

Magnetism

The background features a white, tightly wound coil of wire. Two red, C-shaped magnets are positioned around the coil, one above and one below, with their poles facing the wire. The entire scene is set against a light gray background with a subtle, abstract pattern of overlapping white and light blue shapes, possibly representing magnetic field lines or a stylized flower.

What Is a Magnet?

A magnet is a metal which attracts or repels other materials. A magnet is made from iron, nickel, steel or cobalt. A magnet has a north end and a south end.

When a magnet **attracts** another material, there is a pulling force between the two objects.

When a magnet **repels** another material, there is a pushing force between the two objects.

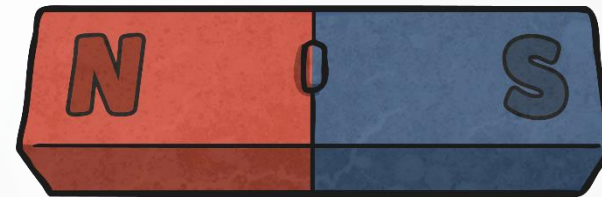
If you observe an object being attracted to a magnet, this is magnetism.

Using two bar magnets, see what happens when you put the two blue ends together, the two red ends together and then a blue and a red end together.

Can you think of any magnets used at home?

Think about it!

Have a Go!



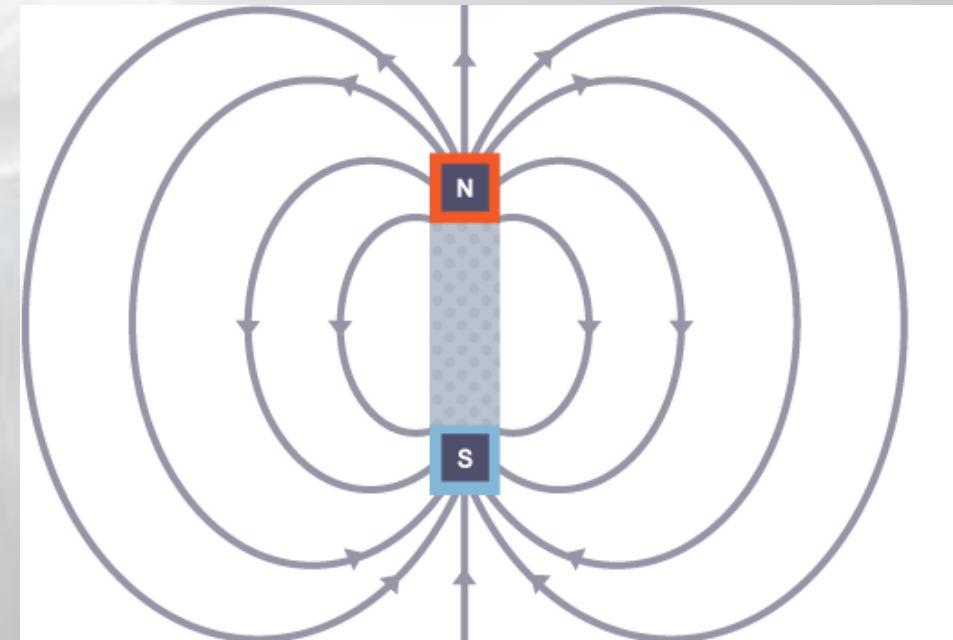
- Permanent magnets can come in lots of different shapes and sizes. Bar magnets and horseshoe magnets are two of the most common shapes of magnet.

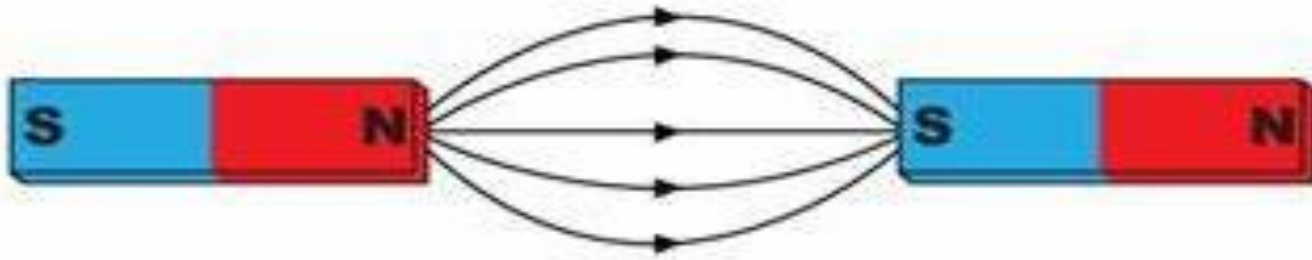
- One of the most important features of a permanent magnet, whatever shape it is, is that it has two different ends. These ends are called . There is a north (N) pole and a south (S) pole.

