

ECO- GUARDIAN

ACT NOW TO COOL THE EARTH!

Small actions make a big difference.

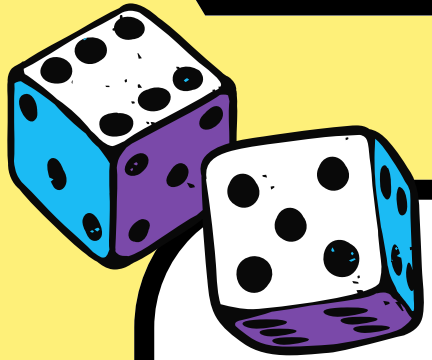


Eco-Guardian

Game Theme
Global Warming

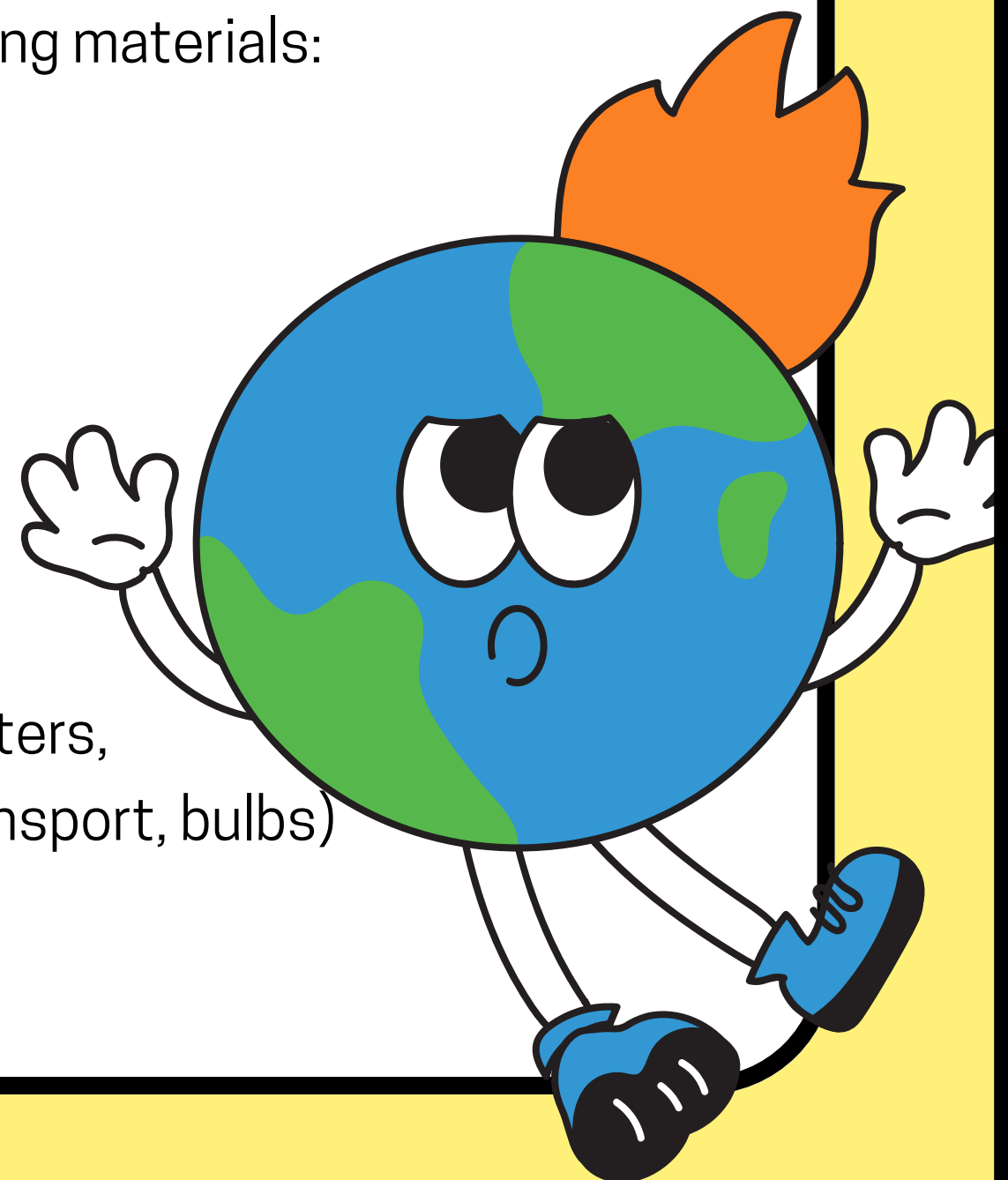
Grade Level
VII - IX

Game Type
Board Game



Game Overview

- Eco-Guardian is a climate-awareness board game designed to engage students in understanding the global crisis of climate change. Through a progressive, three-level gameplay structure, students will explore core environmental issues including deforestation, greenhouse gas emissions, and glacial melting. The game encourages students to apply prior knowledge of matter, atoms, and the environment to respond to real-world climate problems, propose solutions, and take on the role of environmental stewards.
- As a formative assessment tool, this game is intended to reinforce learning, stimulate discussion, and help students reflect on both scientific and civic responsibilities related to global warming. The game concludes with an applied task where students use earned rewards to redesign a town in a more environmentally responsible manner.
- By the end of the game, players will have explored major contributors to global warming and suggested evidence-informed actions for reducing its impact.
- A complete game set, for one group, includes the following materials:
 - 1 game board
 - 1 town template
 - Game cards
 - 7 Level 1 cards (Deforestation)
 - 7 Level 2 cards (Greenhouse Gases)
 - 5 Level 3 cards (Glacial Melting)
 - Dice 4–5 coloured counters
 - Reward tokens (pictures of trees, dustbins, water filters, solar panels, recycling bins, compost bins, public transport, bulbs)
 - Town rearrangement sheet



Gameplay Instructions

- Divide the class into small groups of 4–5 students.
- Distribute one complete game set to each group. Ensure all card decks (Level 1, 2, 3) are shuffled and separated. Place all reward tokens and town templates aside until the final phase.
- Each player rolls the dice and draws a card from the corresponding level (starting from Level 1).
- There are six types of cards:
 - Problem Cards: Describe a real-world climate issue.
 - Discussion Cards: Invite players to share opinions or solutions.
 - Information Cards: Provide scientific facts or data.
 - Task Cards: Require players to complete short challenges.
 - Challenge Cards: Pose dilemmas or complex questions.
 - Action Cards: Suggest a solution or encourage specific behaviour.
- Players read or respond to the card as instructed.
- Upon completion, the player earns a reward token based on their response.
- Once all cards have been used or time ends, each group receives a town template.
- Players collaboratively use their earned reward tokens to redesign the town into an eco-friendly space, integrating what they learned.
- Groups may present their redesigned towns to the class, explaining their choices.



Debriefing and Reflection

Conclude the game with a whole-class reflection to reinforce learning. Suggested discussion prompts:

- Ask students to summarise the do's and don'ts of climate action they encountered during the game. Highlight practices such as reducing emissions, using renewable energy, and conserving forests.
- Reflect on the tasks or cards students found most difficult. Ask why those were challenging and clarify any concepts.
