

## Forces and Magnets

Whether you know it or not, you are surrounded by forces every day. Force is just another word for the pull or push action that makes things move or changes the motion of an object. Everything around us and in the universe works on the concept of force. Magnetism is a type of force. A magnet might pull an object toward it or push it away.

Key facts	Key Vocabulary	
When two magnets come near each other, their fields create forces that attract or repel.	<b>Force</b>	A push or a pull.
The Earth is a giant magnet. Its magnetic field is like a bar magnet at its centre.	<b>Magnet</b>	An object that is made of materials that creates a magnetic field.
Forces are measured using a Newton Meter in Newton.	<b>Friction</b>	This occurs when two objects move past each other. Friction slows objects down.
Many scientists believe that birds are able to find their way home by using the Earth's magnetic field to guide them on long distance flights.	<b>Magnetic field</b>	A magnetic field is the region in space where a magnetic force can be detected.
Today, new trains use magnets to lift them off the ground so that they float. Floating reduces friction and allows the train to run more efficiently	<b>Magnetic poles</b>	The two ends of a magnet are known as the north pole and the south pole.
Magnets have north poles and south poles.	<b>Attract</b>	When a magnetic pole attracts another magnetic pole, it gives out a force that pulls the other pole to it.
Magnets are present in most electronic devices. In fact, anything that has a motor uses a magnet. Televisions, computers and microwave ovens all operate with magnets.	<b>Repel</b>	When a magnetic pole repels another magnetic pole, it gives out a force that pushes the other pole away.

### Friction

Friction is a push against a moving object. It happens when there is contact between two materials, like a brake pad on a bicycle tyre.

Friction is the force that stops or slows us when trying to move an object. If the object is already moving, friction is slowing it down.



### Magnetism

Magnetism is the force that occurs when a magnet pulls a metal or another magnet towards itself.

Magnetic materials are always metals but only a few metals are magnetic.



Examples of magnetic materials include iron, nickel and cobalt.

Steel is a mixture of metals. It is magnetic because it contains iron.