12 Pollution

Learning Outcomes

After completing this chapter, students will be able to:
- understand and describe pollution and pollutants, types of pollution
- understand the sources, effects and preventive measures of air pollution, water pollution, land pollution and noise pollution
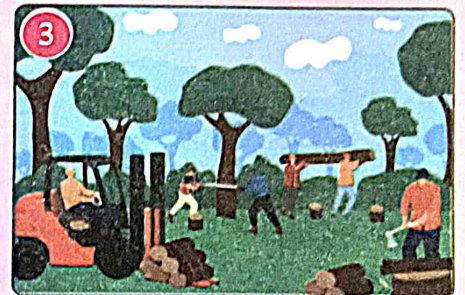
Inside the Chapter
★ Pollution ★ Air Pollution ★ Water Pollution ★ Land Pollution ★ Noise Pollution

Let's Do

Observe the pictures given below. Tick (✓) the activities that are good for our environment and cross (✗) the activities that are not good for our environment.

1. ✗
2. ✓
3. ✗

Mrs Sharma, class teacher of IV C, walked into the classroom. She noticed that the students were not in a mood to study. She smiled and said, "Actually I wanted to start the next chapter in Science, but I have changed my mind. I am going to discuss four situations with you."

Everyone sat up. What? No lesson today!

Mrs Sharma started, the first situation—Bimla lives in Phoolpur, a small village in Madhya Pradesh. Every day she fetches water from the nearby river. One day she notices dead fish floating on the water. She screams in fear and runs away. As she runs, she notices a strange coloured liquid flowing into the river from the factory, that has recently been set up.

Dead fish

3. **Sewage and wastewater:** We all use water for our day-to-day activities like cleaning the house, bathing, cleaning utensils and flushing toilets. After use, the water becomes wastewater. This wastewater contains a lot of pollutants. When this water enters water bodies like rivers through the sewers, it pollutes the water.

Effect: Polluted water contains germs that can cause various diseases like dysentery, jaundice and typhoid. The contaminated water also affects the life of aquatic animals. It kills fish and other aquatic animals. Also, the chemicals in the polluted water make it unsafe for any further use.

Preventive measures

- We should not throw garbage, wrappers or any other trash into the sewer. These wastes reach the water bodies and cause water pollution.
- We should use water wisely. Turn off the taps while brushing teeth. Take shorter showers.
- We should not pour chemicals like paints and oils down the drain or toilet. These chemicals can harm the water when they mix with it.

Multiple Choice Questions

Tick (✓) the correct answers:

(Remembering, Understanding)

1. _____ is **not** an effect of water pollution.
   (a) Dysentery   (b) Jaundice   (c) Irritation in eyes
2. Which one of the following is **not** a source of air pollution?
   (a) Electric fan   (b) Vehicle exhaust   (c) Factory exhaust
3. How do we reduce air pollution?
   (a) by planting trees
   (b) by cutting trees
   (c) by burning wood

Soil (Land) Pollution

Dumping of solid wastes such as plastic bags, glass bottles and metal containers causes **land pollution**. Excessive use of fertilisers and pesticides in crop fields also causes land pollution.

Sources of Land Pollution

1. **Garbage:** When garbage and waste materials are not disposed off correctly, they end up in landfills or remain scattered around, polluting the land. It is important to use proper trash bins and recycling facilities for proper disposal of garbage.

Garbage dump

Multiple Choice Questions

Tick (✓) the correct answers:

(Remembering, Understanding)

1. Which one of the following is a source of land pollution?
   - (a) garbage
   - (b) smoke ✓
   - (c) sewage ○

2. _____ is an effect of noise pollution
   - (a) Deafness
   - (b) Dysentery ✓
   - (c) Infertile soil ○

3. How can we reduce the land pollution?
   - (a) by throwing garbage in dustbins ✓
   - (b) by throwing garbage in rivers ○
   - (c) by throwing garbage in open land ○

Preventive measures

- We should not shout while talking to our friends and other people. But we should talk softly.
- We should avoid toys that make loud noises.
- We should not honk the horn unnecessarily. We should also not honk the horn in quiet zones like nearby hospitals and schools.

Points to Remember

- The harmful changes made in the environment due to various human activities are called pollution.
- Air pollution is the mixing of harmful gases and other unwanted particles like smoke and dust in the air.
- Water pollution is the mixing of harmful liquids and solid wastes in water bodies.
- Soil or land pollution is the wastage of land by dumping waste materials such as plastic bags, glass bottles and metal containers.
- Noise pollution is the production of noise.

