Network of European Blue Schools

# A wave of EUROPEAN BLUE SCHOOLS

## Handbook for teachers

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# REFERENCE



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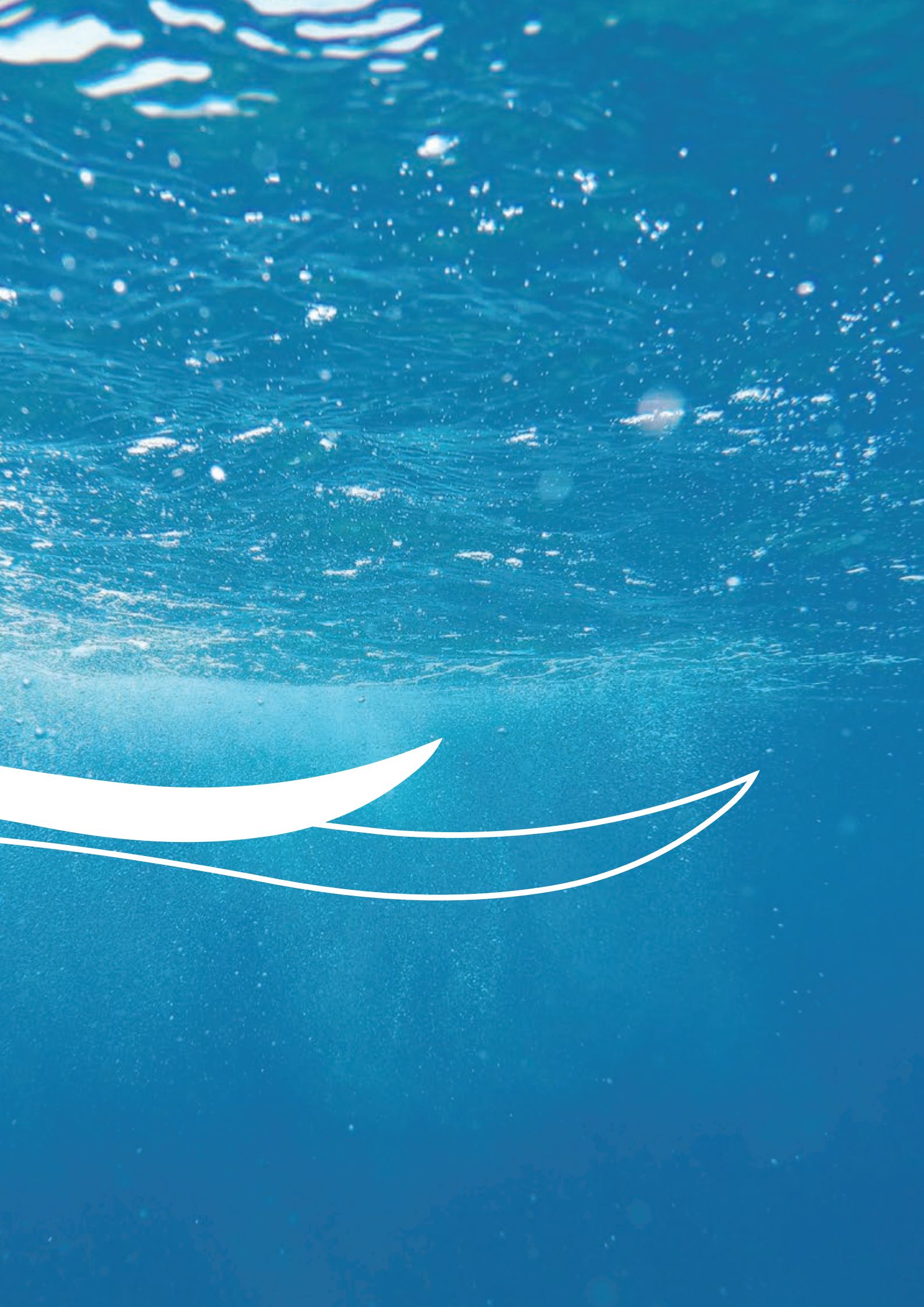
More information on the Network of European Blue Schools at eu-oceanliteracy.eu

## Main Authors

Evy Copejans (EMSEA)
Marion Besançon (ACTEON)
Carla Lourenço (CIÊNCIA VIVA)
Sandra Soares (CIÊNCIA VIVA)
Vanessa Batista (CIÊNCIA VIVA)

## Contributing authors

Adnana Mihaela Patrascoiu
Agnès Lavergne
Alan Deidun
Andrea Oltmans
Andreea Ionascu
Annekathrin Schuldt
Annika Devos
Athanasios Mogias
Björn Källström
Carmen Bucovala
Carolyn Scheurle
Cassie Stymiest
Cathy Baxter
Chloe Schwendemann
Christian Berthelot
Ciocan Emilia
Constantinescu Adriana
Cushla Dromgool-Regan
Dominika Wojcieszek
Eliane Bastos
Esther Farrant
Francois Morisseau
François Arbellot
Giovanni Cecconi
Irini Skoula
Jerry Lust
Juliette Grosschmidt
Karen Wilcocks
1UXOTG2ǪG&ì
Linda Mederake
Maaike Steyaert
Maggy Sinnaeve
Malin Rosengren
Marica Kucan
Mark Ward
Melanie Bolks
Melita Mokos
Nicola Bridge
Noirin Burke
Peder Hill
Raquel Costa
Rita Borges
Ruth Teerlynck
Stu Higgs
Susanna Canuto
Tina Johansen Lilja



# PREFACE

We live on a blue planet. Our planet has one ocean, without which, life as we know it would simply not exist.

Despite sharing a vast coastline and maritime history, many European citizens are not aware of the importance of the ocean and the opportunities it offers us – how it regulates the climate, how it produces much of the oxygen we breathe and the food we eat, and supports human livelihoods and wellbeing.

A paradigm shift is needed to reorient society towards valuing the riches of the ocean, so that it can continue sustaining life. Education is a key agent in this transformation, by equipping citizens with knowledge, skills, and competencies to secure a vibrant European Blue Economy and a healthy ocean for us all.

The EU4Ocean Coalition, with the support of DG MARE, brings together organisations, projects and individuals committed to promoting ocean literacy across Europe. The DG MARE recognises that the role of teachers is essential to the mission of the EU4Ocean Coalition. To support teachers, a Network of European Blue Schools is being established.

The concept of a European Blue School evolved from the marine education expertise gathered from consultations with teachers and educators across Europe. It acknowledges the variety of cultures and school communities from the 27 EU Member States and champions the concept of open schooling[1] – encouraging the development of local partnerships to make the learning context relevant. The challenges that the work of teachers faces are many, but through the Network of European Blue Schools, you will not be working alone.

All teachers are invited to join this effort to promote ocean literacy by taking the ocean into their classroom, helping to make it everyone's concern, no matter where

TZFWJ9JFHMJWFWJRJSYTWFSINSNWFYNTSFQiLZWJX for students and the subjects they chose at school, as well as their future career choices and attitudes towards the environment.

To get started, this Handbook is designed to meet you where you are on your ocean journey. It includes a wealth TKZKZQWJZWHJFSIGJXUWFHYNHJYTNSNWJTZYTiSI what connects you and your school to the ocean. It has built in flexibility to encourage and support teachers across all disciplines to bring the ocean to their classrooms, whether through biology, physics, chemistry, technology, mathematics, history, literature, or the arts.

By becoming a European Blue School you will:

- be able to work collaboratively with a growing network of European colleagues;
- be supported at every step by the Handbook and Coalition;
- have access to teacher development opportunities in different languages organized by EU4Ocean Coalition members and other European institutions and projects;
- have your efforts recognised through award of a HJWYNiHFYNTSGJ);2&*
- be in line with international initiatives including the UN's Decade of Ocean Science for Sustainable Development.

Every student has the right to an education that nurtures understanding of the complex biosphere they inhabit. The ocean touches all aspects of society, so it is time for us to assume our collective responsibility, as citizens of the Earth, and guide our lives knowing that the ocean matters.

Thank you for considering taking this journey of discovery with your students; championing ocean change within your community and leading the way towards fostering a generation of European Blue Citizens.

[1] http://ec.europa.eu/research/swafs/pdf/pub_science_education/KI-NA-26-893-EN-N.pdf

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# WHAT IS THE NETWORK OF EUROPEAN BLUE SCHOOLS?

