How Mirrors Reflect Light and Create Images

KS2 SCIENCE | LIGHT AND SHADOWS | Ages 9-12 | ⏰ 3 min read

What is Light Reflection?

Reflection happens when **light bounces off a surface**. When light hits a mirror, it doesn't get absorbed or pass through—instead, it bounces straight back towards you. This is why mirrors are so useful for seeing yourself and other objects.

All surfaces reflect some light, but mirrors are special because they have a very smooth, shiny surface that reflects light in an organized way. This organized reflection is what creates a clear image you can see.

Think of it like throwing a ball at a wall. The ball bounces straight back because the wall is smooth and solid. Light does the same thing when it hits a mirror.

How Does a Mirror Work?

A typical mirror has a piece of **glass** with a thin layer of **reflective material** (usually **aluminium or silver**) painted on the back. When light enters the glass, it travels straight through until it hits that shiny metal coating. The metal coating reflects the light back through the glass and into your eye.

The key to a perfect reflection is that the mirror's surface is incredibly smooth. If the surface were bumpy or rough, light would bounce off in lots of different directions instead of bouncing back in an organized way. This would create a blurry or distorted image.

Think of it like a calm lake versus a rough sea. A calm, smooth lake reflects light perfectly, like a mirror. A rough, wavy sea scatters light in all directions, so you don't see a clear reflection.

The Law of Reflection

Scientists discovered the Law of Reflection: the **angle at which light hits a mirror equals the angle at which it bounces off**. If you shine light straight at a

mirror, it bounces straight back. If you shine it at an angle, it bounces off at the same angle on the other side.

This law works every single time, which is why mirrors are so reliable for seeing reflections. It's also why mirrors in lighthouses and telescopes help scientists see things that are far away.

Think of it like a tennis ball bouncing off a wall at different angles—depending on how hard and at what angle you throw it, it bounces back the same way.

Why Mirrors Create Images

When light from an object bounces off a mirror and reaches your eye, your brain tricks you into thinking the object is **behind the mirror**. This creates a **virtual image**—something that looks real but isn't actually there. The image appears to be the same distance behind the mirror as the real object is in front of it.