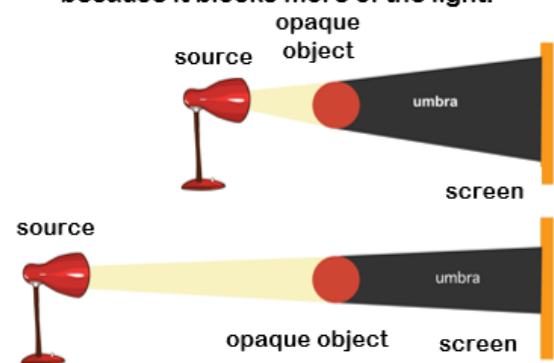


### Rocket Words

|                  |   |
|------------------|---|
| light            | a form of energy that allows our eyes to see                              |
| reflect          | the process that describes light bouncing off a surface                   |
| vitamin D        | a vitamin that come from sunlight or food and important for bone strength |
| ultraviolet rays | type of light that can be harmful   |
| fluorescent      | gives a highly visible reflection of light                                |
| high visibility  | can be seen easily  |
| shadow           | a dark image that is formed when an object blocks the light               |
| ray              | a thin beam of light  |
| cast             | to throw or project   |
| position         | where something is placed   |
| shape            | the outline of something  |
| puppet           | a doll that looks like a person or an animal                              |

### Size of a shadow changes

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.



### Mirrors and reflection

Mirrors reflect light very well, so they create a clear image. An image in a mirror appears to be reversed. For example, if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.