# 4

# HOW TO DEVELOP A PROJECT?

## 3.1 Follow ten keys to success: criteria to become a European Blue School

The educational model of a European Blue School is based on ten key-points. These can be considered both as guidelines to develop a project, and as criteria to self-evaluate your application to become a European (R[K9INUUR:NKjXYZjKIXOZKXOGGXKIUSV[RYUX_ every project needs to address these criteria to obtain ZNK+[KUVKGT(R[K9INUURY)KXZjIGZOUT Remaining criteria are optional.

Every project needs to address compulsory criteria to obtain the European Blue School Certfication and to be part of the Network.

BECOME A EUROPEAN BLUE SCHOOL

DEVELOP A PROJECT

COMPULSORYKKdj8789-8(7.97.844'983*7458&1:8(-441(79.+.(&43

- Develop a project with interlinked activities
- Produce a clear output
- Involve all students
- Collaborate with a local partner
- Communicate project results

OPTIONAL

- Provide authentic learning experiences
- Work multi - or interdisciplinary
- Mobilise beyond the classroom
- Foster a land-sea interaction
- Bring in a European dimension

# Develop a project with interlinked activities

## Finding the time

How much time is spent to Find the Blue is entirely up to the teachers as it depends on the topic, the age of the students and of the workload. A project can have a duration from 1 week to a semester, up to 2 years.

Adding a new project to a teachers' tight shedule is a challenge. Therefore we encourage teachers YTiSIFXFS2XJWLNJFXXTXGQJNYMYMJ curriculum (see 4), and looking for inspiring projects or ongoing projects that are anchored in the school planning. Informing your colleagues and the school director about your intentions and the process is therefore a necessary step to take.

The ocean can be addressed in most schools subjects and can be used to work multidisciplinary or to tackle cross-curricular and alternative skills. If the school is planning a (multiday) school trip or thematic week, these are opportunities to link the activities with the project.

## Find the Blue

Identifying a relevant ocean topic to work on is a creative and democratic process where the teacher facilitates and provides assistance.

Teachers can advise students to Find the Blue by:

- Investigating the personal existing links between them, their families, the school and the sea or ocean;

B 1TTPNSLFYYMJJXJHNiHLJTLWFUMNHFQTWJHTQTLNHFQ context that they experience, such as living by the coast or near a river, how the community depends on marine resources (food, raw materials, energy, leisure and professional activities, communication route, etc.);

- Sharing their concerns or questions on a provided marine topic (which is linked to the curriculum topic the teacher wishes to address);

There is always a "blue spot" nearby connecting us to the ocean

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## HOW TO DEVELOP A PROJECT?

Both coastal and landlocked communities are linked to the ocean through goods and services, economic activities, cables and pipelines, and geographic features such as rivers, or even the atmosphere. The ocean is crucial to humankind as a source of oxygen, water, food, energy and resources, communication route, influence on weather, and as a place for sports and leisure activities.

(MFQQJSLJYMJXZIJSYXTiSIFYTUNHYMFYHTSSJHYX them to the ocean and to act actively on their sustainable conservation.

Young children can be given a short list of possible topics to choose from, presented by a visual or a description

## Possible ocean topics to start investigating

### Food from the ocean

- Fisheries
- Algae
- Aquaculture

→ Sustainable consumption
Promote the use of sustainable seafood
at schools, restaurants and hotels in the school area

### Climate and ocean

- 4HJFSFHNINiHFYNTS
- Sea level rise
- Coastal erosion
- Storms / floods
- Carbon cycle
- Migrating species
- Ocean warming

→ Working to protect our coast, beach and dunes
Campaign on promoting public transportation, biking,
or sharing rides

### Healthy and clean ocean

Water quality
- Industries
- Swimming
- Wastewater

→ Investigating what goes in the drain and rivers,
goes into the ocean

Marine litter
- Single-use products
- Microbeads

→ Tackle the litter problem in the school environment
Take action against the overuse of plastic in school
and at home

# Produce a clear output

## Choose the project outcome

9MJTZYHTRJIJXHWNGJXXUJHNiHHMFSLJXNSYMJ knowledge, attitudes, skills, and behaviors a teacher expects to occur in the students as a result of this project. The outcome is important to set up the different activities, outputs and collaborations in the project.

The outcomes are preferably linked to the curriclum. There can be more then one outcome and it can of course evolve along the way.

Think carefully about what the students can realistically accomplish with the project.

,TTITZYHTRJXFYJRJSYFWJXJHNiHRJFZWFGQJ and realistic.

- What do you as the teacher want your students to achieve at the end of the project?
- What do your students want to achieve with this project?
- Is the outcome relevant for the school, the community and the ocean?

## Select the activities

Now that you have your Find the Blue topic and know the outcome, you can move on to planning your work and activities with the students. Your students will accomplish a full range of activities to explore their topic, gain knowledge and skills, and increase ocean awareness.

Possible classroom activities

- Literature research
- Developing a poster
- Presenting
- Lab experiments
- STEAM activities
- Use of ocean-related data (e.g. sea surface temperature satellite data) and maps, like the European Atlas of the Seas
- B FWPNSLNYMiQRFSIITHZRJSYFWNJX
- Inviting a speaker (in person or online) to the classroom

Possible outdoor learning

- Fieldwork
- Outdoor sports
- Participating in a citizen science project
- Visit to science centre, a museum or an aquarium
- Visit to company or government agency
- For many more examples, we refer to chapter 4. Inspiring projects.

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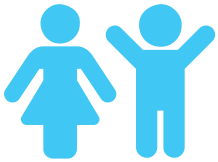
## HOW TO DEVELOP A PROJECT?

The project outcome activities and the output(s) are closely linked to each other. The projects' activities should lead to the creation of a product linked to the Find the Blue challenge.

Students can produce:

- Communication products:
  website, Instagram account, booklet, poster, leaflet, environmental statement
- Art or literature product:
  XSLLWFUMNHSTJQiQRUTJRXQJILJX
- Manufactured product:
  FXWFRFIJTKUFXFLQZJKWTRXJQQiX

Let students identify their main end products of the project



# Involve all students

Find the Blue projects are ideally student-based and UWTRTYJHTHWJFYNTS8YZIJSYXSLFLJIKWTRYMJiWX steps in project design show greater enthusiasm and concentration on assigned tasks. They take ownership of the project, which encourages them to engage more deeply in the research and learning activities.
By getting students involved, learning becomes all about team work as teachers and students become partners reaching for the same learning goals. When students are actively engaged in a project with their community, there is a good chance that they will be doing something similar in their future adult life.

Using the students' interests and fascinations is a simple strategy to make them more involved. Find out what your students are passionate about and then use those interests as natural motivators to increase engagement. Younger students can bring their favorite toys, books or objects to the classroom that are relevant to the project. More mature students can bring in hobbies, talents and unique skills and experiences into the project.
The result? Happier and more motivated students.

Engagement increases whenever students are empowered to make their own choices. Instead of having all students participating in every aspect of the project, teachers can let students choose in which part of the project management they can be succesfull or can grow. Giving roles to students can help them to succeed.

Breaking the class up in smaller teams increases the likelihood that everyone will contribute to the class discussion and problem solving during the project development.

A great way to achieve involvement is by creating an assesment process such as a growth portfolio in which students know exactly what is expected from them and see when they are succesfull or MFYSJJIXTGJiJI9MNIXKZIJSYXQQXFWY to understand how to achieve success on their own as the project moves forward. By teaching students how to self-access, their focus stays on learning. They create a life long learning attitude where they have self mastery over their learning.

Involve your students
in all parts of the project
development and management

# Collaborate with a local partner

Project partners are crucial for the success of the Find the Blue project. These experts will share their skills, knowledge, and provide resources to students, helping them to: generate ideas and materialize them, obtain funds, engage with the local community, and disseminate project results.

Some partners will help students to Find the Blue; others will help to design engagement activities; some will be able to share their skills and knowledge to ensure the success of their projects and others may be prepared to put resources into the activity. Partners can also help students to disseminate the main results of their projects to different audiences. Working together with the local community is key to scale-up projects and to ensure their long-term sustainability. Community engagement will add value to the project activities, events and results.

A teacher can help his/her students to identify relevant partner(s). The students can present an outline of their project to several stakeholders in order to receive support. Teachers and students can reach out and collaborate easily with the members of the EU4Ocean Platform[17]. These organizations, initiatives and people all contribute to ocean literacy and the sustainable management of the ocean. They include local and national organisations to regional sea and European initiatives, spanning the areas of marine research, science-policy, blue economy, maritime industry and the private sector, civil society, arts, education, youth and media. At the core of the platform is the exchange of expertise, knowledge, resources and best practices in ocean literacy.

