RIDE THE

WAVE

OCEAN AND CLIMATE LITERACY FOR NAUTICAL HIGH SCHOOLS

Protect the Ocean
Ride your Future

TOOLKIT

GUIDELINES FOR THE EXCHANGE AND
THE REPLICATION OF THE INITIATIVE

IND
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ISTITUTO
NAZIONALE
DOCUMENTAZIONE
INNOVAZIONE
RICERCA EDUCATIVA

Co-funded by the
Erasmus+ Programme
of the European Union

Contents

INDEX

THE SEA AND ME

MEET THE RIDE THE WAVE GROUP

1

MARISA CECCARELLI
Education and Science - Marevivo

Sea is something I am related to. When a walk on the shore looking for the smoothest pebble, has turned into a chance finding the hidden seashell, when i saw my first dolphin in the wild, when i felt the wind and the salt on my face. These moments, the most quiet and intimate of my life, created memories of a simpler time, strengthened the ties between the immensity of the sea and my inner space, traced the path I follow even now.

COSTANTINOS TRIANTAFILLOU
Head of Strategy and Development - HELMEPA

Sea, the main feature of my childhood memories in Greece and the focus of my studies and work ever since. Being in touch with the sea helps me feel balanced, calm and positive-minded. As cited by famous Greek poet Constantinos Kavafis, I believe that "The sea has a hidden voice — a voice that enters our hearts and moves and rejoices us".

GEORGE KONTOLIOS
Director - EPAL Konistres Greek Institute

Living in a water-rich country, known to you, I hail from a place with ancient energy embraced by the sea. For Greeks, including myself, the sea signifies life, leisure, holidays, food, peace, and adventure. It restores me with its vitality and soothes when needed. Coastal people hold the sea as a life landmark. Blue, the deep sea's hue, reassures and secures. Coastal bioclimate is healthful, waves and the sea's sound alleviate stress. The sea symbolizes life's origin for Greeks, its blue and radiant sun inspire artists, poets, and tourists captivated by our endless blue shores.

PATRIZIA CATALANO
Teacher - Italian Nautical Institute

The sea represents life, both physical and metaphorical. It is the cradle for countless species and ecosystems that reflect boundless possibilities and evoke a connection to something greater than ourselves. It is also a metaphor for life's journey, encompassing beauty, resilience, exploration, and growth.

ROBERTO VESPASIANI
Teacher - Italian Nautical Institute

The sea represents work and economic growth when it comes to the blue economy. In this context, the sea is not just a source of economic activity, but also a reminder of the importance of environmental stewardship and the crucial link between ocean and human health.

TIZIANA SCHIETROMA
Junior Project Manager - Marevivo

Since I started diving, I have come to realize that I knew nothing about the sea until then! Above all, it was a revelation to discover what a wonderful hidden world it is, still waiting to be explored. The sea is infinite, and it must always be respected for its immensity.

THE SEA AND ME

MEET THE RIDE THE WAVE GROUP

ELISA DEL GOBBO
Communication and Press Office – Marevivo

When I think of the sea, I understand the meaning of the expression "natural capital". The sea truly has a wealth of essential services for human life, in addition to those linked to ecosystems and biodiversity. The peace we feel while looking at the horizon or the salty taste of the wind or the sound of waves crashing on the rocks? For me, these emotions are priceless.

VALIA AVGOUSTIDI
PhD, MBA – HELMEPA

Enhancing sustainable behaviors among future sea professionals, citizens and local communities is the way forward.

ROSA LEMBO
Marketing Specialist - Marevivo

For me, the sea is harmony. Just like in music, where every sound wave sends us intense vibrations and emotions, and every small note has its own space and precise time to create a composition, the marine ecosystem is a wonderful symphony in which each element has its vital role for the future of the planet.

GIANNAKIS PANAGIOTIS
Teacher - Greek Nautical Institute

The sea has always held deep meaning for me. It's no coincidence that my dream job was to be in the navy, a dream that came true. After graduating from AEN (Merchant Navy School), I sailed for a decade, respecting its rhythms and life. Working with the sea demands care, respect, and above all, love. The sea remains vital for coastal communities, entrenched in mythology like the Odyssey. Finding our 'Ithaca,' our true happiness, is life's purpose. Mine came teaching future sailors, sharing the sea's secrets.

