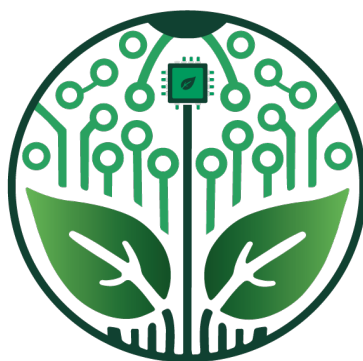




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LESSON PLAN

[Artificial Intelligence in Addressing the Greenhouse Effect]

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Disclaimer



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1. TITLE

Artificial Intelligence in Addressing the Greenhouse Effect

2. GRADE LEVEL

- ☐ ISCED Level 3 – Upper Secondary Education (ages 15–18)

3. SUBJECT AREA

- ☐ Sciences
- ☐ Environmental Studies
- ☐ Geography
- ☐ Computer Science
- ☐ Technology and Design

4. TYPE

- ☐ Lesson Plan

5. DURATION

- ☐ 1 x 40-50minute class

6. LEARNING OBJECTIVES

01. Students will be able to describe the greenhouse effect and explain its main causes
02. Students will be able to identify ways in which Artificial Intelligence (AI) can help reduce greenhouse gas emissions.



O3 Students will be able to evaluate simple AI applications used for environmental protection..

7. Key Competences Developed

The competences that are supported by the lesson activities are:

- competence in STEM
- Digital competence
- Personal, social and learning to learn competence
- Citizenship competence

8. Prior Knowledge / Prerequisites

The prior knowledge, skills, or experiences students should already have before engaging with the lesson is:

- Basic knowledge of climate change.
- Basic familiarity with digital tools (internet, videos, presentations).

9. Lesson/Project Outline

Phase 1 – Introduction (Engage & Contextualize)- 10 minutes

Activity:

The teacher asks:

“How do you think technology can help fight climate change?”

Students watch a short video explaining the greenhouse effect.

Expected outcomes:

Students understand the basic concept of the greenhouse effect.

Resource (name)	Link (to the folder on Teams)
“Greenhouse Effect – Overview Video”	https://www.youtube.com/watch?v=SN5-DnOHQmE



Phase 2 – Exploration (Investigate & Compare) – 15 minutes

Activity:

Students work in small groups. Each group studies one AI application:

- AI for CO₂ emission prediction
- Smart energy grids
- AI-based traffic management systems

Students complete a short worksheet about their assigned application.

Resource (name)	Link (to the folder on Teams)
AI & Climate – Worksheet	AI Applications Worksheet 1

Phase 3 – Application (Hands-On Practice) – 20 minutes

Activity:

Each group designs their own idea:

“An AI application that could reduce the greenhouse effect in our school or city.”

Ideas are presented as a mini-poster or a single slide.

Expected outcomes:

Students develop creative thinking and problem-solving skills.

Resource (name)	Link (to the folder on Teams)
Mini-Poster Template	Group Design Template

Phase 4 – Reflection & Consolidation (Present & Connect)

Activity:

Groups briefly present their ideas.

Students complete a short 5-question quiz.



Exit question:

“Name one way AI can help protect the environment.”

Expected outcomes:

Students consolidate and reflect on what they have learned.

Resource (name)	Link (to the folder on Teams)
quiz	https://gemini.google.com/share/b087f8cd9b29

10. Assessment Criteria

Criterion	Description	Points
Participation	Active participation in discussions	0–4
Worksheet	Accuracy and completeness of answers	0–3
AI Idea	Originality and realism of the proposed solution	0–3

Resource (name)	Link (to the folder on Teams)
quiz	https://gemini.google.com/share/b087f8cd9b29

11. Teaching Materials

Name	Type	Link	Role in the lesson
Greenhouse Effect – Video	Existing	Teams/Materials	Introduction to the topic
AI & Climate – Worksheet	Developed	Teams/Worksheets	Supports exploration activity
Mini-Poster Template	Developed	Teams/Templates	Supports creative design activity
Online Quiz	Developed	Teams/Quiz	Knowledge assessment



12. External Resources and References

Resource (name)	Link (external or to the folder on Teams)
NASA – Climate Change & Greenhouse Effect	https://climate.nasa.gov
European Commission – AI for Climate	https://ec.europa.eu
UNESCO – AI and Education for Sustainability	https://www.unesco.org
IPCC – Climate Change Reports	https://www.ipcc.ch