Finding resources in your own language can be a challenge. Contact an aquarium, marine researcher or visitor center to help you

Find European ocean literacy partners in the EU4Ocean Coalition founding members platform [16]

[16] http://eu-oceanliteracy.eu

[17] https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1483

There is no need to look too far to find relevant partnerships

Have you considered one of the following potential partners yet?

- Local councils
- Local community organisations
- NGO, volunteering teams
- Public transportation
- Schools and libraries
- Aquaria, coastal visitor centers
- Art galleries, museums and science centres
- Marketing and commercial companies
- B 2FWNYNRJX HYTWTWPJWXJWRJSiXMKFWRJWX boating company, dredging engineer, offshore wind engineer, port authorities, water sports schools, coastguards, tour operators, diving clubs
- Manager of a river, lake, or other water body
- For many more examples we refer to chapter 4. Inspiring projects

There are free-access online platforms, where schools will be able to connect to a diversity of stakeholders that are key to the sustainable management of the THJFSiSINSLNSXNWFYNTSFSIXUUTWYYTFIIWJX ocean topics. Consult some of those networks XJHMFUYJWQTTPHFWJKZQQ^TYMJiJQITKFHYN[NY^ TKJFHMXFPJMTQIJWFSIMJQUTZWXZIJSYXTiSI YMJUFWYSJWXMFYGJXiYYMJLTFQTKYMJNWUWTOJHY

## Fundraising

It is possible to set up a project without funding. Funding can however become a necessity when teachers take students to the sea, especially for inland schools, or when teachers need extra time to coordinate a large project.

The funds needed for each project and the way they can be achieved will depend on the nature of the projects developed by students, the partners engaged to it, the local context, and the impacts of these projects to the community.

7FNXSLRTSJ^TiSFSHJUWTOJHYFHYN[NYNJXFSGJFS exciting challenge. Make your students become managers of their Find the Blue project and let them TWLFSNJXFKZSIWFNXSLFHYN[NY^TWiSIXTSXWX 8YZIJSYXWXXJURZXNSHQZIJFQNXTKYMJWJXZWHJX needed for the project and set a clear goal of how much money they need to raise. Then, they should draw inspiration from existing ideas and brainstorm some original ones. Afterwards, students pick the best idea(s). There are many great ways to collect funding, but some of the best ways are the unique ideas that pop-up on student's mind.

There are several stakeholders available to fund school projects with impact on the local community, universities looking for local collaborative projects or national of European funding calls to you can apply with the projects. Pay attention to the opportunities YMFYGJXiYYMJUZWUTXTK^TZWXZIJSYXSIRTYN[YJ them to take the lead of their project, taking it to a step further, as real project managers.

GET INSPIRED!

# *Find the Blue*
# with Erasmus+ funding

Thanks to the Treaty of Rome, we now have a Europe without borders, where everyone can go abroad to travel, work or study without hindrance. In 1987, Erasmus started as a student exchange program. Today the European Commission offers via Erasmus+ funding for students to go abroad as part of a class exchange, a project meeting or individual learning mobility. Schools from different countries can form partnerships of 1 to 3 years. These Strategic Partnerships include simple, small collaborations to exchange good practices and large-scale projects to develop and disseminate innovative resources.

)UTZGIZ_U[K+XGYS[Y4GZOUTGR'MKTI_ZUjTJU[Z
the different opportunities to develop a Blue Project together with schools from a different country.

Browse the Erasmus+ Project Results Platform[18] ZUjTJUZNKXY[IKYYYZUXOKYGTJMUUJVXGIZOIK examples or to search for projects near you.

/TZNOYNGTJHUUQ_U[GTjTJMXKGZKGSVRKYUL projects where schools have collaborated on ocean topics via Erasmus+.

Your teaching tool!

[18] http://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details-page/?nodeRef=workspace://SpacesStore/e10bcccd-c7fd-47e7-900f-ff214ce3b01c

# Communicate project results

Share the project by communicating about the project locally, nationally and at the European scale!

Students can start to disseminate their acquired experience locally with their school, family, the schools's community, the local municipality and the project partner(s).

Then the project results, best practices, main problems, and the solutions, can be shared with students, teachers, schools from other European Blue Schools (both national and interntional). Several strategies and tools can be used to give projects the most visibility possible:

- Public events (exhibition, activities, campaigns, school festivities)
- Project, school or partners webpage
- School and municipality journals and newsletters
- Local/regional media (newspaper, radio, TV)
- Social networks
- For many more examples we refer to chapter 4 - Inspiring projects.

# Provide authentic learning experiences

Ready with a Find the Blue project to address and explore, students can develop both academic and 21st Century skills in a context that is more relevant to the learner.

Authentic learning is by nature both student-driven and applicable to the real world. It can take different forms in a project such as participating in a research or citizen science project or communicating with the local municipality on a local issue.

A popular form of authentic learning is taking students TZYTSFiJQIYWNU9MJRTXINWJHYF*YTGZNQIF relationship with the ocean or seas is having regular visits to the coast over an extended period of time, rather than a one-off visit. Students can then observe, explore and experience the natural marine environment and create a physical and personal relationship with it. But even without leaving the classroom a teacher can provide the students with authentic learning experiences. Why not let students explore the ocean via products from the supermarket or recipes? This will help students to be aware of the strong connection we as consumers have to the seas and ocean.

Extracurricular activities contribute to the personal training of a students' active behavior, becoming deeply involved with their communities. And even more important, students will have the opportunity to develop their talents and passions.

After-school science or water sports clubs, project teams, awareness campaigns, community activism, TQZSYJJWNSLFHYN[NYNJFXSIiJQIYWNUFXWJYMJWJKTWJ examples of some extra-curricular activities that can promote ocean literacy in students.

As part of your project students might undertake extra curricular activities

# Work multi -
# - or interdisciplinary

4HJFSTLWFUMNFXSNSMJWJSYQRZQYNINXNUQNSFWiJQI
One needs to understand how the water moves and flows to understand the patterns you see in chemistry and biology. It's like a giant puzzle where physics, biology, geology, chemistry, technology and human activities affect each other. The ocean role in the Earth's climate's system, in providing resources and in the global economy requires a lot of interaction
GJYJJSYMJINKKJWJSYiJQIX

To improve students' understanding of real-life topics and make the learning process more productive and enjoyable, they can study the topic from a point of view of different disciplines and experience the connection between distinct subjects of the school curricula.
For example, studying pollution on a beach can be achieved by investigating the effects of microplastics in organisms (biology) or by calculating how many microplastics are in seawater (maths).

Another approach is to work interdisciplinary where the design of a solution for beach litter might require engineering skills as well as the knowledge on wind and sand transport, tourism and psychology.

Projects that join different skills, knowledge, and ways of thinking, challenge the compartimentalized knowledge of several school subjects. This multi-or interdisciplinary approach allows students to contextualize their learning with their daily lives.

Multidisciplinary projects are meaningful for students' learning

Exploring complex topics such as climate change and ocean health in a multidisciplinary way is a perfect approach to start creating an ocean literate generation

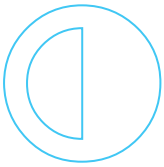
# Mobilise beyond the classroom

Having more then one class or even the entire school involved in the project will no doubt increase its impact.

To get more people on board you could:

- Accept the Find the Blue challenge together with another class.
- Collaborate with teachers from different subjects to add new dimensions to the project.
- Organise a thematic week in the school where more classes take part.
- Tackle issues that appeal to the entire school such as litter or the school menu.
- Establish a working group composed of the school management staff, teachers and students from different classes.

Bd 8JQJHYFRGFXTWXSYMJXMTTQYTLFNSRTWJ awareness for your project.



# Foster a land-sea interaction

While the coast is the ideal environment to Find the Blue, many other sites situated inland such as a river, FHXNJSYNiHQFGFSFYZWFQMNXTWPRZXZRFiXM restaurant or an aquaculture facility are able to support a good project.

What happens inland does impact the ocean. From the pollution that is added to streets, rivers and air to the excess of carbon dioxide, it all affects water quality and the health of marine ecosystems. How we live affects the ocean. Our energy use, our diets, and so much more, all connects to the health of the ocean and seas. 'GJNSLHTSXTZFGTZYYMJTWNLNSTKYMJiXMFSI seafood you eat, the energy you use and the single-use items you buy, you as an individual can influence markets and political decisions. The ocean belongs to us all and it is up to us to protect it. You do not have to live close to the sea to know or protect it.