JENNIFER PISTEVOS
Project Manager PhD – HELMEPA

The sea: a vast expanse of calming blue, where tranquility reigns and the wonders of nature unfold, leaving me in awe.

SILVIA PISELLI
Fundraising CRM Officer - Marevivo

I was born on an island, in Sardinia, and while growing up, I realized how important the presence of the sea was in my life. Sea is life, oxygen, a silent listener, a friend who never leaves you alone. For me, the sea it's my second home, a place where I know I can go back when I need to reconnect with myself and with the entire world. Protecting it means protecting our own life.

Contents

THE CONTEXT

Action Framework
Erasmus+ KA210-SCH-Small Scale Partnership Program, in the field of Education

The initial spark for the design of the **Ride the Wave** project was the Erasmus+ Programme KA210-SCH-Small Scale Partnership Program, in the field of School Education, with approval from INDIRE, the Italian National Agency referee for Erasmus programs for Schools in Italy.
The programme is particularly geared toward engaging young people and creating opportunities for the development of local projects and the establishment of partnerships across Europe.
The project engaged four partners from two nations: Italy and Greece, including two environmental associations and two Nautical Technical Institutes.

The project is fully in line with:

RIDE THE WAVE PARTNERSHIP

MAREVIVO ONLUS
Environmental Association

LEADING ORGANIZATION

Hellenic Marine
Environment Protection
Association

THE ITALIAN NAUTICAL INSTITUTE

G. DA VERRAZZANO
in Porto Santo Stefano
(Grosseto, Italy)

THE GREEK NAUTICAL INSTITUTE

THE 1ST VOCATIONAL HIGH
SCHOOL OF KONISTRES
(Evia, Greece)

RIDE THE WAVE PROJECT

The Project was funded by European Erasmus + Programme 2021-2027 KA210-SCH Small Scale Partnership in School Education, it started in April 2022 and ended in August 2023.

The Project was presented and approved by INDIRE, the Italian National Institute for Documentation, Innovation and Educational Research.

TARGET

- STUDENTS OF NAUTICAL HIGH SCHOOLS, THE FUTURE SEA WORKERS
- TEACHERS, SCHOOL MANAGERS
- PRACTITIONERS OF ENVIRONMENTAL EDUCATION
- FAMILIES, CITIZENS
- LOCAL COMMUNITIES
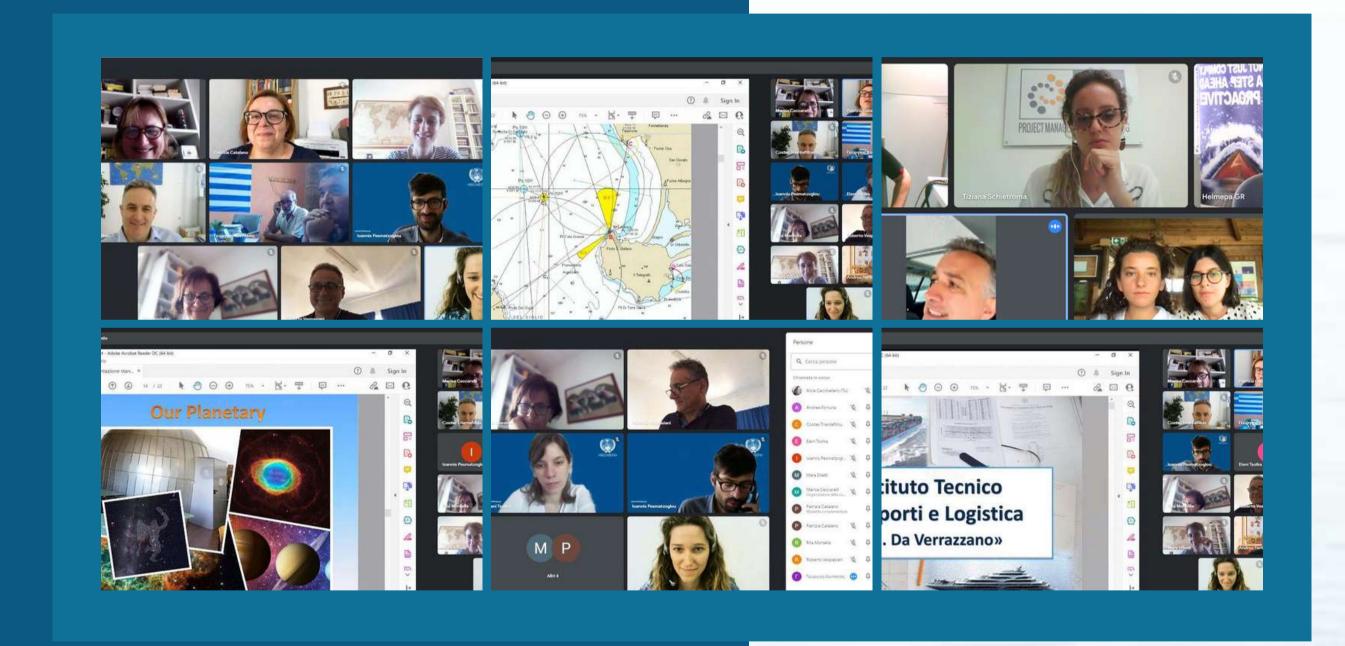
OBJECTIVES