- Invite groups to present their redesigned towns and explain how the changes they made help reduce global warming. Encourage students to link the game to personal and community actions they can take in real life to protect the environment.

Adaptations for Gamplay

- **For Lower Grades:** Simplify the cards to focus on basic environmental actions, such as planting trees or avoiding littering. Limit the game to only Level 1 (deforestation) and use fewer card types.
- **For Higher Grades:** Include more detailed cards focusing on the science of greenhouse gases and glacial melting. Introduce complex challenge scenarios and require justification for each town design choice.



Meet Ali, a young environmental hero from a beautiful village in Pakistan. Recently, his village has faced big problems like unexpected floods and a thick fog in the air. Join Ali on his adventure as he works to solve these issues.

LEVEL 1**PROBLEM STATION****1**

Ali has noticed that many trees in his village were cut down to be used for fuel and to make space for building homes. This process is called deforestation. What do you think might happen because of this?

How can deforestation impact the environment and the village?

You have earned 10 trees! Place this in your town's park area to contribute to reforestation efforts

LEVEL 1**DISCUSSION STATION****2**

Ali has been thinking about the possible impact of deforestation. In your group, discuss the potential impact of deforestation.

You can use these pointers to initiate the discussion:

1. Think about how trees protect the soil.
2. Think about how trees help clean the air.
3. How might animals be affected when trees are removed?

You have earned 10 dustbin! Place this in your town's residential area to improve waste management.

LEVEL 1**INFORMATION STATION****3**

Ali read a newspaper article about deforestation and learned that trees help clean the air by absorbing carbon dioxide (CO₂), a gas that can harm our planet.

They take in CO₂ during a process called photosynthesis and store it in their trunks, branches, and roots. This helps reduce the amount of harmful gases in the air, making our environment healthier.

You have earned a 3 Water Filter! Place this in your town's water section to ensure clean drinking water

LEVEL 1**TASK STATION****4**

As a group, help Ali research online about the effects of deforestation on local wildlife.

Read and book or search on internet and find out:

- 1- Two examples of animals affected by deforestation
- 2- One real example of deforestation in Pakistan

Discuss your findings in the group.

What surprised you the most?

You have earned a 7 Solar Panels! Place this in your town's commercial area to promote renewable energy.

LEVEL 1**BONUS
CHALLENGE STATION****5**

Ali thinks there might be some benefits to deforestation.
Let's help Ali understand both the advantages
and disadvantages of deforestation.

Divide yourselves in two teams:

Pro-deforestation and Anti-deforestation.

Take 5 minutes to prepare your arguments.

In 10 minutes, present your arguments to each other.

You have earned 2 Recycling Bins! Place this in your own's
recycling center to encourage recycling programs

LEVEL 1 INFORMATION STATION**6**

Ali read a newspaper article about
deforestation and learned that tropical rainforests,
often referred to as the "lungs of the Earth,"
are disappearing at a rate of about 32 million acres
per year due to deforestation.

