13.FUN WITH MAGNETS

MODULE-2/3

WHAT WE HAVE LEARNT IN LAST CLASS

- Those substances having the property of attracting materials like iron, cobalt and nickel are called magnets.
- Magnets are of two types:-1.Natural magnet 2.Artificial magnets.
- **Natural Magnet:** Magnet which is found naturally is called natural magnet.
- **Artificial Magnet:** Magnet which is made by humans is called artificial magnet.
- Magnet was discovered by an ancient Greek shepherd; named **Magnes**.
- Those rocks contained the natural magnet are named as **magnetite.**
- Materials which are attracted towards a magnet are called **magnetic materials**, e.g. iron, nickel and cobalt.
- Materials which are not attracted towards a magnet are called **non-magnetic materials,** e.g. plastic, wood, rubber, etc.

THIS MODULE CONTAINS:-

- Poles of a magnet
- Finding directions
- A compass

FINDING POLES OF A MAGNET

AIM:-To find out the poles of a magnet.

REQUIREMENTS:-A magnet , a white paper, iron filings(small pieces of iron/pins/iron nails etc).

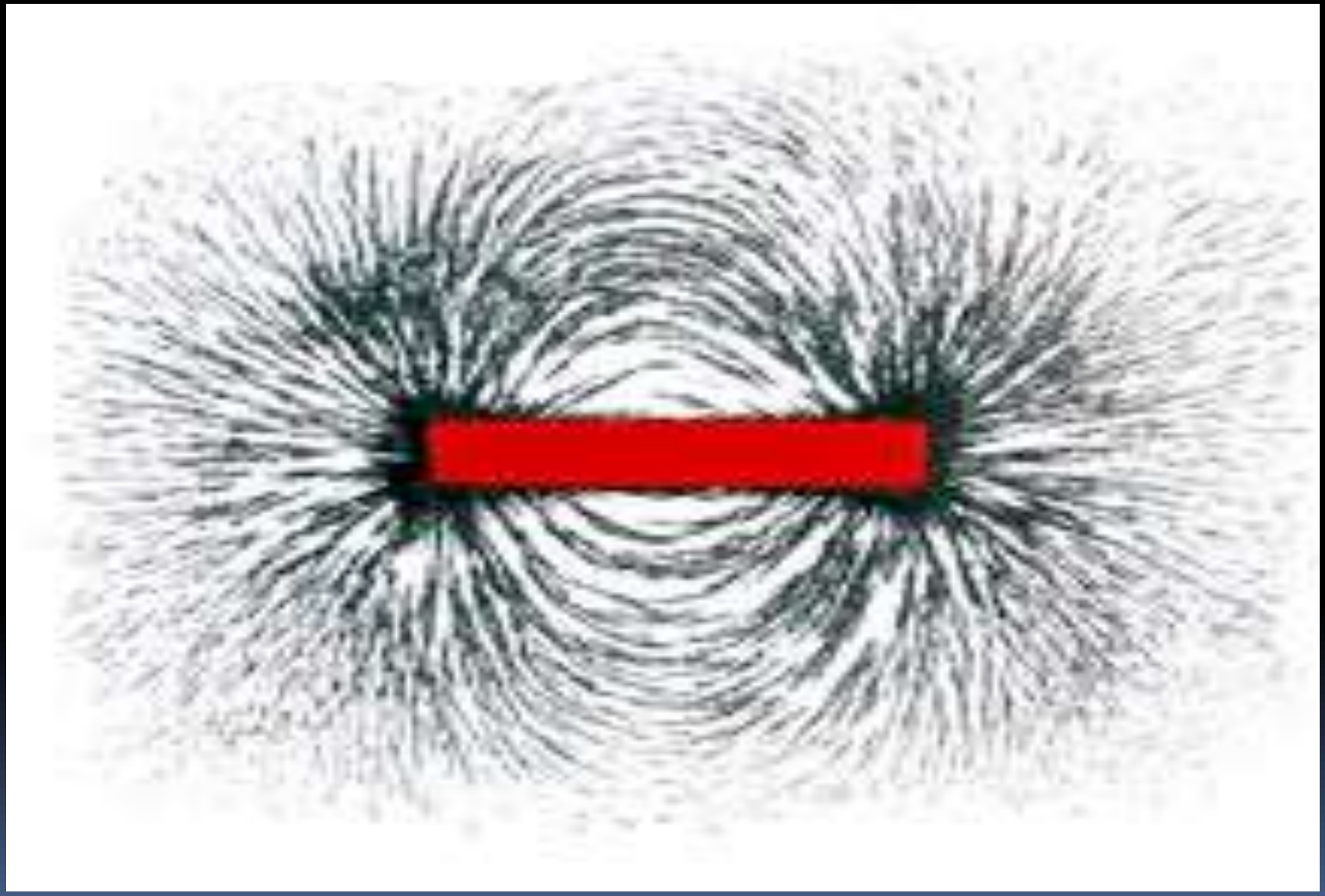
PROCEDURE:-

- Spread some iron filings on a sheet of paper.
- Place a bar magnet on this sheet.

OBSERVTION:-

- More iron filings get attached to the ends.

CONCLUSION:-The iron filings are attached more towards the region close to two ends of a bar magnet.(DRAW THE DIAGRAM IN NOTEBOOK)



FINDING DIRECTION

AN INTERESTING STORY:-

- There was an emperor in china named Hoang Ti.
- He had a chariot with a statue of a lady that could rotate in any direction.
- It had an extended arm as if it was showing the way.
- The interesting property of the statue was that it would rest in such a position that its extended arm always pointed towards south.
- By looking at the extended arm the Emperor was able to locate directions when he went to new places on his chariot.

The Direction Finding Chariot

LETS TRY THIS ACTIVITY:-

Aim:-To find directions using bar magnet

Materials required:-A bar magnet , a piece of thread , wooden stand

Procedure:-

- **Take a magnet.**
- **Put a mark on it.**
- **Tie a thread at the middle to suspend it from a wooden stand.**
- **Make sure that the magnet can rotate freely.**
- **Let it come to rest.**
- **Make two points on the ground to show the position of the ends of the magnet when it comes to rest.**

Continuation.....

