14 Electricity and Circuits

LESSON PLAN

SPECIFIC OBJECTIVES

The students will learn about

- electricity, its sources and caution with electricity
- dry cell, its structure and working; battery
- electric bulb and its working
- electric switch
- electric circuit, breaking the circuit, circuit diagram
- electric torch and its working
- electrical conductors and insulators and their applications

TEACHING AIDS

Pictures/charts/models/animation on Alessandro Volta; a market place at night; an electric generator, inverter, torch; a simple electric circuit; common electrical symbols; different types of electric cells; inside of a dry cell; combination of cells; parts of an electric bulb and electric torch; different types of electric switches; insulated electric wries, insulated electric tools; caution sign, etc.

LESSON PLAN

- Teacher will start the chapter by going through the points given in 'Know these points before you start' section.
- Teacher will discuss the importance of electricity in our day-to-day life, its sources and caution with electricity.
- With the help of teaching aids, teacher will discuss the invention of electric cell and also mention its inventor and by demonstrating activity will explain structure and working of a dry cell.
- Teacher will define a battery and correct way of making a combination of cells in a battery.
- By demonstrating the activity given in the chapter, teacher will explain the structure and working of an electric bulb.

- Teacher will also explain how to connect a bulb to an electric cell by performing the activity given in the chapter.
- Now, teacher will ask students to solve Check Point 1.
- Teacher will discuss an electric switch and its construction.
- Teacher will discuss the electric circuit and drawing of an electric circuit.
- Teacher will discuss the breaking of an electric circuit by explaining an open circuit and a closed circuit.
- Teacher will ask students to solve Check Point 2.
- Teacher will explain the structure and working of an electric torch.
- Teacher will explain electrical conductors and insulators and their applications.
- Now, teacher will ask students to solve Check Point 3.
- Teacher will make students revise the new terms given under the head 'Know These Terms'.
- Finally, teacher will help students to solve the questions given in exercises under the head 'Practice Time' and 'Think Zone'.

BOOST UP

- Teacher should demonstrate and explain activities given in the chapter.
- Teacher should discuss the information given under the head 'Something More'.
- Teacher should discuss the conversation of Annu and Mannu given in between the topics.
- Teacher should discuss the cautions with electricity while using electrical gadgets.
- Teacher may ask students to make a model of a simple electric circuit.
- Students should be asked to identify the electrical symbols drown by the teacher on the board.

EXPECTED LEARNING OUTCOMES

The students understand and know the

- importance of electricity.
- construction of electric circuit.
- electric current and its sources.
- electric cell, e.g., dry cell, its structure and working.
- formation of a battery.
- electric bulb and its working.
- a switch; a torch and its working.
- conductors, insulators and their applications.
- to test the conductivity of given materials.
- precautions taken when working with electricity.

EVALUATIVE QUESTIONS

The teacher may ask the following questions for evaluating the learning and understanding of students:

1. Who invented first electric cell?
2. What is the source of electricity for homes, offices, factories and industries?
3. What are the constituents of a dry cell?
4. Define open and closed circuits.
5. Are cotton and rubber insulators or conductors? Why?
6. What precautions should be taken while handling electricity?
7. Which is the good conductor of electricity – pure water or impure water?