



Lowerhouse Junior School

Science Overview Sheet



Year 3 – Light



Rationale: Teaching Light in Year 3 science is vital for understanding basic physical principles. It introduces concepts like reflection, refraction, and shadows, fostering curiosity and experimentation. Engaging activities help students grasp how light interacts with objects, enhancing their observational skills and laying the groundwork for more complex scientific studies in the future.

Substantive Knowledge:

- Recognise that they need light in order to see things and that dark is the absence of light
- Notice that light is reflected from surfaces
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object
- Find patterns in the way that the size of shadows changes.

Disciplinary Knowledge:

- Classifying
- Comparative/Fair testing

Overview:

Lesson 1: Why do we need light?

Lesson 2: What is darkness?

Lesson 3: How do we see objects?

Lesson 4: What are shadows?

Lesson 5: How do shadows change? (not from the sun)

Lesson 6: How can we protect ourselves from the sun?

Key Vocabulary:

Light: A form of energy that makes it possible to see things. It travels in waves and can be emitted by natural or artificial sources.

Light Source: An object that emits light, such as the sun, a lamp, or a flashlight.

Dark: The absence of light, resulting in a lack of visibility.

Absence of Light: A condition where no light is present, leading to darkness.

Surface: The outermost layer of an object where light can reflect or be absorbed.

Shadow: A dark area or shape produced by an object blocking light.

Reflect: The process by which light bounces off a surface.

Mirror: A reflective surface, typically made of glass, that forms images by reflecting light.

Sun: The star at the center of our solar system, which is the primary natural source of light and heat for Earth.

Sunlight: The light emitted by the sun, which reaches Earth and provides natural illumination.

Dangerous: Something that can cause harm or injury. In the context of light, it often refers to the potential harm from intense light sources, such as looking directly at the sun.

Impact/Assessment

Most Children will be able to:

- describe how we see objects in light and can describe dark as the absence of light
- state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses
- define transparent, translucent and opaque
- describe how shadows are formed
- describe patterns in visibility of different objects in different lighting conditions and predict which will be more or less visible as conditions change
- clearly explain, giving examples, that objects are not visible in complete darkness
- describe and demonstrate how shadows are formed by blocking light
- describe, demonstrate and make predictions about patterns in how shadows vary