A land-sea connection can also be established by uniting an inland school and a coastal school through a Find the Blue project. The students can share results TKiJQITWPHTRUFWJYMJINKKJWJSYFXJHYXKYMJNW regions or spread more awareness at the coast and inland communities.

# Bring in a European dimension

Taking part in the online community of the Network of European Blue Schools supports the intercultural exchange and global dialogue between its teachers and students, and provides opportunities to develop a European eco-citizenship of the ocean. The Find the Blue challenge is not only embedded on a local level, but has both a regional (e.g. regional seas) and a European dimension. We encourage teachers and students to explore how the local reality is connected to that wider European scale.

The Network of European Blue Schools promotes the use of eTwinning to collaborate with other teachers and the European Atlas of the Seas as a useful education tool to enhance your marine knowledge and understanding of the local and wider contexts.

GET INSPIRED!

# European Atlas of the Seas

The European Atlas of the Seas[19] is an interactive and educational mapping application on seas and coastal regions, provided by the European Commission Directorate-General for Maritime Affairs and Fisheries.

The Atlas is a leading tool for ocean literacy and education, used by schools, aquaria, NGOs and anyone interested in learning more about the sea. It contains reliable, high quality and up-to-date information on topics such as tourism, security, KTKXM_ZXGTYVUXZjYNOTMYZUIQYGTJWPZGY aquaculture and much more!

With the Atlas, your students can easily:

- Search for map layers in their language
- Create their own map in combining layers of interest
- C )ROIQUTZNKSGVZUjTJSUXK information and statistics
- Zoom in on a particular area
- Measure distances
- Print a map in different sizes
- Share it on social media
- Embed it on a webpage
- Insert it in documents and presentations

Your teaching tool!

[19] https://europa.eu/!QK93nF


eTwinning [20] is a free and safe platform for schools and teachers in Europe, where they can do transnational online projects with their classes, take part to a variety of Professional Development activities, and exchange ideas with their peers in groups or forums.

:UPUOTGMXUJV_UJTKKJZUjXYZXKMOYZKXOT
K:JDTTOTM5TIK_UJKKIKOKZNKIUTjXSGZOUTZNGZ
your application has been accepted, you can crea
or access “eTwinning live”, the space reserved for
members only; and there, you can access to one o
the European Blue Schools Groups, as well as all t
activities and initiatives available to eTwinners.

Join the European Blue School eTwinning Groups to share experiences with teachers from your or other countries

[20] https://www.etwinning.net/en/pub/index.htm

3.2

## Blue Curriculum (Blue Entry Points)

Ocean literacy is not – yet – an integral part of the school curricula. Ocean topics are at best scattered across science curricula with different subjects organized in separate disciplines. Teaching and learning about an inherent multidisciplinary and authentic topic such as the sea is quite challenging and relies on the incredible resources created by individual teachers or marine education TWLFSNFXYNTS9XTMJQUYJFHMJWX8IFQNSPNYMYMJ curriculum or undertake multidisciplinary projects, ZWTUJFS8HMTTQSJYNIJSYNiJIFSZRGJWTK'QZJSYW^ Points in a selection of curricula.

Current ocean issues such as climate change and ocean health can be easily linked to different subjects in European curricula. In science courses, languages, sports and art, some topics can also be 'marinated' into a more ocean relevant content.

9MJGQZJJSYW0TNSYXIJSYNiJINQQMJQUYJFHMJWX to make ocean literacy a part of their classes.

Please check the website for a full report from European Schoolnet (2020) on the Analysis of Blue Entry Points in each of the school curricula of Belgium, Croatia, Finland, France, Germany, Greece, Portugal, Romania and United Kingdom.

# 5 INSPIRING PROJECTS

5

# INSPIRING PROJECTS

Teachers have created remarkable projects on ocean topics over the past years all over Europe. Some of the projects originated from a personal passion of the teachers or an interest of the school community, while others were set up by or with the help of scientists or marine education organistions. These projects will no doubt provide ZKGINKXYDZNGRUZULOTYVOXGZOUTZUjTJZNKOXHRK challenge in their community.

This is only the beginning, more projects will come and updates will be made regularly

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# Seaweeds in the feed

Food from the ocean

## Country
Portugal

## Goal
Raising students awareness to the importance of healthy eating, looking at seaweed as an important complement to vegetarian and other diets.

## School + City
Agrupamento de Escolas de Padre Bartolomeu de Gusmão - Escola Josefa de Óbidos - Lisboa

## Age
Junior and Senior High School (12-18 years old)

## Inland/Coastal
Coastal

## School subjects
Physics-Chemistry; Biology-Geology

## My project
The project aims to raise students' awareness of the importance of preserving marine ecosystems for the health and well-being of the planet, looking at seaweeds as the main producers of oxygen/consumers of carbon dioxide, capable of mitigating climate change.

The existence of hydrocolloids makes seaweeds an important YU[KIKULYURHRKjHKXY]NORKZNKXOINTKYYOTJOLLKXKTZINKSOIGR elements makes them an important food supplement and a source of nutraceuticals.

The preservation of ecosystems forces us to look at multitrophic aquaculture as an opportunity for local development and the creation ULNOMNR_W[GROjKJPUHYROTQKJZUZNKYKG

This project aims to raise students' awareness of the importance of knowledge to the valorization of natural resources and to the creation of a value chain that preserves the environment, according to the principles of the circular economy.

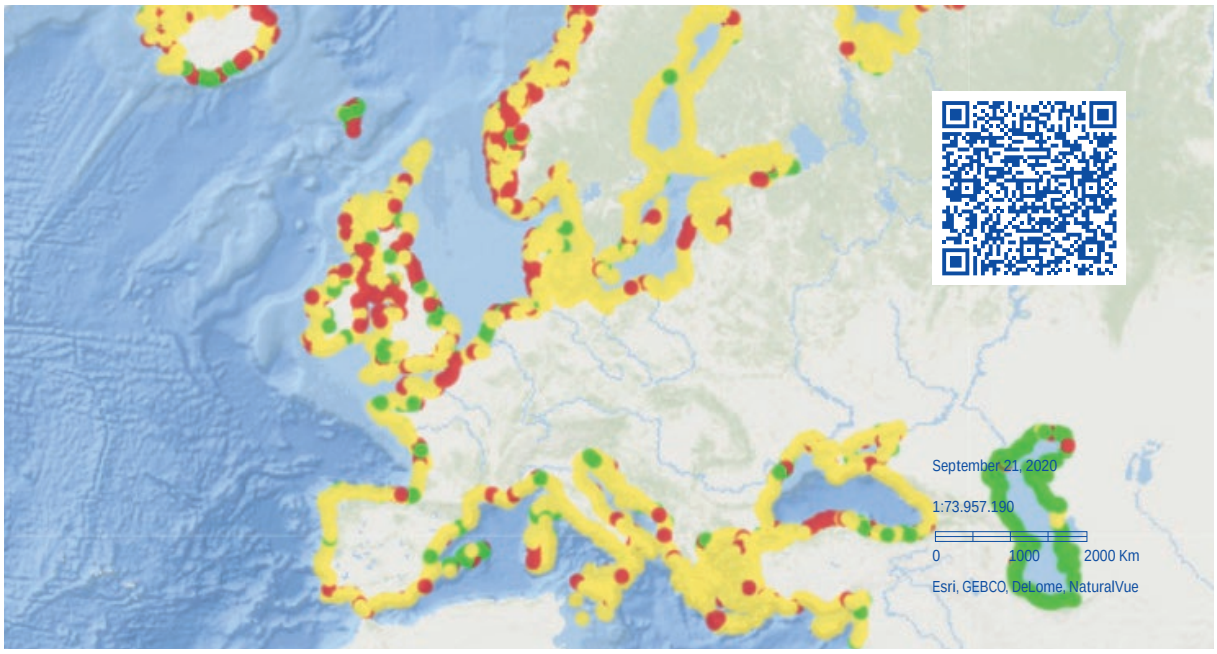
Valorization of seaweeds and its use as a complement to healthy diets



Develop a project with interlinked activities
Produce a clear output
Involve all students
Collaborate with a local partner
Communicate project results
Provide authentic learning experiences
Work multi or interdisciplinary
Mobilise beyond the classroom
Foster a land-sea interaction
Bring in a European dimension

# Climate and ocean

Global warming has alarming impacts on our coasts.
Use the European Atlas of the Seas to describe the state of the coastline in your country.




https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=195:0.75;c=1488680.7684794758,6372896.293863254;z=3

## European Atlas of the Seas – Coastline changes

Coastline changes based on satellite data (2019)

- Erosion (castline retrogradation)
- Stable (imperceptible change)
- Accretion (coastline progradation)

# The ocean in the carbon cycle

Climate and ocean

http://6dimalex.mysch.gr/

## Country
Greece

## Coordinator
Fotios Charitakis

## Goal
HVNWJHNJSYNiHPSTJILJHTSHJWSNSL
THJFSFHNINiHFYNTSNJYMWTLM
a teaching-learning sequence.

## School + City
6th Primary School of Alexandroupolis

## Age
Middle School (10 - 11 years old)

## Inland/Coastal
Coastal

## School subjects
Science

## My project
During the past two school years, we implemented a Teaching – Learning Sequence to a group of 6th graders in our school, taking into account the Ocean Literacy Guide, especially the fundamental concepts which concern the role of the ocean on the carbon cycle and the balance of pH, as well as the Ocean Literacy Scope and Sequence.

