

Science Knowledge Organisers

Science Focus

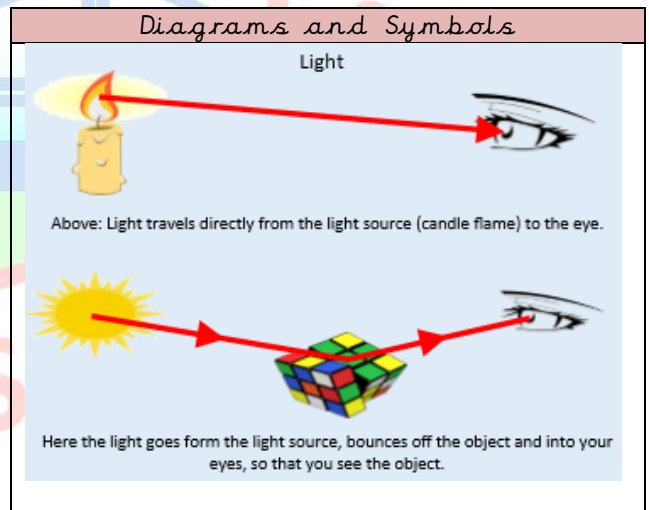
Light

Year 6

Spring

Key Knowledge	
what is a light source?	□ A light source is something that makes its own light.
Things you need to know about light	□ Light travels in straight lines □ Light travels very, very fast - 186,282 miles per second. (that's like travelling around the world over 7 times in a second) □ If something gets in the way of light, a shadow is formed.
How do we see?	When a light source hits an object, light is reflected off this then enters the eye and allows us to see that object
What is refraction?	Refraction is caused when light travels into water; this slows down the light wave and causes it to distort the image we can see.
Who made important discoveries into light?	Isaac Newton made discoveries in this area of science. It was Newton who discovered that white light is a combination of the colours in the light spectrum; he used a prism to shine a light through and found that when he did this the light was dispersed into its different colours - this is because the length of each colour's light wave is different.
How is a shadow formed?	□ When light from a source is blocked by an opaque object, you get a shadow.
How does the size of the shadow change?	□ If an object is moved closer to the light sources, the shadow gets bigger. □ If an object is moved further away from the light source, the shadow gets smaller.

Key Vocabulary	
Shadow	A shadow is a dark area where light from a light source is blocked by an opaque object
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.
Prism	A prism is a transparent optical element with flat, polished surfaces that refract light. At least two of the flat surfaces must have an angle between them.
Refraction	When light travels from air into water, it slows down, causing it to change direction slightly
Colour spectrum	The distribution of colours produced when light is dispersed by a prism.
Incidence	The angle which an incident line or ray makes with a perpendicular to the surface at the point of incidence



Greater Depth Thinking

Why do objects appear to be a certain colour?

Do transparent and translucent objects create shadows?

How does altering the angle of incidence impact on reflection?

Possible Experiences

- Design and make a periscope.
- Investigate refraction. Investigate the colour spectrum