AI-GREENER

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LESSON PLAN

[Using Artificial Intelligence (AI) for the Production of Organic Products]

QUADRAT HAK+HLW Bundeshandelsakademie Wolfsberg Austria	Darıca İlçe Milli Eğitim Müdürlüğü Turkey	CAMPUS 02 Fachhochschule der Wirtschaft GmbH Austria	Directorate of Secondary Education of Kefallinia Greece	Jaunpiebalgas vidusskola Latvia	sucessos criativos Sucessos Criativos, Lda Portugal	Sredno obshtoobrazovatelno uchilishte Lyuben Karavelov Bulgaria

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Disclamer

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1. TITLE

Using Artificial Intelligence (AI) for the Production of Organic Products

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

The main Learning objectives are:

O1 – Students will be able to explain what organic products are and describe their environmental benefits.
O2 – Students will be able to describe how Artificial Intelligence (AI) can support sustainable and organic agriculture.
O3 – Students will be able to design simple ideas for using AI in organic production.

7. Key Competences Developed

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

8. Prior Knowledge / Prerequisites

Basic knowledge of environmental issues and sustainable development.
Basic familiarity with using digital tools.

9. Lesson/Project Outline

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

Activity:
Class discussion:
"What do you think an organic product is? Why is it important?"

Students watch a short video about organic farming.

Resources

- Resource name: "Organic Farming – Basics Video"
- Link (Teams folder): /AI-GREENER/Phase1

Expected outcomes:
Students understand the concept of organic products.

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Resource (name)	Link (to the folder on Teams)
"Organic Farming – Basics Video"	https://www.youtube.com/watch?v=WhOrIUlrnPo

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

Activity:
Group work. Each group studies one AI application in agriculture:

- AI for plant disease detection
- Smart irrigation systems
- AI-powered drones for crop monitoring

Students complete a short worksheet.

Resources

- Resource name: "AI in Organic Farming – Worksheet"
- Link (Teams folder): /AI-GREENER/Phase2

Expected outcomes:
Students identify how AI supports organic and sustainable farming.

Resource (name)	Link (to the folder on Teams)
AI in Organic Farming – Worksheet	AI and the Future of Organic Farming: Student Worksheet

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

Activity:
Each group designs a simple scenario:
"How could we use AI to produce organic food in our school garden?"

Students create a mini-poster or a single-slide presentation.

Expected outcomes:
Students develop creative thinking and environmental awareness

Resource (name)	Link (to the folder on Teams)
Student's Guide	Student Guide: Using AI to Produce Organic Food in Our School Garden

Phase 4 – Reflection & Consolidation (Present & Connect)

Activity:
Groups present their ideas.
Students complete a short 5-question quiz.

Exit question:
"Name one way AI can help organic farming."

Resources

- Resource name: " Quiz"
- Link (Teams folder): /AI-GREENER/Phase4

Expected outcomes:
. Students consolidate their learning.

Resource (name)	Link (to the folder on Teams)
quiz	https://forms.gle/Cb7sAug9Mmns5Uwn8

10. Assessment Criteria

Criterion	Description	Points
Participation	Active participation in discussion	0–4
Worksheet	Completeness and accuracy of answers	0–3
AI Idea	Originality and realism of the proposed idea	0–3

Resource (name)	Link (to the folder on Teams)
quiz	https://forms.gle/Cb7sAug9Mmns5Uwn8

11. Teaching Materials

The materials used during the lesson are listed below.

Name	Type	Link	Role in the lesson
Organic Farming – Basics Video	Existing	Teams/Materials	Introduction to the topic
AI in Organic Farming – Worksheet	Developed	Teams/Worksheets	Supports exploration
Mini-Poster Template	Developed	Teams/Templates	Supports creative work
Online Quiz	Developed	Teams/Quiz	Assessment

12. External Resources and References

Resource (name)	Link (external or to the folder on Teams)
FAO – Organic Agriculture	https://www.fao.org
European Commission – Sustainable Agriculture	https://ec.europa.eu
UNESCO – AI AI in Agriculture	https://www.unesco.org
IFOAM – Organics International	https://www.ifoam.org