

Forces - Science

Vocabulary

Word	Definition
forces	Pushes or pulls.
Gravity	A pulling force exerted by the Earth (or anything else which has mass)
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground .
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other
Air resistance	A type of friction caused by air pushing against any moving object
Water resistance	A type of friction caused by water pushing against any moving object.

Previous Knowledge

- In Year 3 you observed how magnets attract and repel.
- In year 3 you compared how things moved on different surfaces

Science Key Concepts

Working Scientifically	Gravity	Resistance	Friction	Explain	Environment
Investigation	Physics - Forces	Mechanisms	predict	Physics - Weather & Space	

Examples of **forces** in action:



Water resistance and **air resistance** are forms of **friction**. **Friction** is sometimes helpful and sometimes unhelpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. **Friction** on a bike chain can make the bike harder to pedal so it is unhelpful.

Key Facts

Mass is how much matter is inside an object. It is measured in kilograms
 Weight is how strongly gravity is pulling an object down. It is measured in newtons (N).
 Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.
 Upthrust is a force that pushes objects up, usually in water.

Key Facts

- When an object is shaped to minimise the effects of air or water resistance is streamlined.
- Mechanisms are simple machines with moving parts that change input forces and movement into a set of useful output forces. Examples of mechanisms are pulleys, gears and levers.
- The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth
- Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth

Spellings: category, equipment, equipped, explanation, opportunity, physical, system, recognise, vehicle