PROJECT

SAILING WITH SCHOOL

CIRCOLO VELICO VENTOTENE

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SAILING WITH SCHOOL

A PROJECT TO EDUCATE

IN SPORT, RESPECT AND PROTECTION OF THE ENVIRONMENT, SUSTAINABILITY, AND INCLUSIVITY

THE CONTEXT

At the national level, CONI and the Italian Ministry of Education have been collaborating for years to develop the teaching of sports and the practice of sports in Italian schools of all levels. In September 2007, this collaboration was sealed with the signing of a protocol between CONI and the MIUR, and in May 2022, specifically for the sport of sailing, with the signing of a specific protocol between the FIV and the MIUR.

Within this national framework, the Circolo Velico Ventotene, which had developed and launched the "Sailing with the School" project in 1995, has consolidated this initiative by involving hundreds of Italian and foreign schools, including through funding provided by regional calls for proposals and European funds, in participating in sailing camps with environmental, historical, and European themes on the island of Ventotene.

In this context, on November 13, 2015, a three-year agreement was signed between the Lazio Regional School and the Circolo Velico Ventotene "to promote and develop cultural and sporting initiatives related to the sea, environmental education, and sailing for students and teachers of schools of all levels in Lazio."

Article 1 of the Agreement: "...The Lazio Regional School and the Circolo Velico Ventotene undertake, each to the extent of their respective expertise, to offer an exchange of knowledge and scientific-educational collaboration for the benefit of students and teaching and non-teaching staff of the schools of the Lazio region." Lazio, taking into account the qualified professional resources, adequate facilities, and experience acquired by each contracting party, through various opportunities such as:

1. the exchange of information on study, research, and training activities in areas of mutual interest;
2. the development and implementation of specific research programs and training projects related to Maritime Culture, from a sporting, environmental, and cultural perspective, reserved for schools of all levels in the Lazio Region;
3. the implementation of coordinated cultural, study, and educational initiatives involving other scientific organizations;
4. the exchange of professional resources between the two partners;
5. the organization of seminars, courses, internships, meetings/debates, forums, round tables, trips, and conferences reserved primarily for teachers and students of schools of all levels in the Lazio Region..."

A-THE SAILING WITH SCHOOL PROJECT

The "Sailing with School" project, conceived in the 1990s, became an integral part of the agreement signed in 2015 between the CVV and the USR LAZIO, to ensure students receive the highest quality education and accompanying teachers receive recognition for their continuing education.

The project was designed to offer schools the opportunity to introduce a methodology that uses the sport of sailing, and primarily the sailing boat, as a unique context in which students and teachers can engage with the study of various curricular subjects, particularly scientific subjects.

To meet the needs of individual schools in terms of educational offerings, the Sailing with Schools Project has been divided into specific themes that have taken on the characteristics of true sub-projects.

We summarize some guiding ideas from the Sailing with Schools Project that schools of all levels could include in their PTOF (Three-Year Educational Offering Plan).

1) Sailing is a safe, outdoor sport, and more than any other sport, it perfectly matches the metaphor of travel, as in discovery, freedom, knowledge of the environment, and movement. In this context, the Sailing School Camp becomes one of the most popular educational trips.

2) The Sailing with Schools Project contains differentiated proposals for the various levels of school, in relation to content and implementation methods.

3) The Sailing with Schools Project offers a training program that also meets the needs of schools' local locations, such as providing the opportunity to go sailing to students from schools far from the sea or lakes, or from schools close to the sea but with partners not interested in offering this project.

