

CHAPTER – 13

FUN WITH MAGNETS.

- **Magnets:** Materials that attract iron. Natural magnet is called lodestone or magnetite.
- Magnetite is a natural magnet.
- Magnet attracts materials like iron, nickel, cobalt. These are called magnetic materials.
- Materials that are not attracted towards magnet are called non-magnetic.
- A freely suspended magnet always aligns in N-S direction.
- Classification of substances based on attraction to magnets:
 - **Magnetic Substances:** Materials which get attracted towards magnets. Example: copper, iron, nickel, etc.
 - **Non-magnetic Substances:** Materials which do not get attracted towards magnets. Example: wood, paper, plastic and most metals.
- Methods to make Magnet:
 - (i) **Single Touch Method:** A piece of iron or steel can be magnetized by stroking it several times with a magnet in one direction.
 - (ii) **Double Touch Method:** Opposite poles of two bar magnets are brought together in the middle and then moved from the middle in the opposite directions to each other.
 - (iii) **Using Electric Current:** The bar to be magnetized is placed inside the coils of a conductor and current is passed through these coils of wire.
- Properties of Magnet:
 - (i) A magnet has two poles – north pole and south pole.
 - (ii) Similar poles repel each other.
 - (iii) Opposite poles attract each other.
 - (iv) Magnetic poles always exist in pairs.
- Applications of Magnet:
 - **Compass needle:** It points north-south because the earth is also a giant magnet. The compass lines up with the earth's magnetic field.
 - Used in factories for lifting heavy masses of iron like scrap iron.
 - Used by surgeons in hospitals to remove steel splinters from the wounds.
 - Used in the construction of telephones, electric bells, etc.