

Water

SPECIFIC OBJECTIVES

The students learn about

- 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 the 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

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 help the students to fill in the blank.
- 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, teacher will explain the factors affecting the rate of evaporation:
 - higher temperature increases the rate of evaporation.
 - larger surface area increases evaporation.

- higher wind speed increases evaporation.
- high humidity lowers the rate of evaporation.
- Now, teacher will explain the term 'condensation' 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).
- Now, to check the learning of students about the chapter, teacher will ask them to solve 'Checkpoint 1'.
- 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.
- Now, teacher will ask the students to solve 'Checkpoint 2'.
- At last, the teacher will sum up the chapter by going through the points given under the head 'At One Go' and make students revise the new terms given under the head 'Remember These Terms'.
- Teacher will help students to answer the questions given under the head 'Check Your Study'.

BOOST UP

- If possible, teacher should perform the activities given in the chapter in the class.
- Teacher should discuss the difference between ice and snow given in the 'Knowledge Zone'.
- 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

- 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. Name three forms of water with examples.
2. What is evaporation?
3. What is water vapour?
4. How do temperature and surface area affect the rate of evaporation?
5. What is humidity?
6. How does humidity affect rate of evaporation?
7. What is condensation?
8. How do clouds form?
9. How are dew drops formed on leaves?
10. What is underground water?
11. Which chemicals are used for purifying water?
12. Which cloth is used for filtering water?