

LOESS INTEGRATED LEARNING SCENARIO TEMPLATE

Introduction

In [LOESS](#), the acquisition of soil health knowledge is facilitated using integrated STEM teaching and learning, which is carried out via the [Biology Science Curriculum Study \(BSCS\) 5E Instructional Model](#) by Bybee and colleagues (Bybee et al. 2006) as well as the application of innovative [pedagogical approaches](#) (PBL, IBL, etc).

Keywords

Soil health, ecosystems, parks, beaches, biodiversity

Title

Digging Deeper. Exploring the vital role of Soil in local ecosystems

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Summary

In this learning scenario, students will explore the importance of healthy soil and its role in supporting local ecosystems such as parks and beaches. Students will investigate different types of soil, examine soil biodiversity, and analyse the effects of pollution and human activity on soil health. This project integrates science, mathematics, geography, and environmental education, promoting hands-on learning and engagement with the local community.

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Subjects

Biology, Mathematics, Geography, ICT and Civic engagement

Real-life questions

- How does soil health impact local ecosystems, such as parks and beaches?
- What are the different types of soil, and how do they support local plant and animal life?
- How does human activity and pollution affect soil quality and biodiversity?
- What practical steps can be taken to improve soil health in our community?
- How can local communities participate in preserving soil and promoting sustainability?



Learning objectives

The students will be able to:

- understand the importance of soil health for ecosystems,
- investigate the different types of soil found in parks and beaches in Zadar,
- analyse the relationship between soil quality, biodiversity, and environmental sustainability,
- collect soil samples, analyse their properties, and map soil types across Zadar,
- raise awareness about the impact of pollution and urban development on soil quality.

Link to curriculum

The activities in this learning scenario are directly linked to the curriculum by integrating science, geography, and mathematics in the context of environmental education. Through hands-on soil investigations, students develop STEM skills like data analysis, critical thinking, and problem-solving. The scenario also promotes collaboration and real-world applications of knowledge. It aligns with UN SDGs, specifically **SDG 13 (Climate Action)** by addressing the impact of human activities on soil, **SDG 15 (Life on Land)** by exploring biodiversity and soil health, and **SDG 12 (Responsible Consumption and Production)** through sustainability practices.

Age of students

10 – 12 years old

Time

Preparation time:

- 2 hours (including gathering materials, researching local soil data, and planning interdisciplinary activities).

Teaching time for each subject:

- **Science:** 45 minutes (investigating soil types, conducting experiments, analysing results).
- **Biology:** 90 minutes (exploring biodiversity and its link to soil health).
- **Geography:** 45 minutes (examining local soil conditions and environmental impact).
- **Mathematics:** 45 minutes (data collection, analysis, and graphing).
- **ICT:** 45 minutes (using digital tools for data analysis, research, and presentations).
- **Civic Engagement:** 45 minutes (connecting with the local community through awareness campaigns or action plans).

Some lessons are done in combination.

Teaching resources (materials & online tools)

Materials:

Material for all lessons

- Computers/tablets.
- Internet connection.



Lesson 2: Science and Geography

- Soil samples (variety of types: clay, sand, loam, etc.)
- Magnifying glasses or microscopes
- Commercial soil testing kits for pH and NPK nutrients (Nitrogen, Phosphorus, Potassium)
- Notebooks
- Rulers for measurements
- Maps of the local area demonstrating features such as parks, beaches, land formations etc (optional – use of online tools is possible)

Lesson 3: Biology

- Microscopes for viewing soil organisms (if available)
- Markers, printouts, and other materials for creating posters or flyers

Lesson 4: Geography and Civic Engagement

- Maps of the local area demonstrating features such as parks, beaches, land formations etc (optional – use of online tools is possible)
- Presentation boards for creating awareness materials
- Markers, printouts, and other materials for creating posters or flyers
- Local community contacts or information for collaboration

Lesson 5: Mathematics and ICT

- Graph paper or digital tools for creating graphs
- Calculators or computers for data analysis
- Rulers for measurements
- Digital cameras or smartphones for recording data

Online tools:

