

# Year 6 Science – Light Knowledge Organiser

**Golden Knowledge** (everyone must know and be able to explain this information)

- Light appears to travel in straight lines.
- Objects are seen because they give out or reflect light into the eye.
- We see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- Shadows have the same shape as the objects that cast them.

**What is light and how does it travel?**

- Light is a type of energy that helps us see.
- It travels in straight lines and moves incredibly fast (faster than anything else in the universe!).
- Light comes from sources like the Sun, light bulbs, and fire.
- When light hits something, it can be reflected (bounced back), absorbed (soaked up), or pass through if the object is clear, like glass.
- Without light, everything would be dark!

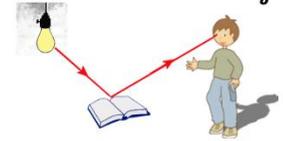
**Can light go round corners?**

No, light travels in straight lines, so it can't bend around corners on its own. But we can make it change direction by using mirrors to reflect it or lenses to bend it.

Imagine shining a torch in a straight hallway—it lights up the area directly ahead but not around the corner.

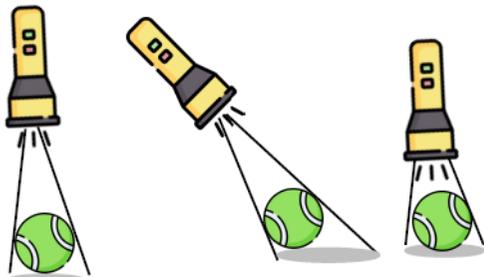
**How are objects seen by our eyes?**

1. Light shines on an object
2. Light bounces off the object
3. Light travels to your eyes – the reflected light enters through a small hole called the pupil.
4. Inside your eyes the retina and optic nerve send messages to your brain, and your brain figures out what you're looking at.



**Why are shadows always the same shapes as the object that casts them?**

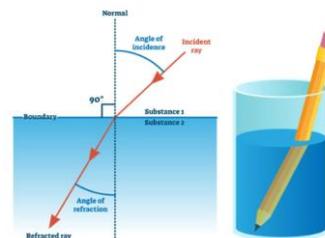
Shadows are always the same shape as the object that has cast them because they are formed when an opaque object blocks the light travelling from the light source. They can be stretched or shortened depending on the angle of the light source. A shadow is larger when the object is closer to the light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



**Can light change direction without a mirror?**

Yes, light can change direction without a mirror! When light passes through something clear, like water or a glass prism, it bends. This bending is called **refraction**. For example, if you put a pencil in a glass of water, it looks like the pencil bends at the water's surface. That's refraction!

## REFRACTION



## Vocabulary

light	A form of energy that travels from its source in waves.
opaque	Objects that do not allow any light to travel through them.
ray	A wave of light.
reflect	When light bounces off a surface and changed the direction of a ray of light.
refract	To make a ray of light change direction when it hits at an angle.
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.
translucent	Objects that allow some light to travel through them.
transparent	Objects that allow light to easily pass through them.