

Magnets

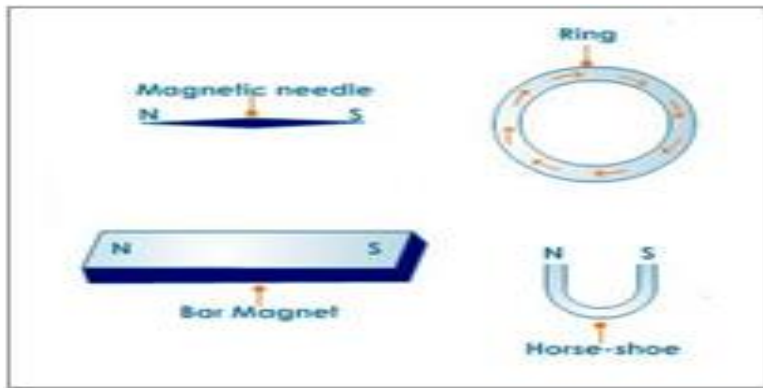
Natural : found in nature (ex.Lodestone) – composed of oxides of iron (Fe_3O_4)-Attracts iron

Magnetism – property of attracting iron

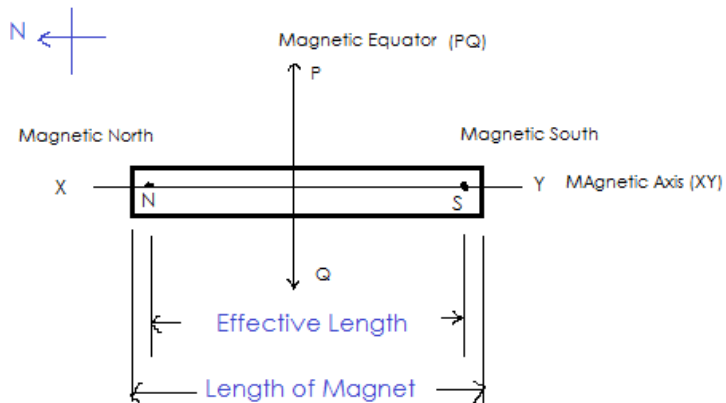
Magnetic force- the force that a magnet exerts on iron

Artificial : magnetized piece of iron or magnetic materials.

Magnetic Substance	Non-Magnetic Substance
are attracted by magnets	are not attracted by magnets
ex: iron, cobalt, nickel	ex: aluminium, copper, wood, plastic



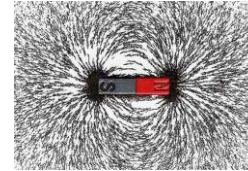
Parts of bar magnet :



MAGNETISM

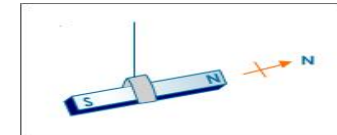
Properties of Magnets

1. Attractive property

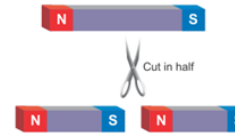


2. Directive property

Freely suspended magnet rests in north-south direction of earth.

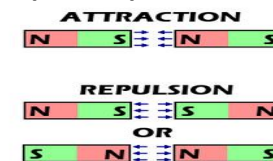


3. Poles exist in pairs (No Monopoles exist)



North pole and south pole cannot exist separately.

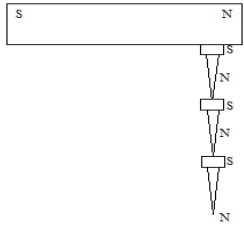
4. Like poles repel and Unlike poles repel each other



REPULSION IS THE SURER TEST FOR A MAGNET

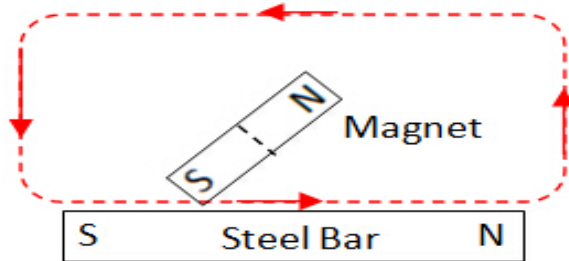
MAKING MAGNETS :

1. **Magnetic Induction** : - Magnetism acquired by a magnetic material when it is kept near or in contact with a magnet.



2. **Single Touch method** :

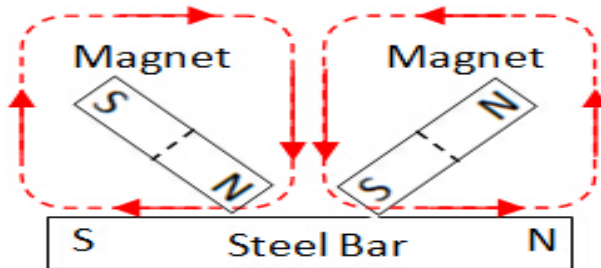
Start from same pole and rub only in one direction for several times



Using one Magnet

3. **Double Touch method**:

Each time start from middle and rub up to its ends



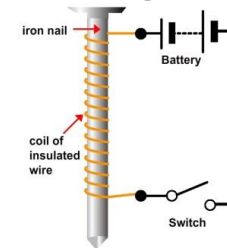
Using two Magnets

Demagnetizing a Magnet :

- By hammering the magnet repeatedly
- By rough handling
- By heating and keeping in east west direction
- By passing AC current
- Self-demagnetization.

4. **Electrical method** :

Electromagnet



Strength depends on:

1. Number of turns in coil
2. Amount of current flowing

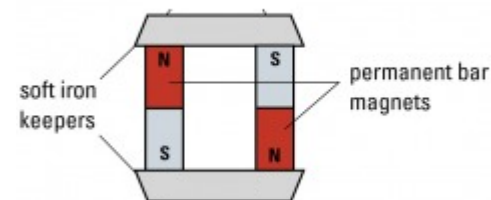
Uses: lifting and transporting huge mass of iron scrap, loading furnaces with iron, electric bell, electric fans, electric motors , etc.
Electric Bell:

Advantages of electromagnet :

- Can be easily magnetized and demagnetized by turning the current on or off in the coil.
- They can be made stronger than any other permanent magnet.
- Poles of an electromagnet can be interchanged by reversing the direction of current.

It is a **temporary** strong magnet made from a piece of soft iron when current flows in the coil wound around it. It is an **artificial** magnet. The **polarity** and magnetic field **strength** can be **changed**. **Demagnetized** by switching off the current.

Storing of Magnets : Magnet keepers



Uses of Magnet :

- Magnetic compass
- Door bells
- Dynamos
- Motors
- Loudspeaker , etc.,