Lesson 1: Introductory lesson

- A video introducing soil and the value of soil health
Option 1: Crash Course Geography #17 What is soil (and why is it important)
<https://youtu.be/udselcrUxvA?si=3fWm-ektJKlzfgVt>
Option 2: Why soil is one of the most amazing things on Earth (BBC video)
<https://www.youtube.com/watch?v=OiLITHMVcRw>
- A video presenting the impact of soil erosion
Option 1: Soil Erosion | Causes, Effects, and Solutions | The Planet Voice
https://www.youtube.com/watch?v=BoSUEiKk_Y4
Option 2: Why The World Is Running Out Of Soil (CNBC)
<https://www.youtube.com/watch?v=NJhpoYwAqFA>
Option 3: Soil Erosion Round the World – Causes and Solutions | Global 3000
<https://www.youtube.com/watch?v=s0F2cIECuo4>
- A podcast series on topics related to EU Mission Soil
<https://www.youtube.com/watch?v=NyLreiPUL64&list=PLFj-DFMoOMbHubCTv8B8DpeRxfBbr2AaT&index=3>

Lesson 2: Science

- Guide to determining soil texture by feel
<https://www.nrcs.usda.gov/sites/default/files/2022-11/texture-by-feel.pdf>



Lesson 2 and 4: Geography

- A website to retrieve and view satellite images
Option 1: Google Earth <https://earth.google.com/>
Option 2: NASA WorldWind <https://worldwind.earth/explorer/>
Option 3: EarthExplorer <https://earthexplorer.usgs.gov/>

Lesson 5: ICT

- Software for data analysis
Option 1: Microsoft Excel <https://www.microsoft.com/en-us/microsoft-365/excel/>
Option 2: Google Sheets <https://workspace.google.com/products/sheets/>
- Software to create presentations
Option 1: Microsoft PowerPoint <https://www.microsoft.com/en-us/microsoft-365/powerpoint>
Option 2: Google Slides <https://workspace.google.com/products/slides/>
Option 3: Canva <https://www.canva.com/>

STEM Strategy Criteria

Developing the LOESS learning scenario will help you and your school comply with the [STEM School Label criteria](#). Please find below the list of STEM School label criteria this Learning Scenario fulfils.

Elements and criteria	How is this criterion addressed in the learning scenario?
Instruction	
Personalisation of learning	<p>The scenario can be connected to personalisation of learning by allowing students to explore topics that align with their own interests and strengths. For example:</p> <ul style="list-style-type: none"> • Choice of study location: Students can select soil samples from locations they personally connect with (parks, beaches, home gardens). • Diverse outputs: Some may prefer writing reports, while others could opt for creating infographics or leading presentations, catering to their individual skills. • Tailored investigations: Students can explore specific aspects like soil biodiversity, pollution, or human impact, focusing on areas that intrigue them.
Problem and project-based learning (PBL)	<p>Problem-Based Learning (PBL) connection: Students investigate real-world challenges like soil health, urbanization, and pollution in Zadar. They define problems related to soil degradation and propose solutions for improvement, encouraging critical thinking and collaboration.</p> <p>Project-Based Learning: Through hands-on activities like soil sample collection and analysis, students work on a long-term project to explore soil biodiversity and environmental health, creating tangible products (maps, reports, presentations) based on their findings.</p>
Inquiry-Based Science Education (IBSE)	<p>Inquiry-Based Science Education (IBSE is visible in the scenario because it is student-driven, where learners form hypotheses about soil quality, gather and analyse data through scientific inquiry, and draw conclusions, fostering exploration and curiosity in a real-world context.</p>
Curriculum implementation	<p>The scenario can be implemented across several subjects in lower secondary school, encouraging cross-curricular connections:</p>



