



### What I should already know

- Sticky knowledge from topics covered in Year 1, 2, 3 and 4: Forces and Magnets.

### Working Scientifically

- Explore falling objects and raise questions about the effects of air resistance.
- Explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall.
- Experience forces that make things begin to move, get faster or slow down.
- Explore the effects of friction on movement and find out how it slows or stops moving objects.
- Explore the effects of levers, pulleys and simple machines on movement.

### Sticky Knowledge

- Earth's **gravitational force** causes objects to have **weight**. Gravity pulls everything towards the centre of the Earth.
- The higher the **friction** the harder it is for an object to move, the lower the **friction** the easier it is for an object to move.
- Air resistance** is the force acting between air and an object that slows an object down e.g. a roller-coaster, a parachute and an aeroplane.
- It is much harder for humans to walk in water than on land because of **water resistance**. Objects that are **streamlined** encounter little water resistance.
- Pulleys** make it easier to lift heavy objects. Examples of machines that use pulleys are escalators, car engines, cranes, checkouts and vacuum cleaners.
- Pairs of meshing **gears** turn in opposite directions.

### Vocabulary

gravity	A force which tries to pull two objects towards each other.
friction	A force between two surfaces that are sliding, or trying to slide, across each other.
newton	What we measure forces in using a newton meter.
Isaac Newton	The first man to explain gravity.
air resistance	A type of friction between air and another material.
water resistance	A force that pushes against objects as they pass through water.
streamlined	When an object encounters little resistance from a force due to its design.
transmission	Two or more gears working together.
buoyancy	An object which floats in water has buoyancy.