

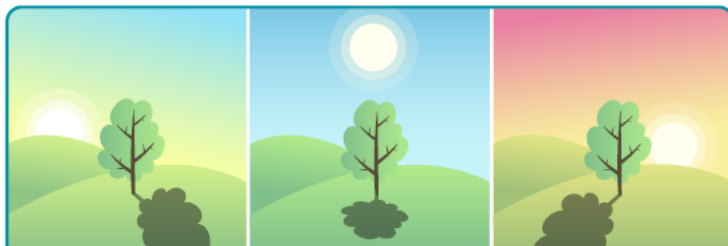
### National Curriculum programme of study:

#### Pupils should be taught:

- 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.

### 'Sticky' Knowledge

- We see objects because our eyes can sense light.
- Dark is the absence of light. We cannot see anything in complete darkness.
- Some objects, for example, the sun, light bulbs and candles are sources of light.
- Objects are easier to see if there is more light.
- Some surfaces reflect light.
- Objects are easier to see when there is less light if they are reflective.
- The light from the sun can damage our eyes and therefore we should not look directly at the sun and can protect our eyes by wearing sunglasses or sunhats in bright light.
- Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light.
- The size of the shadow depends on the position of the source, object and surface.



The shadow's position will change as the Sun rises in the East and sets in the West. The shadows get shorter as the Sun moves higher in the sky until midday and then get longer again as the Sun sets.



All surfaces **reflect** at least a little light where light bounces off them. Objects that are shiny and **reflective** let more light bounce off them.



**Shadows** form when the light from a light source is blocked by an opaque object.

### Key Vocabulary

light	A type of energy that helps us see the world around us.
Light source	Anything that produces and emits its own light - naturally or artificially.
transparent	An object or material that lets light pass through it completely.
translucent	An object or material that lets some light through but not enough to see clearly through it.
opaque	An object or material that does not let light pass through it.
shiny	Has a bright, smooth surface that reflects light
matt	Has a dull, flat finish that isn't shiny.
reflect	When light or an image bounces off a surface.
shadow	A dark shape that appears on a surface when an object blocks light from a light source.
mirror	A smooth surface often made of glass that reflects light and creates an image of what is in front of it.

### Prior Knowledge

In Nursery, children explored how things work and the differences in materials. In Reception, this was expanded to describe what they see, hear and feel outside. In year 1, children learnt to identify, name and label which body part is associated with each sense and described the simple physical properties of a variety of everyday materials.

### Future Learning:

In year 6, children will recognise that light appears to travel in straight lines and use that idea to explain that objects are seen because they give out or reflect light into the eye. They will explain that we see things because light travels from light sources to our eyes or from light sources to objects and then our eyes. They will use the idea of light travelling in a straight line to explain why shadows have the same shape as the objects that cast them.