



Project No.3

This project was created by a Green Skills Teacher Ambassador as part of the EcoAI EduNetwork Initiative (EAIEN). Developed within the scope of the online course AI-Empowered Green Skills Education, it demonstrates how teachers can integrate artificial intelligence (AI) tools and sustainability competences into a meaningful, student-centered learning experience.

Designed to be implemented within a single subject or through cross-disciplinary collaboration, the project promotes green skills and artificial intelligence literacy in the classroom. It shows how AI can serve as both a teaching assistant and a catalyst for empowering students to think critically and act sustainably and preparing them to become responsible, future-ready learners.



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Mathematics of Green



Project Description

In this interdisciplinary project, students explore the relationship between mathematics, environmental science, and sustainability by developing a mathematical model to estimate how many trees would be required to offset their school's carbon emissions. Guided by their teacher, students collect and analyze data on the school's daily energy consumption, heating, transportation, and even the CO₂ generated by human respiration. Using AI-assisted tools, they calculate the total emissions and simulate various reforestation scenarios that could neutralize the school's ecological footprint. The project connects mathematical reasoning with environmental responsibility, showing students how abstract numbers can translate into tangible climate actions. Through research, collaboration, and ethical reflection, learners not only enhance their quantitative literacy but also cultivate a deeper appreciation for sustainable living.

Objectives



- Research and quantify the sources of CO₂ emissions within the school environment.
- Calculate the carbon footprint associated with electricity, heating, water usage, and daily activities
- Use AI-supported tools to model scenarios for achieving carbon neutrality.
- Design and present a data-driven sustainability plan for the school community.
- Reflect on how mathematical models can support environmental decision-making.

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Related School Subjects



Mathematics, Environmental Science, Physics, ICT, Geography.



Green Skills

Systems Thinking, Collaboration, Research, Environmental Literacy, Critical Thinking.



AI Tools

ChatGPT (data interpretation, report writing, estimation support), MathGPT (formulas and model calculations), Google Bard or Copilot (data collection and verification), Canva (infographic creation).

Example Prompts



“Estimate the total CO₂ emissions produced by a school with 500 students, including heating, electricity, and respiration.”

“Calculate how many oak trees would be needed to offset 10 tons of CO₂ per year.”

“Generate a mathematical model showing how reforestation could achieve carbon neutrality for a school.”

“Create a visual infographic summarizing the carbon balance between emissions and tree absorption.”

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Notes to the teacher



Stage 1: Define the Challenge

Introduce students to the concept of carbon footprint and sustainability metrics. Guide them in identifying all possible sources of CO₂ emissions in the school. Discuss the role of trees and ecosystems in absorbing CO₂ and producing oxygen.

Stage 2: Design & Prototype

Support students in using AI tools to gather emission data and perform calculations. Encourage them to experiment with different tree species and reforestation scales. Help them visualize the outcomes using graphs and AI-generated infographics.

Stage 3: Communicate & Showcase

Have students present their final “Mathematics of Green” model through posters, digital dashboards, or classroom exhibitions. Encourage them to share the findings with the school administration and suggest actionable sustainability strategies.

Teacher Tips

- Collaborate with the science and ICT departments for accurate data.
- Emphasize the ethical and ecological implications behind numbers.
- Encourage teamwork and problem-solving across disciplines.
- Ensure students cite AI tools and data sources transparently.