Science – Light – Spring Term 2

Prior Knowledge

- In Year 3, I learned about light and dark, and shadows.
- In Year 6, I learned about inheritance and evolution.

Key Vocabulary

Cones	Light-sensitive cells located on the retina responsible for detecting colour and detail in bright light.
Rods	Light-sensitive cells located on the retina responsible for vision in low-light, dark, or night-time conditions.
Opaque	When light will not pass through an object.
Translucent	When an object allows some light to pass through it.
Transparent	When light passes through an object.
Reflection	Light energy hits a surface and bounces off.
Refraction	The bending of light as it passes from one medium to another.
Spectrum	A band of colours produced when white light is refracted.
Prism	A 3D, transparent, angled block (often triangular) used to bend light.

Core Knowledge

- Light is a type of **energy** known as **electromagnetic radiation**. It is made up of **photons** (little particles of energy).
- **Rays** of light travel from a **light source** and hit objects around us. The rays of light **reflect**, or bounce, off an object, and then travel into our eyes. This **reflection** of light allows us to see the object. Light from an object can be reflected by a mirror.
- **Light waves** travel out from **sources of light** in **straight lines**. These lines are often called **rays** or **beams of light**. Because of this, when an **opaque** object blocks the light, a **shadow** is formed. The **angle** and **distance** of the light beam will affect the **size** and **shape** of the shadow.
- We usually see light as being white, but it actually contains all the colours of the **spectrum**. When an object looks red, it will **absorb** every colour except for red. This means that it will **reflect** the red, causing it to enter your eyes.
- **Cones** and **rods** help us to see in the dark and in colour. Some animals have different cones and rods, meaning they see colours differently.
- The **angle of incidence** and the **angle of reflection** are always **equal**.
- When light travels from air through a **transparent** material, it **refracts**, or **bends**. Since each colour's **wavelength** is slightly different, the colours in the ray of light bend slightly differently. This causes them to separate and become visible to our eyes.

Diagrams