Elements and criteria	How is this criterion addressed in the learning scenario?
	<ol style="list-style-type: none"> 1. Science with a focus on soil ecosystems, biodiversity, and environmental impacts. 2. Geography students study the local geography of Zadar, soil types, and human impact on natural areas. 3. Mathematics as students analyse data from soil tests, calculate averages, and interpret graphs. 4. Students use digital tools for mapping and presenting data. 5. Civic engagement through the exploration of environmental responsibility and the role of communities in protecting local ecosystems. 6. Biology is connected to the scenario by focusing on the biological aspects of soil ecosystems and biodiversity: <ul style="list-style-type: none"> o Microorganisms: Studying the role of bacteria, fungi, and other microorganisms in breaking down organic matter and maintaining soil health. o Soil Biodiversity: Investigating the presence and functions of earthworms, insects, and plant roots in soil ecosystems, discussing how these organisms affect soil structure and fertility. o Ecosystem Interactions: Exploring how soil health influences plant growth and local ecosystems in Zadar’s parks and beaches, connecting it to wider biological cycles such as nutrient cycling and decomposition.
Emphasis on STEM topics and competencies	
Interdisciplinary instruction	In this Learning Scenario, we examine and implement a variety of activities by connecting Geography, Mathematics, Science, Civic engagement with Biology and ICT. This interdisciplinary approach fosters a well-rounded understanding of soil health and its significance.
Contextualisation of STEM teaching	Contextualisation of STEM teaching in the scenario involves making the learning experience relevant to students’ local environment. Students explore real-world issues related to soil biodiversity, pollution, and human impact in their own city, using their parks and beaches as living laboratories. By applying STEM concepts to familiar surroundings, students see the relevance of science, technology, engineering, and mathematics in solving local environmental challenges, fostering deeper engagement and practical understanding of the subjects.
Assessment	
Continuous assessment	<p>Field observations and note-taking: During the collection of soil samples, assess students’ ability to observe and record detailed characteristics (texture, colour, biodiversity).</p> <p>Formative quizzes: Use quick quizzes after explaining soil types, biodiversity, and human impact to check comprehension.</p> <p>Ongoing reflection journals: Have students regularly reflect on their findings and challenges encountered during the project, giving insight into their learning progress.</p>
Personalized assessment	<p>IDifferentiated projects: Allow students to choose how they present their findings—through reports, presentations, or digital media—tailored to their strengths and preferences.</p> <p>Customised feedback: Provide individualised feedback on fieldwork, encouraging each student to improve based on their personal learning goals and challenges.</p>
Professionalization of staff	
Highly qualified professionals	Collaboration with environmental scientists: Invite soil scientists or ecologists to guide students in sample analysis, providing expert insights into soil biodiversity and pollution.



Elements and criteria	How is this criterion addressed in the learning scenario?
	Input from local professionals: Depending on the local ecosystems, professionals can be contacted for collaboration e.g. collaboration with marine biologists to explain the soil-sea interaction and its ecological significance.
Existence of supporting (pedagogical) staff	Technicians' support: Science lab technicians can assist with equipment preparation for soil testing. Special education teachers: Provide differentiated support for students needing additional help in understanding scientific concepts.
School leadership and culture	
School leadership	Strong leadership fosters a supportive environment by prioritising STEM initiatives and providing resources (e.g., technology, professional development) needed for success.
High level of cooperation among staff	Collaboration between teachers from different subjects (science, geography, technology) allows for integrated learning experiences, while sharing ideas and resources ensures the scenario runs smoothly.
Inclusive culture	An inclusive culture ensures that all students, regardless of their abilities, can participate fully in the project, with personalised support to meet diverse learning needs.
Connections	
With parents/guardians	Involve parents and guardians if possible, in field activities, such as taking part in local park or beach clean-ups, or asking them to help with observations at home. Regular updates through newsletters or meetings can keep them engaged in students' progress.
With other schools and/or educational platforms	If possible, partner with platforms like eTwinning or Scientix for collaborative projects, expert webinars, or access to research data.
With universities and/or research centers	Collaborate with local universities or research centres for expert talks, access to laboratory facilities, or joint research projects, enhancing the educational experience.
With local communities	Engage the community through awareness campaigns, workshops, or even citizen science activities to raise awareness of soil health and its environmental importance.
School infrastructure	
Access to technology and equipment	Technology and tools like soil testing kits, computers for data analysis, and digital platforms for collaboration are crucial for students to gather and analyse data accurately, conduct virtual simulations, and present their findings effectively.
High quality instruction classroom materials	Well-prepared teaching resources, such as textbooks, worksheets, and multimedia materials, enhance the quality of instruction, ensuring students understand scientific concepts deeply and can apply them practically in the field.