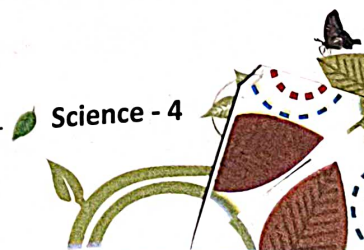**Competency Based Discussion:** Pollution and its Preventive Measures

Exercise — [According to NEP Guidelines]

SECTION - A

(Remembering)

A. Oral Questions:

1. What is pollution?
2. What are the effects of land pollution?

B **Science Riddle:** *(Problem Solving)*

1. I am invisible but can be felt.
   When I am around, it's hard to breath.   *Air pollution*
   I come from cars, factories and even burning wood.
   If you don't stop me our air won't be good. What am I?

2. I am everywhere, on the ground and in the sea.
   Trash and waste, causing harm, you see.   *Litter or pollution*
   Bags, bottles, cars and papers too.
   What am I that we should clean up, its true?

C **Multiple Choice Questions:**

Tick (✓) the correct options: *(Remembering, Understanding, Logical Thinking)*

1. Soil becomes infertile and unfit for the organisms due to
   (a) excessive use of detergents ⃝   (b) dumping of solid wastes ✓
   (c) release of harmful gases ⃝

2. Which one of the following preventive measures helps us reduce land and water pollution?
   (a) throwing oil and paints in the sink ⃝
   (b) throwing garbage in the dustbin ✓
   (c) throwing plastic bags into sewers ⃝

3. Which one of the following pictures depicts the result of global warming?

   (a) ⃝   (b) ✓   (c) ⃝

   Air pollution   Frequent floods   Coal formation

D **Case/Source based Question:**

Read the situation given below and choose the correct answer: *(Applying)*

Neeraj, the gardener, burns dead leaves and plants. Mr Tripathi stops him and tells him not to do so. Instead, he asks Neeraj to put the dead leaves and plants in a pit.

Why does Mr Tripathi ask Neeraj to do so?

(a) burning leaves causes air pollution ⃝

(b) leaves in the pit become manure ⃝   (c) both (a) and (b) ✓

E **Fill in the blanks with the help of the given words:**   *(Remembering)*

1. Loudspeakers and _vehicle_ are the sources of noise pollution.   (vehicles/ sewage)
2. _Solid waste_ is a major source of land pollution.   (Solid waste / Sewage)
3. Vehicles are the sources of noise and _Air_ pollution.   (air/ water)

Class — LV

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Exercise

Section - B

A. Very Short Answer

1. Air pollution is when the air around us becomes dirty too or harmful. It happens when things like mode, dust, or gases are added to the air, making it less safe to breathe.

2. List two factors that causes land pollution.

Ans ① Improper disposal of garbage.
   ⑪ Industrial waste.

3. What are pollution?

Ans. Pollutants are substances or things that make the environment dirty or unsafe.

B. Short Answer Questions?

1. What are the preventive measures for air pollution. Write any three?

Ans ① Planting trees :- It helps to clean the air by absorbing pullutants

⑪ Using public transport :- Using of buses or trains instead of individual vehicle.

⑪ Recycling :- It reduces the need for new production, which can create pollution.

2. List two human activities responsible for each land and water pollution.

Land pollution:-
① Improper waste dispersal.
② Industrial waste.

Water Pollution:-
① Dumping sewage into rivers.
② Oil spills from ships.

3. What are the harmful effects of air and noise pollution on our health?
Air pollution effects
① Causes respiratory problems.
② It can lead heart diseases
Noise pollution harmful effects
① It causes stress and anxiety.
② Distrupts sleep leading to sleep disorders.

Long Answer Questions:-
① How do water bodies get polluted? Mention its Sources.

Water bodies get polluted from sources like:
① Dumping of Sewage-Releasing untreated sewag
② Industrial waste material-Harmful chemicals
③ Trash and litter:- Throwing garbage into rivers or on the shores

2. How do planting more trees help in controlling air pollution?

An. Planting more trees helps in controlling air pollution because trees,

(i) Absorb pollutants :- like carbon dioxide and release oxygen and improving air quality.

(2). Act as a natural filter :- leaves and branches traps dust and particles. preventing them from entering the air.

3. Proper disposal of waste reduces water pollution. How?

An. Proper disposal of waste reduces water pollution because :

(1) Prevent runoff - When waste is disposed of in proper bins, it's less likely to be washed into rivers during rainfall.

(2). Avoids direct dumping :- Dumping waste directly into water bodies is prevented. keeping the water cleaner.

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