



SCIENCE – LIGHT

KNOWLEDGE ORGANISER

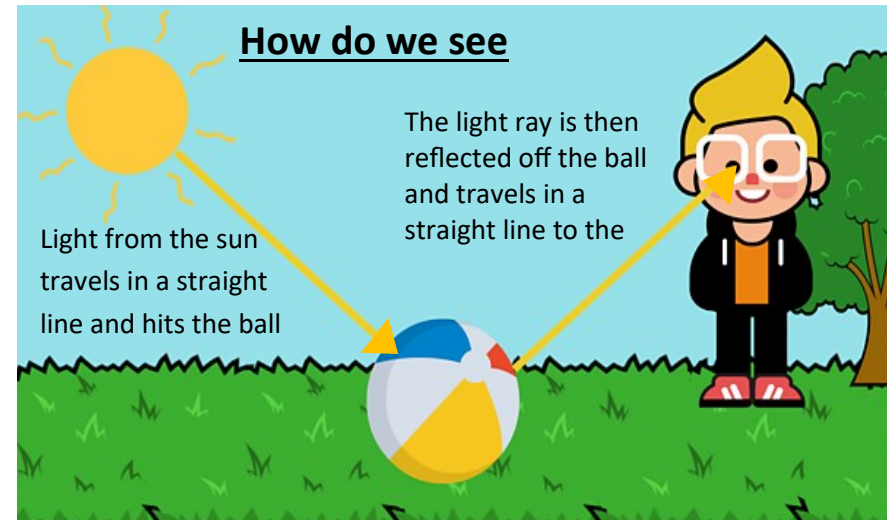


Facts about Light:

- Light travels in straight lines.
- These lines are called rays or beams of light.
- Light travels as a wave.

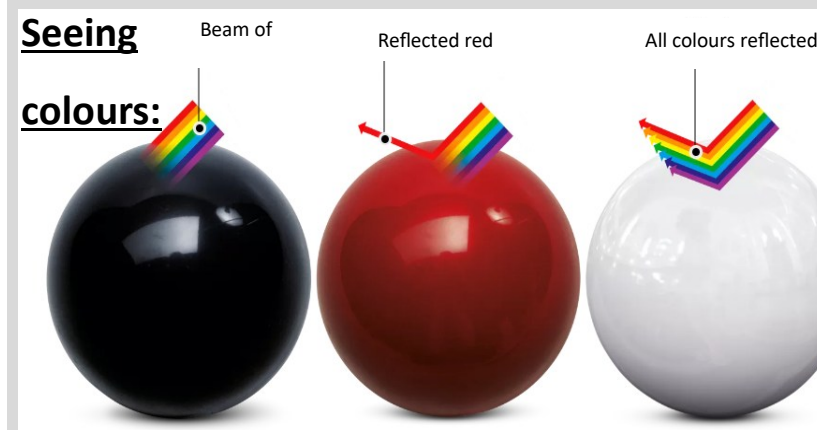
Key Vocabulary

light	Light is a form of energy that makes vision possible.
dark	Darkness is the absence of light .
reflection	Reflection is the bouncing back of light when it hits a surface.
shadow	A shadow is a dark area created when an object blocks light between a light source and a surface.
reflective	' Reflective ' describes a surface that reflects most of the light that hits it.
light source	A light source is an object that emits light , such as the Sun or a lightbulb.
colour spectrum	The colour spectrum is the range of colour visible to the human eye, which can be seen when light is refracted through a prism.
reflect	To reflect is to bounce back light or another form of energy when it hits a surface.
refract	To refract is to change the direction of light as it passes through different materials.
visible spectrum	The visible spectrum is the portion of the light spectrum that is visible to the human eye.



Refraction

The straw in this water looks like it is bent. This is because light bends when it moves from air to water. When light bends like this, it is called refraction.

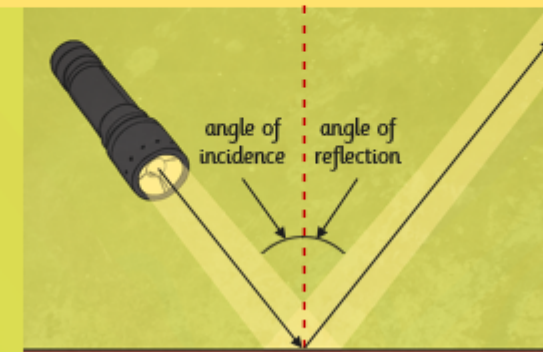


The Law of Reflection

When rays of light reflect, they obey the law of reflection: The angle of incidence always equals the angle of reflection.

The red dashed line is called the 'normal' line. It is drawn at a right angle, or perpendicular to the reflector.

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



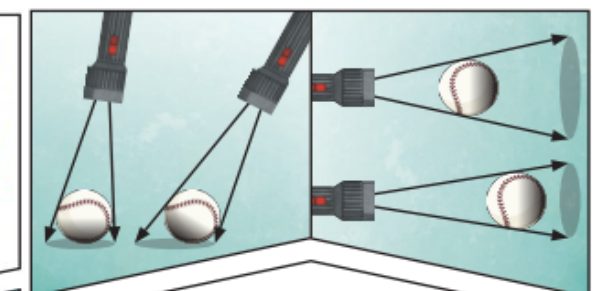
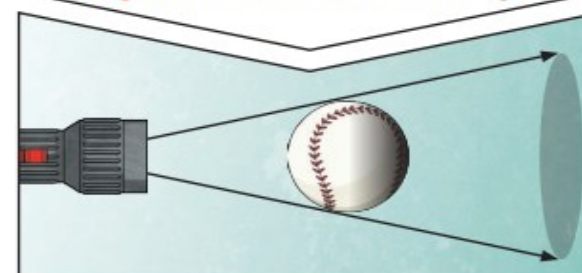
The angle of reflection is the angle between the normal line and the reflected ray of light.

Newton

In 1666, Newton made a discovery about light that led him to develop his Theory of Colour : although light looks white, it is actually made up of all the colours of the rainbow!



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.



Shadows can also 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**. This is because it blocks more of the **light**.