

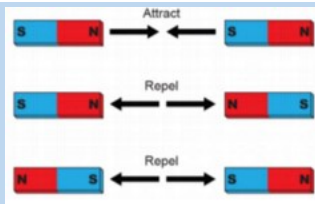
Recapped Knowledge

A **force** is a **push** or a **pull**. When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes.



For some forces to act, there must be **contact** e.g. a hand opening a door, the wind pushing the trees. Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts. We call this a **non-contact force**.

A **magnet attracts magnetic material**. **Iron** and **nickel** and other materials containing these, e.g. stainless **steel**, are **magnetic**. If two like poles, e.g. two north poles, are brought together they will push away from each other – **repel**. If two unlike poles, e.g. a north and south, are brought together they will pull together – **attract**.



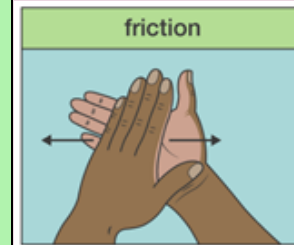
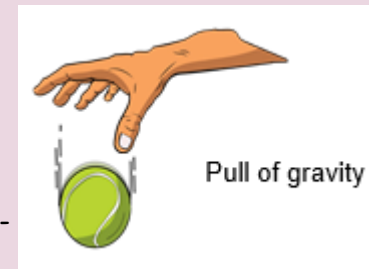
New Vocabulary

forces	Pushes or pulls.
contact forces	Pushes or pulls that require object to touch (e.g. friction).
non-contact forces	Pushes or pulls that act at a distance (e.g. magnetism and gravity).
gravity	A pulling force exerted by the Earth (or anything else which has mass).
weight	The measure of the force of gravity on an object (in Newtons).
mass	A measure of how much matter (or stuff) is inside an object (in g, kg, pounds, ounces etc).
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 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 resistance and water resistance .
mechanism	Simple machines with moving parts that change the input force and movement into a set of useful output forces (or machines that make it easier to move a heavy object). Examples include pulleys, gears and levers.
upthrust	A force that pushes up.

New Knowledge:

A force is a push or pull that **acts upon an object**. We **can't see forces**, but they are an important part of our everyday lives. We **push and pull** objects to do many different things. When we push or pull objects we can **move** the object, **change the shape** of the object or **make the object change direction**.

Gravity is a non-contact force which **acts at a distance**. It is a **pull force** that pulls objects towards the center of the Earth.



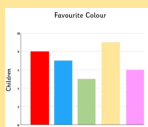
Friction is a **force created between two surfaces when they rub together**. Friction creates heat and always **slows down an object**. Rough surfaces create more

Working Scientifically:

Ask questions



Label diagrams



To present results in a tables and

bar chart and use these to draw conclusions

To begin to take repeat reading and see why this might be needed

To use newton meters and stop watches

and record results to 2 decimal places



Pulleys	Gears/Cogs	Lever
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.	Lever can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Air resistance is a force that acts in the **opposite direction to gravity**. It acts **between** a moving object and the air molecules around it, slowing the object down. Air resistance is a type of **friction**.



Water resistance is the force responsible for making it difficult for us to **move through the water**. It acts between a moving object and the **water molecules** around it, **slowing the object down**. Water resistance is also a type of friction.