

**National Institute of Open Schooling**  
**Secondary Course : Science And Technology**  
**Lesson 17 : Magnetic Effects of Electric Current**  
**Worksheet-17**

1. Perform an activity to prove that if a magnet is suspended freely with the help of a string, it always rests in the 'north-south' direction. Observe and comment what happens if the magnet is slightly turned from this direction.
2. Continue to Q1, explain why a magnet rests in the north-south direction if it is suspended freely.
3. Take one magnetic needle, two bar magnets, some iron filling and perform different activities to verify the properties of magnet. On the basis of observation; list properties of magnet.
4. Take one magnetic needle and one bar magnet. Keep magnetic needle near the bar magnet. You will observe that the magnetic needle rotates and stops in a particular direction only. The direction of magnetic needle changes continuously and it takes the curved path while moving from north to south. Explain the phenomenon why the needle stops at a specific direction. Does magnetic field exist throughout space?
5. Continue to Q4, using magnetic needle and bar magnet; draw magnetic line of forces. On the basis of observation; list properties of magnetic line of forces.
6. Perform an activity to prove that if an electric current is made to flow in a wire, magnetic field is produced around it. Observe your surroundings and write one application of the principle of the magnetic effect of electric current.
7. Define electromagnet. Make an electromagnet using thick paper like drawing sheet, copper wire, 9V battery or eliminator through which mili ampere current may flow, switch and iron scale.
8. Continue to Q7, we have seen that magnetic field is created when current flows through a solenoid. Do you think that the reverse should also be possible which means conversion of electricity from magnetism?
9. Observe your surroundings; you will see electricity poles, transformers, wires etc. around your houses. The production of electricity is done far away from cities at electricity generation centers. Write the system and process by which electricity is transmitted from such centers to the consumer.
10. If electricity is used with careful and safe measures, it is the largest and most convenient form of energy. If one uses it carelessly it will become lethal.
  - a. Observe and list the precautions to be taken while using Electrical Energy
  - b. Observe and list the accidents caused by electricity
  - c. Observe and list the safety devices used in electrical circuit to avoid accidents caused by electricity