

## SPECIFIC OBJECTIVES

The students learn about

- ❖ matter and its composition, its features in three states
- ❖ classification of matter as pure substances (elements, compounds) and impure substances (mixtures)
- ❖ changes in the state of matter
- ❖ solutions
- ❖ physical and chemical changes

## TEACHING AIDS

Pictures/animation on three physical states of water (solid, liquid, gas) and molecular arrangement in three different states; formation of molecules (of different and same type of atoms); molecular composition of an element, a compound and a mixture; matchsticks, rubber band, incense stick, etc.

## LESSON PLAN

- ❖ Teacher will start the chapter by asking some questions on the three physical states of water based on previous knowledge of students.
- ❖ Now, teacher will make students recall the features of matter that they learnt in previous class, i.e., matter has weight and occupies space.
- ❖ With the help of teaching aids, teacher will explain the features of three different physical states of matter (as given in table in chapter).
- ❖ With the help of teaching aids, teacher will explain that all matter is made of atoms and molecules.
- ❖ Now, teacher will classify matter as pure and impure substances and will define the terms 'element', 'compound' and 'mixture'. With the help of teaching aids and giving suitable examples of each, teacher will describe the distinguishing features of element, compound and mixture: that
  - Substances made of one kind of atoms are called elements.

- Substances made of more than one kind of elements in fixed ratio are called compounds.
- Substances made by mixing two or more substances in which the components are individually distinct are called mixtures.
- ❖ Now, to check the understanding of students about the topic, teacher will ask them to solve 'Checkpoint 1'.
- ❖ Then, teacher will explain the changes in the state of matter.
- ❖ Teacher will define solution and explain soluble and insoluble substances as well as miscible and immiscible liquids.
- ❖ With the help of teaching aids and giving suitable examples, teacher will explain physical and chemical changes and their characteristics features (as given in chapter).
- ❖ Now, teacher will ask students to solve 'Checkpoint 2'.
- ❖ At last, teacher will make students revise the new terms given in 'Science Vocabulary' and sum up the lesson by going through the points given in 'Wrapping it up'.
- ❖ Now, teacher will help students to solve the questions given in 'Exercises'.

### BOOST UP

- ❖ Teacher should encourage students to carry out activities given in the chapter.
- ❖ Teacher should discuss the conversation of Annu and Mannu given in bubbles in between the topics.
- ❖ Teacher should help students to find the answers of questions given in 'Think Zone' and encourage to do activities or projects given in 'Beyond the Text'.
- ❖ Teacher should discuss the information given in the 'Knowledge Desk'.
- ❖ Teacher should explain that there are 115 elements in nature.
- ❖ Teacher should display the samples of some elements, compounds and mixtures, if possible.
- ❖ Teacher should give an idea of chemical symbols of elements.
- ❖ While teaching physical and chemical changes, teacher should demonstrate some examples as given in the chapter.

### EXPECTED LEARNING OUTCOMES

The students

- ❖ know about matter and its composition.
- ❖ can differentiate between three states of matter.
- ❖ understand about elements, compounds and mixtures.
- ❖ solutions
- ❖ change in the state of matter
- ❖ can distinguish between physical and chemical changes.

## EVALUATIVE QUESTIONS

The teacher may ask the following questions for evaluating the understanding of students.

1. What are the features of matter?
2. What are three states of matter?
3. Which state of matter cannot flow?
4. What is a material composed of?
5. What are the types of matter according to nature of atoms in it?
6. In which change substance remains the same?
7. In which change no new substance is formed?