Leamington Primary Science Organiser Year 6 – Light – How do we see?

Strand – physics/ biology

What I should already know

* Different types of light sources e.g. the sun, a torch, light
* Dark is the absence of light
* Light reflects from surfaces
* Light from the sun can be dangerous and can damage your eyes
- Shadows are formed when the light from a light source is blocked by an object

Interesting Facts

* Women blink more

*The human eye can differentiate approximately 10 million different colours.

*Ommetophobia is the fear of eyes

What I will learn

How does light travel?

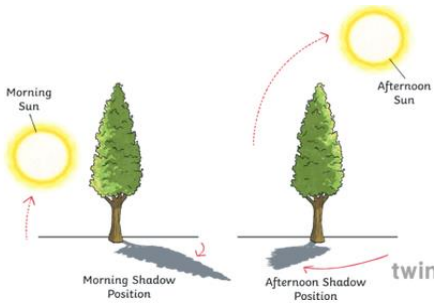
Light travels as a wave. But unlike waves of water or sound waves, it does not need a medium to travel through. This means light can travel through a vacuum – a completely airless space.

How do we see objects?

We need light to be able to see things. Light waves travel out 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 to hit the object. The light ray is then reflected off the object and travels in a straight line to the eye.

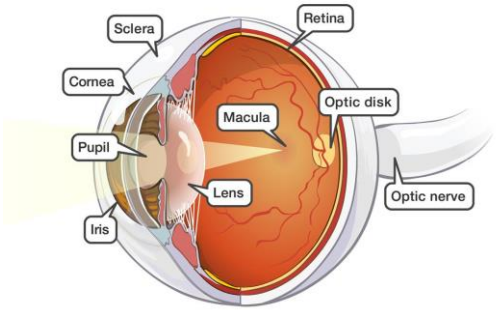
What do shadows have the same shape as the object that casts them?

A shadow is always the same shape as the object that casts it. This is because an opaque object is in the path of the 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.



Important words to help me. (vocabulary)

retina	a light-sensitive layer at the back of the eye. It is made up of rods and cones
pupil	black part of the eye. This is an opening that lets light in
optical nerve	Carries messages from the retina to the brain. The brain turns these into an image of what we are looking at
cornea	the transparent layer forming the front of the eye
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
the law of reflection	the law states that the angle of the incident ray is equal to the angle of the reflect ray
shadow	an area of darkness where light has been 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 scatters te light so we can't see through properly
opaque	describes objects that do not let any light pass through them



Ideas for Scientific Enquiry

Observation over time

Explore how light reflects/ refracts when it meets different surfaces.

Pattern Seeking

Explore how light behaves when placed at different distances from an object.

Compare different light sources using scientific vocabulary such as man-made/ natural.

Secondary Source

Research who first discovered light moves in straight lines and explain how this discovery impacted us today.

Explain why glasses can be needed for different purposes based on the functions of the parts of the eye.

Research the difference between light waves and other waves (e.g. sound waves).