

What I should already know?

Certain things produce light, usually burning (e.g. the sun) or electricity (e.g. streetlights) Shiny materials do not make light but do reflect it. Shadows are caused when certain materials block light. The further away the light source is the smaller the shadow is. The closer the source of the light, the bigger the shadow.



Top Facts

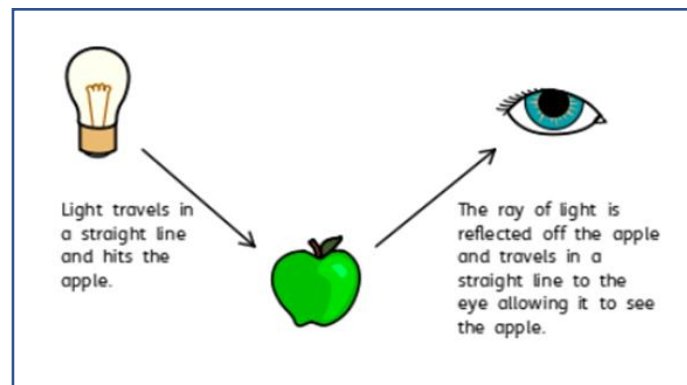
1. Light sources can be natural or humanly constructed. For example, the sun is a light source but so is a light bulb.
2. Light is made up of all the colours mixed together. White light can be split up to reveal red, orange, yellow, green, blue, indigo and violet.
3. Things appear a certain colour because it's the only colour that is reflected, and white objects reflect all.
4. Light is a beam of energy. It travels in wavelengths.
5. Light is measured in wavelengths on the electromagnetic spectrum. This spectrum includes all the different types of light and other types of waves too.
6. The light that humans can see only takes up a very small portion of the electromagnetic spectrum and it is called visible light. Insects and some other animals can see more than we can, which means they can see different colours that we can't even imagine!
7. Plants turn light from the sun into food. This process is called photosynthesis.
8. There are lots of different types of energy, but light is the only type of energy that we can actually see with our eyes.
9. We see rainbows because the water droplets in the air cause the light to be split up into the colours it's made from - just like a prism.
10. Animals that only come out at night when it is dark are called nocturnal animals. They include badgers and owls.

Top 10 Vocabulary

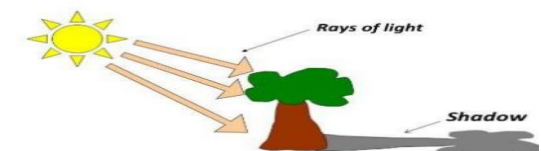
angle	The direction from which you look at something.
reflection	Reflection is when light bounces off a surface, changing the direction of a ray of light.
refraction	This is when light bends as it passes from one medium to another e.g. light bends when it moves from air into water.
shadow	An area of darkness where light is being blocked.
transparent	Describes objects that let light travel through them easily, meaning you can see through the object.
translucent	Describes objects that let some light through but scatter the light so we can't see through them properly.
opaque	Describes object that do not let any light pass through them.
source	Where the light comes from.

What will I know by the end of the unit?

Light travels in straight lines when light is blocked by an opaque object, a dark shadow is formed. Objects are seen because they give out or reflect light into the eye. 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.



- These shadows have the same shape as the objects that cast them.



- The size of a shadow changes as the light source moves.