- IMPROVE THE ABILITY OF THE PARTICIPANTS TO UNDERSTAND THE OCEAN AND CLIMATE'S INFLUENCES ON OUR LIVES AND OUR INFLUENCES ON THE OCEANS AND CLIMATE

- RAISE AWARENESS ABOUT THE ROLE OF SEAS AND OCEAN FOR CLIMATE MITIGATION

CROSS-CUTTING OBJECTIVES

- BUILD A NETWORK WITH PUBLIC AND PRIVATE ORGANISATIONS TO SHARE EXPERIENCES, BEST PRACTICES AND FUTURE PROPOSALS IN THE FIELD OF ENVIRONMENTAL EDUCATION

- PROMOTE SCIENTIFIC KNOWLEDGE

PROJECT PARTNERS

AT WORK

WHO IS THE TOOLKIT FOR?

Contents

WHO IS THE TOOLKIT FOR?

In recent years, Ocean Literacy and Climate Literacy have emerged as core principles for sustainable development.
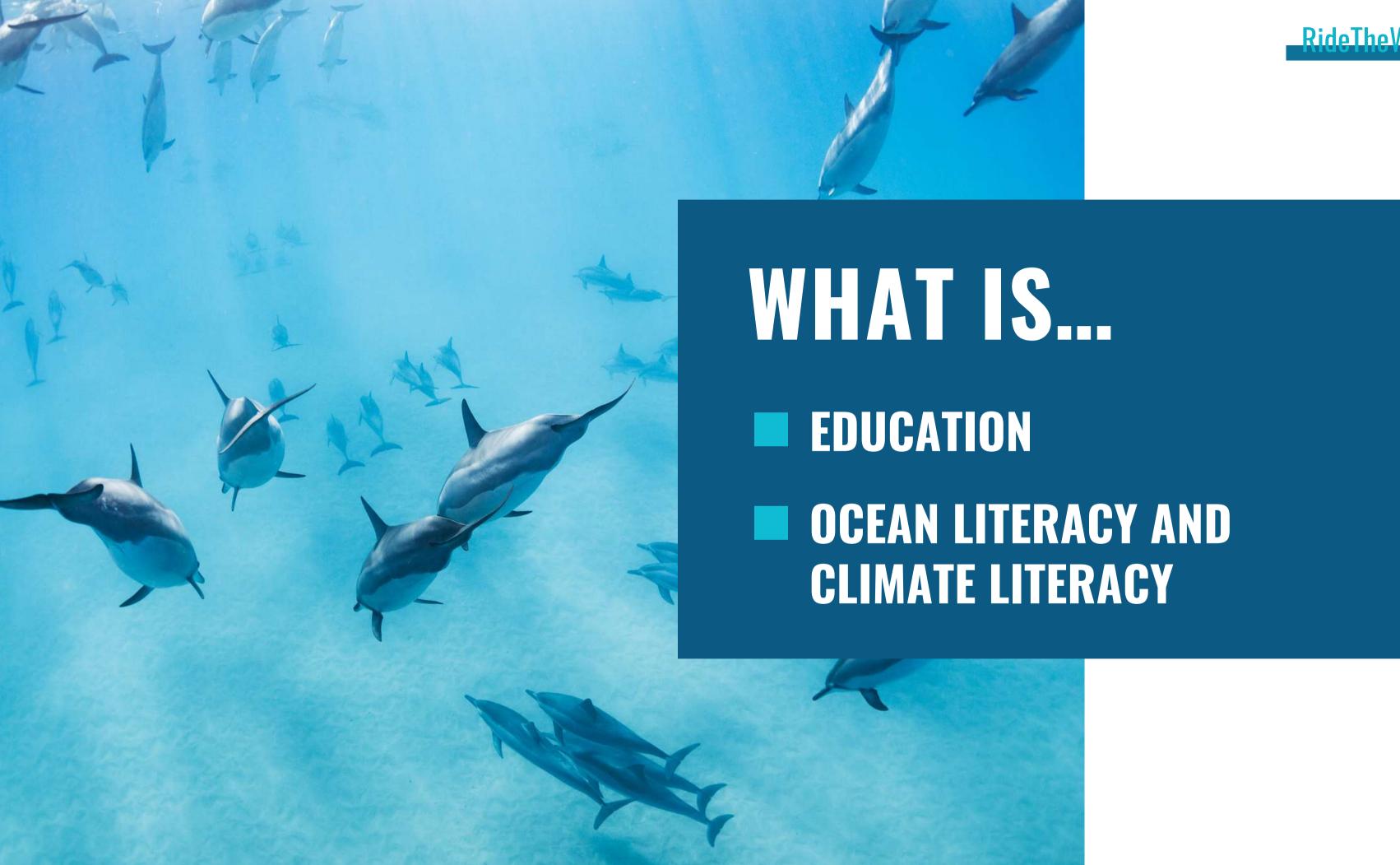
Today, we are aware that we inhabit a Blue Planet, and it is essential to acknowledge that:

