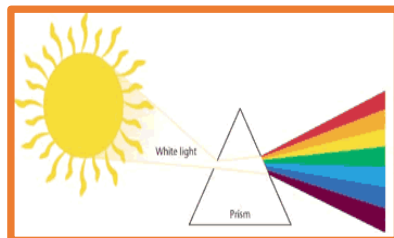
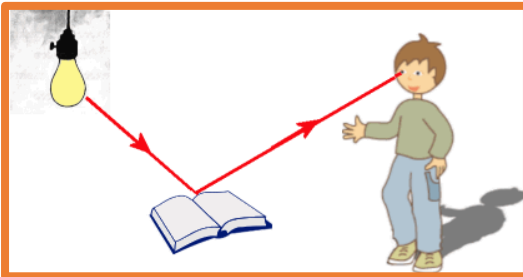


Year 6 Knowledge Organiser- How can you see around a corner?

What will I learn?

In this topic we will learn to:

- 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 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.



Previous learning

Y3
Can you make a shadow?

You should already know:

- 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 shadows are formed when the light from a light source is blocked by a solid object

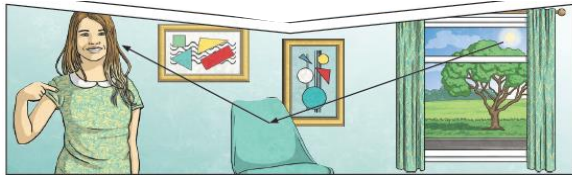
Vocabulary Dozen

Light	Light, or illumination, is a form of energy that travels in waves, like sound
Light Source	Light comes from different sources called light sources; our main natural light source is the sun. Other sources include fire, stars and man-made light sources such as light-bulbs and torches.
Light Rays	Normally, light travels in a straight path called a ray.
Reflection	When light from an object is reflected by a surface, it changes direction. It bounces off the surface at the same angle as it hits it.
Refraction	Normally, light travels in a straight path called a ray, however, when passing through transparent materials, like water or glass, light bends or turns.
Prism	A prism is a clear, triangular device made up of plastic or glass (or any transparent material). When white light travels through a prism. You can see that light is made up of different coloured light.
Shadow	A shadow is the dark shape made when something blocks light from a light source like the sun, a flashlight, or campfire
Translucent	If an object is translucent, it means that some light passes through it but the light is scattered so you can't see clearly through it.
Transparent	If an object or material is transparent, it means light completely passes through it and you can see clearly through it.
Opaque	Something that is opaque cannot be seen through and does not allow light to pass through it.
Periscope	A periscope is an instrument people use to look at things from a hidden position. The device has a long tube with parallel mirrors situated at both ends at a 45-degree angle.
Spectrum	A spectrum is a band of several colours: violet, indigo, blue, green, yellow, orange and red. A spectrum can be seen if the Sun's light is passed through a prism and allowed to gather on a white screen.

Key Knowledge

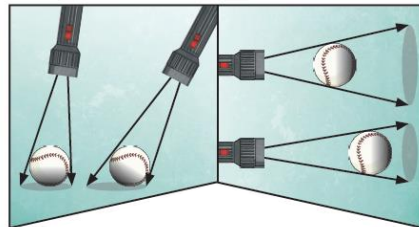
How do we see things?

We need light to be able to see things. Light waves travel from sources of light in straight lines. These lines are often called rays or beams of light. Light from the sun travels in a straight line and hits the chair. The light ray is then reflected off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.

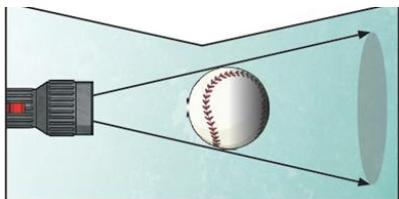


What shape are shadows?

A shadow is always the same shape as the object that casts it. This is because when an opaque object is in the path of light travelling from a light source, it will block the light rays that hit it, while the rest of the light can continue travelling.



Shadows can also be elongated or shortened depending on the angle of the light source. A shadow is also larger when the object is closer to the light source. This is because it blocks more of the light.



What is a light spectrum?

Isaac Newton shone a light through a transparent prism, separating out light into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) - the colours of the spectrum. All the colours together merge and make visible light (known as white light).



What is refraction?

When light travels from air through water, glass or anything that lets light through, it gets bent just like the pencil in the image below. This bending is called refraction.



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Useful Weblinks

<https://www.bbc.co.uk/bitesize/topics/z3nnb9q>

<https://www.bbc.co.uk/bitesize/articles/zp23r82>

<https://www.theschoolrun.com/what-is-light>



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