The magnetic effect is the strongest at the poles.

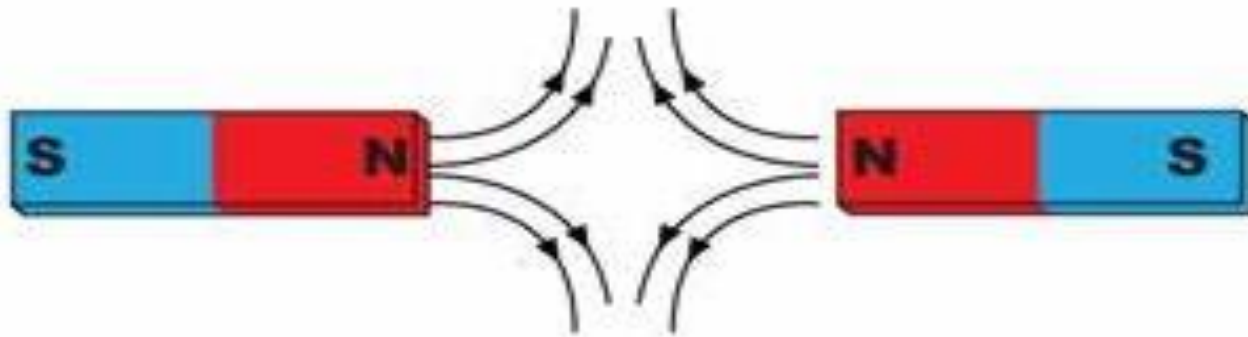


- A magnetic force can be either an attraction or a repulsion
- The region around a magnet where a force can be felt is called the magnetic field. If a magnetic material enter this region, it will be attracted to the magnet.
- The magnetic field of a magnet is shown by lines with arrows that point from North to South.

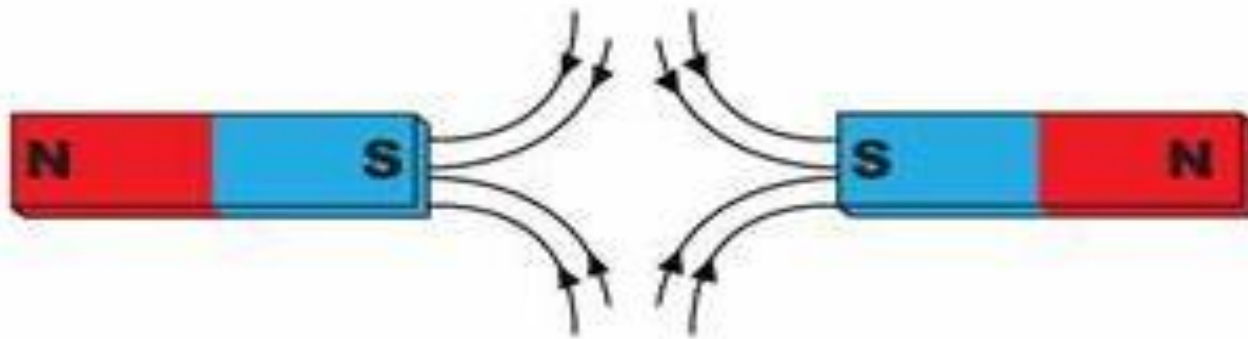




Different poles attract.



Alike poles repel.



Alike poles repel.

Magnetic materials:

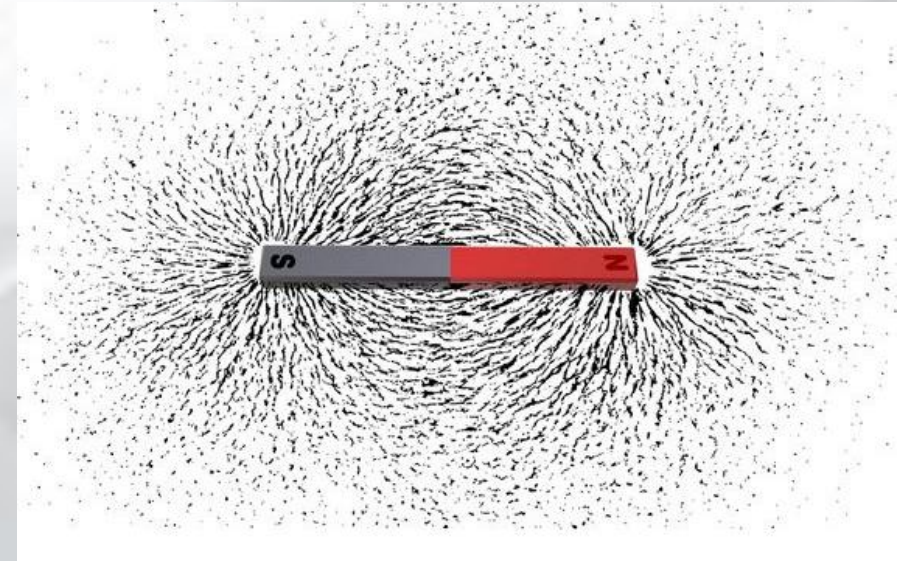
Magnetic materials are materials that feel a force from a magnetic field. If you bring a magnet and a magnetic material together they will pull towards each other, or attract.

The attraction gets stronger as the a magnetic material gets closer.

Some materials are magnetic.
For example: iron, steel, cobalt, nickel.

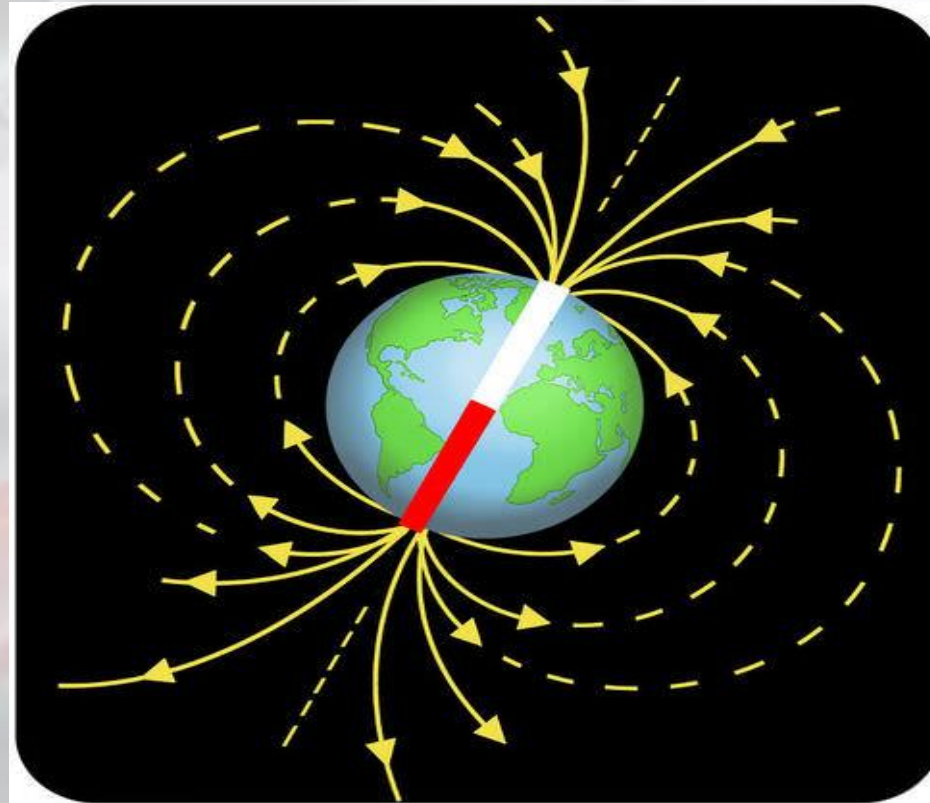
Lots of metals are not magnetic.
For example: copper, aluminium.

Materials such as sand, wood and plastic are not magnetic.



Earth acts as a magnet:

- Earth acts as a magnet with two poles, and a magnetic field over which exerts magnetic force.
- It is because the core of the Earth is made mostly of metal iron.



Animals and magnetism

- Some animals seem to sense magnetism
- They use it to help them navigate, or find their way while migrating.
- These include birds like swallows and geese. Large sea mammals like whales and seals. Fish like salmon. Land animals like caribou.
- These animals seem to have a built-in compass.