"a clean, healthy, and sustainable environment is a human right - a landmark move in the fight against the triple planetary crisis of climate change, nature and biodiversity loss and pollution and waste".

(UN Human Rights Council, 2021).

This toolkit offers suggestions for engaging a diverse range of end-users, including teachers, practitioners, association staff, and educators, in the teaching and learning of ocean and climate-related topics, as well as the development of Ocean and Climate Literacy activities.

Its primary aim is to assist the users in creating compelling learning experiences which incorporate new materials related to ocean and climate, environmental awareness, and biodiversity protection.

WHAT IS...

- **EDUCATION**

- **OCEAN LITERACY AND CLIMATE LITERACY**
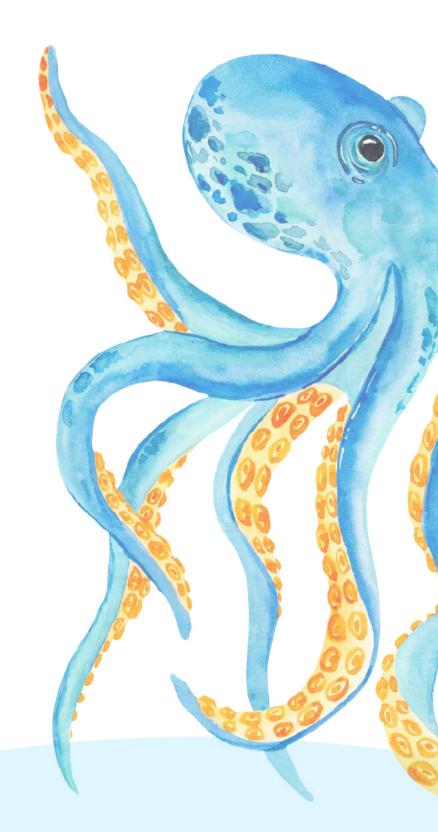
What is...
EDUCATION

The wide range of existing definitions of Education, such as Environmental Education, Education for Sustainable development, Global Citizenship Education, Earth Education, and others, each with its own theoretical and practical experiences background, makes it particularly demanding to provide a singular definition.

EDUCATION has been described as "critical to recognise the interrelatedness of environmental, social and economic issues and the need to advance them together. It gives us the knowledge, values and skills to participate in decisions about the way we do things, individually and collectively, locally and globally".

Building environmental understanding remains the central focus. The current challenge facing environmental educators is to equip society to actively contribute to building a sustainable future. It's essential that we comprehend the consequences of our choices, recognizing that understanding ecological processes is significant only when accompanied by action.

Ocean Literacy and Climate Literacy strive to enhance understanding of Ocean and Climate science by offering a conceptual educational framework accessible to individuals, communities, and learners of all ages. Moreover, they can assist educators and teachers in aligning their curricula with content standards.

