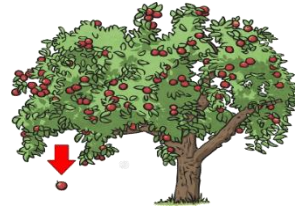


Knowledge Organiser Year 5 The Vikings Science: Forces Concept: Forces

Key Vocabulary

Forces	Pushes and pulls
Gravity	A pulling force exerted by the Earth, and other planets, that pull objects to the ground. It also keeps Earth and other planets in their orbit around the Sun.
Earth's Gravitational Pull	The gravitational pull is exerted by Earth onto an object. It pulls it to the Earth's centre. This is what keeps us on the ground.
Weight	The measure of force of gravity on an object. It is measured in newtons (N).
Mass	The measure of how much matter ('stuff') is inside and object. It is measured in kilograms (kg).
Friction	A force that acts between two objects that are moving or trying to move across each other.
Air Resistance	A type of friction caused by air pushing against a moving object.
Water Resistance	A type of friction caused by water pushing against a moving object.
Streamlined	When an object is shaped to minimise the effects of air and water resistance.
Mechanisms	Parts that work together, to allow a smaller force to move a greater load. Examples of mechanisms are levers, pulleys and gears.

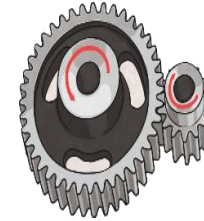
Gravity: *Isaac Newton* is believed to have developed his theory on **gravity** when he saw an apple fall from a tree.



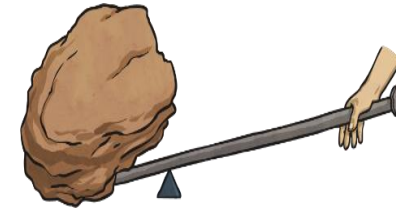
Streamline: Both the shark and plane are streamlined to combat **friction**. Can you see the similarities?



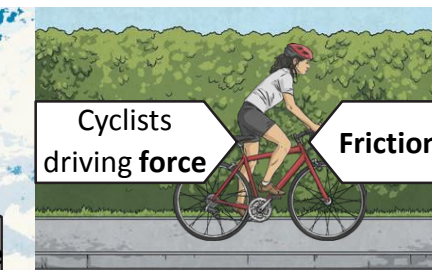
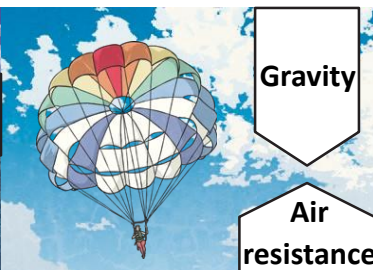
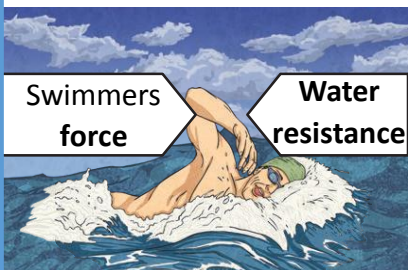
Examples of **mechanisms**: Pulleys- they can be used to so a smaller **force** can lift a load. The more wheels in a pulley system, the less force that is needed to lift the **weight**.



Gears- also known as cogs, can be used to change the **force**, speed or direction of a motion. When two gears are connected, they move in opposite directions.



Levers- they can be used to allow a small force to lift a heavier **weight**.



Examples of **forces** in action: **Water resistance** and **air resistance** are types of **friction**. In some situation's **friction** can be helpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. However, it can be unhelpful too. **Friction** on a bike chain can make it harder for the cyclist to pedal.