4) The Sailing with School Project commits to new responsibilities and initiatives: ● Organizing refresher courses for teachers and principals of schools of all levels ● Training its instructors with internships specifically designed for schools ● Updating curriculum and teaching methodologies ● Providing knowledge to communicate effectively with schools in compliance with regulations and, above all, mutual decision-making autonomy ● Designing and managing projects reserved for schools ● Designing and managing projects for European, national, and regional calls for proposals in the field of sailing

5) The Sailing with School Project promotes, within a defined legal framework that respects educational travel regulations, using the collaboration of specialized tour operators, primarily TO Mediterranea Viaggi e Cultura, School Camps and School Cruises to be held during the school term or during the summer as educational trips with the entire class lasting several days in a specific marine environment. Sailing School Camps and School Cruises have become a very important aspect, if not the primary one, of the Sailing with Schools project, especially for middle and high schools that in recent years have chosen the Sailing School Camp for their educational trips, studying the visited area from an environmental, historical, and cultural perspective. The teachers and school principals involved in the Sailing with Schools project, through courses, internships, meetings, and targeted communication efforts, have been the main contributors to the project's success.

6) The Sailing with Schools project has become an important opportunity for the development of coastal and maritime ecotourism and the acquisition of "blue" skills in the fields of training, education, and workforce development in the Blue Economy sectors.

7) The Circolo Velico Ventotene, which is headquartered and operates on Ventotene, uses several residential facilities on the island in addition to the school's guesthouse, "La Casa della Vela."

Through this activity, it has attracted over 12,000 students from 2013 to 2025. Students with an average stay of 4 nights, totalling 48,000 daily presences in the Ventotene area, with a population of 700, are spread throughout the year.

The boat, in its myriad forms (dinghies, offshore, monohulls, multihulls, etc.), is a complex interdisciplinary system that, in addition to fostering the acquisition of specific knowledge and skills, helps develop and

strengthen the student's culture and potential for teamwork.

on the boat, the crew is constantly engaged in anticipating and resolving problems that may arise on and off the boat, relating to safety, weather, and/or potential obstacles at sea.

On the boat, discipline and the nautical code are in force, which stimulate the crew to adopt new relational models based on solidarity and the ability to work in a group, thus helping to overcome some degenerative phenomena present in the youth world, such as violence and bullying.

The boat encourages the participation of all students by integrating students with disabilities into the work. With special attention and technical support, they can fully utilize the boat and become an integral part of the crew.

The project is developed through standard learning paths, adapted to the needs of each school and grade level. Upon request and guidance from individual schools, it can be implemented with specific programs.

"Sailing with School" offers new educational and learning programs characterized by cultural models of learning and the acquisition of skills and knowledge inspired by teamwork and the use of renewable energy resources. Sports and the use of sports equipment are in balance with the environment, respecting nature and controlling sources of pollution and degradation.

Sailing, often used in advertising as an adventurous activity, synonymous with freedom and the joy of living in harmony with nature, can also significantly help and support the solution to problems of marginalization and socialization affecting young people.

Learning to sail, sail a boat, and share projects, emotions, fears, and solidarity with the rest of the group can help foster new behavioural and ethical models characterized by respect for people and the environment in which we live.

GENERAL OBJECTIVES

Sailing, for both students and teachers, involves a real training and refresher course on the use of the boat as a sporting activity, as a means of transportation, and as an opportunity to develop new relational systems. N.B.: The training will be certified in accordance with current regulations for all teachers participating in the Sailing School Camps organized by the Circolo Velico Ventotene.

Through knowledge of the nomenclature and basic navigation techniques, the students will acquire basic skills for sailing a dinghy.
Sailing skills and knowledge can be applied throughout the curriculum, particularly in the practice of all sports, especially in terms of team building and compliance with safety regulations.

Pedagogical Objective: To develop critical and responsible behaviors in the external and internal environment of one's crew (feeling involved, interacting, engaging, and being involved). Develop dynamic skills in the relationship with the sailing boat, not only as a tool for sailing but also as a means of transportation equipped with sustainable tools and technologies.

Educational and Training Objective - Developing unique skills in understanding the boat system (measuring and assessing situations, accepting the constraints dictated by the context, especially in terms of safety, making reasoned decisions, acquiring technical and motor skills) - Acquiring skills for personal and collective use of the boat, equipment, and sails - Developing the ability to interact with others in various contexts.

