

**LESSON PLAN****SPECIFIC OBJECTIVES**

The students will learn about

- ✧ waste water
- ✧ sewage and harmful effects of untreated sewage
- ✧ waste water treatment
- ✧ alternate method of sewage disposal – septic system
- ✧ need to treat waste water
- ✧ reducing water contamination

**TEACHING AIDS**

**Pictures/charts/models/animations** on a drought-affected area, a waterbody polluted by detergent discharge; sources of sewage; waste water treatment plant, screening of waste water, grit and sand removal tank, sedimentation tank, aeration tank; septic system, etc.

**LESSON PLAN**

- ✧ The teacher should start the chapter with ‘Gear Up’ by discussing the questions given in the section.
- ✧ The teacher should define waste water and its sources.
- ✧ The teacher should define sewage, its sources and the contaminants found in it.
- ✧ The teacher should discuss the harmful effects of untreated sewage.
- ✧ Now, the teacher should describe waste water treatment and elaborate the processes involved in it. Teacher should also discuss the need of waste water treatment.
- ✧ Teacher should also define the alternative method of sewage-disposal system.
- ✧ The teacher should discuss the ways to reduce water contamination at different places.
- ✧ The teacher should tell the students to solve ‘Check Points’ 1 and 2.
- ✧ At last, the teacher will sum up the lesson by going through the points given under the head ‘Wrap Up Now’.
- ✧ The teacher will help the students to solve all the questions given in exercises under the head ‘Practice Time’ and will also discuss the topics given under the head ‘Formative Tasks’.

## **BOOST UP**

- ✧ The teacher should call each student and ask to write one source of sewage on the board.
- ✧ The teacher should give Activity 1 as home assignment or class assignment and should discuss the results in the class.
- ✧ The students should be encouraged to make an Environment Club at their school for creating awareness to reduce water contamination.

## **EXPECTED LEARNING OUTCOMES**

The students know about

- ✧ waste water.
- ✧ sewage and its sources.
- ✧ harmful effects of untreated sewage.
- ✧ waste water treatment, processes involved and its need.
- ✧ an alternative method of sewage disposal – septic system.
- ✧ various ways to reduce water contamination.

## **EVALUATIVE QUESTIONS**

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

1. Define waste water.
2. Mention organic and inorganic impurities present in sewage.
3. Explain the harmful effects of untreated sewage.
4. What is meant by waste water treatment?
5. Why do we need to treat waste water?
6. Write the constituents of biogas.
7. Mention few ways that should be adopted to reduce water contaminants.