

Vocabulary		
1	Force	A push or pull on an object which can cause it to move, change speed, direction or shape.
2	Newton	Unit of measure used for measuring forces.
3	Magnet	A material or object that produces a magnetic field. It attracts or repels magnetic objects.
4	Magnetic	Things that are magnetic are attracted to metal. Magnetic materials are always made of metal, but not all metals are magnetic.
5	Attract	To pull towards. Opposite of repel.
6	Repel	To push away. Opposite of attract.
7	Balanced force	Two forces of equal size acting in opposite directions on an object so that it will stay still or continue to move in the same way.
8	Unbalanced force	Two forces of unequal size acting in opposite directions causing an object to move, change speed, direction or shape.
9	Friction	The resistance of motion when one object rubs against another. Friction causes objects to slow down and the energy becomes heat.



What are forces?

- A force is the push or pull of an object in a particular direction.
 - Forces are shown by arrows in diagrams.
 - The bigger the arrow, the bigger the force.
- The direction of the arrow shows the direction of the force.



Pushes and Pulls

A push is the force that moves an object away from something. Whereas, a pull is the force that brings an object towards something. A push and a pull are opposite forces, moving objects in different directions.



Balanced and Unbalanced Forces

If two forces are balanced, they are the same size but are acting in opposite directions. If the two forces are acting on an object, then its motion will not change.

When two forces acting on objects are not equal in size, they are called unbalanced. Unbalanced forces change the way and/or speed that something is moving, e.g. they can make objects speed up/slow down.

Magnets



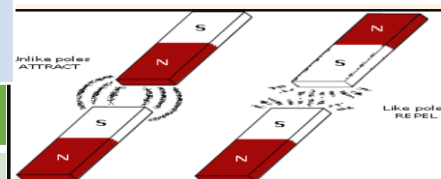
A magnet is an object that is made of materials that create a magnetic field. Magnets create a 'magnetic force' - this is a force that causes objects to attract (pull closer together) or repel (push further apart). Unlike most other forces, 'magnetic force' does not require objects to touch one another - magnets can act at a distance.

Magnetic Materials

Iron Steel Nickel Cobalt Gadolinium

Non-Magnetic Materials

Copper Gold Rubber Wood Leather



Magnets have two poles - a north pole and a south pole. The north pole of one magnet will repel the north pole of another magnet. However, it will attract the south pole of another magnet.

Friction

The resistance of motion when one object rubs against another.



Skating on ice is an example of where **low friction** is useful.



When we rub our hands together the warmth we feel is because of **friction**.

What is a Magnetic Field?

A magnetic field is the area in which a magnetic force can be felt. A magnet will only attract or repel a magnetic object when it enters its magnetic field.

Magnetic fields cannot be seen with the human eye. However, spreading iron filings over the magnetic field allows us to see the magnetic field, as the filings cling to it.

Magnetic fields can pass through air. Some can even have an effect through solids and liquids (depending on the strength of the magnet).