Description of activities

Name of activity	Procedure	Time
1st Lesson		
5E Phase	<i>Engage</i>	
Brainstorming and discussion	<p>Spark students' curiosity and relate soil health to their everyday environment in your town or city.</p> <p>Brainstorming: Begin with a discussion about the parks, beaches or other ecosystems that students often visit. Ask students to reflect on the importance of soil in these environments. Pose questions like:</p> <p>"What role do you think soil plays in these ecosystems?" "How might the health of soil affect the plants and animals in parks and beaches?"</p> <p>You could also show a short video on any of the following topics, depending on what is more relevant to your area:</p> <ul style="list-style-type: none"> - the importance of soil and soil health (option 1, option 2) - the impact of soil erosion (option 1, option 2, option 3) <p>This phase connects the lesson to their lives and stimulates interest, making them think about soil in a way they might not have before.</p>	15 minutes
Discussion and preparation for the next lesson	<p>Introduce the students to a soil observation activity they will have to complete at home, in preparation for the next lesson.</p> <p>Ask students to observe and document the soil in their own surroundings, such as their backyard, garden, or even a nearby park or beach that they regularly visit. They should:</p> <ul style="list-style-type: none"> o Take a small sample of soil from a location of their choice. If this is not possible, the teacher should be prepared to provide a variety of soil samples from local garden depots or even from their own home garden, local park or even the school yard. o Observe the texture, colour, and presence of any organic material (e.g., small plants, insects, etc.). o Photograph the location and the soil sample (if collected by the student). o Write down their initial thoughts and answer the following questions: <ol style="list-style-type: none"> 1. Does the soil feel sandy, clay-like, or a mix? 2. Are there any visible signs of life (e.g., worms, roots)? 3. How do you think human activity might have affected this soil? 4. Is the soil in a natural area or one altered by human development? <p>Encourage students to bring their observations, samples, and photos to the next class for comparison and discussion. This will prepare them for the Explore stage, where they will be collecting and analysing soil samples in a more structured and scientific manner.</p> <p>This activity sets the stage for deeper inquiry and personal connection to the lesson while encouraging observational skills and curiosity.</p>	30 minutes



Name of activity	Procedure	Time
2nd Lesson		
5E Phase	<i>Explore</i>	
Subjects	Science, Geography	
Discussion of student reports	Students are asked to share the observations the made on soil samples at home. Ask students to compare and contrast observations on samples collected from similar locations or whether what they observed matched their expectations.	15 minutes
Preparation of outdoor activity	<p>Introduce students to how the outdoor soil sampling will be conducted and what types of data they will collect this time. Take this opportunity to explain the difference between qualitative and quantitative data.</p> <p>Key points the students will be observing or measuring:</p> <ul style="list-style-type: none"> ○ Soil Texture and composition: Understanding the different components of soil (sand, silt, clay, organic matter) (Use the Guide to determining soil texture by feel). ○ pH Measurement: Learning how to measure the acidity or alkalinity of soil and its impact on plant growth. ○ NPK Nutrient levels: Measure Nitrogen, Phosphorus and Potassium levels in the soil, if an appropriate testing kit is available. ○ Biodiversity: Identifying various organisms found in soil samples and their roles in the ecosystem. ○ Data Collection: Emphasizing the importance of accurate data recording and analysis in scientific investigations. 	15 minutes
Exploring and investigating the local area	<p>Objective: Provide hands-on experience to deepen their understanding of soil health and biodiversity.</p> <p>Activity: In this phase, students will actively explore a local ecosystem (e.g. a park, a beach, a prairie) by collecting soil samples, measuring pH, nutrients, and soil texture, and observing biodiversity within the soil. They will work in groups, gathering and recording data about different soil types and their properties.</p> <p>Tools like soil testing kits will allow them to physically engage with the topic and start making observations about differences in soil health across locations.</p> <p>Students can use a common physical map or an online tool (Google Earth, NASA WorldWind, EarthExplorer) to record the location of the observations for the entire class.</p> <p>This phase is student-centred and inquiry-based, allowing them to gather evidence through direct experience.</p>	60 minutes
Learning products	<p>Each student or group submits a written report on the soil samples they collected and analysed. The report includes the following information:</p> <ul style="list-style-type: none"> ○ Location of the samples (location on the common classroom map and photos if available). ○ Soil properties (pH, texture, nutrient content, if measured). ○ Observations of soil biodiversity (earthworms, plant roots, etc.). 	