This Teaching-Learning Sequence was comprised of 3-weeks inquiry--based and knowledge-integration activities, particularly experiments, concept maps, virtual laboratories, and interactive online activities, concerning photosynthesis, respiration, web chain, carbon cycle, pH GTJUIKGTGIOJOjIGZOUT/TZNKYKGIZOOZOKYYZJKTZYJXXKGYQKJZU present their knowledge concerning the carbon cycle, emphasizing the effects of $CO_2$OTIXKGYKUTUIKGTGIOJOjIGZOUT

/TZNOYYVKIOjIVXUPKIZJOLLKXKTZGVVXUGINKYLUXKGRGZOTMQTURKJMK gains of the students were applied prior and after the extended didactical intervention, namely a structured questionnaire, a concept inventory, and the so-called “rich pictures”, a free form of chart or image used to help illustrate complex issues, found mainly in science.

For the successful implementation of this project a close collaboration, between our school teachers and marine educators from the Department of Primary Education, Democritus University of Thrace, has taken place.

Ocean acidification and the carbon cycle in primary education

# STEM4Sea

Climate and ocean

## Country
Belgium

## Coordinator
Annika Devos

## Goal
Developing a school's STEM curriculum with activities related to the sea

## School + City
Sint-Lodewijkscollege SLOS4, Brugge

## Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)

## Inland/Coastal
Coastal

## School subjects
STEM

Using the sea as a source of inspiration for STEM activities

## My project
The project started with a co-creation process were pupils, parents and teachers choose the topics from a short list provided by the scientists. Around the 3 most wanted topics we created STEM GIZODZOKYOTZNKjXYZ_KGXULZNKVXUPKIZ

1) topic: Voyage around the world – activity:
Building a boat that can carry containers – age: for 1st grade;
2) topic: the sea came through the mailbox – activity:
Building a coastal protection against flooding, age: for 2nd grade, and
3) topic: Jonas and the sea – activity:
Building a submarine that sinks and floats, age: for 3rd grade.

In all activites children used recycled materials and LEGO (TM), they worked in pairs and did not get any guidelines on how to do the construction. The activities were also tested by different teachers in the school. All activities were hands-on and followed an enquiry based approach where the children seek solutions for problems. In the second year of the projects, the activities are embedded in the schools STEM curriculum and the lesson plans are shared via workshops with other schools and several education centers on the coast. The project was initiated by the board of parents at our school and researchers from the Flanders Marine Institute. We found funding at the local municipality to hire a STEM teacher that can lead this project.

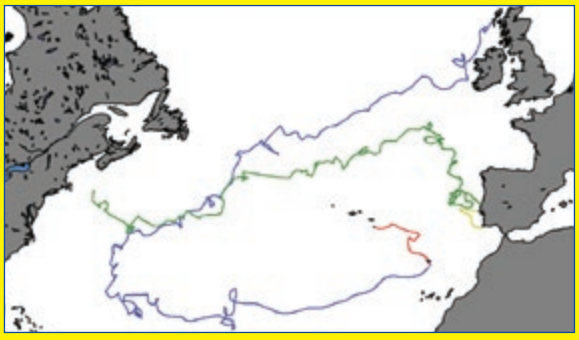
GET INSPIRED!

# EDUCATIONAL PASSAGES

## MINIBOAT PROGRAM

Educational Passages' Miniboat Program[21] connects people around the world to the ocean and each other, creating citizen scientists and global ocean stewards. Students work together to prepare, deploy, and track their miniboat while learning about ocean currents, weather, technology, etc. Each 1.5m long unmanned boat has a satellite transmitter and can be followed online as it sails. Students develop important Science, Technology, Engineering, Art, and Math (STEAM) skills GTJIUTjJKTIKJNORKRKGXTOTMGHUZSGXOZOSKIGXKKXY =OZNNKRVLXUSjYNKXSGTXKYKGXINKYYKRYGTJUZNKX mariners, 145 boats have crossed the world's ocean, bringing together thousands of students, teachers, and communities around fascinating learning opportunities. Boats often land in Europe after sailing along the Gulf Stream from the USA, which provides a unique opportunity to learn about different cultures while making lasting friendships.

Partners like the Portuguese Escola Azul help to re-launch them: WEST, for instance, which had stops in Portugal, Scotland, and the Azores, travelling over 20,000 km over four voyages. In 2019, the Spirit of Ashley Hall connected students from the South Carolina (USA) to the Isles of Scilly (UK) after crossing in 118 days. Boat tracks, stories, and data are all available online.



[21] http://educationalpassages.org/start


One of seven Portuguese sailboats being launched into the sea under the "Educational Passages PT" project: Take Portugal to the World (Leva Portugal ao Mundo), Escola Azul (Portugal)

# Adopt a Float

Climate and ocean

www.adoptafloat.com

## Country

France

## Goal

NYMFUJHNiHFSIUFWYNHNUFYTWFUUWTFHM
the Adopt a Float project aims at bringing
marine sciences into the classrooms.

## Age

Kindergarten (3 - 5 years old)
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal

Inland/Coastal

## School subjects

STEM

## My project

The concept of the project is based on the idea that a class
IUJRJGJUVZGTJTJKXJGZKXXUHUZULZNKJXUjROTMLRUGZ?Z_VK
GTJLURRUJDZJJKOTMOZYYIOKTZOjIU_GMK=OZNZNKLRUGZ
the learners “travel” into an oceanic zone (e.g. the Mediterranean or the North Atlantic).

In real-time, they participate in the observations collected by the float as well as to the sciences that are associated. The learners
GXKGIIUSVGTOKJH_YIOKTZOYZYGTJJUXQUTGYVKIOjIVXUPKIZ

At the end of the school year, they present their work to the Adopt a Float team and, if possible to a wider public. Trainings for educators
UTYIOKTZOjIZUVOIYGXKVXUVUYKJ9IOKTZOYZYGZJOLLKXKTZIGXKKXRKKRY
are implicated and trained on science-based outreach issues.

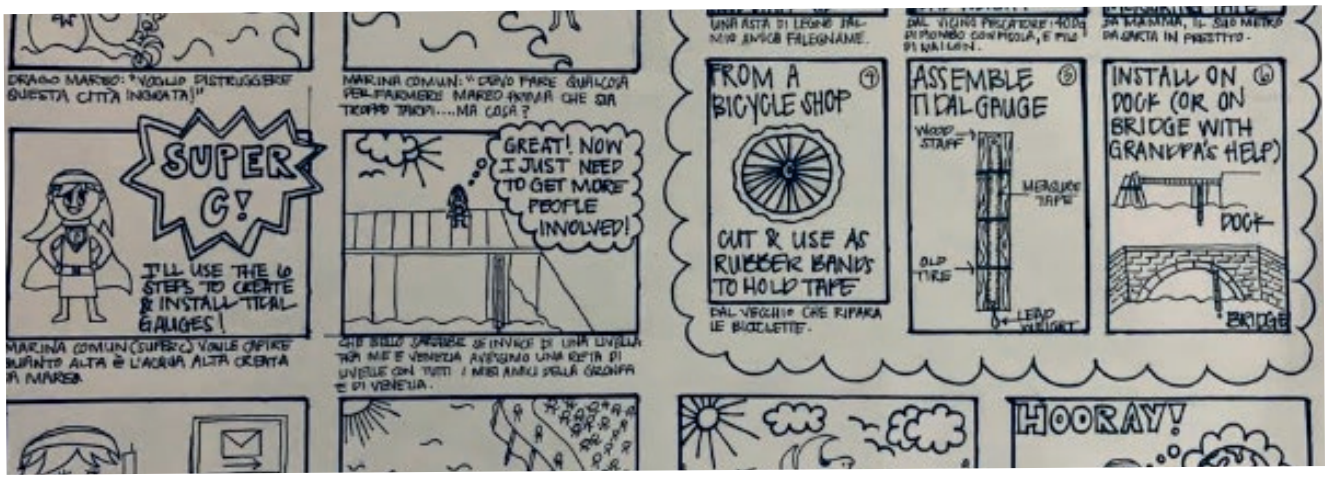
The project is tightly linked to the international global ocean observation program: BGC-Argo (https://biogeochemical-argo.org/).

