

FORCES AND MAGNETS KNOWLEDGE ORGANISER

Overview



- Forces are pushes and pulls which make things move and stop moving.

- -Most forces need contact between objects, but magnets can act at a distance.
- -Magnets are made of materials that create a magnetic field (the area in space where the force of magnets can be detected).
- -Magnets have at least one north pole and one south pole.

-Magnets can attract or repel one another. They attract some materials & not others.

Magnets non-magnetic



magnetic

Forces

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.

-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.

Magnetic Fields

-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).

Magnetic Ma	iterials						
Iron	Steel	Nickel	Cobalt	Gadolinium	Copper	Gold	Rubber



-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.

> -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.

> > **Non-Magnetic Materials**

Wood

Leather