Learning Objectives - Acquiring practical technical knowledge and skills and operational study methods, which can be used during curricular activities in the various thematic disciplines (choosing study paths, organizing one's study, creating connections with other disciplines, using investigative tools).

SPECIFIC OBJECTIVES

● Acquire the basic knowledge for sailing a dinghy. ● Provide knowledge and assessment of sailing risks and related safety decisions. ● Provide information on the possibilities of sailing, depending on the type of boat

and the basic psychophysical requirements. ● Provide information on the different types of vessels. ● Encourage the learning of work methods that can be practically tested during sailing, from navigation techniques to teamwork. ● Through practical and theoretical activities, promote the acquisition of methodologies, knowledge, and skills in the field of sport in general, and sailing in particular.

CONTENTS The course, which takes place on various types of dinghies and on both offshore and offshore boats, includes differentiated in-depth studies, especially regarding seafaring activities and the use of all sails: boat inspection and checks before departure; the mast; rigging; sails; safety equipment; crew and assignment of roles; weather and sea conditions and choice of sailing strategy; sailing techniques; sail and equipment adjustments
- sailing directions; manoeuvres; boat handling; hauling and launching; equipment inspection and arrangement. All topics will be covered with continuous links to the curriculum subjects, particularly the technical and scientific ones.
N.B.
For students - Participation in the Sailing School Camps in Ventotene allows students to have their training activity recognized as certified training credits

B- TEACHER REFRESHER

The Club has been involved for many years in experimenting with new teaching methods for the sport of sailing by integrating federal sailing school programs with thematic programs and projects, linked to specific individual training programs for students and teachers at all levels of schools.
The Club is an accredited and certified institution by the Ministry of Education and Merit pursuant to Directive 170/16.
The Club has implemented these training experiences through agreements with several Italian and foreign institutions and by accrediting its courses on the MIUR's SOFIA platform. In 2020, the Circolo Velico Ventotene, in addition to having its courses directly recognized by the Regional Schools of Lazio, Lombardy, Emilia, Tuscany, and Campania, has added, through CONI, four National Training Courses to the SOFIA Platform, reserved for teachers, managers, and technical-administrative staff from schools of all levels:

COURSE: CLIMATE CHANGE AND THE FUTURE: A COMPARISON BETWEEN MAN AND THE ENVIRONMENT ON THE ISLAND OF EUROPE
Teacher training on climate change and the challenges of living in a sustainable society
COURSE LOCATION: VENTOTENE ISLAND
TARGET AUDIENCE: Teachers and school managers from schools of all levels
SUBJECT AREAS: Science, Humanities, Economics, Physical Education

COURSE: ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT - A CHALLENGE FOR THE BLUE ECONOMY - VENTOTENE ISLAND STATE NATURAL REGION MARINE PROTECTED AREA
Teacher training to develop and strengthen environmental education in the curriculum and encourage student participation in environmental and water conservation initiatives.
COURSE LOCATION: VENTOTENE ISLAND
TARGET AUDIENCE: Teachers and Headmasters of all levels of schools.
SUBJECT AREAS: Science, Humanities, Economics, and Physical Education.

COURSE SAILING WITH SCHOOL
The laboratory boat and the STEAM (Science – Technology – Engineering – Art – Mathematics) method.
Teacher training to develop the teaching of scientific and artistic subjects through the sport of sailing in schools.
COURSE LOCATION: VENTOTENE ISLAND
TARGET AUDIENCE: Teachers and Headmasters of all schools
SUBJECT AREAS: Scientific, Humanistic, and Economic Areas, Physical Education

COURSE VENTOTENE A SMALL ISLAND FOR A LARGER EUROPE
"Memory and the Future Know How to Navigate" Teacher training to develop and promote European culture in curricular teaching and encourage student participation in active citizenship initiatives
COURSE LOCATION: VENTOTENE ISLAND

