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WRITTEN LESSON PLAN

AI GREEN PERSONAL ASSISTANT AS SUPPORT FOR STUDENTS' RESEARCH ON THE IMPACT OF CLIMATE CHANGE ON WETLAND ECOSYSTEMS

LESSON OVERVIEW

Subject areas: Biology / Geography / Science / Informatics / Cross-curricular topic: Sustainable Development

Target group: 7th and 8th grade primary school students

Topic: Climate change and its impact on ecosystems

Duration: 90 minutes

Learning approach: Inquiry-based learning and collaborative group work

Digital tools: AI Green Personal Assistant, climate simulations and interactive digital tools

01 Learning Objectives

The aim of this learning activity is to enable students to understand the impact of climate change on natural ecosystems and to develop their ability to use artificial intelligence as a support tool for research, data analysis and decision-making related to sustainability challenges.

Students will explore how changes in temperature, precipitation, water availability and human activities can influence the balance of wetland ecosystems, with a special focus on the Kopački rit Nature Park area.

02 Learning Outcomes

STUDENTS WILL BE ABLE TO

explain the concept of climate change and identify its consequences for the environment

describe the importance of wetland ecosystems for biodiversity conservation

analyse the impact of different climate factors on ecosystems

use the AI Green Personal Assistant to ask questions, collect information and develop conclusions

critically evaluate information generated by artificial intelligence

propose sustainable solutions for mitigating the effects of climate change

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develop green skills and digital competences.

After completing the activity, students will be able to:

03 Introduction Activity (15 minutes)

The teacher introduces the topic by presenting photographs of the Kopački rit wetland ecosystem or a short video showing the effects of climate change on wetlands.

DISCUSSION QUESTIONS

What factors can influence changes in an ecosystem?

What could happen if a wetland area experiences a significant reduction in water availability?

How can increasing temperatures affect plants and animals?

How can humans contribute to ecosystem protection?

The teacher introduces the AI Green Personal Assistant as a digital learning support tool that students will use during their research.

04 Research Activity – Working with the AI Green Personal Assistant (35 minutes)

Students work in groups. Each group investigates one climate-related factor and explores its possible impact on the wetland ecosystem.

GROUP 1 – TEMPERATURE CHANGES

Research task:

Using the AI Green Personal Assistant, students explore:

How does an increase in average temperature affect wetland ecosystems?

Which plant and animal species may be endangered?

What adaptations could occur within the ecosystem?

Example prompt:

"Explain how an increase in temperature by 2°C could affect plant and animal species in the Kopački rit wetland ecosystem."

Expected student conclusion:

Higher temperatures may cause habitat drying, changes in species life cycles and a reduction in biodiversity.

GROUP 2 – PRECIPITATION AND WATER AVAILABILITY

Research task:

Students investigate:

How does reduced precipitation affect water levels in wetlands?

What are the consequences of prolonged drought periods?

Which measures can support the conservation of wetland habitats?

Example prompt:

"What consequences could a long-term drought have on the Kopački rit wetland ecosystem and its biodiversity?"

Expected student conclusion:

Reduced water availability can threaten aquatic species, birds and plants that depend on wet habitats

GROUP 3 – HUMAN IMPACT ON ECOSYSTEMS

Research task:

Students explore:

How do human activities influence natural ecosystems?

Which activities increase environmental pressure?

How can humans reduce their negative impact?

Example prompt:

"Suggest activities that people can undertake to protect wetland ecosystems."

Expected student conclusion:

Protecting natural habitats, reducing pollution and promoting sustainable resource management can contribute to ecosystem preservation.

05 Analysis of Results and Decision-Making (30 minutes)

After completing their research, students present their findings.

The common challenge:

THE COMMON CHALLENGE

"How could the Kopački rit wetland ecosystem look in 50 years if climate change continues?"

Using the AI Green Personal Assistant, students create:

STUDENTS CREATE

a possible future climate scenario

a list of potentially endangered species

recommendations for ecosystem protection.

POSSIBLE SOLUTIONS

restoration of natural habitats

protection of water resources

reduction of pollution

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environmental education

promotion of renewable energy sources.

06 Reflection Activity (10 minutes)

REFLECTION QUESTIONS

What have I learned about climate change and ecosystems?

How did the AI Green Personal Assistant support my learning?

Why is it important to critically evaluate information generated by AI?

What action can I personally take to contribute to environmental protection?

07 Assessment

ASSESSMENT CRITERIA

students' active participation in the research process

the quality of questions asked to the AI assistant

students' ability to connect climate factors with environmental consequences

creativity in proposing sustainable solutions

critical thinking about AI-generated information.

08 Expected Results

By using the AI Green Personal Assistant, students develop the ability to use artificial intelligence as a learning support tool while maintaining a critical approach towards AI-generated information.

The activity integrates digital competences, green skills and climate change education through an inquiry-based learning approach. Students gain a deeper understanding of climate challenges and develop the ability to use digital technologies for exploring and solving real-world environmental problems.

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