Name of activity	Procedure	Time
	An additional outcome is the common classroom map (either physical or online) recording the observations of the entire class. The map will be used in follow-up lessons for further analysis of soil health based on data and comparison to other locations.	
3rd Lesson		
5E Phase	Explain	
Subject	Biology	
Researching and documenting	<p>Objective: Encourage students to explain their findings and connect them with scientific concepts.</p> <p>Activity: Students will present their soil sample results, discussing the pH, moisture, biodiversity, and texture differences they discovered. Students can also use microscopes (if available) to make additional observations on soil organisms they have found in their samples.</p> <p>Guide students to explain how soil quality impacts local plant life, water retention, and overall ecosystem health in parks and beaches. They can discuss why certain areas have better soil health than others.</p> <p>Introduce scientific concepts during this phase, such as the soil nutrient cycle, soil ecosystems, and human impacts on soil through pollution and development.</p> <p>This phase helps students articulate their understanding and make sense of the data they've collected.</p>	45 minutes
Group work	<p>In groups of four the students combine their findings and collaboratively create a presentation or posters using online tools (PowerPoint, Google Sheets, Canva) or physical materials.</p> <p>They should:</p> <ul style="list-style-type: none"> ○ Explain the types of soil they encountered. ○ Discuss patterns they observed (e.g., different soil types in parks vs. beaches). ○ Propose ways to improve or maintain soil health based on their research. 	45 minutes
Learning products	Presentations or posters regarding the soil sample data.	
4th Lesson		
5E Phase	<i>Elaborate</i>	
Subjects	Geography and Civic Engagement	
Group work: soil health map creation	<p>Soil Health Map (Class-wide project)</p> <p>As a class, students collaborate to create a map (of the local area or the entire town), showing:</p> <ul style="list-style-type: none"> - The locations of soil samples they collected and the fieldwork data for each sample. - In which locations different types of soils are found across the area (e.g. highlight parks vs beaches) 	45 minutes



Name of activity	Procedure	Time
	<ul style="list-style-type: none"> - Colour-coded areas representing healthy vs. less healthy soil (they will try to extrapolate this information based on their fieldwork observations) <p>Purpose: This product integrates geography with science and encourages teamwork, while also serving as a visual summary of their findings.</p>	
Group work: connecting soil health and society	<p>Objective: Extend and apply their knowledge by connecting soil health to broader environmental issues and proposing solutions.</p> <p>Activity: Students will analyse how urban development, pollution, or tourism might affect the soil in local parks and beaches.</p> <p>In groups, they can brainstorm ways to improve soil health, like planting native species, reducing foot traffic in sensitive areas, or advocating for green spaces. They can also consider how soil health is linked to global issues like climate change and food security.</p> <p>Based on their observations and on the soil health map of the area, they can create proposals for interventions that will improve soil health. They can showcase these proposals as posters or leaflets of a 'campaign' to involve the public in soil conservation.</p> <p>This phase encourages them to think critically and apply their knowledge to solve real-world problems related to soil in their community.</p>	45 minutes
Learning products	<p>Final soil health map of the area, compiling fieldwork observations and types of soil present in the area.</p> <p>Posters or leaflets with proposals for interventions to improve soil health in the area, based on the soil health map.</p>	
5th Lesson		
5E Phase	<i>Evaluate</i>	
Subjects	<i>Mathematics and ICT</i>	
Preparation of presentations	<p>Objective: Assess students' understanding and their ability to apply what they've learned.</p> <p>Activity: Students will present their findings and proposals for soil conservation to a mock audience of local authorities or community members.</p> <p>To support their case, they need to create data graphs and infographics about their research and suggestions.</p>	45 minutes
Presentations and assessment	<p>You can assess the students' understanding through their presentations, the accuracy of their data analysis, and their ability to communicate the importance of soil health and biodiversity.</p> <p>In this phase, both formative (throughout the project) and summative assessment (final presentations/reports) help evaluate students' understanding and application of concepts.</p>	45 minutes
Learning products	<p>Final presentations and infographics,</p>	



