

CLASS : X

SUBJECT : Physics

CHAPTER No.: 13

TOPIC : Magnetic Effects of Electric Current SUB-TOPIC : Magnetic Field Lines

NAME OF THE ACTIVITY : Pattern of Magnetic field lines

TYPE OF ACTIVITY : Group PLACE OF THE ACTIVITY : School (Class room)

MATERIALS USED : Bar magnets, iron filings, white sheet

METHODOLOGY:

Students are divided into three groups and each group is made to do an activity.

GROUP 1:

- 1) A bar magnet is placed on a flat surface.
- 2) A white sheet of paper is placed above the bar magnet.
- 3) Iron filings are sprinkled from a distance above the bar magnet.
- 4) A pattern is observed.

GROUP 2:

- 1) Two bar magnets are placed on a flat surface such that their N-poles are facing each other.
- 2) A white sheet of paper is placed above the bar magnets.
- 3) Iron filings are sprinkled from a distance above the bar magnets and the pattern is observed.
- 4) The same is repeated by placing the S-poles of two magnets to face each other.

GROUP 3:

- 1) Two bar magnets are placed on a flat surface such that their N and S poles are facing each other.
- 2) A white sheet of paper is placed above the bar magnets.
- 3) Iron filings are sprinkled from a distance above the bar magnets and the pattern is observed.

QUESTIONS:

- 1) Draw the pattern of magnetic field lines for all the three situations.
- 2) What are your observations and why does it happen?
- 3) How do we find the direction of magnetic field lines?

CURIOSITY QUESTIONS:

- 1) Why is A.C. used in the running of electrical appliances in home?

Answer Guide:

Think About:

- a) Differentiate between A.C. and D.C.
- b) In what form is current transmitted from power stations to houses? Why?
- c) How is heat energy loss related to current?