

Chapter 8

Water

LESSON PLAN

SPECIFIC OBJECTIVES

The students will learn about

- ❖ importance of water
- ❖ sources of water, i.e., rainwater, surface water and groundwater
- ❖ physical properties of water
- ❖ water as a good solvent
- ❖ solubility of gases in water and its importance
- ❖ solution and its characteristics
- ❖ classification of solutions
- ❖ water of crystallisation
- ❖ chemical properties of water
- ❖ soft and hard water
- ❖ hardness of water and its types
- ❖ removal of hardness of water
- ❖ advantages and disadvantages of using hard water

Teaching Aids

Pictures/charts/models/animation on sources of water; physical and chemical properties of water; characteristics and classification of solutions, hydrated salts; soft and hard water, hardness of water

Teaching Strategy

- ❖ Teacher will start the chapter by discussing importance and sources of water, i.e., rainwater, surface water, water table and groundwater.
- ❖ Now, teacher will discuss physical properties of water and will define water as a good solvent by demonstrating Activity 1.
- ❖ Teacher will discuss solubility of gases in water and its importance.

- ❖ Teacher will define solution, its characteristics and will discuss classification of solutions based on the amount of the solute in the solvent as well as on the size of the solute particles and will demonstrate Activity 2.
- ❖ Teacher will differentiate between miscible and immiscible liquids.
- ❖ Teacher will compare the properties of true solution, suspension and colloidal solution.
- ❖ Now, teacher will ask the students to solve 'Check Point 1'.
- ❖ Teacher will discuss water of crystallisation and will explain hydrated salts and anhydrous salt and will demonstrate Activity 3 to show the presence of water in hydrated copper sulphate.
- ❖ Teacher will explain hygroscopic and deliquescent substances.
- ❖ Then, teacher will discuss chemical properties of water.
- ❖ Now, teacher will ask the students to solve 'Check Point 2'.
- ❖ Teacher will discuss hard water and soft water by demonstrating Activity 4.
- ❖ Teacher will explain hardness of water, its types and its removal, and will also explain advantages and disadvantages of using hard water.
- ❖ Now, teacher will ask the students to solve 'Check Point 3'.
- ❖ At last, teacher will sum up the lesson by going through the points given under the head 'Wrapping It Up'.
- ❖ Teacher will finally help students to answer the questions given under the head 'Test Yourself'.

Boost Up

- ❖ Teacher can help students to perform the activities given in chapter.
- ❖ Teacher can make students revise new terms given under the head 'Know These Terms'.
- ❖ Teacher can encourage students to learn the facts given under the head 'Something More'.
- ❖ Teacher can show animations related to the topics taught, if possible.
- ❖ The students should be encouraged to carry out campaigns on the importance of water in daily life.
- ❖ Students should be asked to tell the definition of potable water, and to differentiate sources of water and their utility.
- ❖ Teacher should ask the students to give more examples to prove water as a good solvent.
- ❖ Teacher should correlate soft water and hard water with everyday life; hardness of water, its types and way of removal.
- ❖ Students should be encouraged to observe permanent and temporary hardness of water; advantages and disadvantages of using hard water in everyday life.

Expected Learning Outcomes

The students understand and know:

- ❖ importance of water and potable water.
- ❖ sources of water.
- ❖ physical and chemical properties of water.

- ❖ water as a universal solvent.
- ❖ solubility of gases in water and its importance.
- ❖ solution, its characteristics and classification.
- ❖ water of crystallisation.
- ❖ hard and soft water.
- ❖ hardness of water, its types and removal.
- ❖ differences between temporary and permanent hardness of water.
- ❖ advantages and disadvantages of using hard water.

Evaluative Questions

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

1. Why is water called the chief life-giver?
2. Which is the purest form of naturally occurring water?
3. What is meant by potable water?
4. What is water table?
5. Write two physical properties of water.
6. Define soft water.
7. How is hardness of water caused?
8. Give one example of a deliquescent substance.