

# CLASS VI

## FUN WITH MAGNETS

### Uses of Magnet in daily life:

1. To remove iron junk from heap of waste using cranes
2. In pencil boxes
3. In doors of refrigerators
4. Pin holders in offices

**Magnetite:** Naturally occurring magnetic rocks are called Magnetite.

**Magnets:** The substances having the property of attracting iron are called magnets.

**Artificial magnets:** Man made magnets are called artificial magnets.

Eg: ALNICO ( Aluminium, Nickel, Iron, Cobalt, )

### Shapes of magnets:

- 1) Bar Magnets
- 2) Horse shoe Magnet
- 3) Cylindrical Magnet
- 4) Ball ended Magnet

**Magnetic materials:** The materials which get attracted towards the a magnet are called magnetic materials. Eg: Iron, Nickel, and Cobalt.

**Non-magnetic Materials:** Materials which are not attracted towards a magnet are called Non-magnetic material. Eg: wood, paper, rubber, plastic, gold

### Activity to show that soil contains iron particles

Procedure	Observation	Result
Rub the magnet in the soil. Pull out the magnet and observe	Some small iron particles stick to the ends of the magnet.	Soil contains iron particles.

**Poles of a magnet:** A magnet has two poles. North pole and South Pole

**North Pole / North seeking Pole:** The end of the magnet that points towards the North is called North pole.

**South Pole/ South Seeking Pole:** The end of the magnet that points towards the south is called South pole or South Seeking Pole.

### Activity to identify North using a bar magnet

Procedure	Observation	Result
Freely suspend a magnet as shown below using a thread. Rotate the magnet and let it come to rest. Repeat the same again.	The freely suspended magnet always comes to rest in North – South direction.	Freely suspended magnets can be used to find the directions.

**Magnetic Compass:** is a device used to identify the directions. Magnetic compass has a small box with glass cover. A magnetic needle is pivoted inside the box, which can be rotated inside the box. The compass has a dial with directions marked on it. The compass is rotated gently until the north-south marked on the dial are at the two ends of the needle.

### Magnetizing an Iron:

An iron piece can be changed into a magnet by Rubbing

Take an iron piece.

Take a bar magnet and place its pole near one edge of the iron piece.

Without lifting move the magnet, along the length of the iron piece to the other end.

Lift the magnet and bring the magnet to the same point on the iron piece from which started.

Repeat the process about 30-40 times.

Bring an iron nail near the iron bar. If it is attracted the iron bar has magnetic property.

If not continue the process.

Precaution during the activity:

1. Pole of the magnet should not be changed
2. Direction of movement should not be changed.

### Attraction and Repulsion:

Like poles repel and Unlike poles attract.

$N \rightarrow N$  repels,  $S \rightarrow S$  repels,  $N \rightarrow S$  attracts

### Care to be taken while handling magnets

1. Magnets lose their property on heating, hammering, dropping
2. Magnets become weak if not stored safely
3. Keep magnets away from cassettes, mobiles, television, music system, compact disks, and computer.

## **Keeping the magnet safe:**

**Bar magnets should be kept in pairs with their unlike poles on the same side. They must be separated by a piece of wood while two pieces of soft iron should be placed across their ends.**

Properties of magnet:

1. Magnets attract iron objects.
2. Freely suspended magnets comes to rest in north –south direction
3. Magnets have two poles
4. Like poles repel and unlike poles attract.