

What I already know:

Two magnets can attract or repel each other
Magnetic forces can work from a distance



Year 5: Forces

Key Question:

Which Scientist is credited with developing the theory of gravity?

Learning Journey

Sc5/4.2a explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

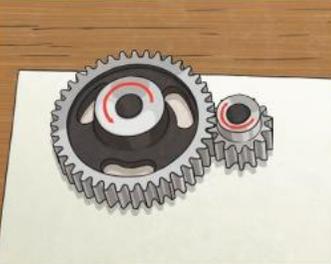
Sc5/4.2b identify the effects of air resistance, water resistance and friction, that act between moving surfaces

Sc5/4.2c recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

Powerful knowledge:

Key Vocabulary

Force	A push or pull
Earth's gravity	A pull the Earth exerts on an object, pulling it towards Earth's centre. It keeps us on the ground.
weight	The measure of the force of the gravity of an object
mass	A measure of how much matter (stuff) is inside an object
friction	A force between two surfaces or objects that are moving/attempting to move across each other
air resistance	Friction caused by air pushing against a moving object
water resistance	A type of friction caused by water pushing against any moving object
streamlined	An object shaped to reduce water or air resistance

Pulleys	Gears/Cogs	Levers
		
Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight .	Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.	Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.



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.



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.