Follow an underwater robot and work with the real-time ocean observation data during its voyage.

# Discovering High Waters

Climate and ocean

www.venicelab.eu




## Country
Italy

## Coordinator
Giovanni Cecconi

## Goal
Raise awareness of the risk of sea level rise in the Venice lagoon.

## School + City
Schools from the Venice Municipality Itinerari Educativi

## Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal
Coastal

## School subjects
Hydraulics; Natural science; Geography; Physics

## My project
Students contributed to the work of scientists struggling with the problems of climate change and subsidence in Venice lagoon. They actively contributed to the understanding of high water by measuring:

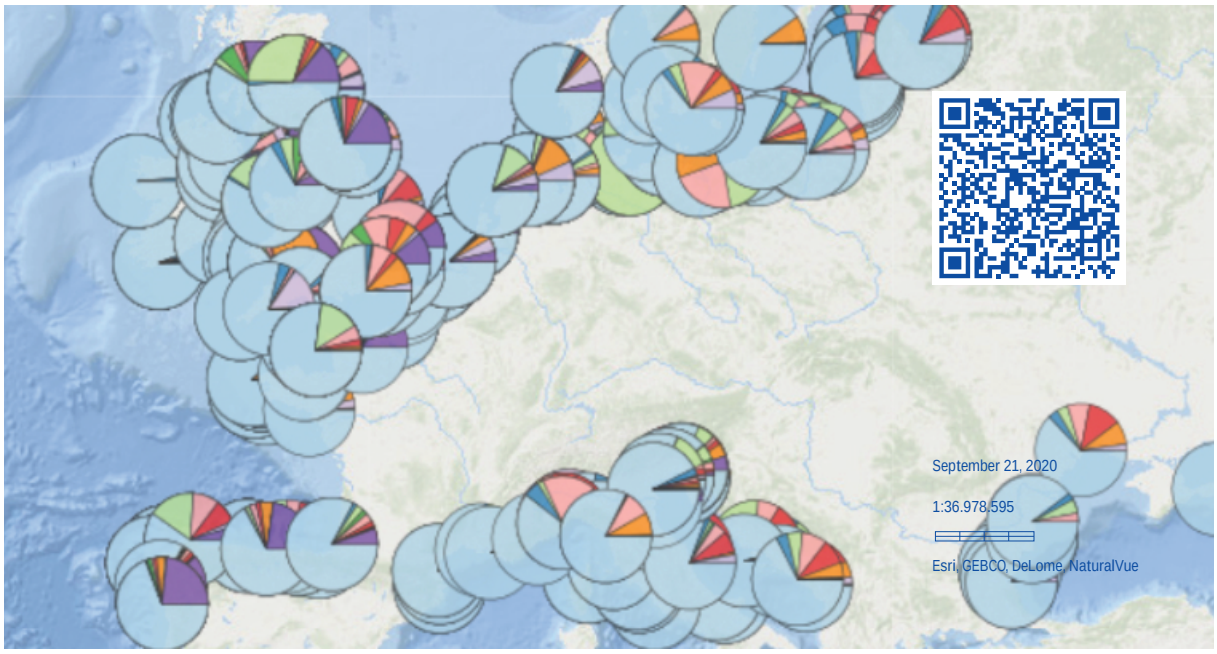
1. the delay of the tide from Venice to their school/territory;
2. the effect of the wind on the high water;
3. the local baseline for local soil settling and sea level rise.

:NKOXSKGYJKKSKTZYJKXKGJJKJZUZNKULjIOGRSGZNKSGZOIGR models of Punta della Salute to monitor the delay of the tide and the growth over the years of the sea level and the effects of the wind on the high waters that threaten the Venice lagoon territories. The project started with a 2 hour introduction and 2 hour OTYZGRRGZOUTULZNKKWDVSKTZOTZNKjKRJ/TZNKLURRUDTMJKKQY during normal or stormy weather, the students carried out a dozen readings, mainly out of school hours, accompanied by a family member or the teacher. The work was presented at the annual Earth book Forum. The activities were shared with eTwinning schools of the major coastal cities of the world threatened by the growth of sea level starting with Croatian and Slovenian schools of Upper Adriatic.

Measuring the tides in the Venice lagoon

# Healthy and clean ocean

Every year, millions of tonnes of litter make their way to our beaches and seas, causing a major hazard for marine life. Use the European Atlas of the Seas to describe the most common types of litter you can find on the nearest beach




https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=562:0.8;c=-8261.993457008619,5668452.641187269;z=5

## European Atlas of the Seas – Beach Litter

**Beach Litter – Composition of litter according to materail categories**

- 'XZOjIOGRVUR_SKXSGZKXOGRY
- )RUZN:KZORK
- -RGYY)KXGSOIY
- 3KJOIGRROZZKX
- 3KZGR
- 6GVKXGTJIGXJHUGXJ
- 6URRZGTZY
- 6XUIKYYKJ=UXQKJJUJ
- 8HHKX
- 9GTOZ_ROZZKX
- 5ZNKX

# Clean Sea

Healthy and clean ocean

Microproject Interreg

https://www.projectendatabank.be/nl/projecten/clean-sea-microproject-1278/


## Country

Belgium/France

## Goal

To raise awareness among coastal children about the origin of marine waste, the consequences for sea life and the daily actions that lead to waste reduction.

## School + City

· Ecole Kleber (Dunkerque - FR)
· School De Vlieger (Ostende - BE)

## Age

Primary School (6 - 9 years old)
Middle School (10 - 11 years old)

## Inland/Coastal

Coastal

## School subjects

Visual Arts; Art History; Written Expression; Modern Languages (French/Flemish)

## My project

We started the project with creating awareness on marine pollution in both schools separately by class activities on the origins, impact and solutions to marine pollution and a sensory discovery of the beach and its natural and unnatural elements.

The pupils then created a work of art (artistic expression) and a plea (written expression). They also prepared a presentation for the schools of the neighboring country which can be understood by children from another language.

When the approximately 100 students from each side of the border met, we engaged them in children games on the sea and on waste, experimented with other mode of expression, allowing children to understand each other despite the difference in language.

Finally the students had to vote for the output of the project out of 12 works of their art. And they decided to create an album that can then be used to support future writing workshops without any text. The schools were supported by Horizon Educatief (Oostende, BE) en CPIE Flandre Maritime (Zuydcoote, FR) in the process.

A cross-border project between
3 coastal schools on beach pollution

# Plastic ALARM! Müll im Meer

Healthy and clean ocean

Garbage in the Sea

https://www.oldenburger-kunstschule.de/projektarchiv/plastik-alarm-2019/

## Country
Germany

## Coordinator
Annekathrin Schuldt

## Goal
To use artistic engagement to teach about the impact of plastic pollution on the marine environment.

## School + City
Grundschule Dietrichsfeld, Grundschule Heiligengeisttor, OBS Ofenerdiek, 4'84XJWSGZWLd4'8&JFSIJWXWFX

## Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal
Inland/Coastal

## School subjects
Arts

## My project
The project focused on the artistic interpretation of the immense pollution of the environment by plastics, especially the ocean, and how the resulting destruction of the habitats of animals, can impact the rest of the Earth and inhabitants.

The school and local community together with 17 artists, explored the ghost nets of the seas, learning about the huge, deep-sea plastic landscapes, travelled with cruise ships in the plastic sea UXOTKYZOMGZKJjYNYZUSGINY:NKYKGYIRVZKKGYKYRUXKJ experienced and designed using artistic-aesthetic methods. Seventeen professional artists from Bremen and Leipzig worked on plastic pollution in 2019 over 5 weeks with over 220 students from 5 schools in the studios and workshops of the Oldenburg Art School.

KOTMZNKjTGRKNOHOZOUTZNKXKGYGTKZKTYOKYVVUXZOTM program with actions and lectures in cooperation with the Museum Natur und Mensch and the Institute for Chemistry and Biology of the Sea (ICBM) at the University of Oldenburg.

