



Conceptual Knowledge

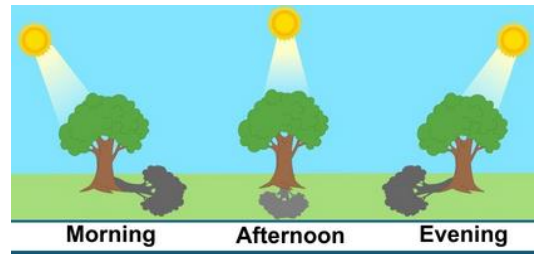
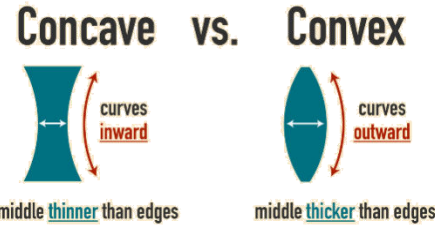
Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.

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

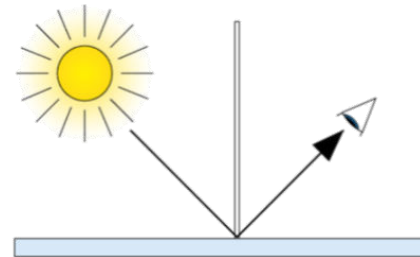
Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.



Lights sources.



Shadows at different times of day.



Working Scientifically Knowledge – Comparing and Fair Testing

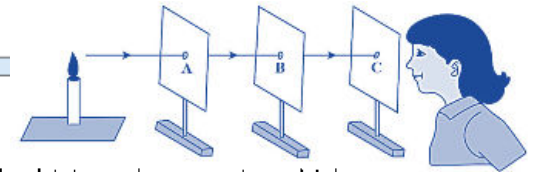
Taking measurements, using a range of scientific equipment, with increasing accuracy and precision. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations

Questions for Experts

What is the difference between natural and artificial light sources?  
How UV light can become stronger?

Domain Knowledge

Can explain how non-luminous objects are seen.  
Know all surfaces reflect some light but that shiny surfaces reflect light better than matt surfaces.  
Know that the size of a shadow depends on the relative position of the light source and the object.  
Know the size of the Sun's shadow changes throughout the day.  
Know the sun rises in the East and sets in the West. The Sun is highest in the sky in the middle of the day.



Light travels in a straight line.

Where can this take you?

- Lighting engineer
- Astronomer
- Optician
- Astronaut

Key Vocabulary

Light = a form of energy that moves in straight lines.

Light source = something that makes light e.g. sun, fire or a torch.

Reflection = when a light ray hits a surface and bounces off.

Refraction = when light changes direction or bends when it moves between materials

Emit = give off or out. E.g. a torch emits light.

Shadow = created when light is prevented from passing through an opaque material.

Transparent/ opaque = transparent objects allow light to pass through. Opaque objects do not allow light to pass through.

Luminous = objects that give off light.

Non-luminous = objects that do not give off light.

Convex = curved outwards so its middle is thicker than its edges.

Concave = curved inwards so its middle is thinner than the edges.