



Interactive Escape Rooms for Climate Crisis Awareness and Civic Engagement in School Education

Module 1: Why is Our Climate in Crisis?

Unit 4: Environmental Degredation



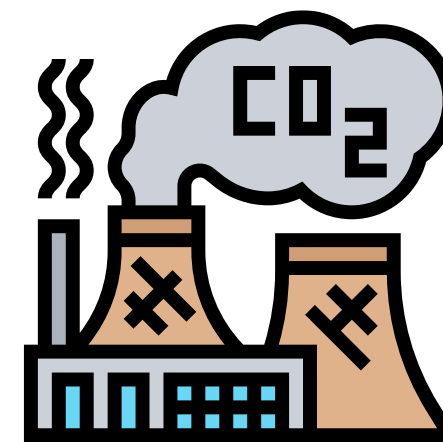
What Is Environmental Degradation?



What do you think happens when humans take too much from nature without giving it time to recover?

- Damage/pollution to air, water, soil, and living things - mostly caused by human activities
 - Sometimes nature can recover, but it takes time
 - Degradation happens when nature cannot recover

Examples



What are the Effects of Environmental Degredation?



Case study: deforestation

- When a forest is destroyed, what are the consequences?
 - Think about the life that lives in and relies on the forest ecosystem
 - Without plants and trees, insects and animals lose shelter
 - Without large predators, smaller animal and pest populations grow exponentially
 - Without insects, plants don't get pollinated and cannot reproduce

Let's Experiment



How do plants help prevent flooding?

Materials needed:

- 1 small pot (with holes in the bottom) with grass, herbs, or similar;
- 1 small pot (with holes in the bottom) with only soil;
- 1 pitcher of water

Instructions:

Place both small pots (1 with soil and grass/plants and 1 with only bare soil) on a flat surface. Pour a bit of water on both

Which one retains the most water?

This demonstrates plants' role in protecting the land.

How is Environmental Degradation Connected to Climate Change?



Pollution is bad, but does it really cause Climate Change?

There are both direct and indirect effects that contribute to Climate Change:

- Direct effects: most common is burning fossil fuels (polluting air + adding CO₂)
- Indirect effects: don't necessarily add CO₂, but can affect the amount absorbed by planet
 - Example: cutting down trees = fewer trees to absorb CO₂ = more warming
 - Spilling chemicals into waterways = destruction of environments that help absorb CO₂ = more warming

A significant driver of both environmental degradation and Climate Change is **overconsumption**

- This means 1) using resources faster than the Earth can safely replace them and 2) continuously buying new items rather than buying used items or repairing old ones
 - See: [Earth Overshoot Day](#)



Key takeaways



- Environmental degradation comes in many forms
 - Some forms cause (directly or indirectly) Climate Change
- Reducing consumption, reusing materials, repairing products, and avoiding the use of chemicals and fossil fuels can help reduce environmental degradation

Which of these three problems affects your community the most?

What small actions could we take to reduce our impact?



Let's play a game!



Musical Chairs - Exploring Biodiversity Loss

Setup: place 20-25 chairs (enough for 1 chair per student in class) in a circle within the classroom or outside

- Also need a speaker and phone (or just the phone) for playing music)
- Teachers: pass out 1 species role card to each student
- Students: look at your cards and know your role!

Instructions: Teachers will play the music for 20-30 seconds at a time, while students walk around the chairs.

- Once the music starts, teachers will remove one chair
- When the music stops, students will attempt to sit in a chair, with one student being eliminated
- Repeat until one chair remaining

NO PUSHING, SHOVING, OR OTHER AGGRESSIVE BEHAVIOR PLEASE

Musical Chairs - Exploring Biodiversity Loss



Know your role!

Each student will be assigned one of the following roles:

Trees



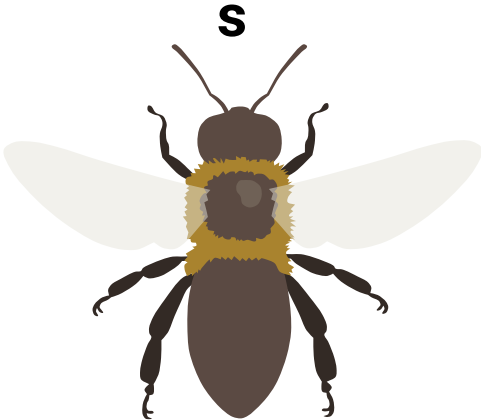
Removes CO₂, produces oxygen, and provides climate regulation, shelter, and soil stabilisation

Shrubs and other plants



Supports biodiversity, prevent soil erosion, and provide food and shelter for wildlife

Pollinators



Ensures plant reproduction and maintains forest plant diversity

Soil engineers and decomposers



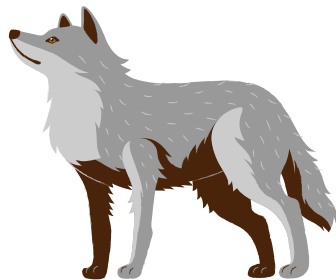
Maintains soil fertility, nutrient cycling, and organic matter decomposition

Seed dispersers



Contributes to forest regeneration and new plant growth

Predators



Contributes to population control, maintaining ecosystem balance



Thank you!

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