The problem to address revolves around the insufficient knowledge regarding the interactions between Climate and the Global Oceans, the impact of the ocean on the climate crisis, as well as the threats and solutions related to the preservation of marine biodiversity and the services provided by sea ecosystems.

THE SEVEN ESSENTIAL PRINCIPLES

CLIMATE LITERACY

1. The Sun provides energy for Earth's Climate System.

2. Climate is regulated by complex interaction among components of the earth system.

3. Life on Earth depends on, is shaped by, and affects climate.

4. Climate varies over space and time through both natural and man-made processes.

5. Our understanding of the climate system is improved through observations, theoretical studies, and modelling.

6. Human activities are impacting the climate system.

7. Climate change will have consequences for the Earth system and human lives.

OCEAN LITERACY

1. Earth has one big ocean with many features.

2. The ocean and life in the ocean shape the features of Earth.

3. The ocean is a major influence on weather and climate.

4. The ocean makes Earth habitable.

5. The ocean supports a great diversity of life and ecosystems.

6. The ocean and humans are inextricably interconnected.

7. The ocean is largely unexplored.

THE LEARNING JOURNEY

The Learning Journey
KEY DRIVERS

Three-phase approach to to enhance Ocean and Climate Literacy

1. Multi-Transdisciplinary Education

2. Networking: Local Sea Network and European Blue Schools Network

3. Expertise Exchange

The project empowered students to discover and understand the intricate environmental problems and challenges we confront. It also inspired them to act, collaborate and collectively generate ideas and solutions, with the aim of implementing local actions to address their real needs.

The Learning Journey

TEN TIPS

TEN TIPS FOR EDUCATING ABOUT OCEAN AND CLIMATE ISSUES AND ENGAGING YOUNG PEOPLE

UNDERSTAND THE TARGET GROUP

1. Begin by assessing students' existing knowledge.
2. Build on existing knowledge.
3. Identify students' current perceptions, behaviours and experiences related to the sea.

ENHANCE THE SENSE OF PLACE

4. Evoke emotions to foster a deeper connection between students and the place they live in.
5. Engage local experts to incorporate traditional knowledge.
6. Explore the intricate relationship between the local community and their wealth of cultural knowledge regarding the sea.

USE SCIENCE AND ART

7. Encourage students to learn and explore "hands on" local marine ecosystems and species.
8. Inspire students to use science and art to (re)connect themselves and the community with the sea.
9. Involve students in addressing pollution issues and exploring potential solutions.

SHARE INFORMATION

10. Communicate and disseminate your activities and findings to a broader audience, utilising social media and various outreach tools whenever possible.

The Learning Journey
TEACHING OCEAN AND CLIMATE LITERACY

SCHOOLS ENVIRONMENTAL EDUCATION PROGRAMMES

Planned and implemented by the two Nautical Institutes in collaboration with the two environmental Associations - Four days and 1 final event

In Italy

MAIN TOPICS

- Introduction to Erasmus+ Program, presentation of the project **"Ride the Wave".**
- **Only One Ocean.** The Ocean and Climate Literacy Principles.The Global Ocean and its functions as climate regulator, source of food, work, well-being, energy, raw materials and medicines, and as reservoir of the largest biodiversity on the planet.
- **Humans and the Sea.** The cause-effect relationship between Humans and Sea. Developing new habits for the future maritime seafarers to manage the sea in a sustainable way.
- **Blue Economy careers.** Opportunities for youth from Europe. Next Generation EU. EU4Ocean. UN Agenda 2030. UN Decade of Ocean Science for Sustainable Development.
- **The importance of protecting the marine environment.** Educational field trip on a beach to observe marine life. Beach cleanup from waste. Visual census of marine litter.
- **The legacy of the territory's history.** Field trip exploring the traces of the history on the territory. Observing the seascape. Beach clean-up along the way.

In Greece

MAIN TOPICS

- Introduction to Erasmus+ Program, presentation of the project **"Ride the Wave".**
- **Exploring the Sea.** Techniques of underwater cleaning and for the preservation of marine ecosystems.
- **Ocean and Climate Literacy.** Ocean Literacy Principles, delving into subjects like Climate Change, Mediterranean biodiversity and habitats, as well as addressing the perils faced by Marine Life such as Ocean Acidification.
- **Promoting Sustainable Fisheries and the Conservation of Marine Species.** Nurturing a comprehensive understanding of our oceans' intricacies and the imperative for their protection.
- **The Blue Economy Sector and the Ecological Transition.** Opportunities for young individuals and women in maritime and Blue Economy.
- **Exploring Environmental Protection Engineering** (EPE) facilities and visiting a boat. Interactive demonstration showcasing a new material specifically designed to efficiently absorb oil from water.