Working with professional artists to create art works for a public exhibition



Develop a project with interlinked activities
Produce a clear output
Involve all students
Collaborate with a local partner
Communicate project results
Provide authentic learning experiences
Work multi or interdisciplinary
Mobilise beyond the classroom
Foster a land-sea interaction
Bring in a European dimension

# The Garbage Pirates

Healthy and clean ocean

https://www.grundschule-neuhaus.de/umwelt-bne/

### Country
Germany

### Coordinator
Doris Henningson

### Goal
To arouse positive emotions on ocean pollution and to convey a message with joy, great commitment and sustainability.

### School + City
Grundschule Neuhaus an der Oste, Neuhaus

### Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)

### Inland/Coastal
Inland/Coastal

### School subjects
Arts; Music; Technology; Drama

Creating awareness on litter by involving the whole school in a musical

### My project
The pupils participated in a musical on garbage pirates. In this imaginative forum we created a pirate ship using emotive and musical performance techniques, drawing attention to consequences of pollution of the seas, the careless use of the environment, and the thoughtless consumption of resources and resulting waste.

This became a continually running project as part of school curriculum on education about sustainable development, the preparation YVKIOjIGRR_LUXZNKSJYOIGRRGYZKJYOSUTZNY

The main point was to involve everyone in the school in the project OTGVUYOZOKJG_DZNXURKYZUjZKKX_UTKGTJKTYJKKZNKJNURK community and student body were included including technical aspects, lights, decoration, catering, cleaning, and performing.

The combination of music as a motivational and creative aspect and the existential topic of marine litter allowed the topic to be incorporated in a creative and inspiring manner. The garbage pirate ship that was build did not wear out after the musical, but now serves its purpose as an environmental center for recycling in our school.

# Wattenmeerprojekt

Maritime Culture

https://www.gs-rhein-whv.de/wordpress/category/allgemein/wattenmeerhaus/

## Country
Germany

## Coordinator
Andrea Oltmans

## Goal
To educate the children on the local Wadden Sea mud flats, part of a UNESCO world heritage site.

## School + City
Grundschule Rheinstrasse, Wilhelmshaven

## Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)

## Inland/Coastal
Coastal

## School subjects
Biology; Geography; Geology; Natural Sciences

## My project
In this project children discovered and explored the Wadden Sea through a wide range of activities throughout the year: from the mud flats, the tides, the seals, the construction of dykes, bird migration routes (migratory birds), coastal protection and flooding. The children also reflected on the lack of sustainability in one's own behaviour.

Students worked together with the visitor center UNESCO-
-Weltnaturerbe Wattenmeer in Wilhelmshaven, which is located close to the school and which has an aquarium with marine SGSSGRYGTJZNK1ÁZKTS[YKƁ'VGXZLXUSZNKjKRJZXOVYGTJ different learning activities the center provided, students created movies on distinct topics.

The project has now taken place 7 years in a row and the activites GXKjTGTIKJSGOTR_H_JUTGZOUTY:NKINORJXKTXKIKOKHGJMKYKKX_ time they end a part of the project. Children who showed a lot of interest had the opportunity to become a junior ranger during the course of the project.

Children explore all facets
of the Wadden Sea
and produce short movies

# Our Ocean

Maritime Culture

Marine Legends, Fairy Tales and Folklore in Ireland

https://oar.marine.ie/handle/10793/1396

## Country

Ireland

## Goal

Promote ocean awareness and engagement amongst primary school children and their wider community, in line with the Ocean Literacy Principle 6 - the Ocean and Humans are inextricably inter-connected; as well as the Global Sustainability Development Goal 14 - Life below the water.

## School + City

St. Michael's National School, Kerry
Glasheen Girls Primary School, Cork
Glasheen Boys National School, Cork
Liscannor National School, Clare
Cork Educate Together National School, Cork
Scoil Rois Primary School, Galway
Bayside Senior National School, Dublin
Kilbarron National School, Donegal
Saint Aidan's National School, Sligo

## Age

Middle School (10 - 11 years old)

## Inland/Coastal

Coastal

## School subjects

English; Music; Art; History; Information and Communications Technology (ICT); Science and Geography

## My project

The Explorers Education Programme outreach team carried out a project called "Our Ocean – Marine Legends, Fairy Tales and Folklore in Ireland", with up to 300 primary school children and their teachers around the coastal counties of Ireland.

The project aimed to promote ocean literacy through storytelling and the arts, with a particular focus on how the ocean and humans are inextricably inter-connected. By reflecting on Ireland's marine and maritime heritage, the children engaged in learning about a selection of Ireland's well-loved Irish marine legends, fairy tales and folklore from each of their counties.

Inspired by the stories, the children worked together creating their UJTUXOMOTGRVOKIKYULGXZJUXQVUKSYYUTMYGTJYNUXZjRSY Promoting further learning and engagement, the children's work was published in a book and launched at Seafest, 2019.

During Ireland's national maritime festival the children's art work was showcased at an exhibition reaching over 100,000 people. Copies of the book were presented to the children who took part in the project, as well as to national and international delegates at Ireland's Our Ocean Wealth Summit.

The project was been further promoted through media and social media promoting Ireland's marine heritage. As part of the evaluation of the project, the children's ocean literacy knowledge and KTMGMKSKTZJGYGYYKYYKJVXKGTJVUYZ

The Explorers Education Programme is supported by the Marine Institute of Ireland, the state agency for marine research and development.

Children find inspiration in the Irish maritime heritage stories to create and display works of art

GET INSPIRED!

# TBA21 – Academy

## An initiative of the Thyssen-Bornemisza Art Contemporary Foundation

TBA21–Academy[23] leads artists, scientists, and thought-leaders on expeditions of collaborative discovery, dedicated to fostering a deeper understanding of the ocean through the lens of art and to engendering creative solutions to its most pressing issues. TBA21–Academy commissions interdisciplinary research that catalyzes engagement, stimulates new knowledge, and inspires artistic VXUJ[ZOUT+YZGHROYNKJOTZNKTUTVXUjZ;Y program is informed by a belief in the power of exchange between disciplines and in the ability of the arts to serve as a vessel for communication, change, and action.

The "Ocean Space" [24] was created by TBA21–Academy and is located in the Church of San Lorenzo, in Venice. It is a new collaborative platform for ocean imagination and ocean action, by catalyzing ocean literacy, research and advocacy through the arts.

"Ocean Space" offers targeted educational paths towards sustainability, through pragmatic activities and the promotion of best practices, encouraging collective reflection, critical thinking and conscious action in the name of the environment. "Ocean Space" intends to start a permanent educational program that allows everyone to feel like an active participant, and offer a solid contribution to the protection of our planet.

A collaborative platform
for Ocean Imagination
and Ocean Action

[23] https://www.tba21.org
[24] https:// ocean-space.org

# Classes Glénan

Maritime Culture

www.glenans.asso.fr

## Country
France

## Coordinator
(MWNYNFS'JWYMJTY(RJSHJ(MFUTYTY

## Goal
Preservation of maritime space, awareness of the marine environment, together with the ocean.

## School + City
(TLJHJYJWSFYIJSKFSY3FSYFN3FSYJ

## Age
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal
Coastal

## School subjects
Mathematics; English; Technology; Geography; Music; Arts; French; SVT

Linking the marine environment and nautical activities into a multidisciplinary project

## My project
This interdisciplinary project brought together three sixth grade classes around marine environment and nautical activities. During the school year, each teacher brought up different marine themes: diversity and relationships within the marine ecosystem, ocean vulnerability, landscape evolution (SVT), ecological impact of coastal and seaside tourism on the seascape (Geography), Homer's Odyssey and the Maritime Adventure (French), sailor and polyphonic songs (Music), RUMUZ_VKUTZNKYGORGTJZNKYKGZUGJUXTZNK)RGYYKY-RTGT:YNOXZ (Arts), seamanship, inspired dance, wind, waves and sails (EPS), expressing oneself on the marine environment and interacting with a navigator (English), nautical charts, tides, wind angles (Mathematics), matter and energy at sea (Technology).

