

Chapter 7

Electricity and Magnetism

LESSON PLAN

SPECIFIC OBJECTIVES

Students will learn about

- ❖ magnetism and electricity in brief
- ❖ properties of a magnet
- ❖ law of magnetism
- ❖ test for a magnet
- ❖ electromagnet and its uses
- ❖ electric bell and its working
- ❖ electricity and electric current
- ❖ conductors and insulators of electricity
- ❖ sources of electricity, i.e., cells or also dry cell, battery, mains supply, generators and inverters, solar cell
- ❖ electric circuit
- ❖ series and parallel electric circuits
- ❖ simple rules for the safe use of electricity at home.

Teaching Aids

Pictures/charts/models/animation on topics related to electricity and magnetism; diagrams of electromagnet, electric bell and different sources of electricity.

Teaching Strategy

- ❖ Students should be asked to study about magnetism and electricity in brief. They should also be asked to study properties of a magnet; law of magnetism; activity 1 showing magnetic attraction between unlike magnetic poles and repulsion between like magnetic poles given at page 116.
- ❖ The teacher should ask the students to learn test for a magnet and something more related to colour of magnetic pole given at page 116. He/She should ask the students to perform activity 2 showing repulsion is the sure test of magnetism given at pages 116-117.

- ❖ Students should be focussed to study electromagnet, its working and related activity 3 given at page 117. They should also be asked to study uses of electromagnets.
- ❖ Students should be asked to study difference between a permanent magnet and the electromagnet using Table 7.1 given at page 118.
- ❖ The teacher should teach the students about electric bell, brief introduction of its related parts and working of electric bell, and also its illustration.
- ❖ Students should be asked to solve check point 1 given at page 120. They should also be asked to study electricity and electric current; something more given at page 120, question-answer given at page 120. They should also be asked to study conductors and insulators of electricity with definition and examples and related something more given at page 121.
- ❖ The teacher should ask the students to perform activity 4 showing a list of electric conductors and insulators. He/She should also ask the students to learn sources of electricity, i.e., cells and their types; dry cell and its construction and related activity given at page 122.
- ❖ Students should be asked to study something more given at page 122 related to dry cell; sources of electricity, i.e., battery, mains supply, generators and inverters, solar cell.
- ❖ Students should be asked to solve check point 2 given at page 124.
- ❖ The teacher should ask the students to study electric circuit and its related activity 6 showing to make a simple electric circuit. He/She should ask the students to study about resistance and resistor; some other electrical devices; electric symbols and conditions for current flow in an electric circuit; its related something more given at page 125.
- ❖ Students should be encouraged to draw and complete a circuit diagram. They should also be asked to study series and parallel electric circuits; activities 7 and 8 related to series and parallel electric circuits given at pages 127–128.
- ❖ The teacher should ask the students to study simple rules for the safe use of electricity at home; something more indicating the electric frill given at page 128 and question-answer related to ISI mark given at page 128.
- ❖ Students should be asked to solve check point 3 given at page 129.
- ❖ The teacher should ask the students to recap the whole chapter using wrapping it up and know these terms. He/She should also ask the students to answer the questions given in test yourself and discuss the think zone given in it.

Boost UP

- ❖ The teacher should call each student of the classroom to tell the definition of magnetism and electricity and also to tell the properties of a magnet.
- ❖ The teacher should ask few questions to the students related to law of magnetism and test for a magnet.
- ❖ The teacher should encourage the students to answer the questions related to electromagnet and its uses.
- ❖ Students should be asked to answer the questions related to electric bell and its working. They should also be asked to answer the questions related to electricity and electric current; asked to tell two conductors and two insulators of electricity.

- ❖ The teacher should ask the students to write two examples each of primary and secondary cells on the blackboard. He/She should arise few questions to the students related to construction of dry cell; sources of electricity, i.e., battery, mains supply, generators and inverters and solar cell.
- ❖ Students should be questioned about electric circuit; resistance and resistor; should be asked to draw the electric symbols and also to draw circuit diagram. They should also be asked to tell which kind of electric circuits are used in household connections.

Expected Learning Outcomes

Students will be able to know the

- ❖ definition of magnetism and electricity.
- ❖ properties of a magnet.
- ❖ law of magnetism.
- ❖ test for a magnet.
- ❖ electromagnet and its uses.
- ❖ electric bell and its working.
- ❖ electricity and electric current.
- ❖ conductors and insulators of electricity.
- ❖ sources of electricity.
- ❖ sources of electricity, i.e., cells (their kinds), and dry cell and its construction, battery, mains supply, generators and inverters, solar cell.
- ❖ electric circuit, resistance and resistor.
- ❖ draw and complete electric circuit diagram.
- ❖ series and parallel circuits.
- ❖ simple rules for the safe use of electricity at home.

Evaluative Questions

The teacher should ask the following questions to evaluate the students.

1. What is meant by electric current?
2. Define conductors and insulators with two examples each.
3. Write the differences between primary and secondary cells.
4. Define battery.
5. Why are connecting wires made from copper?
6. What is the difference between galvanometer and ammeter?
7. What does a dry cell consist of?
8. Draw the symbols of open switch and closed switch.