

Year 5 Term 1: Science: Forces Knowledge Organiser

Why do objects fall towards the Earth, and why do they speed up as they fall?

How does air resistance, water resistance and friction effect how things move?

How can I change the effects of friction to make movement easier or harder?

How do levers, pulleys and gears help us move or lift things using less force?

Key vocabulary

- **force** – a push or a pull
- **gravitational force** – a non-contact force caused by objects with mass pulling each other



- **weight** – the downwards gravitational pull on an object



Mass – Measured in grams or kilograms.

The amount of matter or stuff in an object.

- **air resistance** – a type of friction force on an object moving through air



- **frictional force** – a contact force that is caused by one object being pushed across the surface of another



- **Lever** – A rigid bar resting on a pivot, used to move a heavy load.



- **Gear** – A wheel and axle that has teeth along the wheel, mostly used in machines to increase speed.



- **Pulley** – A rope or a cable on one or more wheels, used to lift heavy objects.



Key concepts:

A person or object will only move if there is a force acting on it.

If opposite forces are balanced (equal), the object will not move.

We are pulled towards earth because the earth's gravity is very strong. The moon's mass is smaller so it's gravity is weaker than earth's.



Working scientifically:

We will make the experiment **fair**. In our experiments we will try to keep everything the same, and change just one part so we can test that.

Controlled variables are the things we **will not change** in an experiment.

Independent variable is the thing we **will change** in an experiment to test it.