Initial assessment

Pre-lesson quiz on basic soil types and their properties.

What is the main component of soil?

- A) Sand
- B) Organic matter
- C) Water
- D) Air

Answer: B) Organic matter

Which soil type is best for growing most plants?

- A) Clay soil
- B) Sandy soil
- C) Loamy soil
- D) Chalky soil

Answer: C) Loamy soil

Which soil type holds water for a longer period?

- A) Sandy soil
- B) Clay soil
- C) Silty soil
- D) Gravel soil

Answer: B) Clay soil

Which soil type drains water quickly?

- A) Clay soil
- B) Sandy soil
- C) Peaty soil
- D) Loamy soil

Answer: B) Sandy soil

What is the texture of loamy soil?

- A) Rough and gritty
- B) Smooth and sticky
- C) A balance of sand, silt, and clay
- D) Powdery and dry

Answer: C) A balance of sand, silt, and clay

Which soil type is rich in nutrients and good for agriculture?

- A) Clay soil
- B) Sandy soil
- C) Loamy soil
- D) Peaty soil

Answer: C) Loamy soil

Formative evaluation

Interactive quiz:

What can we learn from the biodiversity in soil?

- It helps determine the soil's health.
- It shows how much water the soil can hold.



- It indicates the soil's colour.
- It doesn't have any effect on soil quality.

Answer: A) It helps determine the soil's health.

What type of soil would you find in areas with frequent rainfall, like parks in Zadar?

- Sandy soil
- Clay soil
- Loamy soil
- Peaty soil

Answer: B) Clay soil

Which of the following activities can help maintain healthy soil in parks and beaches?

- Planting native plants
- Dumping trash on the soil
- Paving over the soil
- Over-watering the soil

Answer: A) Planting native plants

Why is soil testing important when studying soil health?

- To know how much rain will fall
- To measure the soil's temperature
- To understand the soil's composition and nutrient levels
- To determine the height of plants in the soil

Answer: C) To understand the soil's composition and nutrient levels

What is one effect of pollution on soil?

- It improves the soil's health.
- It makes the soil richer in nutrients.
- It can reduce the soil's fertility.
- It increases the biodiversity of the soil.

Answer: C) It can reduce the soil's fertility.

Which of these is a sign of healthy soil in your local park or beach?

- Dry, cracked surface
- A large number of worms and insects
- Soil that doesn't support any plant growth
- A lot of trash on the surface

Answer: B) A large number of worms and insects

Final assessment

A final assessment is necessary to evaluate how well students have understood the core concepts of soil health, its types, and their impact on the local environment. It provides an opportunity for students to apply their knowledge in real-world contexts and demonstrate their ability to analyse soil conditions and suggest solutions for improving soil quality in their town. Student assessment of their understanding is done through the final project presentations (Lesson 5). See the rubric in [Annex 1](#) detailing the criteria for a presentation assessment.

