

Lesson Plan: Our Environment (CBSE Class X 2026-27)

Teacher:

Class: X

Subject: Science (Subject Code - 086)

Unit V: Natural Resources (Unit Weightage: 05 Marks)

Chapter: 13 – Our Environment

Estimated Number of Periods: 6

1. Gist of the Lesson & Curricular Goals

- **Core Syllabus:** Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.
- **Educational Aim:** To understand the interconnectedness between organisms and their environment, analyze human impact on natural systems, and develop the capacity to act for necessary environmental change as responsible citizens.

2. Teaching-Learning Plan & Pedagogy

Key Concepts	Competencies (C) & Learning Outcomes	Teaching-Learning Activities (Pedagogy)	Assessment Strategies
Eco-system & Its Components	C-4.3: Analyses different levels of biological organisation from organisms to ecosystems and interactions that take place.	<ul style="list-style-type: none">• Visual Mapping: Draw a terrestrial and aquatic food chain on the board, indicating producers, consumers, and decomposers.• Discussion: Explain the 10 percent law of energy transfer and	<ul style="list-style-type: none">• [Demonstrate Knowledge - VSA]: Define an ecosystem .• [Application - SA]: Illustrate a food web with at least four interconnected food chains.

	<ul style="list-style-type: none"> • <i>Outcome:</i> Students will classify ecosystems and map food chains/webs. 	the unidirectional flow of energy.	
Biodegradable & Non-biodegradable Substances	<p>C-2.8: Explores interconnected systems and phenomena that support and affect life on Earth.</p> <ul style="list-style-type: none"> • <i>Outcome:</i> Students will distinguish between types of waste and their environmental impact. 	<ul style="list-style-type: none"> • Hands-on Activity: Bring clean samples of daily waste (fruit peels, paper, plastic wrappers, glass) and have students categorize them into biodegradable and non-biodegradable bins. • Concept Mapping: Discuss biological magnification of harmful chemicals (like pesticides) across trophic levels. 	<ul style="list-style-type: none"> • [Demonstrate Knowledge - Objective]: <i>Identify</i> non-biodegradable substances from a given list . • [Analyze & Evaluate - SA]: <i>Examine</i> why a ban on single-use plastics is necessary for ecosystem health.
Ozone Depletion	<p>C-2.8: Explores interconnected systems (atmosphere) and hazards.</p> <ul style="list-style-type: none"> • <i>Outcome:</i> Students will write the chemical formation of ozone and explain the causes and effects of its depletion. 	<ul style="list-style-type: none"> • Board Work: Write the chemical equations for ozone formation ($O_2 \rightarrow O + O$ in presence of UV; $O + O_2 \rightarrow O_3$). • Discussion: Discuss the role of Chlorofluorocarbons (CFCs) and the global success of the Montreal Protocol. 	<ul style="list-style-type: none"> • [Demonstrate Knowledge - VSA]: <i>Name</i> the synthetic chemicals primarily responsible for ozone depletion . • [Application - LA]: <i>Explain</i> how ozone is formed in the upper atmosphere and how it protects life on Earth.

Waste Production & Solutions	<p>C-5.2: Examines a case study related to the use of Science in human life from the perspective of Social Sciences and Ethics.</p> <p>• <i>Outcome:</i> Students will evaluate local waste management strategies.</p>	<p>• Brainstorming: Discuss the 5 Rs (Refuse, Reduce, Reuse, Repurpose, Recycle).</p> <p>• Case Study: Analyze the environmental problem of electronic waste (e-waste) and the ethical responsibility of safe disposal.</p>	<p>• [Application - SA]: <i>Suggest</i> three practical ways to reduce waste production at the school level .</p> <p>• [Formulate & Analyze - Case-Based]: <i>Evaluate</i> the effectiveness of segregating dry and wet waste at the household level.</p>
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3. Assessment Structure & Weightage

Assessments are strictly modeled on the CBSE 2026-27 Theory Question Paper Design (80 marks) :

- **Demonstrate Knowledge and Understanding (50%):** Assessed via questions asking students to *state, name, list, identify, define, suggest, describe, outline, and summarize* (e.g., defining biodegradable waste, stating the function of the ozone layer).
- **Application of Knowledge/Concepts (30%):** Assessed via questions asking students to *calculate, illustrate, show, adapt, explain, and distinguish* (e.g., illustrating food webs, explaining biological magnification).
- **Formulate, Analyze, Evaluate and Create (20%):** Assessed via questions asking students to *interpret, analyze, compare, contrast, examine, evaluate, discuss, and construct* (e.g., evaluating waste management practices, analyzing ecological impacts).

4. Digital Integration & Portfolio Enrichment (Internal Assessment - 20 Marks)

- **Subject Enrichment (5 Marks):** Since there are no mandatory laboratory experiments prescribed for Unit V , enrichment will focus on environmental action. Students will collaboratively design a working model or a detailed blueprint of a sustainable "Eco-School" featuring rainwater harvesting, solar panels, and compost pits.
- **Digital Integration Strategy:** To reinforce environmental awareness ahead of Periodic

Assessments (5+5 Marks), utilize educational documentaries or interactive digital modules (via the DIKSHA portal) illustrating the stark contrast between a healthy coral reef ecosystem and one suffering from pollution and climate change.

- **Portfolio Task (5 Marks):** Students will conduct a "Household Waste Audit" over three days. They will *examine* the type and volume of waste produced in their homes, categorizing it into biodegradable, recyclable, and non-biodegradable waste. They will prepare a brief write-up *analyzing* their findings and proposing two actionable solutions to reduce their family's ecological footprint, securely adding this to their academic portfolio.