STUDENTS' PROJECT WORKS

AS FINAL OUTPUT OF THE ENVIRONMENTAL EDUCATION PROGRAMME, STUDENTS IMPLEMENTED A FINAL PROJECT WORK

In Italy

The "Art for the Sea" mural art project is a collaborative initiative aimed at raising awareness about the importance of ocean conservation and promoting the health of our seas among high school students. Using eco-friendly paint Airlite, "Art for the Sea" combines artistic expression with environmental education to inspire positive change and encourage sustainable practices. The primary objective of the project is to engage students in a creative endeavour that highlights the significance and importance of preserving the health of our oceans.

The project intends to spark conversations about the marine environment and empower students to take action to protect our oceans.

In Greece

"EPAL Konistres' Students Interview with Personnel of EPE SA" is a collective project where the students had the opportunity to conduct an in-depth interview with key members of the anti-pollution company, EPE - Environment Protection Engineering SA, located in Piraeus.

During the interview, the students asked technical questions regarding environmental clean-ups, as well as inquiries about gender balance in the field and the available opportunities for women.

The interview took place on board the Aegis II spill response ship and involved the company's chief oceanographer and first engineer.

The two projects have been adopted by each Institute in order to apply to the European Blue Schools Network

BLUE SCHOOLS NETWORK CERTIFICATES

The projects were successfully selected!

Here the Official Certificates

Network of European Blue Schools

CERTIFICATE

1st Vocational High School of Konistres, Evia
has received the certification of
European Blue School
with the project 'EPAL Konistres' Student interview with
personnel of EPE SA'
for the school year (2022/2023)

Serial number | 2022-2023/276

This certification is granted by the EU4Ocean Coalition, funded by the European Commission, DG Maritime Affairs and Fisheries.

Network of European Blue Schools

CERTIFICATE

ISIS Del Rosso - Da Verrazzano
has received the certification of
European Blue School
with the project 'Art for the Sea'
for the school year (2022/2023)

Serial number | 2022-2023/271

This certification is granted by the EU4Ocean Coalition, funded by the European Commission, DG Maritime Affairs and Fisheries.

INTERNATIONAL DAY FOR WOMEN IN MARITIME AND OPEN DAY FOR FUTURE DIRECTIONS

On the occasion of **The International Day for Women in Maritime**, the Italian Technical Nautical Institute "G. Da Verrazzano" decided to celebrate the closing event of *Ride the Wave*.

Former female students who have pursued maritime careers and, or, marine science study path were invited to share their educational and professional experiences.

Additionally, local middle school students were invited to participate at the initiative to assist them in making informed choices about their future paths, providing them with insights and guidance, much like an *Open Day experience*.

Gender equality is a prerequisite for a thriving and resilient maritime industry that would bring with it innovation, creativity and sustained growth. (Secretary-General, IMO-International Maritime Organization, 18 May 2023)

Activities Presentation
https://marevivo.it/wp-content/uploads/2023/09/Activities-Presentation_ITTL_G.DaVerrazzano_RTW_Ocean_Climate_Literacy_Days_.pdf

Art Project
https://marevivo.it/wp-content/uploads/2023/09/RideTheWave-Student-Project-Final-Event_compressed-1.pdf
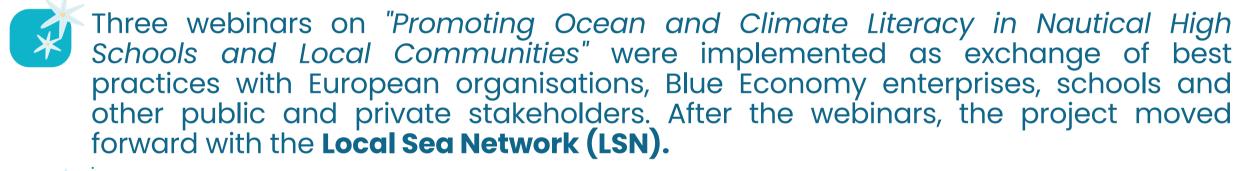
The Learning Journey
NETWORKING

ACTIONS

Common Stakeholders Database to extend and share each partner' list of contacts, organisations and networks.