Student feedback

These are indicative feedback questions to ask students:

- *What was the most interesting thing you learned about soil health in our project?*



- *How did working with real-world data (like soil samples) help you understand the topic better?*
- *Was the presentation of the findings clear and easy to follow? What could be improved?*
- *How did your teamwork contribute to the success of the project?*
- *What challenges did you face while learning about soil health, and how did you overcome them?*
- *How can you apply what you've learned about soil health to help your local community?*

Teacher feedback

The following guiding questions can be used for teacher feedback:

Student engagement & understanding

- *Did students show curiosity and interest in exploring soil types and biodiversity?*
- *How well did students grasp the connection between soil health and ecosystem sustainability?*
- *Were students able to relate the scientific concepts to their local environment?*

Hands-on learning & inquiry

- *How effectively did students engage in hands-on investigations and data collection?*
- *Did students demonstrate critical thinking when analysing the effects of pollution and human activity?*
- *Were students able to formulate meaningful questions or hypotheses during the inquiry?*

Interdisciplinary connections

- *How successfully were science, mathematics, geography, and environmental education integrated?*
- *Did students make connections between soil data and local geographical features?*
- *Were mathematical skills (e.g. measurement, data analysis) applied accurately and meaningfully?*

Collaboration & community engagement

- *Did students collaborate effectively during fieldwork and group activities?*
- *Was there any interaction with the local community or experts (e.g. park staff, environmentalists)?*
- *How did students respond to the idea of contributing to local awareness?*

Reflection & communication

- *Were students able to reflect on their learning and express their findings clearly?*
- *Did they use appropriate scientific vocabulary and reasoning in their presentations or reports?*
- *How did students respond emotionally or ethically to the environmental issues discussed?*

Suggestions for improvement

- *What aspects of the lesson could be improved to deepen understanding or increase engagement?*
- *Were there any challenges in logistics, resources, or student readiness?*
- *What would you change or expand in future iterations of this scenario?*



Reflection on the development process

Add here your personal reflection on the creation of your learning scenario (max 200 words). Here below are a few questions that can help you brainstorm.

1. Describe where your initial ideas for the LS came from. What inspired you to choose the particular focus you have chosen?
2. Summarise the research you have conducted and resources you have found to inform your plan. How did those influence your thinking and creation process?
3. What did you learn about your own planning and development process?

1. My initial ideas for the Learning Scenario (LS) came from my interest in combining local environmental issues with educational goals. The specific focus on soil health was inspired by my students' natural curiosity about the environment and the need to raise awareness about sustainability. Additionally, my own city's context, Zadar's parks and beaches, provided a real-world context to connect classroom learning with the students' everyday surroundings.
2. I conducted research on soil types, biodiversity, and local environmental factors affecting Zadar's soil health. Resources found in the MOOC from European Schoolnet Academy provided many valuable insights. This helped shape the plan, ensuring relevance and alignment with real-world environmental challenges.
3. The more research I did, the clearer the connections between scientific theory and local relevance became. I also realised the importance of flexibility in adapting resources and approaches based on student feedback and the evolving project context. This process has enriched my approach to lesson planning and collaboration.



Annex 1 – Final presentation assignment rubric

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Understanding of Concepts	Demonstrates a deep understanding of soil types, their properties, and their role in ecosystem health.	Demonstrates good understanding with minor gaps in knowledge.	Shows basic understanding, but misses key concepts or details.	Lacks understanding of key concepts or misrepresents information.
Data Analysis & Application	Accurately presents and interprets soil data, applying findings to real-world contexts like Zadar's environment.	Correctly presents data, but application to local context is limited or unclear.	Presents some data with minimal analysis; connections to local context are weak.	Presents data with little to no analysis; fails to connect to local context.
Creativity & Presentation	Presentation is highly engaging, visually appealing, and well-organised, with clear explanations.	Presentation is clear and organised with some visual appeal.	Presentation is somewhat disorganised or lacks engaging visuals.	Presentation is unclear, lacks structure, and is not visually appealing.
Collaboration & Teamwork	Collaborates effectively, with each member contributing meaningfully to the presentation.	Most members collaborate well, but some contributions are minimal.	Some collaboration, but unequal participation or unclear roles.	Minimal collaboration, with little to no contribution from some members.
Proposed Solutions & Action Plan	Provides a detailed and practical plan for improving soil health in Zadar, considering local environmental factors.	Provides a feasible plan, but lacks detail or connection to local factors.	Suggests general solutions with little consideration of Zadar's specific needs.	Offers vague or impractical solutions with no connection to Zadar's context.

