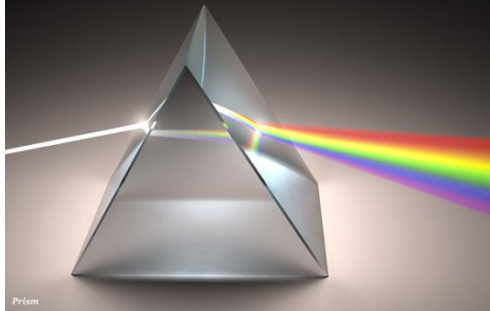

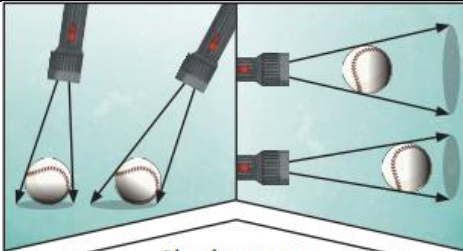


Upper Key Stage 2: Light

Key Vocabulary		What are the colours of the spectrum?
Straight lines	Lines that go from one point to another without a bend.	<p>Isaac Newton shone a light through a transparent prism, separating out light into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) –the colours of the spectrum. All the colours together merge and make visible light.</p> 
Light rays	A visible column light.	
Light source	An object that makes its own light	
Absence of light	When there is no light source and so it is dark.	
Transparent	Describes objects that let light travel through them easily, meaning you can see through the object.	
Translucent	Describes objects that let some light through, but scatters the light so we can't see through them properly.	
Opaque	Describes objects that do not let any light pass through them.	
Shiny	When an item has a smooth, glossy surface.	
Matt	A dull and often flat surface.	
Surface	The outside part or uppermost layer of something.	
Shadow	An area of darkness where light has been blocked.	Alhazen
Reflection	When light bounces off a surface, changing the direction of a ray of light.	<p>Abū Ali al-Ḥasan Ibn al-Haytham al-Baṣrī (965-1040), known in European Middle Ages by the name of Alhazen. He was actually a scholar of many disciplines: Mathematics, physics, mechanics, astronomy, philosophy and medicine. He was one of the senior most members of the Muslim scholars' trio during 10th -11th centuries.</p> <p>Ibn al-Haytham was a prolific writer. According to his own testimony, he wrote 25 works on mathematical sciences, 44 works on (Aristotelian) physics and metaphysics. His most famous book in Arabic was on optics. It is seven volumes, with experimental and mathematical study of the properties of light. Ibn al-Haytham, devised special experiments for various types of lights: Sunlight, twilight/morning light, reflected light from polished surfaces and from opaque bodies, refracted/transmitted light. He went on to discover that light always appears to travel in straight lines.</p> 
Mirror	A surface, typically of glass coated with a metal amalgam, which reflects a clear image.	
periscope	An apparatus consisting of a tube attached to a set of mirrors or prisms, by which an observer (typically in a submerged submarine or behind a high obstacle) can see things that are otherwise out of sight.	

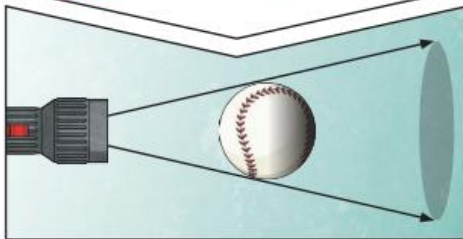
Upper Key Stage 2: Light

Shadows



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**.

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.



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**.

Light from the sun travels in a straight line and hits the chair. The **light** ray is then **reflected** off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.

