



3

Air and Water

LESSON PLAN

SPECIFIC OBJECTIVES

The students learn about

- ✧ air
- ✧ sea breeze and land breeze
- ✧ three states of water
- ✧ the process of evaporation and the factors affecting it
- ✧ the process of condensation
- ✧ the process of precipitation and its different forms
- ✧ water table and water cycle
- ✧ water pollution, its causes, sources and harms
- ✧ different methods of purification of water

TEACHING AIDS

Pictures/animation on wind, breeze, storm, thunderstorm, sea breeze, land breeze; Pictures/animation/chart on three states of water, process of evaporation; Effect of temperature, surface area, wind speed and humidity on the rate of evaporation (as described in the chapter); The process of condensation, cloud formation, process of rain and snowfall, process of hailstones, dew, fog and frost formation; Pictures/animations on heavy rainy scenes and floods; Damage due to heavy snowfall, hailstorms; Picture of water table; Picture/animation showing water cycle, polluted waterbodies, sources of water pollution, harms or diseases caused by consuming polluted water; Pictures/animation on the process of sedimentation and decantation; Boiling of water; Pictures of different types of water filters; Sample or picture of chlorine tablets and potassium permanganate.

LESSON PLAN

- ✧ Teacher will start the chapter with 'Warm Up' section by asking some simple questions on different forms of water based on the previous knowledge of students. Teacher will ask some questions related to the picture given in the section.
- ✧ Teacher will have brief discussion on air and its composition and will explain the terms wind, breeze, storm and thunderstorm with the help of different teaching aids.
- ✧ With the help of different teaching aids, teacher will explain the formation and movement of sea breeze and land breeze.
- ✧ Now, to check the learning of students about the chapter, teacher will ask them to solve 'Checkpoint 1'.
- ✧ Teacher will have a brief discussion on three states or forms of water, i.e., solid, liquid and gaseous states.

- ✧ Now, teacher will define the term ‘evaporation’ and with the help of teaching aids, describe how it occurs in nature.
- ✧ With the help of teaching aids and Activities 1, 2 and 3, teacher will explain how different factors, i.e., temperature, surface area, and speed of wind affect the rate of evaporation.
- ✧ Now, teacher will explain the term ‘condensation’ by Activity 4 that it is the change of gaseous form of water, i.e., water vapour into liquid form of water, on cooling.
- ✧ Teacher will explain the term ‘precipitation’ that it is the process of falling of solid or liquid form of water from the atmosphere on the earth. Teacher will also explain that rain is liquid form, whereas snow, hail, dew, fog and frost are solid forms of precipitation.
- ✧ With the help of teaching aids, teacher will explain the formation of rain, snow, hail, dew, fog and frost and the damages they cause (as described in chapter).
- ✧ Teacher will tell about underground water and water table, and explain that the level of water table varies according to season, i.e., rises during rains and lowers during summers.
- ✧ Now, teacher will describe water cycle that it is the change of one form of water into other and again into previous form in a cyclic manner. Teacher will explain the process of water cycle by showing pictures/animation on it and highlight its significance in keeping the amount of water on the earth constant.
- ✧ Teacher will use different teaching aids and explain the term water pollution, why it occurs, different sources of water pollution and the harms of consuming polluted water (as described in the chapter).
- ✧ Now, teacher will discuss the need of clean water and explain some common methods for cleaning water and their benefits.
- ✧ Teacher will describe the processes of sedimentation, decantation, filtration and chlorination.
- ✧ Teacher will demonstrate the filtration of muddy water by performing Activity 5, given in the chapter.
- ✧ Now, teacher will ask the students to solve ‘Checkpoint 2’.
- ✧ The teacher will sum up the chapter by going through the points given under the head ‘At One Go’.
- ✧ Finally, the teacher will help students to solve all the exercises given under the head ‘Check Your Study’.

BOOST UP

- ✧ Teacher should perform the activities given in the chapter in the class.
- ✧ Teacher should display different types of water filters.
- ✧ Teacher should display chlorine tablets and tell how they are used for purifying water.
- ✧ Teacher should arouse the moral values in students for saving water by discussing with them the need of clean water.
- ✧ Students should be encouraged to find out some other sources of water pollution other than those given in the chapter.

EXPECTED LEARNING OUTCOMES

The students know about

- ✧ air and its composition.
- ✧ different forms of wind.



- ✧ sea breeze and land breeze.
- ✧ three states of water.
- ✧ the process of evaporation and the factors affecting it.
- ✧ the process of condensation and precipitation.
- ✧ different forms of precipitation.
- ✧ water table and water cycle.
- ✧ water pollution, its causes, sources and harms.
- ✧ different methods of water purification.

EVALUATIVE QUESTIONS

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

1. What is atmosphere?
2. What is air?
3. Differentiate between wind and breeze.
4. What is the difference between storm and thunderstorm?
5. When do sea breeze and land breeze blow?
6. Name three forms of water with examples.
7. What is evaporation?
8. What is water vapour?
9. How do temperature and surface area affect the rate of evaporation?
10. What is humidity?
11. How does humidity affect rate of evaporation?
12. What is condensation?
13. How do clouds form?
14. Which cloth is used to filter water?
15. What is underground water?
16. Which chemicals are used for purifying water?