You have earned 3 Solar Panel! Place this in your
town's commercial area to promote renewable
energy

LEVEL 1**ACTION STATION****7**

You are invited to be part of the village council
meeting with the mayor of the city.

What steps would you take to prevent further
deforestation?

Write down atleast 5 actions you would implement.

You have earned 2 Compost Bin!
Place this in your town's garden
area to encourage composting organic waste.

LEVEL 2 PROBLEM STATION 8

Ali has noticed that news reports are talking about glaciers melting rapidly. This is causing sea levels to rise and can lead to flooding in coastal areas. What are the main reasons for glaciers melting, and how does this affect our planet?

You have earned a set of public transportation vehicles! Promote sustainable travel in your city.

LEVEL 2 INFORMATION STATION 9

Ali learned that greenhouse gases trap heat in the Earth's atmosphere, causing temperatures to rise. The main greenhouse gases are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Major sources include burning fossil fuels, industrial processes, and agricultural activities.

You have earned 10 trees!
Place this in your town's park area to contribute to reforestation efforts

LEVEL 2 DISCUSSION STATION 10

Ali wants to discuss with you how greenhouse gas emissions affect our environment and daily lives. Think about the changes in weather, health impacts, and the environment.

You have earned 10 dustbin!
Place this in your town's residential area to improve waste management.

LEVEL 2 TASK STATION 11

Ali needs your help to identify common sources of greenhouse gas emissions. List five places or activities where you think greenhouse gases are being released.

You have earned a set of public transportation vehicles! Promote sustainable travel in your city.

LEVEL 2 BONUS CHALLENGE STATION 12

Ali needs your help to brainstorm three innovative ideas to reduce greenhouse gas emissions in his village.

Think about renewable energy,
efficient transportation, and
sustainable farming practices.

You have earned a 3 Water Filter!
Place this in your town's water section
to ensure clean drinking water

LEVEL 2 BONUS CHALLENGE CARD 13

Ali's friend, Sara, lives in the same village and has noticed something concerning in her daily life.

Every morning, Sara's father drives her to school in their old, smoke-belching car. As they pass by the local factory, she sees thick black smoke rising from its chimneys.

On their way back home, they pass through a busy market where many vendors burn trash, releasing more smoke into the air.

What issues do you see in this scenario related to greenhouse gas emissions?

You have earned 2 Recycling Bins!
Place this in your own's recycling
center to encourage recycling programs

LEVEL 2 ACTION STATION 14

Ali would like to know what will you change in your practice to combat the issue of green house gases.

LEVEL 3 PROBLEM STATION**15**

Ali noticed that there is another reason why there are floods in his village. He discovered that factories, vehicles, and other activities in his village are releasing large amounts of greenhouse gases like carbon dioxide, methane, and nitrous oxide into the atmosphere. These gases trap heat and contribute to global warming, which can lead to more severe weather conditions, including floods. What are the main sources of these emissions in Ali's village?

You have earned 3 Energy-Efficient Light Bulbs! Place this in your town's residential or commercial area to reduce energy consumption.

LEVEL 3 INFORMATION STATION**16**

Ali read an article on the global warming and found out that the main causes of global warming are:

- 1- Increased temperatures caused by greenhouse gases (CO₂, methane) trap heat in the Earth's atmosphere.
 - 2- Black carbon and soot from burning fossil fuels settle on ice, absorbing more heat and accelerating melting.
 - 3- Reduced forests lead to higher CO₂ levels, contributing to global warming.
- Congratulations! You have earned the opportunity to add one unique feature to your town. What special addition will you choose?

LEVEL 3 INFORMATION STATION**17**

Ali learned about the effects of global warming on our planet:

- 1- Melting glaciers contribute to rising sea levels, threatening coastal communities.
- 3- Many animals depend on glaciers for their habitat.
- 3- Changes in the distribution of ice can affect global weather patterns.

Congratulations! You have earned the opportunity to add one unique feature to your town. What special addition will you choose?

LEVEL 3 BONUS CHALLENGE STATION**18**

Ali is thinking critically about how glaciers melting affects our world. Help Ali answer the following questions with:

What human activities contribute most to global warming?
How does the rise in sea levels impact coastal communities?
What are some potential solutions to slow down glacial melting?"

Discuss and write down your answers.
Share your ideas with the group

Congratulations! You have earned the opportunity to name your own town.
What will you call it?

LEVEL 3**TASK STATION****19**

Imagine you and Ali are part of a campaign to raise awareness about glacial melting.
Design a poster that includes:
A catchy slogan about protecting glaciers.
Three key facts about why glaciers are important.
Simple actions people can take to help reduce global warming."

Use the provided materials (markers, paper) to create your poster. Present your poster to the group and explain why the information is important.

You have earned 3 Energy-Efficient Light Bulbs!
Place this in your town's residential or commercial area to reduce energy consumption.