



# Y6 Science Light



Light can travel through a vacuum.

**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**.

angle of reflection

reflected ray

normal line

incident ray

angle of incidence

Key Vocabulary	
<b>light</b>	A form of energy that travels in a wave from a source.
<b>light source</b>	An object that makes its own <b>light</b> .
<b>reflection</b>	<b>Reflection</b> is when <b>light</b> bounces off a surface, changing the direction of a ray of <b>light</b> .
<b>incident ray</b>	A ray of <b>light</b> that hits a surface.
<b>reflected ray</b>	A ray of <b>light</b> that has bounced back after hitting a surface.
<b>the law of reflection</b>	The law states that the angle of the <b>incident ray</b> is equal to the angle of the <b>reflected ray</b> .

**Key Knowledge:** We need light to be able to see things. Light travels in straight lines from the light source. Light travels in straight lines from the sun, hits an object which reflects light back to our eyes. This is how we see things.



Thomas Edison invented the electric lightbulb.



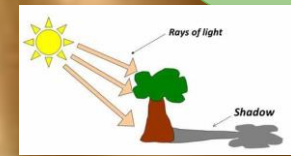
Light bends when it moves from air to water. It is called refraction. This is why the spoon looks bent.



Percy Shaw invented The Cat's Eye.



Key Vocabulary	
<b>refraction</b>	This is when <b>light</b> bends as it passes from one medium to another. E.g. <b>Light</b> bends when it moves from air into water.
<b>visible spectrum</b>	<b>Light</b> that is visible to the human eye. It is made up of a colour <b>spectrum</b> .
<b>prism</b>	A <b>prism</b> is a solid 3D shape with flat sides. The two ends are an equal shape and size. A transparent <b>prism</b> separates out visible <b>light</b> into all the colours of the spectrum.
<b>shadow</b>	An area of darkness where <b>light</b> has been blocked.
<b>transparent</b>	Describes objects that let <b>light</b> travel through them easily, meaning you can see through the object.
<b>translucent</b>	Describes objects that things let some <b>light</b> through, but scatters the <b>light</b> so we can't see through them properly.
<b>opaque</b>	Describes objects that do not let any <b>light</b> pass through them.



Shadows are formed when an opaque object blocks light from a light source. The object will block the light rays that hit, whilst the rest of the light can continue to travel.

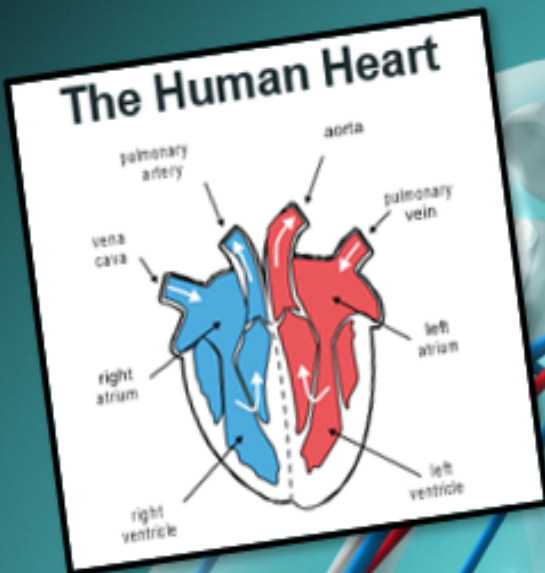
Sir Isaac Newton shone a light through a transparent prism. This separated the light into the colours of the rainbow - called the spectrum. When these colours merge together we get visible light.



Shadows can be elongated or shortened by changing the angle of the light source.



1000 calories  
= 1kcal



**KEY VOCABULARY**

**Aorta:** the main artery in the human circulatory system

**Arteries:** the tubes that carry oxygenated blood around the body

**Atria:** the upper chambers of the heart

**Blood vessels:** the tubes that carry blood around the body (veins, arteries, and capillaries)

**Deoxygenated:** blood that is not carrying oxygen

**Nutrients:** a substance that provides nourishment essential for the maintenance of life and for growth

**Oxygenated:** blood that is carrying oxygen

**Pulse:** the beat of your heart

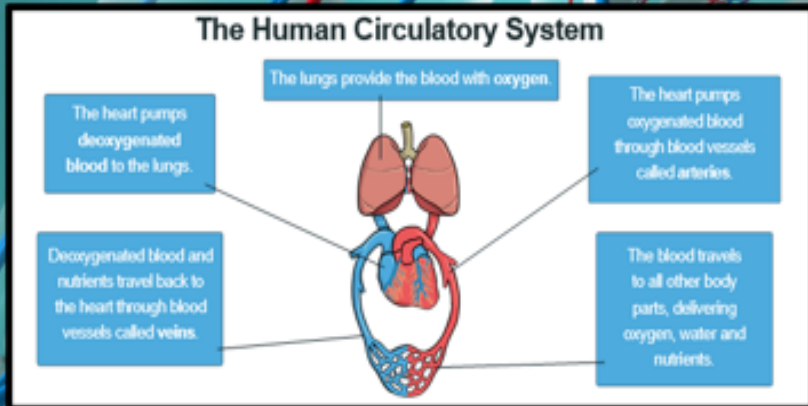
**Veins:** the tubes that carry deoxygenated blood into the heart

**Vena cava:** a large vein that carries deoxygenated blood into the heart

**Ventricles:** the main chambers of the heart

**Villi:** finger-like structures that line the small intestine to absorb water and nutrients

**Key Knowledge:** the heart, which is a muscle, pumps blood around the body through blood vessels. This is called the circulatory system, and is responsible for transporting oxygen, water and nutrients. To live a healthy lifestyle we need to exercise, eat a balanced diet (1400–2000kcal a day) and know the dangers of drugs, alcohol and smoking.



British scientist, Sir Richard Doll, was a pioneer in linking smoking to health problems.

**Health Heroes and Villains**

You can keep your body healthy by eating a balanced diet, ensuring you have good hygiene and exercising regularly.

You should avoid eating lots of unhealthy food, smoking, drinking alcohol and becoming inactive.