



ECOSTEAM project

Handbook 2024



ecosteam.net



Handbook Promoter

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About the ECOSTEAM project

Students are the key resource for preserving the planet's resources and schools are on the frontline in move towards a more circular, greener economy.

ECOSTEAM methodology facilitate teachers to inspire learners to develop key competencies related to sustainability, to fight against climate change, but also to understand democracy and the confidence to participate as active citizens.

The local utility services sector (e.g. water/waste/energy/transport management) can be valuable, visible learning agent connecting global sustainability strategies with everyday life, facilitating the understanding of complex concepts through examples and concrete practices directly relating to our daily actions.

ECOSTEAM facilitate the connection between local utilities and schools with action that use amazing activities to front curricular topics.



The efficacy of the project was assessed during the piloting phase in three different schools.

YOU CAN FIND MORE DETAILS IN





How to use and aims

Companies that manage public resources have realised the importance of seek contact with schools to communicate with students good practice and to work in synergy in education field.

The **ECOSTEAM** project drew extensively on the knowledge and expertise of environmental and public service management companies to develop a teaching methodology that crosses subjects (scientific and otherwise) with their civic and public application: waste, energy, water and urban transport management.

This **Handbook** is for the step by step application of the **ECOSTEAM** methodology and it is address to school teachers and stakeholders that promote sustainability, civic and environmental education in schools.





A user-friendly tool guiding the teachers step-by-step on implementing the learning methodology.

Following the steps proposed in this guide will facilitate the collaboration with colleagues and the development of a learning plan on sustainability, with the support of **ECOSTEAM** didactic methodology and materials.

By this Handbook the following resources will be available

100

More than 100 educational resources including videos, games and documents organized in a digital library

12

12 Teaching units to work on curricular themes addressing topics related to sustainability and resource management

3

3 Learning Plan that propose the examples created by different type of schools. They are examples of how to apply the methodology and solving common problems.



Before planning activities, check our social channels to get in touch with the **ECOSTEAM** methodology. The Handbook will offer guidance and good practice examples on the optimum implementation of the learning activities to reach quality learning results

Themes



Sustainable Water Management

Water is an element linked to life: the city water cycle helps us understand the importance of water management.



Sustainable Energy Management

We know little about what is 'behind' the energy we consume, who produces it, who transports it, what source is used, how much is wasted, what pollution it causes or has caused.



Sustainable Waste Management

The management of the Integrated Waste Cycle (waste collection, street cleaning and other services that are essential for the environment, hygiene and the decorum of cities) is crucial for the well-being of society. We must all work towards reduction, reuse, recycling and recovery! The European waste directive (Waste Framework Directive, 2008) is based on the 4R paradigm.



Sustainable Urban Mobility

We move around constantly on foot, by bicycle, scooter, car, bus, tram, train, plane, sometimes by ship. Recently with car sharing, car pooling, bike sharing, scooters, pedal-assisted bicycles. We spend a lot of time and money on transport, but the means of transport pollute.



The ECOSTEAM Methodology



The project realisation with the class follows the structure of Inquiry-Based approach in **5 phases** which recall the steps of Inquiry Based Learning.



Click on each step for more details and examples



STEP 1

Introduction of the project to the students and engagement to the project theme



STEP 2

Questioning with students about the service and the problems that may be identified



STEP 3

Investigation through the ECOSTEAM Learning Units or similar Learning units you can build with colleagues



STEP 4

Conclusions and discussion with the design of a smart solution created by students



STEP 5

Dissemination spreading the message on social and presenting the results and outcomes

Teamwork meetings with urban utility services' members and researchers are together, sharing results and tasks improves the pleasure in study and satisfaction in own work.



How to build the Team of Teachers

Teachers of different school subjects (STEAM) agreeing in implementing a Project, are committed in the organisational aspects for the project implementation. This means that teachers form a **Focus Group** in which roles are defined and the schedule of activities is also decided during meetings.

During the implementation of a Project, the teachers' Focus Group meets regularly (e.g., once a week or less) and keeps being updated on the progress of the project in each subject, setting up the next steps, approaches with the students, organising events etc.

Below suggestions for the Team

- 1 Define clear roles: Project Manager, Content Experts, Technology Coordinator, Stakeholder Liaison;
- 2 Create shared work plan with clear goals, tasks, and timelines;
- 3 Establish regular communication: weekly meetings, digital platforms, cloud sharing;
- 4 Foster collaborative professional development and knowledge sharing;
- 5 Encourage flexible integration of STEAM disciplines;
- 6 Implement monitoring and evaluation processes;
- 7 Build team spirit through recognition and supportive environment;
- 8 Maintain flexibility to adapt the plan as needed;
- 9 Include student involvement: Co-creation workshops, gather student input on project themes and activities.



