

# Year 6: Light

## VOCABULARY



**LIGHT:** A form of energy that travels from its source in a wave.



**LIGHT SOURCE:** An object that creates light.



**REFLECT:** When light bounces off a surface and changes the direction of a ray of light.



**REFRACT:** To make a ray of light change direction when it hits at an angle.



**PRISM:** A solid 3D shape. A transparent prism separates visible light into the spectrum of colours.



**RAY:** A wave of light.



**SHADOW:** An area of darkness where light is blocked.



**REFLECTIVE:** A material which reflects light well.



**PUPIL:** The black part of the eye which lets light in.



**RETINA:** The layer at the back of the eye that takes in light and sends nerve signals to the brain.



**SPECTRUM:** A band of colours made by separating the components of light.

## SIGNIFICANT SCIENTISTS



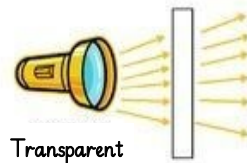
Ibn al-Haytham  
965-1040

Ibn al-Haytham was an Iranian mathematician, astronomer and physicist. He was the pioneer of modern optics. He explained how an image is formed by rays of light travelling in straight lines.



Isaac Newton  
1643-1727

Isaac Newton developed a theory of light based on the observation that a prism decomposes white light into the colours of the rainbow: red, orange, yellow, green, blue, indigo and violet.



Transparent

All light passes through and we can see through.



Translucent

Some light passes through but we cannot see through.



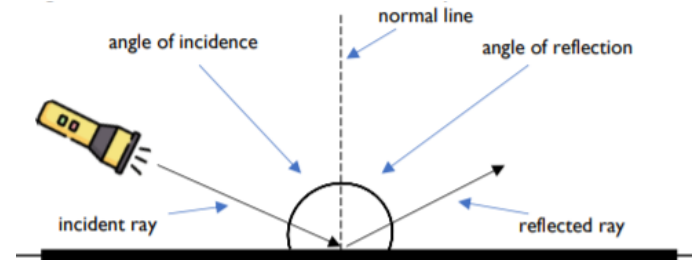
Opaque

No light passes through and we cannot see through.



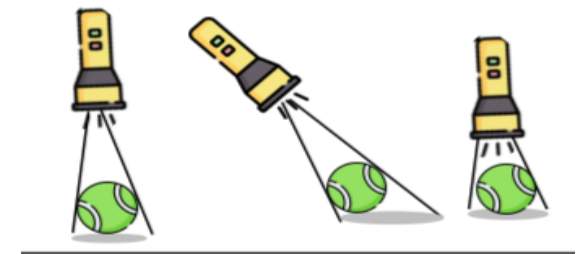
## THE LAW OF REFLECTION

The angle of incidence is always equal to the angle of reflection. The angle of incidence is between the incident ray and the normal line. The angle of reflection is between the reflected ray and the normal line.



## SHADOWS

Shadows are always the same shape as the object that has cast them because they are formed when an opaque object blocks the light travelling from the light source. They can be stretched or shortened depending on the angle of the light source. A shadow is larger when the object is closer to the light sources as more light is blocked.



## DID YOU KNOW?

- Light travels faster than sound.
- Darkness is caused by the absence of light.
- The moon is not a light from the Sun.
- Light can travel through the airless vacuum of space.