

What is a force ?

Forces make things move. Whenever an object starts to move or moves faster, it is a force making this happen. Forces can also make things slow down or stop moving. Almost all forces have a push or pull action.

Friction & Gravity

Most forces require contact with an object to change its movement. Friction and gravity do not – they are non-contact forces. Friction is a force that is created when two surfaces move across each other – the greater the friction, the slower the movement. Gravity is the force by which a planet (such as Earth) attracts objects to its centre.

Did you know

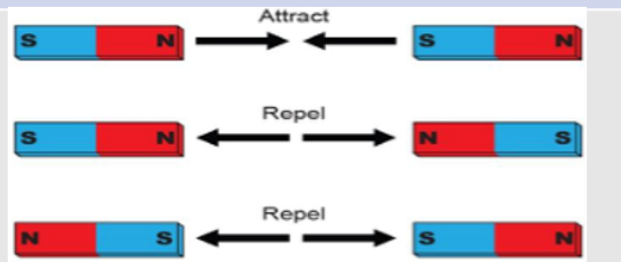
You are taller first thing in the morning than when you go to bed at night? That's because gravity is pushing you down all day and is causing your spine to shrink. When you go to bed at night, your spine has a chance to stretch back out!

You are about 1.5cm taller in the morning than you are at night. Get a tape measure and test it out!

Magnets

Magnets exert another non-contact force. A magnet is a special object which produces a magnetic force around itself called a magnetic field. If a magnetic object enters this magnetic field, it will be attracted towards the magnet and will end up sticking to it.

Magnets have 2 poles – north and south. If you put magnets towards each other, different poles will attract each other while same poles will repel each other.



Magnetic or not magnetic ?

Although all magnetic objects are metal, not all metals are magnetic. Only iron, cobalt and nickel are magnetic. Steel is mostly made of iron so is also magnetic.

Key Vocabulary

Contact force	A force causing an object to move through direct contact with it (eg kicking a ball)
Non-contact force	A force causing an object to move even though there is no contact with it (eg gravity causing an object to fall to the ground)
Push	A force causing an object to move away
Pull	A force causing an object to move closer
Newton	The unit of measurement of force
Magnet	A material or object that produces a magnetic field, it attracts or repels magnetic objects
Magnetism	The force of attraction by a magnet
Pole	Two sides of a magnet where the magnetism is strongest
Attract	To pull towards (the opposite of repel)
Repel	To push away (the opposite of attract)

Magnetic vs Non-Magnetic Metals



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Forces &
Magnets