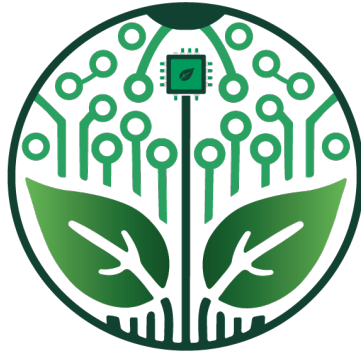




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LESSON PLAN

DESIGNING AN AI-BASED GREEN SCHOOL SOLUTION

 QUADRAT BLANK & HILF Bundeshandelsakademie Wolfsberg Austria	 DARICA İLÇE MİLLİ EĞİTİM MÜDÜRLÜĞÜ Turkey	 CAMPUS 02 FACHHOCHSCHULE DER WIRTSCHAFT GmbH Austria	 ΔΙΕΥΘΥΝΣΗ ΔΕΥΤΕΡΙΑΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΦΑΛΛΙΝΙΑΣ Directorate of Secondary Education of Kefallinia Greece	 Jaunpiebalgas vidusskola Latvia	 sucessos criativos Sucessos Criativos, Lda Portugal	 Sredno obshchobrazovatelno uchilishte Lyuben Karavelov Bulgaria
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Authors

Darica İlçe Milli Eğitim Müdürlüğü

Şehit Edip Zengin Anatolian High School



KOCAELİ - DARICA
İLÇE MİLLÎ EĞİTİM MÜDÜRLÜĞÜ

Hatice Tunç

Disclaimer



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1. TITLE

DESIGNING AN AI-BASED GREEN SCHOOL SOLUTION

2. GRADE LEVEL

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

3. SUBJECT AREA

- Environmental Studies
- Economics
- Computer Science
- Technology and Design
- Social Studies

4. TYPE

- Lesson Plan

5. DURATION

- 2 x 40-minute classes

6. LEARNING OBJECTIVES

O1 – Identify environmental sustainability problems in a school environment.

O2 – Explain how AI technologies can help create greener and more sustainable schools.



O3 – Design a simple AI-based solution to improve sustainability in their school.

O4 – Evaluate their solution in terms of environmental impact, feasibility, and responsibility

7. Key Competences Developed

- Literacy
- Digital competence
- Personal, social and learning to learn competence
- Citizenship competence
- Entrepreneurship competence

8. Prior Knowledge / Prerequisites

Basic understanding of AI (examples such as sensors, data analysis, smart systems)

General awareness of environmental issues (energy, waste, water, climate)

9. Lesson/Project Outline

Phase 1 – Introduction (Engage & Contextualize)

Activities:

Teacher introduces the concept of a “Green School”.

Class discussion:

“What environmental problems do we see in our school every day?”

Teacher introduces AI examples in schools:

Smart energy systems

AI-based waste sorting

Water usage monitoring

Smart heating and lighting



Expected Output:

Class list of sustainability problems in the school.

Supporting Media:

Presentation slides

Short inspirational video on smart green schools

<https://www.youtube.com/watch?v=HEiMWxVEAxE>

The Most Eco-Friendly Schools | Green Schools Around the World

Resource (name)	Link (to the folder on Teams)

Phase 2 – Exploration (Investigate & Compare)

Activities:

Students work in groups (3–4 students).

Each group analyzes one school sustainability problem:

Energy waste

Water overuse

Food waste

Excessive paper use

Students answer guiding questions:

Why is this a problem?

Who is affected?

How could AI help?

Expected Output:

Completed problem analysis worksheet.



Resource (name)	Link (to the folder on Teams)

Phase 3 – Application (Hands-On Practice)

Activities:

Groups design an AI-based Green School Solution.

They must define:

The problem

The AI technology used

How the system works

Environmental benefits

Possible challenges or risks

Examples of Student Solutions:

AI system that turns off lights automatically when classrooms are empty

Smart bins using AI to separate waste

AI system monitoring water leaks

AI tool that reduces food waste in the cafeteria

Expected Output:

One-page AI Green School Solution Poster or Canvas.

Resource (name)	Link (to the folder on Teams)



Phase 4 – Reflection & Consolidation (Present & Connect)

Activities:

Group presentations (3–4 minutes each).

Peer feedback using simple rubric.

Individual reflection:

“How can AI help schools become more sustainable and responsible?”

Expected Output:

Group presentation

Individual reflection paragraph

Resource (name)	Link (to the folder on Teams)

10. Assessment Criteria

Assessment Methods:

Knowledge quiz

Design worksheet

Group AI solution presentation

Self-reflection

Assessment Focus:

Understanding of AI and sustainability

Creativity and feasibility of solution



Environmental impact

Collaboration and communication

Resource (name)	Link (to the folder on Teams)

11. Teaching Materials

Name	Type (Developed/Existing)	Link	Role in the lesson

12. External Resources and References

Resource (name)	Link (external or to the folder on Teams)