

Magnets are pieces of iron or other materials which exhibit the properties of magnetism, i.e. the ability to attract other objects that contain iron. Compass needles, fridge magnets and MRI scanners are some common examples of magnets.



## Magnetic and Non-Magnetic Materials

**Magnetic Materials:** Materials like nickel, cobalt and iron are called magnetic materials. These materials are attracted to magnets.

**Non-Magnetic Materials:** Materials like rubber, plastic, cloth, glasses etc., which are not attracted to magnets, are non-magnetic materials.

## Poles of Magnet

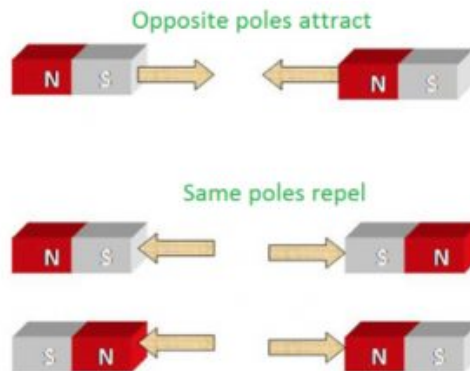
We can observe a very interesting property about magnets. When we try to attract iron filings or other magnetic objects to a magnet, they always accumulate at the ends of the magnet.



This is because, near the poles, the magnetic field of the magnet is very strong.

Two ends of a magnet are known as poles.

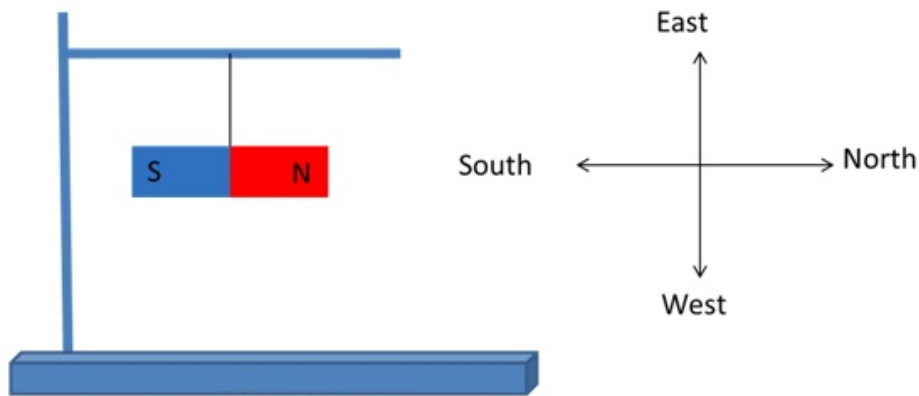
## Poles of a Magnet



## Finding Directions

Another great property of a magnet is that it can prove extremely helpful in navigating directions. This is because a freely suspended magnet always points in the North-South direction.

This property of a magnet is used to make a compass. A magnetic needle is placed inside a box with directions marked on it. It is allowed to rotate freely so that when the compass is kept at rest, the needle points towards the north and south directions.



A freely suspended magnet, always comes to rest in North-South direction.

### Steps to make own magnet

- Take a rectangular piece of iron. Place it on the table.
- Take a bar magnet and place one of its poles near one edge of the bar of iron. Then, without lifting the bar magnet, move it along the length of the iron bar till it reaches the other end.
- Lift the magnet and bring the pole (the same pole we started with) to the same point of the iron bar from which we began. Then, move the magnet again along the iron bar in the same direction as we did before.
- Repeat this process about 30-40 times. The iron piece has become a bar magnet.



*Making your own magnet*