

# Chapter 3

## Mixtures

### LESSON PLAN

#### SPECIFIC OBJECTIVES

The students will learn about

- ❖ mixture, its types, properties and components
- ❖ separation of the components of a mixture
- ❖ need for separation of a mixture
- ❖ methods of separation
- ❖ separation of solids from a mixture of solids
- ❖ separation of insoluble solids from liquids
- ❖ separation of soluble solids from liquids
- ❖ separation of constituents of a mixture using multiple methods

#### Teaching Aids

**Pictures/charts/models/animation** on formation of mixture of sugar and water, iron filings and sulphur powder; things made of alloys; methods of separation (as given in the chapter)

#### Teaching Strategy

- ❖ Teacher will define a mixture and explain its types, i.e., homogeneous and heterogeneous mixtures.
- ❖ Teacher will discuss alloys and solutions, i.e., homogeneous mixtures and will demonstrate Activity 1 showing the preparation of a solution.
- ❖ Teacher will define heterogeneous mixture and explain suspensions and emulsions by demonstrating Activities 2 and 3.
- ❖ Now, teacher will explain the properties of a mixture by demonstrating Activities 4 and 5.
- ❖ Teacher will discuss differences between compound and mixture.
- ❖ Teacher will discuss components of a mixture and the ways to separate components of a mixture and why it is needed to separate them from a mixture.
- ❖ Teacher will explain different methods for separating components of a mixture.

- ❖ Teacher will explain methods of separation of solids from a mixture of solids by demonstrating Activities 7 and 8.
- ❖ Now, teacher will ask students to solve 'Check Point 1'.
- ❖ Teacher will explain separation of insoluble solids from liquids and will demonstrate Activities 9 and 10.
- ❖ Teacher will explain separation of soluble solids from liquids and perform Activity 11.
- ❖ Teacher will discuss magnetic separation method.
- ❖ Teacher will discuss how to separate constituents of a mixture using multiple methods and will demonstrate Activity 12.
- ❖ Now, teacher will ask students to solve 'Check Point 2'.
- ❖ 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 teacher should call each student one-by-one and ask them to define mixture and its types.
- ❖ The teacher should ask the students to define alloy, solution, solvent and solute, and ask to identify the solute and solvent in a mixture of salt and water.
- ❖ Students should be asked to tell the difference between suspension and emulsion.
- ❖ Student should be asked to tell the method used in separating husk from wheat.
- ❖ Students should be asked to tell the method used to separate iron filings and sulphur powder.
- ❖ Students should be asked to name the methods used in separating solids from a mixture of solids, separating insoluble solids from liquids, separating soluble solids from liquids and separating constituents of a mixture using multiple methods.
- ❖ Teacher should assign Activities 6, 7 and 8 as home assignment and discuss the results in the class.

### Expected Learning Outcomes

The students understand and know:

- ❖ definition of mixture and its types.
- ❖ definition of alloy, solution, solvent, solute and aqueous solution.
- ❖ differences between suspension and emulsion.

- ❖ properties of a mixture, its components and separation.
- ❖ necessity for separation of a mixture.
- ❖ different methods of separation of components of mixtures—from a mixture of solids, insoluble solids from liquids, soluble solids from liquids and separation of constituents of a mixture using multiple methods.

### Evaluative Questions

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

1. Define a mixture.
2. Name the mixture in which components are uniformly distributed.
3. What is meant by a solute?
4. Name the substance that dissolves in water.
5. Write one example of suspension.
6. What is handpicking method of separation?
7. Name the process involved to separate salt from a mixture of salt and water.
8. Name the process of settling down of sediment in a mixture.