Webinars to "activate" the Database and involve the stakeholders.

Memorandum of Understanding to establish the Local Sea Network (LSN), to exchange experience and share future initiatives.

LOCAL SEA NETWORK

- Three webinars on *"Promoting Ocean and Climate Literacy in Nautical High Schools and Local Communities"* were implemented as exchange of best practices with European organisations, Blue Economy enterprises, schools and other public and private stakeholders. After the webinars, the project moved forward with the **Local Sea Network (LSN).**

- The LSN aims at forging alliances among local organisations across Europe to participate and/or launch together other short and medium-term actions on Ocean and Climate Literacy initiatives.

- The Webinars and the LSN have focused on spreading wider awareness of what each individual can contribute and the pivotal role that seas and oceans play in addressing climate change, combatting biodiversity loss, and enhancing both our well-being and the health of our planet.

- The organisations who agreed to become members and join the Local Sea network signed a **Memorandum of Understanding**. This MoU represents a non-exclusive, non-legally binding collaborative agreement primarily focused on establishing a network among interested parties. The main objective of this network is to foster cooperation based on shared interests and joint efforts aimed at safeguarding the Blue Planet.

The Learning Journey

COMMUNICATION AND DISSEMINATION OF RESULTS

READ!

**"How to communicate your project.
A step-by-step guide on communicating projects and their results"**

Guide for the beneficiaries of the Erasmus+, Creative Europe and European Solidarity Corps Programmes to support them in their communication activities.

ACTIONS

- Design of the Official Project Website
- Design of the Project logo and the Claim
- Plan the Digital Leaflet
- Share the Communication Plan
- Prepare Project Milestones Press Releases
- Plan, Write and Translate the Periodic Newsletter
- Define the Social Media Posts
- Organise and Run the Webinars
- Organise the closure events to involve local and national stakeholders and communicate the results
- Design the *Toolkit for the replication of the initiative* and upload it on the project website and EU platforms

The Learning Journey
EVALUATION

Qualitative Techniques Applied

Questionnaires to collect opinions
Focus groups to to gather the perspectives and insights of participants regarding a particular subject or theme.

QUESTIONNAIRES

Questionnaires to collect students' opinions, administered before and after completing the program as a test of learning objectives:

"What do the participants think of the project?"

"What have participants learnt?"

"What have they learnt about the Ocean and Climate interaction?"

Questionnaires to collect experts' opinions, administered after the three webinars:

"What was the most valuable aspect of the webinar you participated in?"

"Which topic discussed in the webinar sparked your interest the most?"

"Do you think that participating in the webinar has contributed to improving your professional skills?"

Questionnaires to gather partners' staff members' feedback and opinions:

"To what extent were the project milestones met within the planned timeline and budget?"

"How well did the project management team allocate and utilise resources (financial, human, technological) to support the project activities and objectives?"

"Did the project management team effectively track and monitor the progress and performance of the project activities?"

FOCUS GROUPS

Two Focus Groups of Italian School Students

- *How art can become a tool to help and discuss seas and oceans, as well as engage the community (Art for the Sea).*

- *Promoting female participation in nautical technical schools as preliminary step to organize the project final event on the occasion of International Day for Women in Maritime (May 2023)*

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The Learning Journey
LESSON LEARNT

Opportunities

Feedback on the project's performance is essential as it enables a comprehensive review of both accomplishments and obstacles, while also highlighting potential follow-up

STRENGTHS

- **Virtual work** can help in transcending geographical boundaries and shorten distances.
- **High engagement** of a wide range of stakeholders, including students, educators, and community members.
- **Positive impact** on students' understanding of marine conservation, leading to increased awareness and sustainable behaviours.
- **Sustainability** through "Local Sea Network" Spin-off.
- **Effective communication** channels with stakeholders.
- **Dissemination** of biodiversity protection values.
- **Outdoor activities** to foster learning and develop positive group dynamics.
- **Professionalism,** expertise, perseverance and passion of teachers.
- **Strong engagement** of all participants.
- **Building learning paths** between formal education and non-formal settings.
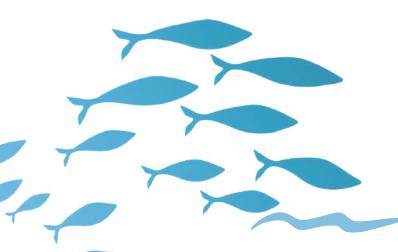
CHALLENGES

- **Virtual work** can make communication more complex.
- **Coordinating tasks and schedules** across different countries can be a complex endeavour, potentially leading to delays.
- **Technology dependence** is a critical aspect of virtual work, where any technical issues or outages can have a significant impact on productivity and communication.
- **Transforming** the project from "pilot experience" to "management practice".
- **Involvement** of families and local authorities.
- **Integrating** indoor and outdoor activities.
- **Being interactive** and engaging with colleagues, project partners and participants.
- **Building learning paths** between formal education and non-formal settings.

