

OUTSTE(A)M in Action: Let's STE(A)M

My OUTSTE(A)M Learning Scenario

Pollution in our water/lake/sea



Presenting the template

The OUTSTE(A)M Learning Scenario template is for all educators in formal education (early childhood education and care, primary, secondary). A Learning Scenario provides all the details for a lesson or series of lessons and the activities that are to take place to help pupils understand better a specific topic.

How to fill in the sections of the template

In the following pages, you will design your own OUTSTE(A)M Learning Scenario and share it with the community. Every bit is important: all educational activities, your instructional strategies, your aims, and the final outcomes are some of these aspects.

Each section provides you with instructions about what information needs to be included. Add the required information and delete the instructions before submitting.

OUTSTE(A)M Learning Scenario Basic Information

In this section, you need to add some information that supports the **identification of your Learning Scenario**. This will give the reader an **overview** of the essential elements of your Learning Scenario, ensuring that anyone who wants to use it can easily understand its focus, target audience, and educational goals. The title and keywords will help make your scenario **searchable**, while the summary provides a quick **snapshot of the content**. Additionally, the license ensures that your work can be shared and adapted by others under the appropriate terms. The overview breaks down key logistical details, including the subject areas, topics covered, and required materials, making it **easier for other trainers to assess whether the Learning Scenario fits their needs**. Finally, the **aim** of the lesson clearly defines the intended **learning outcomes for learners**.

The OUTSTE(A)M Learning Scenario activities

This section outlines the **step-by-step structure of your Learning Scenario**. In the Activity Plan, you will list each activity by name, describe the procedure, and indicate the duration. The Assessment unit allows you to detail how you plan to measure the learners' understanding, whether through quizzes, projects, or other methods. The Trainees' feedback section is about how you plan to gather the feedback of the teachers you will train on the activities you propose.

Reflection on Practice

This section is crucial for aligning your Learning Scenario with broader STEM education strategies and competency frameworks. In the STEM Strategy Criteria, you will select which criteria your scenario addresses and optionally reflect on this. These criteria help ensure your scenario contributes to the development of a comprehensive STEM strategy. You will also find throughout the OUTSTE(A)M Learning Scenario template guiding questions to help you reflect on your development process and the choices you have made when designing this Learning Scenario (process-oriented assessment).

My OUTSTE(A)M Learning Scenario

Basic Information

Title

Pollution in our water/lake/sea

Author(s)

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Summary

Students are familiarised with the concept of social and environmental justice through the story, photos, and videos. Students are dealing in classroom with photos in order to build a socio-environmental fair neighbourhood (water/lake/sea) in which they would like to live using recycled materials.

Keywords

Sea world, lake, environment, water.

Aim

Students will locate different places on map of Croatia and Serbia and use the vocabulary of spatial awareness. Students from both countries will get familiarised with the concept and the objectives of social justice, the importance of green infrastructure for the benefit of the society.

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Overview

Subject(s)	This is an interdisciplinary lesson. Multiple subjects: STEM and non STEM subjects.
Topic(s)	Ocean environment, the importance of preserving health in ocean and lakes.
Age of pupils	9-10
Preparation time	1 hour per subject
Implementation time	7 x 45 min (7 school hours)
Teaching Materials	<p><u>Online materials and resources:</u></p> <p>WordArt, Padlet, Evaluation form, Linoit.</p> <p>Resources used:</p> <p>https://www.researchgate.net/publication/371993053 <u>Tourism development and water pollution in national parks in Serbia Interrelations and perspectives</u></p> <p>https://www.europarl.europa.eu/doceo/document/P-9-2022-000605_EN.html</p> <p><u>Physical materials:</u> paper, glue, colouring pencils, recycled materials</p>

Learning objectives

1. **Students will identify and accurately locate key physical and human features** on maps of Croatia and Serbia using basic map symbols and legends.
2. **Students will use vocabulary of spatial awareness** (e.g. north/south, border, region, river basin, proximity) to describe locations and relationships between places.
3. **Students will compare geographical features** of Croatia and Serbia to recognize similarities, differences, and shared natural systems.
4. **Students will explain the concept of social justice** and describe how access to green infrastructure supports fairness, well-being, and quality of life in communities.
5. **Students will evaluate the role of green infrastructure** (parks, rivers, forests, urban green spaces) in promoting environmental sustainability and social benefits across both countries.

Lesson plan

How are the activities that follow relevant to your own context? Why are you suggesting them? What sources or personal experiences did you draw on?

All the activities that follow are relevant to my own context because all of the activities were carried out in classroom. It was shown that the activities were successful and that the students adopted the intended outcomes from this LS.

Activity Title	Procedure	Duration	STEM Criteria Codes
Introduction activity	Collaborative activities for both Croatian and Serbian 4th grade students. Students will get one cloud of words: https://wordart.com/create . Each pupil has to put one word on it: what do you think of when you hear a word pollution.	45 min	S
First thoughts	Students adding their first thoughts on Linoit	45 min	T
Suggesting solutions	Students write as many solutions for this problem (sea and lake pollution) on one lino it canvas.	45 min	T
Drawing solutions	Pupils are drawing on a piece of paper. They draw the neighbourhood- (lake, sea) they would like to live close by. Teachers from both countries are putting all the drawings on one lino it canvas.	45 min	E
Workshop	Using recycled materials, students will create socio-environmentally fair neighbourhoods (they can make healthy lake Perućac with all the living creatures and plants, trees around it; Adriatic sea – the bottom of the sea with all fishes and water plants in it). That will be beneficial for every member of the community, regardless of disability, age or poverty.	45 min	E
Videoconference	Teachers will arrange one videoconference meeting where pupils from both countries will prepare everything they did through the past activities. Pupils will present their final products. Pupils from both countries are filling the evaluation form.	45 min	T

Dissemination	Both countries will present their work at parents meeting, in their schools in front of other pupils and teachers.	45 min	T
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In your opinion, what are your activities' main strengths? How would you address their weaknesses?