Activities included presentations related to the marine environment, jRROTMOTGRUMHUUQUTZNK_KGXVXKYYGXZOIRKYIGRROMXGSYRKZZKXY painting, sculpture, T-shirt logo, maritime orienteering course, dances inspired by the ocean, sea songs, conference by Jean-luc Van Den Heede, visit of the city of sailing, Operation Clean Up nature and HKGINKYGTJOJKTZOjIGZOUTGTJIRGYYOjIGZOUTULSGXOTKYVKIOKY

:NOYVXUPKIZKTJKJTJZNGYZG_UTZNKOYRGTJUL6KTLXKZOTZNK-RTGT GXINOVKRGMUOTGYYUIOGZOUTJZNZNK-RTGTYYGOROTMYINUUR
The organization of this stay was an opportunity to go beyond just learning to sail since the students discovered the association 2KY-RTGTYHGYKJUTRUKULZNKYKGZKGSYVOXOZGTJYUROJGXOZ_
They became more and more autonomous and took responsibility and initiative through the assignment of roles like those one can adopt on a boat, where they learnt to act safely. Students also became aware of the natural environment to greater respect. In short, the pupils were IUTLXUTZKJTJZNGXKGR9INUURULROLK?)RGYYKY-RTGTKOYZYYOTIK

# The Sea and Us

Maritime Culture


### Country
Croatia

### Coordinator
Marica KuÄan

### Goal
To awaken the ecological awareness of students.

### School + City
Pomorska škola Bakar, Bakar

### Age
Primary School (6 - 9 years old)
Middle School (10 - 11 years old)
Junior and Senior High Schools (12 - 18 years old)

### Inland/Coastal
Coastal

### School subjects
Art; Biology; Chemistry; Foreigner language; Information Technology; Natural Sciences; Physics; STEM

### My project
Over the last 13 years students have been learning about the laws of life at sea and ways to protect the ocean. The school has its own boat, Vila Velebita Dva, which is used to take students out on the sea in order to help develop their awareness of sustainable, ocean-linked development.

Students learn to take care of the environment, applying key principles of how to protect the sea through research of microplastics in sea sediment and sea water, chemical and physical analysis of water parameters and the protection of sea turtles. Students take a proactive involvement in the removal of plastics and other waste from the ocean and have the chance to develop underwater photography skills.

Throughout their participation in the project they discover the role of Posidonia oceanica as the lungs of the sea and learn about the impact of carbon dioxide in sea life. In addition, a special festival is held every year – Blue Day. Blue Day is a celebration of the ocean looking at a range of topics focused on protecting sea life and connecting the community. Blue Day brings a wide range of people
OTZUZNKVXUMXGSSKOTIRJOTMYIOKTZOYZYjYNKXSKTVUROZOIOGTY
VXKYYINKLYZKGINKXYGXZOYZYNGXHUXSGYZKXYULjIKYJOKXY

Maritime students celebrate their own ocean festival with the local community

# Create your expedition

Maritime Culture

https://www.we-explore.org/.


## Country
France

## Goal
To discover and set up a maritime expedition.

## School + City
Collège les Sables Blancs, Concarneau
1ĦJ5NJWWJ,ZŁZNS(TSHFWSJFZ

## Age
Middle School (10 - 11 years old)
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal
Coastal

## School subjects
All subjects

Creating a maritime expedition and talk about it with famous sailors and explorers

## My project
Students were invited to the Explore base (exploration incubator) to discover and set up a maritime expedition. This was part of the "Projet de Territoire" initiative, which aimed to raise among the students a state of mind committed to the environment, a collaborative way of being, as well as to share some know-how based on the existing maritime skills and professions.

The students choose the subject, duration and route of the expedition. They were then divided into different groups – ship, communication, subject, administrative – and simulated the expedition's set-up.
For this project the students developed a “virtual” two-year expedition around the world on a 15-metre boat to study the influence of global ĮGXSOTMUTVURGXHKGXYZNKHOURĮOTKYIKTIKULPKRR_jYNGTJOTTUĠZOK water and energy management techniques.

In-situ workshops allowed them to get to know all sorts of jobs on the water, but also to discover the importance of the collaborative aspect, of team spirit. This activity was in the form of a role-playing game very participative. The richness of the hosted explorations, the presence of the members of the expeditions (face-to-face / telephone / video links) allowed the students to be in contact with "real life" and thus share experiences and build their "project".

At the end of the activity, a report in the presence of Explore staff allowed the pupils to present their expedition, their choices and their options.



Develop a project with interlinked activities
Produce a clear output
Involve all students
Collaborate with a local partner
Communicate project results
Provide authentic learning experiences
Work multi or interdisciplinary
Mobilise beyond the classroom
Foster a land-sea interaction
Bring in a European dimension

# The Legendary on the way

Maritime Culture

https://projetothelegendary.blogspot.com/
https://dodouroaomar.blogspot.com/
https://www.instagram.com/escola.azul.aedm/


## Country
Portugal

## Goal
Students and teachers engagement in a project with an international dimension. Communicate and create links with other educational communities, strengthening knowledge about other realities. Make known our community with strong connections both to the river and to the sea. Provide students with new connections to the ocean, promoting Ocean Literacy.

## School + City
Escola Secundária Diogo de Macedo, Agrupamento de Escolas Diogo de Macedo - Olival (Vila Nova de Gaia)

## Age
Kindergarten (3 - 5 years old)
Primary School (6 - 9 years old)
Junior and Senior High Schools (12 - 18 years old)

## Inland/Coastal
Inland (river side)

## School subjects
Portuguese; English; Natural Sciences; Geography; Biology and Geology; Information and Communication Technologies; Programming and Robotics and Visual Education; Canoeing Sports Training Center

## My project
The Diogo de Macedo School Grouping is Portuguese Blue School (Escola Azul). It is located in the municipality of Vila Nova de Gaia, district of Porto (Portugal) and is part of a community with strong connections both to the river and the sea. It is on the Oporto wine production and trade route and close to the Port of Leixões. The project is part of another project with an international dimension Educational Passages. It consists of hosting the mini-sailboat that hit the shore at Praia do Baleal on October 20, 2019, from the USA, launched by the students of Webster School in New Hampshire; and prepare it for the new trip.

The projects involves the following steps:
1. Knowledge about the Educational Passages project and stories of other mini-sailboats (training);
2. Assessment of the conservation status of the sailboat and its maintenance and repair;
3. Decoration (selection of iconic elements of the community, drawing and painting);
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and checking the navigability conditions of the sailboat; and, b) the actual launch location of the sailboat (partnerships);
5. Communicate with Webster school students;
6. Production and preparation of documents and souvenirs that follow inside the sailboat on the next trip;
7. Construction of a digital "Logbook" (recording the stages of preparation and monitoring the trip to the next destination).

Students are the main actors throughout the project.
They produced a video that they sent to students at Webster's school where they answered their initial questions:
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Building bridges between communities



Develop a project with interlinked activities
Produce a clear output
Involve all students
Collaborate with a local partner
Communicate project results
Provide authentic learning experiences
Work multi or interdisciplinary
Mobilise beyond the classroom
Foster a land-sea interaction
Bring in a European dimension


The Pilot Programme "Educar para uma Geração Azul" (Educating a Blue Generation[25]) targets children between 6 and 10 years old and was designed to facilitate the inclusion of ocean topics within the existing curriculum, during the four JFWXKYMJiWXHHQJTKJIZHFYNTSTKYMJ5TWYZLZJXXJR

The programme includes:

- Key partnerships with the Education ministry, regional government, local municipalities, school directors and teacher training centers;
- B 9JFHMJWJSLFLJRJSYFSIHFUFHNYFYNTSYMWTZLMHJWYNiJI training, including a series of practical activities;
- Teacher handbook and supporting educational materials;
- Follow-up opportunities ensuring that teachers can HQFWNKFSIMFWJYMJNWJJJWNJSHJFSIFSNKiHZQYNJX
- Actions with students: educational activities with Oceanário de Lisboa, and visits to the aquarium, that create an emotional connection leading to a more powerful and long-lasting interest in the ocean;
- Evaluation of impact, critical to ensure effectiveness and to inform decisions on scaling up the programme.

Content:

Questions posed by students from the target ages informed a brainstorm between educators, biologists and those working more broadly in ocean policy to design the programme's content. Through a multidisciplinary and holistic approach to our relationship with the ocean, topics include:

- Ocean geomorphology, marine ecosystems and biodiversity;
- Marine ecosystem services;
- Ocean economy;
- Law of the sea;
- Historical importance of the ocean;
- Portugal's strong relationship with the ocean;
- Main threats and opportunities to restore and conserve the ocean;
- Importance of what is still to be discovered.

These contents and activities can be explored in a flexible and adaptable way, from the 1st to 4th year, both in the classroom across all curricular disciplines, as well as in extra-curricular activities.

Scope:

- 6 municipalities in mainland Portugal + 4 islands in the Azores Region
- More than 900 teachers
- More than 15 000 students

[25] https://www.youtube.com/watch?v=U3YBXXfQjCs

# 6

# USEFUL RESOURCES, INITIATIVES AND NETWORKS