

Magnetism

Magnetic and non- magnetic materials

All the objects you see around yourself are not magnets. How would you know then, which one is a magnetic material and which is not? Whenever we bring anything near a magnet some things get attracted to it and some are not. Those materials which are attracted to the magnet are called magnetic materials. Some examples of such materials are- Iron, Cobalt, and Nickel, etc.

While the materials which are not attracted to a magnet are nonmagnetic materials. Such as plastic, glass, wood, silver, gold, etc.

Poles of magnet

If you have seen a bar magnet then you may have noticed this that the poles of a magnet have the strongest magnetic forces. There are two poles of every magnet which are termed as the North pole and South pole.

Note- No pole can exist independently which means no matter into how many pieces you cut a magnet, it will always have two poles. Poles always exist in pairs.

Attraction and repulsion

Many times while playing with the magnets you may have come across a condition when two poles of a magnet strongly attract each other whereas sometimes the two poles strongly repel each other. This happens because of the forces of attraction and repulsion.

- Like poles (N-N/ S-S) always repel each other while unlike poles (N-S) always attract each other.

?It is the repulsion which is the sure test for the polarity of a magnet, not the attraction.

Properties of magnet

?If you allow a magnet to move freely, it comes to rest by arranging itself such that its north-south direction lies very close to earth's south-north direction. This important property of a magnet is used to find directions on the surface of the area. A magnetic compass uses a magnetic needle which is free to rotate in any direction and this helps in finding the directions as it always points in the north- south direction.

Types of magnets

There are two types of magnets

1. Temporary magnets
2. Permanent magnets

Temporary magnets- such magnets retain their magnetic properties only over a short interval of time. These are made up of iron or cobalt. Their magnetism lasts only under the influence of a strong magnet.

Electromagnets are temporary magnets.

Electromagnets - Such magnets in which magnetism is produced by the passing of electric current through them are called electromagnets.

As soon as the current stops flowing through them, the magnetism in them disappears.

- Electromagnets are used to lift heavy scrap metal as we can increase or decrease its strength accordingly.
- Electromagnets are also used in doorbells or electric fans.

Permanent magnets- Such magnets do not lose their magnetism for a long period of time. Magnetism in permanent magnets lasts for a long time.