

## Wonders of Air

### SPECIFIC OBJECTIVES

The students learn about

- air, its composition and properties
- air pollution, its sources, effects and controls

### TEACHING AIDS

**Picture/animation** showing the effects of moving air, e.g., rustling of leaves, clothes on clothes line, waving of flag, etc.; **picture/chart** of the earth clearly showing the circumference of air, i.e., atmosphere around the earth; **picture/chart** showing pie chart of composition of air; **picture/animation** showing breathing of animals and man under trees; candles bell jar or glass tumbler; **picture/animation** roots of pea/gram showing its nodules; **picture/animation** on photosynthesis; two footballs, beam balance; glass tumbler, water tub; syringe/pitchkari/fountain pen; siphon set-up; **picture/animation** on some sources of air pollution (as given in chapter); some effects of air pollution (as given in chapter); some control of air pollution (as given in chapter).

### LESSON PLAN

- The teacher will start the chapter with 'Warm Up' section by asking some simple questions on air and water based on the previous knowledge of students.
- Teacher should give the demo of activity shown in Warm Up picture, i.e., blowing of balloon. Teacher will help students to answer the question asked in this section.
- Now, teacher will show the pictures/animation on the effects of moving air (as mentioned in teaching aids) and explain the terms 'wind' and 'atmosphere'.
- With the help of pie chart, teacher will explain the proportion of gases present in air.
  - With the help of teaching aids, teacher will explain how oxygen is useful for living beings. The teacher will give a demo of activity given in the chapter under the head 'Composition of Air' and explain that air helps in burning.
  - With the help of teaching aids, teacher will explain how nitrogen from air reaches the soil, converted by soil bacteria and taken by plants through soil and how animals take plants as their food and get the nitrogen.
  - With the help of teaching aids, teacher will explain how carbon dioxide is used by plants and released by animals, and how a balance is maintained in nature.

- Now with the help of teaching aids, teacher will explain the properties of air by performing the activities given in the chapter.
- To test the learning of students, teacher will ask them to solve 'Checkpoint 1'.
- Teacher will explain the uses of air (as given in chapter).
- Now with the help of teaching aids, teacher will define air pollution and air pollutants.
- By showing related charts/pictures/animation, teacher will discuss about sources and effects of air pollution and its control (as listed in the chapter).
- Now, teacher will ask students to solve 'Checkpoint 2'.
- At last, teacher will sum up the chapter by going through the points given under the head 'At One Go' and make students revise the terms given under the head 'Remember These Terms'.
- Teacher will also help students to solve the questions given under the head 'Check Your Study'.

## BOOST UP

- Teacher should show some samples of roots bearing nodules for nitrogen fixation as given in Knowledge Tree.
- Teacher should display barometer and show how it measures the atmospheric pressure.
- While teaching the effects of air pollution, teacher should also discuss the effect of air pollution on the Taj Mahal.
- Teacher should also give a brief idea of acid rain that it is also due to air pollution.

## EXPECTED LEARNING OUTCOMES

The students

- know about air, its composition and properties.
- know about air pollution, its sources, effects and controls.

## EVALUATIVE QUESTIONS

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

1. How do we feel air?
2. What is wind?
3. What is atmosphere?
4. How far is atmosphere extended above the earth's surface?
5. How does nitrogen reach soil?
6. How do animals get oxygen and nitrogen of the air?
7. What is a pollutant? Name some air pollutants.
8. Name some diseases caused due to polluted air.
9. What is global warming?
10. Name a non-polluting fuel.