

# Lesson plan



2023-1-SK01-KA220-SCH-00015112

<b>Topic</b>	Sustainability and technology	
<b>Block name</b>	<i>Green Diary – an application for ecological living</i>	
<b>Age category</b> 13 – 15	<b>Duration</b> 135 minutes	<b>Number of teaching hours</b> 3
<b>Student-centered educational goals (content and performance standards)</b>		
<b>Content standard:</b> <ul style="list-style-type: none"><li>• Principles of sustainable development and personal responsibility towards the environment.</li><li>• Impacts of human activity on ecosystems and climate balance.</li><li>• Possibilities of using technologies to support ecological behavior.</li></ul>		
<b>Performance standard:</b> <ul style="list-style-type: none"><li>• Design and create a simple application that tracks daily environmental activities.</li><li>• Evaluate results using a visual display of points and levels of sustainable behavior.</li><li>• Present the app and explain how it motivates an environmentally responsible lifestyle.</li></ul>		
<b>Integration of subjects:</b> <ul style="list-style-type: none"><li>• Natural history,</li><li>• Geography,</li><li>• Informatics,</li></ul>		

- Art education

### **21st century skills:**

- Critical thinking,
- Digital creativity,
- Cooperation,
- Empathy

### **Didactic aids and teaching techniques:**

- Computers with internet,
- MIT app inventor,
- Canva,
- Mobile phones
- Worksheet "My Ecological Week",
- Cards with environmental activities (e.g. "walked", "saved water", "used a cloth bag")

### **References / Resources (videos, methodologies):**

<https://appinventor.mit.edu>

### **Motivational phase:**

**Duration: 35-40 minutes**

*"Every day counts"*

*Discussion:*

- The teacher opens the lesson with the question: "How can we be more environmentally friendly in our daily lives?"
- Students spontaneously suggest ideas (waste sorting, walking instead of driving, reducing plastic, saving water).

*Video with reflections:*

- The teacher will show a video, e.g. [Sustainability in everyday life | Sustainability](#) or [What is](#)

[Sustainable Living? - Eco-Friendly Habits - Why is sustainable life important? #education](#) or his own—a simple, understandable explanation of a sustainable lifestyle for young people.

This is followed by a short discussion: “How can technology help us live ecologically?”

*Worksheet:*

- Students fill out the worksheet "My Ecological Week" - they write down what sustainable activities they do (e.g. walking to school, reusing bottles, recycling).

*Introduction to the project:*

- The teacher explains that the goal of the lesson is to create a Green Diary – an application that motivates users to behave sustainably.

**Exposure phase:**

**Duration: 50 minutes**

**Objective:** To combine environmental knowledge with basic principles of computer science by creating an application supporting ecological behavior.

**Science Integration:**

- Discussion about carbon footprint, recycling and the material cycle.
- Students determine which everyday activities have the greatest impact on the environment.
- A quick calculation: how many CO<sub>2</sub> emissions will a person save by not driving for one day?

**Informatics integration:**

- The teacher will introduce the basic principle of MIT App Inventor and show how the point database works.
- Students will create the user interface of the "Green Diary" application - a field for entering activities, assigning points, and a graphical level indicator (e.g. "Eco-Novice", "Eco-Hero", "Eco-Master").
- Using block programming, students set that a certain number of points will be awarded for each ecological action (e.g. "I walked", "I sorted waste").

- Images and colors change according to the user's level (e.g. from a gray planet to a green one).

### **Activities:**

#### *Demonstration and planning (10 min)*

- The teacher demonstrates an example of a simple application with adding points.

#### *Prototype creation (30 min)*

- Students in groups create their own version of the app and design ecological activities that it will track.

#### *Discussion and testing (10 min)*

- Students test the applications with each other and suggest improvements.
- Students share their experiences - what was the most difficult, what was the most fun, how such an application can be useful in everyday life.

### **Fixation phase (fixing and deepening):**

#### **Duration: 45 minutes**

#### *Presentation and voting:*

- Each group will present their app and explain how it motivates users to behave environmentally friendly.
- Together they vote for the "greenest idea."

#### *Reflexes:*

- Discussion: "How is technology changing our relationship with nature? How can we support sustainability every day?"

#### *Visual output:*

- Students will create a poster in Canva titled "Small Actions, Big Impact," showcasing their ideas and environmental activities.

### Student evaluation:

- Functionality and creativity of the application
- Teamwork and presentation
- Understanding nutritional principles

### Attachments:

# Worksheet – My Ecological Week

**Name:** \_\_\_\_\_ **Class:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## 1. My daily eco-friendly habits

*Check which activities you normally do. (You can add others that come to mind.)*



*At home*

- ☐ *I sort waste (plastic, paper, glass)*
- ☐ *I use a cloth bag instead of a plastic one*
- ☐ *I save water when washing or showering.*
- ☐ *I turn off the lights when I leave the room.*
- ☐ *I don't waste food.*



*On the road*

- ☐ *I walk or ride a bike to school.*
- ☐ *I use public transportation instead of a car.*
- ☐ *I share a ride with others (carpooling)*



*Inside*

- ☐ *I help out in nature (garbage collection, planting plants)*
- ☐ *I am interested in ecological projects or competitions.*

☐ *I try to buy local or seasonal foods.*

## 2. My eco-goals for this week

*Add three things you want to improve:*

---

---

---

## 3. Track your results throughout the week

*Every day, make a ✓ for an ecological act you have completed. (e.g. walking instead of driving, sorting waste, saving water)*

<i>Day</i>	<i>Number of eco-activities</i>	<i>My notes/feelings</i>
------------	---------------------------------	--------------------------

*Monday*

*Tuesday*

*Wednesday*

*Thursday*

*Friday*

*Saturday*




*Sunday*

## 4. Reflection of the week

- What was easiest for me?*
- What was the hardest for me?*
- What new things have I learned about sustainability?*

## Conclusion

*Color your "eco-rating" according to how satisfied you are with your week:*

 = I need to try harder    = I'm on the right track    = I live sustainably