Light - Year 6 - Unit 2

Scientific Enquiry

comparative & fair testing

Comparative testing means testing objects to rank them. **Fair tests** are enquiries that observe or measure the impact of changing one variable when all others are kept the same. We will be able to explain how evidence from enquiries shows that light travels in straight lines. We will make predictions, explore and explain with diagrams and models, the uses of the behaviour of light, reflection and shadows, such as in a periscope design, rear view mirrors and shadow puppets.
We will predict and explain, with diagrams or models, how the shape of shadows can be varied.

Working Scientifically

Asking scientific questions
Planning an enquiry
Observing closely
Measuring (taking measurements)
Gathering and **recording** results
Presenting results
Interpreting results
Concluding (drawing conclusions)
Predicting
Evaluating an enquiry

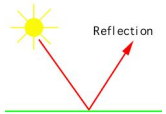
Subject Specific Vocabulary

light rays

Light appears to travel in straight lines which are called **light rays** and we see objects when light from them goes into our eyes.
The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen.

reflect

Reflection is to bounce back light without absorbing it. We see things because light travels from **light sources** to our eyes or from **light sources** to objects and then to our eyes.



Objects are easier to see when there is less light if they are **reflective**.

light source

Objects, like the sun, light bulbs and candles are **sources of light**. Natural **light sources** include the sun and stars. Lamps provide artificial light.

Light sources emit their own light. The Moon is not a light source.

opaque

Not able to be seen through.

transparent

Allows light to pass through. See-through.

translucent

Not see-through but clear enough to allow rays of light to pass through.

shadow

A **shadow** is formed on a surface when an opaque or translucent object is between a light source and the surface and blocks the light. Because light travels in straight lines the shape of the **shadow** will be the same as the outline shape of the object.

The size of the **shadow** depends on the position of the source, object and surface.

Things you learnt in previous topics

In Year 3, you recognised that light is needed in order to see things and you noticed that light is reflected from surfaces. You recognised that light from the sun can be dangerous and that there are ways to protect our eyes. You also recognised that shadows are formed when the light from a light source is blocked by an opaque object. You found patterns in the way that the size of shadows change. In Year 5, you compared and grouped together everyday materials on the basis of their properties, including their transparency.

How this connects with future learning

Later in year 6 you will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. You will explain how a circuit operates to achieve particular operations, such as to control the light from a torch with different brightnesses.
In KS3, you will look at the similarities and differences between light waves and waves in matter. You will study how light transfers energy from source to absorber leading to chemical and electrical effects.