OUTSTE(A)M Concepts

Here you can find a list of the pedagogical approaches and concepts that were introduced throughout the MOOC. Make sure to mark the ones you addressed with your activities.

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|--|--|--|--|
| <input checked="" type="checkbox"/> Project-based learning | <input checked="" type="checkbox"/> Inquiry-based Learning | <input type="checkbox"/> Play-based learning | <input type="checkbox"/> OUTSTE(A)M Games and Toys |
| <input type="checkbox"/> OUTSTE(A)M Job Profiles | <input checked="" type="checkbox"/> Outdoor learning | <input type="checkbox"/> STE(A)M Careers | <input type="checkbox"/> Battling Gender Stereotypes |
| <input checked="" type="checkbox"/> Age-appropriate Technology | | | |

Assessment

Using recycled materials, students will create socio-environmentally fair neighbourhoods (they can make healthy lake with all the living creatures and plants, trees around it; Sea – the bottom of the sea with all fishes and water plants in it). That will be beneficial for every member of the community, regardless of disability, age or poverty.

Student Feedback

Linoit, Padlet, WordArt

Implementation

The implementation of this learning scenario demonstrated the value of combining geography, STEM elements, and social justice within a meaningful, real-world context. The structured progression from basic map-reading skills to more complex discussions about green infrastructure and social equity helped students build confidence and understanding step by step. During implementation, student engagement was particularly strong when digital maps and visual

materials were introduced. These tools supported spatial awareness and encouraged active participation, especially in collaborative tasks where students compared locations in Croatia and Serbia. The cross-border focus promoted curiosity and mutual respect, helping students view geography as a shared space rather than isolated national territories.

What challenges you could possibly face based on the activities you have suggested? How would plan to overcome them?

Reflection on practice

STEM Strategy Criteria

Please indicate which Criteria correspond to this specific Learning Scenario, contributing on a broader scale to the development of a STEM School Strategy, and briefly explain how you applied the specific criterion: <https://www.stemschoollabel.eu/criteria>.

Examples:

Connections with industry: *“a school visit to a research centre will be scheduled, either physically or virtually, so learners can directly discuss with professionals the recent developments in the field.”*

Interdisciplinary instruction: *“we will examine and implement a variety of activities in a spectrum of subjects, ranging from ethics and philosophy (non-STEM) to biology and chemistry (STEM).”*

Click the arrow on the left of each category heading to see and select the corresponding criteria.

A. Introduction

- [A1] Personalisation of learning
- [A2] Problem and project-based learning (PBL)
- [A3] Inquiry based Science Education (IBSE)

Optional: reflect on how you addressed these criteria in your lesson plan

B. Curriculum implementation

- [B1] Emphasis on STEM topics and competencies
- [B2] Interdisciplinary instruction
- [B3] Contextualisation of STEM teaching

Optional: reflect on how you addressed these criteria in your lesson plan

C. Assessment

- [C1] Continuous assessment
- [C2] Personalised assessment

Optional: reflect on how you addressed these criteria in your lesson plan

D. Professionalisation of staff

- [D1] Highly qualified professionals
- [D2] Existence of supporting (pedagogical) staff
- [D3] Professional development

Optional: reflect on how these criteria are addressed at your school

E. School leadership and culture

- [E1] School leadership
- [E2] High level of cooperation among staff
- [E3] Inclusive culture

Optional: reflect on how these criteria are addressed at your school

F. Connections

- [F1] with industry

- [F2] with parents/guardians
- [F3] with other schools and/or educational platforms
- [F4] with universities and/or research centers
- [F5] with local communities

Optional: reflect on how these connections were made in your lesson plan.

G. School infrastructure

- [G1] Access to technology and equipment
- [G2] High quality instruction and classroom materials

Optional: reflect on how these criteria are addressed at your school.

About OUTSTE(A)M

[OUTSTE\(A\)M](#) is a project funded by the European Union's (EU) Erasmus+ programme under the Grant Agreement (101133868), running from 1 January 2024 to 31 December 2026. Coordinated by European Partnership aislb (EUN), a network of 30+ education ministries, OUTSTE(A)M brings together 3 partners to develop a toolkit that will help teachers and educators promote high quality outdoor learning experiences in the field of STE(A)M, as a means of addressing the insufficient attention given to STE(A)M education in early childhood education and care settings (ECEC) as well as in primary schools.

About Scientix

[Scientix®](#), is the number one community for science education in Europe. It aims to promote and support a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other educational stakeholders to inspire students to pursue careers in the field of Science, Technology, Engineering and Mathematics (STEM).

Annex(es)

Add here any annex(es) for the Learning Scenario, if needed.