Library

The web is rich in interesting materials you can use to create a debate or stimulate ideas and questions in class on these themes. Many utilities, NGOs and Entities developed materials to inform and to arise the attention on sustainability of the management of the resources, and widely on climate change and Circular Economy.

You can find it yourself by searching on the web or rely on the **ECOSTEAM library** where more than 100 products have been reviewed and catalogued. A search engine was built to facilitate the research among themes and types of materials.

With the search engine you can filter by theme, type, language and easily find what are you looking for your project.



Please enjoy the ECOSTEAM Library and read the review before seeing it, if it isn't interesting for your project, you can search immediately a new material and preserve your time

[ECOSTEAM LIBRARY](#)





Learning units



Learning units suggest actions and timing for the application of the methodology in the classroom.

Three learning units were available for each project theme.

It is important to consider the **Learning Units** as an example which can be modified and adapted to the needs of the class in which they will be applied.

Water



- > LU1 
- > LU2
- > LU3

Waste



- > LU4 
- > LU5
- > LU6

Energy



- > LU7 
- > LU8
- > LU9

Urban Mobility



- > LU10 
- > LU11
- > LU12



Learnin Plan



Good practice examples on the optimum implementation of the Learning Units and Methodology

The Learning Plan provides a structured approach for exploring a theme through an integrated project-based learning framework. It is a tool to facilitate teachers in the application of Learning units and follow the **ECOSTEAM methodology**. This plan aims to engage students in understanding their theme, enhance their analytical and problem-solving skills, and foster personal growth. By aligning various subjects with real-world issues, the plan offers students a comprehensive learning experience that connects academic concepts with practical applications.

The Learning Plan is organized around a series of questions and answers that outline the key components and logistics of the project. This approach ensures clarity and coherence in presenting the project's objectives, activities, and assessment methods.

Please **download** the editable document to improve your **ECOSTEAM School project**.



Standard Learning Plan to facilitate teachers in applying the methodology and LUs

Exemples from:



- Srednja skola za elektrotehniku i racunalstvo Rijeka (Croatia)
- 3rd Gymnasium of Glyfada (Greece)
- Liceo Classico Galileo (Italy)

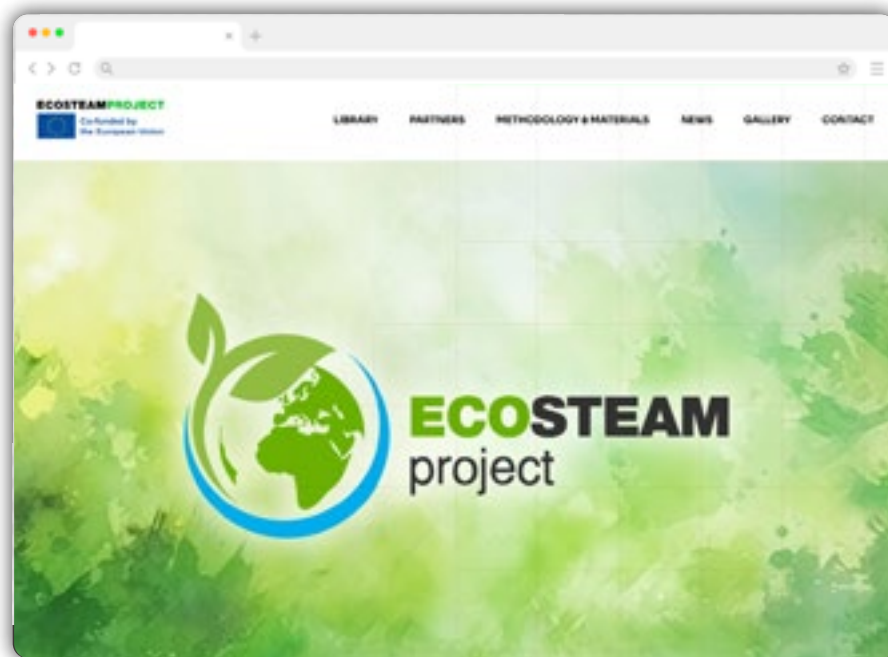


ECOSTEAM



on social

Good practices and experiences: slogan, videos, articles from the piloting and final contest





ECOSTEAM

Manifesto

