

Component 6: Shadows

What we will know after this sequence:

- Pupils will be able to explain how a shadow is formed. Pupils will be able to explain why shadows are the same shape as the object that casts them. Pupils will understand that shadows cast present differently at different times of the day due to the position of the sun (the light source).

Vocabulary:

Shadow, cast, elongated, shortened, rays, block, light source.

How will this feed into my next learning: Children will use all they have learnt to create a detailed fact file.

Component 4: Spectrums

What we will know after this sequence:

- Pupils will understand how a prism affects a ray of light.
- Pupils will be able to explain what this tells us about the visible spectrum.
- Pupils will be able to describe what Isaac Newton discovered about light.

Vocabulary:

Spectrum, prism, ray, visible, theory, transparent, material, refraction, wavelength.

How will this feed into my next learning:

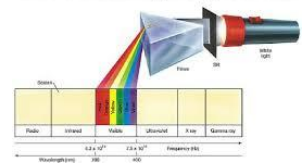
Pupils will use their prior knowledge and understanding of light to dive deeper into how this helps us see colours.

Component 5: Seeing colour

What we will know after this sequence:

- Pupils will be able to explain what Isaac Newton discovered about colour.
- Pupils will understand how light enables us to see colours.

The Visible Light Spectrum



Vocabulary:

Discovery, optical, filter, conclusion, investigation, prediction, absorbs, reflects.

How will this feed into my next learning:

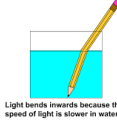
Pupils will use their understanding of how light behaves to dive deeper into investigating shadows and why they happen.

Component 3: Refraction

What we will know after this sequence:

- Pupils will understand how light is refracted. Pupils will understand the effects of refraction upon light.
- Pupils will understand that refraction alters the direction of light.

Refraction of Light



Vocabulary:

Ray, transparent, refraction, lens, materials, distorted, observe, prediction, conclusion.

How will this feed into my next learning:

Pupils will use their knowledge of how light can be manipulated to understand how light waves are seen as different colours.

Component 2: Reflecting light

What we will know after this sequence:

- Pupils will be able to explain how light is reflected.
- Pupils will be able to measure the angles of incidence and reflection.
- Pupils will be able to use their understanding of reflection to create a working periscope.
- Pupils will be able to explain how the periscope allows them to see objects that they would not usually be able to see.

Vocabulary:

Incidence, reflection, angles, periscope, ray, angle, perpendicular

How will this feed into my next learning:

Children will use their new understanding that light can be manipulated in different ways and to explore further methods of manipulation.

Component 1: How we see

We should know:

That light is opposite to dark. That we are able to see more clearly when there is more light around them. That we are able to see different colours. Pupils will take part in a scientific experiment and be able to predict, plan and evaluate using their skills and knowledge.

What we will know after this sequence:

- Pupils will be able to demonstrate that light travels in a straight line.
- Pupils will be able to create a model to show how light travels from a light source to our eyes, or to an object and then our eyes.
- Pupils will be able to draw and label a diagram of the eye and explain how the parts work.
- Pupils will be able to explain how we see things.

Vocabulary:

Photons, particles, vacuum, sources, beams, medium, electromagnetic radiation, light source, reflection.

How will this feed into my next learning:

Pupils will use their knowledge of how the eye works and how light behaves to help them to begin to understand how light can be manipulated.

