



Science – Year 6

Light and Shadow

(Previous knowledge – refer to Knowledge Organiser Year 3 – Light)

Vocabulary

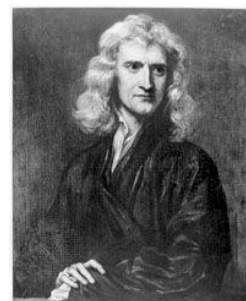
Tier 1	Tier 2	Tier 3
Light	Light source	Law of reflection
Darkness	Reflection	Refraction
Shadow	Prism	Visible spectrum
Ray	Transparent	Reflected ray
Beam	Translucent	Incident ray
Angle	Opaque	Vacuum

Useful Resources

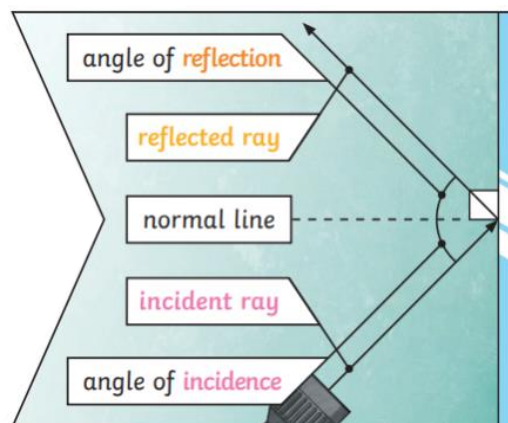
- Torches to create, investigate and measure shadows.
- Prisms.
- Materials to investigate reflectivity.
- Mirrors.

Key Scientists:

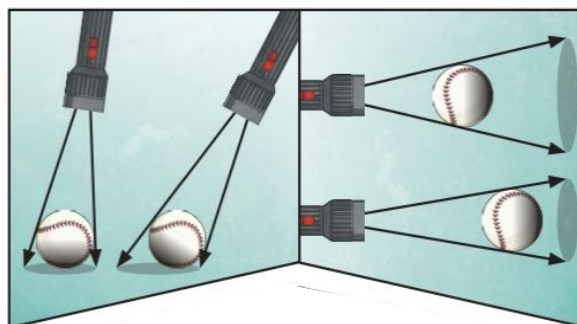
Isaac Newton (1642-1727) – Isaac Newton shone a light through a transparent prism, separating out light into the colours of the rainbow. All the colours together merge and make visible light.



The Law of Reflection



Changing the Shape of Shadows



Key Questions/Facts

What is light?

- 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.

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.

What is the law of reflection?

- The law of reflection states that the angle of incidence is equal to the angle of reflection. Whenever light is reflected from a surface, it obeys this law.
- The angle of reflection is the angle between the normal line and the reflected ray light.
- The angle of incidence is the angle between the normal line and the incident ray of light.

What is a shadow?

- A shadow is always the same shape as the object that casts it because when an opaque object is in the path of light travelling from a light source, it blocks the light rays that hit it.
- Shadows can 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 because it blocks more light.