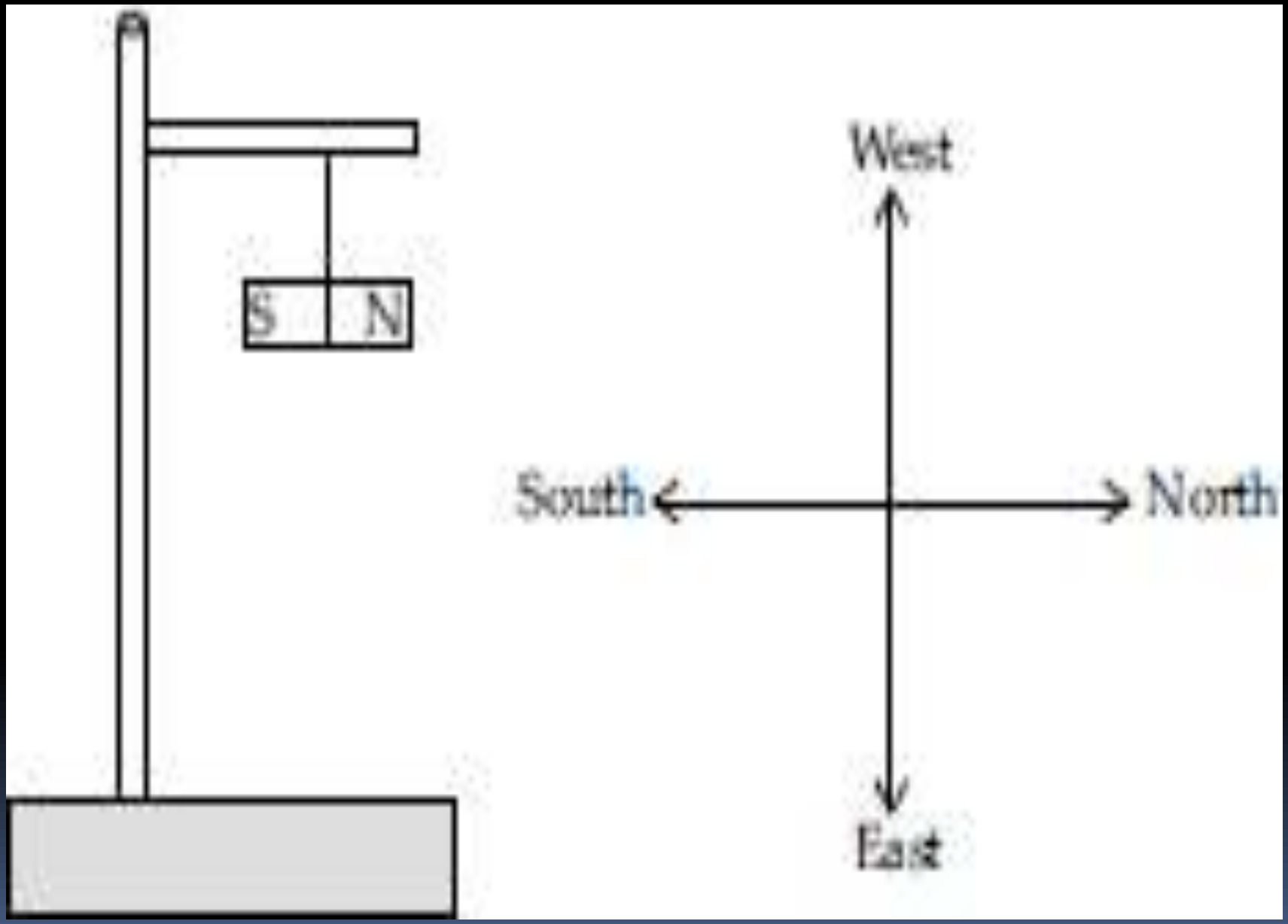
- **Draw a line joining two points.**
- **This line shows the direction in which the magnet was pointing in its position of rest**
- Rotate the magnet gently pushing one end in any direction.
- Let it come to rest.
- Again mark the direction at its rest position.
- Repeat this for more observations.

Observation:-Magnet always come to rest in the same direction.

A freely suspended bar Magnet always comes to rest in the same direction

FINDING DIRECTION USING SUN

- Use the direction of the rising sun in the morning to find out the rough direction towards east .
- If you stand facing east , to your left will be North.
- Finding direction using sun may not be very exact , but it will help to make out the direction North from South on your line.
- Using this you can find out which end of the magnet is pointing to the North and which to the South.


S
N
West
South
North
East

Continuation.....

Conclusion:-A freely suspended magnet always comes to rest in the same direction which is North-South direction.

- The end of the magnet that points towards North is called its North seeking end or the north pole of the magnet.
- The other end that points towards south is called South seeking end or the South pole of the magnet.
- All the magnets have two poles whatever their shape may be.

A COMPASS

- In olden days ,traveller used to find directions by suspending natural magnets with a thread , which they always carried with them.
- Later a device was developed based on this property of magnets . It is called as **compass.**
- It is a small box with a glass covered on it.
- A magnetised needle is pivoted inside the box , which can rotate freely.
- It has a dial with directions marked on it.

FINDING DIRECTION USING A COMPASS

- The compass is kept at the place where we wish to know the directions.
- Its needle indicates the north-south when it comes to rest.
- The compass is then rotated until the north and south marked on the dial are at the two ends of the needle.
- To identify the north pole of the magnetic needle it is usually painted in a different colour.

FROM,

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