

# Year 6 Science

## Autumn 2 Unit

### Light

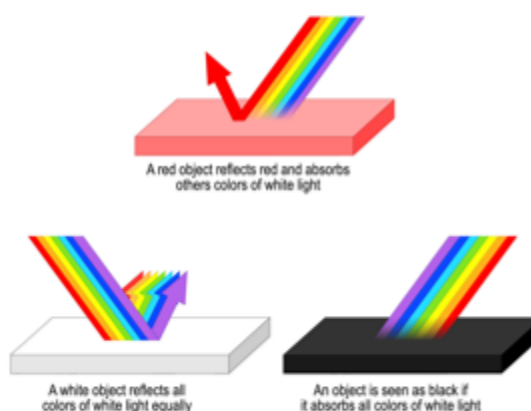
| Key Scientific Skills  | Year 6 Light |
|--|--------------|
| Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  |              |
| Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate  |              |
| Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs  |              |
| Use test results to make predictions to set up further comparative and fair tests  |              |
| Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations |              |
| Identify scientific evidence that has been used to support or refute ideas or arguments  |              |

#### Colours

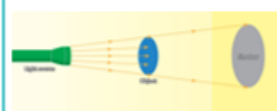
Absorption and reflection of light



White light is made up of the colours of the rainbow. When light is refracted through a transparent object, a rainbow is formed.



#### Shadows



**Opaque** objects block the light rays so they can only travel around the edges of the object in straight lines. That is why a shadow is the same shape as the object.

The **closer** an object is to the light source, the **bigger** the shadow.

The **further away** the object is from the shadow, the **smaller** the shadow.

#### Lesson Sequence



1. Explore how light travels



2. Explore reflection



3. Explore reflection and explain how it can be used to help see things



4. Investigate how shadows can change



5. Investigate how we can show why shadows have the same shape as the object that cast them



6. Explore light phenomena

#### How We See



Light travels in **straight lines**. The light **rays** from a light source **reflect** off the object we are looking at. The light travels in a **straight line** and enters the eye through our **pupil**.

| 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> |

#### Rocket Words

|              |   |
|--------------|---|
| light        | a form of energy  |
| light source | an object that provides its own light                             |
| reflected    | when light shines on a surface and bounces back                   |
| variable     | any one of the elements of an experiment which could be changed   |
| angle        | the space between 2 intersecting lines                            |
| mirror       | a surface that reflects a clear image                             |
| opaque       | it describes materials which do not allow light to travel through |
| transparent  | it describes materials which allow all light to travel through    |
| sunshade     | a device giving protection from the sun                           |
| rotate       | to turn an object around a centre point                           |
| optical      | relating to the science of optics                                 |
| spectrum     | a band of several colours   |

#### Bending Light



REFLECTION

**Reflection**  
Light reflects off shiny, bright or light surfaces. That is why you can see your reflection when you look in a mirror.



Refraction

**Refraction**  
Water and bent shiny surfaces cause light rays to be reflected at different angles, meaning the reflection of the image is distorted.