The Learning Journey
LESSON LEARNT

New teaching and learning methodology and materials tested

Improved language skills, often learning new languages.

Cross-Cultural Problem Solving

Greater capacity in developing new educational practices

Gained intercultural insights and a commitment to continuous learning.

Greater environmental knowledge leads to greater pro-environmental behaviors

Enhanced cultural sensitivity through collaboration with diverse cultures.

Increased flexibility and adaptability in handling changes.

Better awareness of one's traditional knowledge and values

Developed a broader, more global perspective

Improved communication skills, overcoming language and cultural barriers.

Greater self-awareness through exposure to multicultural environments.

Involvement of many actors

Built a global network of valuable contacts.

Greater ability to understand other people's points of view

Science education can have a key role to support youngst growth

Sea and marine habitats as an outdoor classroom to educate in contact with nature

Developed advanced teamwork and collaboration skills.

Developed greater resilience in facing challenges

Sea and Nature as unifying value

WHAT THE PROJECT HAS BEEN FOR US

THE ITALIAN NAUTICAL INSTITUTE
Porto Santo Stefano, Italy

This project has been a transformative experience for our school, enriching our curriculum and enhancing the educational environment. It has fostered cooperation and personal growth. Our students and staff have gained greater knowledge of ocean and climate literacy principles and invaluable experiences through interactive workshops and research initiatives.

HELMEPA
Athens, Greece

The project *Ride the Wave* has promoted the discovery of the emotional bonds with our Mediterranean common roots and values.
It gave us the opportunity to know different people with different cultures, perceptions and approaches to the environmental education, but with the same consciousness of our individual and collective responsibility to act to fight the threats facing the sea and the planet.

MAREVIVO FOUNDATION
Rome, Italy

Ride the Wave has been for us an opportunity for growth, fostering the link between Italy and Greece which will continue through further environmental education projects. Working with an international team has been highly stimulating, presenting challenges and introducing new professional and personal realities to explore and comprehend. This experience has proven to be immensely valuable and rewarding.

THE GREEK NAUTICAL INSTITUTE
Konistres, Greece

Undoubtedly, the sea is Earth's largest ecosystem, essential for climate, air, sustenance, and jobs. Our student projects aimed to raise awareness about sea pollution causes, human impact, and the need for a healthy ocean. We strived to engage our school community in protecting seas, focusing on endangered species and habitats. Solutions were proposed, fostering critical thinking. Through partnerships, we tackled ocean pollution issues, uniting perspectives and resources.

BEFORE WE LEAVE...

.....we want to say something about a cross-cutting theme we haven't introduced so far: our common Sea, the Mediterranean.

Mediterranean Basin is one of the largest biodiversity hotspot in the world, hosting 4 to 18% of the world's known marine species. Between 20-30% of species are endemic: the highest rate of endemism globally.

Three continents surround its shores. It is the cradle of some of the world's first and greatest civilization, of the three monotheistic religions: its diversity is breathtaking.

However, the Mediterranean Sea is a place of pollution, over-exploitation of natural resources and also it is the dramatic theater of desertification, hurricanes, flood, poverty, war, trafficking, clandestine immigration, death.

The project Ride the Wave has been a tool to spread knowledge about the importance to protect Mediterranean habitats and landscapes, and also our common traditional knowledge and cultural heritage.

For all project partners, Ride the Wave has been an opportunity to build bridges among us, reclaiming possession of our common goods, regaining the destiny of our future and our children's.

(Marisa Ceccarelli, Ride the Wave Project Leader)

RIDE THE

WAVE

OCEAN AND CLIMATE LITERACY FOR NAUTICAL HIGH SCHOOLS

Official Webpage

https://marevivo.it/en/activities/ride-the-wave-2/