

Science - Year 6 - Physics

Light



Key Vocabulary



light
light source
reflection
incident ray
reflected ray
the law of reflection
refraction
visible spectrum
prism
shadow
transparent
prism
shadow
transparent
translucent
opaque

Science GOLDEN WORDS:

prediction

measurements

conclusion

explain

classify

Key Facts



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**.

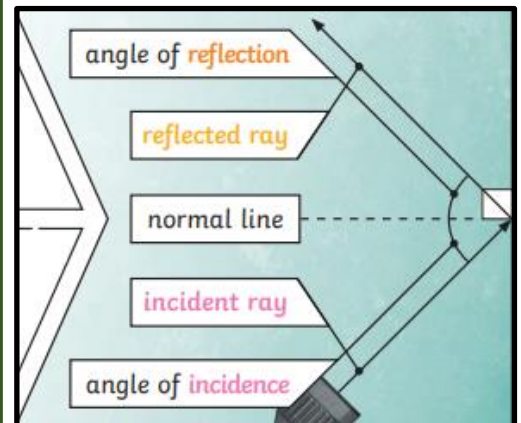
Light from the sun travels in a straight line and hits an object. The **light** ray is then **reflected** off the object and travels in a straight line to your eye, enabling you to see the object.

Light travels as a wave. However 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.

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 line.

The angle of incidence is the angle between the normal line and the incident ray of light.



Refraction

The spoon in the water looks as if it is bent. This is because light bends when it moves from air to water. When light bends in this way, it is called refraction.



Shadows

A shadow is always the same shape as the object that casts it. This is because when an opaque object is in the path of light travelling from a light source, it will block the light rays that hit it while the rest of the light can continue travelling.

Working Scientifically:

- Plan different types of enquiries to answer questions, including recognising and controlling variables where necessary.
- Use test results to make predictions to set up further comparative and fair tests.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Isaac Newton

Isaac Newton shone a light through a transparent **prism** separating out light into the colours of the rainbow - the colours of the **spectrum**. All the colours together merge and make visible light.



Our 'light' knowledge journey:

Y3 • 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 a solid object.
- Find patterns in the way that the size of shadows change.