

Calcot Schools Knowledge organiser – Science

Topic: Light (Term 5)

Phase: KS2 Year 6

Strand: Physics

Prior knowledge from previous year groups:

Year 3 — Recognise that we need light in order to see and that darkness is the absence of light.

Notice that light is reflected from surfaces.

Recognise shadows are formed when light from a source is blocked by an opaque object.

Find patterns in the way the shape of shadows changes.

What will the children know by the end of the unit?

- Recognise that light appears to travel in straight lines.

- Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into our eyes.

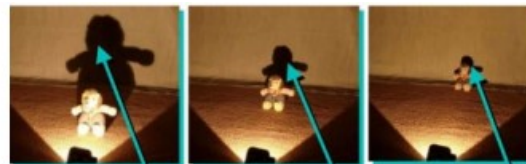
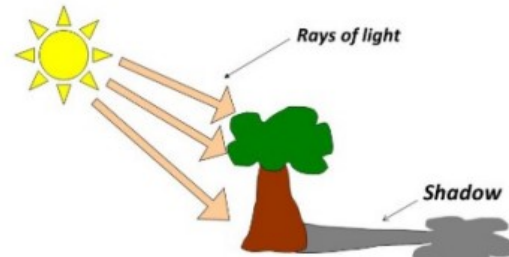
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.

- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

- Carry out investigations of the relationship between light sources, objects and shadows (e.g. shadow puppets).

- Extend their experience of light by looking at rainbows (e.g. create white light from rainbow colours) soap bubbles, objects in water and colour filters.

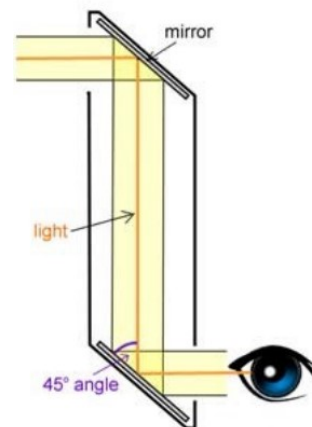
Diagrams:



LARGE SHADOW
when the toy is
close to the light

SMALLER SHADOW
when the toy is further from
the light

TINY SHADOW
when the toy is a
long way from the light



Vocabulary:

Dim—a light that is not bright.

Electricity— A form of energy that can be carried by wires and used for heating and lighting, and to provide power for machines.

Emit—To emit is to produce a light or sound

Light—A brightness that lets you see things.

Opaque—An object or substance you cannot see through.

Reflect—To send back (from a surface) and not let light through it.

Source—The origin of light, where something comes from.

Surface— the outside area or flat top of something.

Translucent—A material or object through which some light can pass.

Transparent—A material or object which you can see through.

Shadow — a dark shape on a surface made when something stands between the light and the surface.

Periscope— an apparatus consisting of a tube attached to a set of mirrors or prisms, by which an observer can see things that are otherwise out of sight.

Investigate!

- Explore shadows: how their shapes and sizes change as light source moves.
- How mirrors in a periscope allows us to see.
- Classify objects as transparent, translucent and opaque.
- Crime Lab: Light suspects (Hamilton Trust).
- Investigate magnifying glasses.
- Create white light from rainbow colours.