



Driving Question: See Ancient Egypt

Power Skill: See Ancient Egypt

National Curriculum Learning Objectives

- 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

Key Vocabulary

reflect

opaque

translucent

transparent

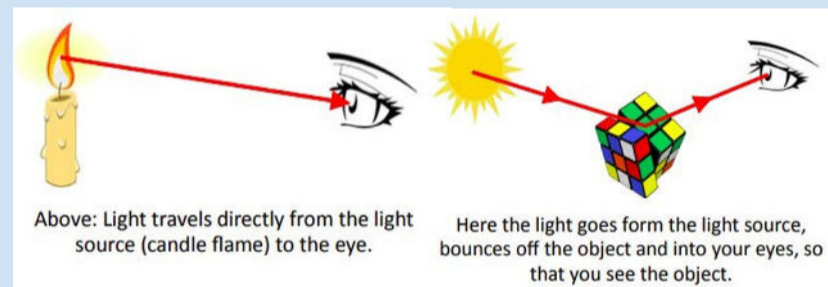
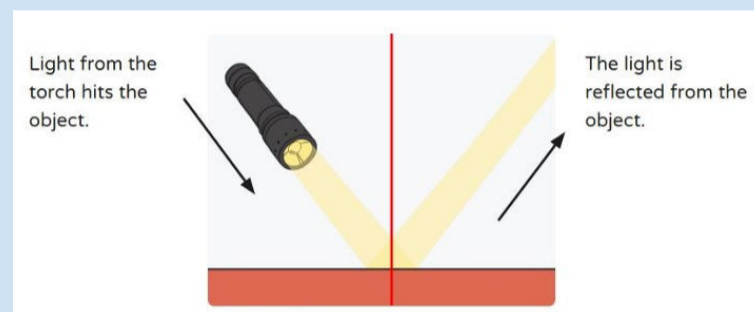
shadow

Key Learning

How do we see things?

Light is a form of energy which allows us to see objects. It can come from the sun, or we can make light using things such as fire or electric light bulbs. Darkness is what you get when there is no light.

When light from an object such as the sun or a torch touches a surface, it bounces back off the surface at the same angle as it hits it. This is called reflection. Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well.



The eye is made to let light in; this is how we see.

Look in the mirror. Can you identify your pupil? It looks like a black circle.

Light enters the eye through the pupil.

Look closely at your pupil in the mirror. Close your eyes for 30 seconds, then open them and look at your pupil. **What do you notice?**

The pupil grows bigger in the dark to allow more light to enter the eye, and gets smaller in bright light.



If too much light comes through the pupil, it can damage the retina.

It causes pain, so that you instantly close your eyes, or turn away from a bright light.

It is very important that you never look directly at the sun, as the light can damage your eyes very quickly.

Bright lights indoors can also damage your eyes, so you should never look at them, or shine lights into anyone's eyes.



Thinking Point

How can we protect our eyes from the bright light, such as the sun?



Explore and Investigate

How do shadows change? - Using torches, investigate how the distance from the light source affects the size and shape of the shadow.

Resources:



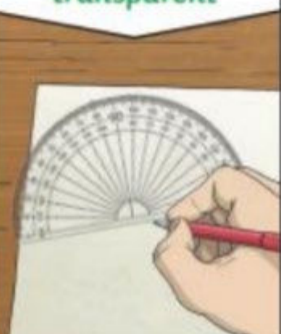
Torches, rulers/measuring tape/metre sticks

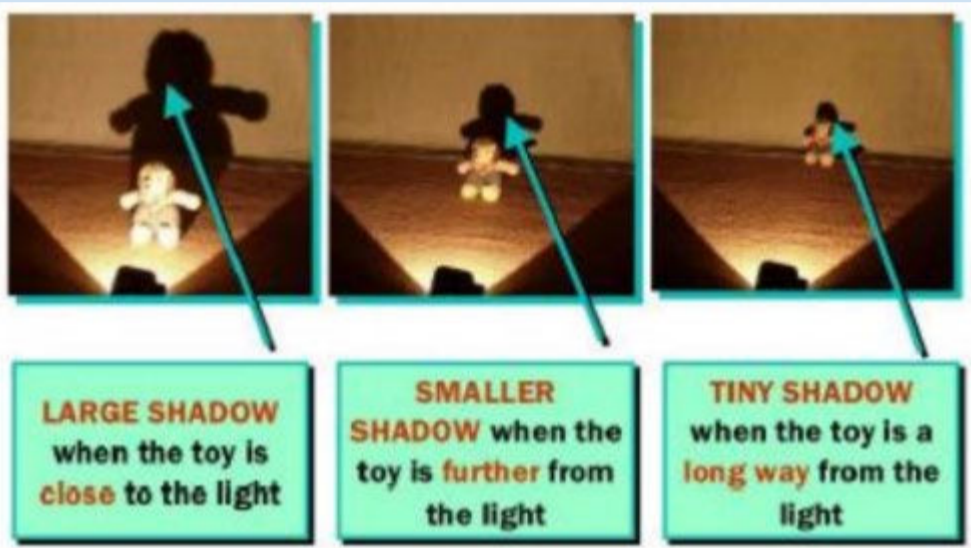
Key Learning

Shadows

All sorts of solid objects can make shadows. Trees, swings, animals, buildings, cars and many other things can all make shadows. Shadows happen because light moves in straight lines called rays. Rays of light from a light source keep travelling in a straight line until they hit something else. When light hits a solid, opaque object like a tree, the tree absorbs a lot of the light. Because of this, the area behind the tree where the light would have gone appears dark.

Shadows come in many different sizes. A small object usually makes a small shadow and a large object usually makes a large shadow. Shadows can get bigger or smaller depending on how far away they are from a light source; it casts a shadow that is about the same size as the object. When you move an object closer to a light source, the shadow looks bigger than the object itself.

| opaque | translucent | transparent |
|---|---|--|
|  |  |  |
| opaque | translucent | transparent |
| Describes objects that do not let any light pass through them. | Describes objects that let some light through, but scatter the light so we can't see through them properly. | Describes objects that let light travel through them easily, meaning that you can see through the object. |



Thinking Point

Why don't we see the shadow of a window?

