# Forces and Motion: Understanding How Things Move

KS2 SCIENCE FORCES AND MOTION Ages 9-12 ⏰ 3 min read

## What Is a Force?

A **force** is simply a push or pull. Every time you throw a ball, kick a football, or close a door, you're using a force. Forces are all around us, and they're responsible for making things move, stop, or change direction. Without forces, nothing would be able to move at all!

There are lots of different types of forces. **Gravity** is the force that pulls everything down towards Earth. **Friction** is the force that makes things slow down when they rub against each other. **Magnetic force** is what makes magnets stick to metal objects. All of these are forces that affect how things move.

Think of it like... a remote control! The button you press is the force, and the television turning on is the effect. No button (no force), no action (no movement).

## How Do Forces Affect Movement?

**Newton's First Law** tells us something amazing: objects that are sitting still want to stay still, and objects that are moving want to keep moving. They only change when a force acts on them. If you roll a ball across the playground, it will eventually stop because **friction** (the force between the ball and the ground) is pushing against it.

When you apply a bigger force, things move faster or more dramatically. A gentle push on a swing makes it go a little bit, but a big push sends it much higher. This is **Newton's Second Law** – the bigger the force, the bigger the change in movement.

Think of it like... pushing a shopping trolley. A gentle push moves it slowly. A really hard push makes it zoom forward much faster!

## Forces Working Together

Forces don't always work alone. Sometimes forces work together, and sometimes they work against each other. When you catch a ball, your hand is applying a force to stop

it. The ball is also applying an equal force back on your hand – that's why it can sting! This is **Newton's Third Law: every action has an equal and opposite reaction**.

Understanding forces helps us design everything from bicycles to aeroplanes. Engineers need to know how forces work so they can make vehicles that move safely and efficiently. Next time you're playing sport or riding your bike, remember: you're using forces to change how things move!