

Key Vocabulary

Light source	An object that emits light around itself.
Illuminate	A verb meaning to light up. E.g. <i>A flash of light illuminated the house.</i>
Opaque	Not able to see through (not transparent).
Translucent	A material allowing light, but not detailed shapes, to pass through (semi-transparent).
Transparent	A material allowing light to pass through so that objects behind can be seen clearly.
Shadow	An area of darkness produced by an object coming between rays of light and a surface.
Sound	Vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear.
Source	A place, person or thing, from which something begins or can be found.
Darkness	The absence of light in a place.
Torch	A portable battery-powered electric lamp.
Mirror	A surface, typically glass coated with metal, which reflects a clear image.
Reflection	The throwing back of light, heat or sound by a body or surface without absorbing it.
Observation	The action or process of monitoring someone or something.
Description	A spoken or written account of a person, object or event.
Explanation	A statement or account that makes something clear.
Light ray	A line (straight or curved) that is perpendicular to the front of the light beam.
Light beam	A projection of light energy radiating from a light source.
Kaleidoscope	A toy consisting of a tube containing mirrors and pieces of coloured glass or paper, whose reflections produce changing patterns when the tube is rotated.
Blocked	Make the movement or flow of an entity (such as light) difficult or impossible.
Telescope	An optical instrument designed to make distant objects appear nearer, containing an arrangement of lenses, or of curved mirrors and lenses, by which rays of light are collected and focused and the resulting image is magnified.

Important information:

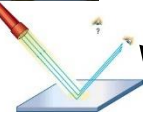


- The sun (our solar system's star) emits very powerful beams of light. These are so powerful they can reach our planet from around 150 million kilometres.
- Our eyes are very sensitive to light, so it is incredibly important we use translucent materials such as sunglasses to protect our eyes from the powerful rays of the sun and other strong light sources.

What happens when light is reflected

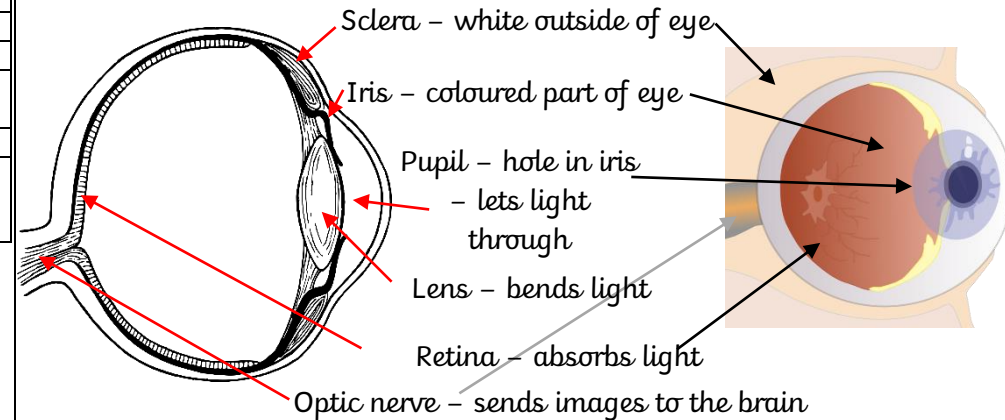


In this image, light beams are projected from the light source (the sun). These light beams travel in a straight line until they meet an object. The light beams are then reflected off the surface it meets, until the light beam enters the eye. The light activates cells inside our eyes which are processed by our brain into an image. This all happens incredibly fast!

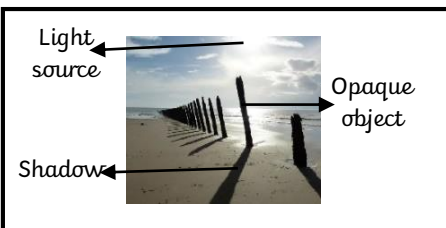


- All of the objects we can see are only visible when light has reflected from the objects into our eyes.
- This is why when we close our eyes we can no longer see – the light has been blocked from entering our eyes. Those objects in our surroundings are still there, we just cannot see them until we open our eyes again. This also explains why we cannot see in the dark.

Structure of the eye.



How are shadows formed?



- Darkness is an absence of light
- Shadows look different based on the transparency of the object.
- Transparent objects = faint shadows. (more light gets through)
- Translucent objects = darker than transparent, lighter than opaque object shadows.
- Opaque objects = dark shadows.

How mirrors have been made

- The earliest mirrors were made from polished metals such as copper. They were very expensive. People used them to look at their reflection
- The French King, Louis XVI, had the hall of mirrors new, expensive glass mirrors from Venice, Italy. Modern mirrors are usually made by coating glass with a thin film of a metal such as silver or gold.

Some uses of mirrors.

- In shops and supermarkets for security.
- In cars for safety.
- In hairdressers to watch what is happening.
- At the dentist to look around teeth.
- On roads to see around corners.



Quiz

Question 1	Question 2
<p>Complete this sentence: Darkness is ...</p> <ul style="list-style-type: none"> A. an object that emits light around itself. B. the absence of light in a place. C. an area of darkness produced by an object coming between rays of light and a surface. D. not able to see through. 	<p>Complete this sentence: Reflection is...</p> <ul style="list-style-type: none"> A. a thin layer or covering of something B. the throwing back of light, heat or sound by a body or surface without absorbing it. C. a place, person or thing, from which something begins or can be found. D. a verb meaning to light up.
Question 3	Question 4
<p>Which of the following is not true?</p> <ul style="list-style-type: none"> A. Rays of light from the sun can be damaging to our eyes. B. We can protect our eyes from powerful light rays from the sun by using translucent objects such as sunglasses. C. Shadow is an area of light between a light source and an object. D. We see by light reflecting from objects into our eyes. 	<p>Light can travel around objects by using what?</p> <ul style="list-style-type: none"> A. A torch B. A telescope C. A battery D. A mirror
Question 5	Question 6
<p>Which of the following is not true?</p> <ul style="list-style-type: none"> A. The shape of an object can change the way a shadow looks. B. The materials an object is made from can change the way a shadow looks. C. The position an object is orientated towards a light source can change the way a shadow looks. D. A human has to be holding an object for it to show a shadow. 	<p>Complete this sentence: A shadow is formed when an object comes between...</p> <ul style="list-style-type: none"> A. an opaque and a translucent object. B. a dark place and a light place. C. a light source and a surface. D. when someone or something looks at an object.
Question 7	Question 8
<p>Complete this sentence: Light always travels ...</p> <ul style="list-style-type: none"> A. into darkness. B. away from our eyes. C. through objects. D. in straight lines. 	<p>Which of the following is not true?</p> <ul style="list-style-type: none"> A. Modern mirrors are usually made by coating glass with a thin film of a metal such as silver or gold. B. The earliest mirrors were made from polished metals such as copper. C. In 1678, it was made possible by new ways of producing glass invented in Venice, Italy. D. The earliest mirrors, made from polished metals, were very cheap to make.