TARGET AUDIENCE: Teachers and Headmasters of all schools
SUBJECT AREAS: Scientific, Humanistic, and Economic Areas, Physical Education

COURSE: "ITALY INSTITUTES SCHOOL: EDUCATION THROUGH TRAVEL" - THE VENTOTENE CASE
Teacher training to enhance and develop their role as planners of educational programming, through the organization of educational trips Education
COURSE LOCATION: VENTOTENE ISLAND
TARGET AUDIENCE: Teachers and Headmasters of schools of all levels
SUBJECT AREAS: Science, Humanities, Economics, and Sports Sciences
N.B.
For teachers - During the Circolo Velico Ventotene Sailing School Camps, accompanying teachers participate in training activities that are certified and valid as refresher courses.

C-PCTO PROJECT AND THE SPORT OF SAILING

(Paths for Transversal Skills and Orientation)
FORMERLY SCHOOL-WORK ALTERNATION

The project is based on a collaboration between secondary schools interested in Sailing School programs and the CVV (Italian Sailing School). This experience led to the idea of further enhancing the PCTO programs that schools offer to students in their first three years of high school, to promote a training program aimed at acquiring knowledge and skills related to professions in the world of sport, particularly sailing. **Special attention is given to the program for sports high schools, with the aim of allowing students to take the exams for ADI (Italian Sailing Federation) and 1st Grade Dinghy Instructor.**

The project combines training with a trip to a place of cultural, environmental, and sporting interest. In this context, students can participate **directly in a PCTO project** to gain knowledge and experience related to **the management and operation of a sailing school and a sports association with general and specific characteristics: the case of Circolo Velico Ventotene**. In this training program, students acquire knowledge and experience in the various fields related to the profession of sailing instructor and/or manager of an amateur sports association (ASD): Sports - Environmental - Historical and Cultural - Promotion and Marketing - Entrepreneurial Training.

The PCTO activity is primarily structured into one or more "on-the-job" internships and meetings that will address topics related to the training profile. In this context, short lessons can be held, in the field, at school, or on the e-learning platform, on the subjects through which, in addition to acquiring theoretical and practical knowledge, they will learn the techniques and processes related to the activity to be carried out.

COURSE OBJECTIVES AND METHOD

During their stay on Ventotene, students will directly participate in the management and operation of the Sailing School. This training program will enable students to acquire knowledge and experience in various fields related to the profession of Sailing Instructor:

SPORTS: ● Acquire the basic knowledge for sailing various types of sailboats; ● Understand and evaluate the risks of sailing and the related safety decisions; ● Enhance the practice of sailing in relation to the type of boat and the possession of basic physical and psychological requirements; ● Provide information on the different types of boats; ● Promote the learning of work methods that can be practically tested during sailing, from navigation techniques to teamwork; ● Through practical and theoretical activities, promote the acquisition of methodologies, knowledge, and skills in the field of sport in general, and sailing in particular. ● Promote the use of the Boat as a unique/inclusive collective context for integrating and enhancing everyone's abilities (not disabilities, but rather different abilities - ref. International Classification of Functioning, Disability & Health). ● Use the Boat as an educational context for teaching scientific subjects - STEAM Method (Science, Technology, Engineering, Mathematics) and historical-humanistic subjects - SELF Method (History, Economics, Literature, Philosophy). ● Promote the learning of methodologies, knowledge, and skills in the scientific, environmental, and sports fields through play;

ENVIRONMENTAL: ● Acquire information on current developments in environmental issues and prospects for the rational use of natural resources, in particular natural and humanized habitats, to encourage the practice of sports such as sailing; ● Engage with issues related to the protection and conservation of the territory (relationship between nature conservation and sustainable development);

• Develop adequate knowledge and awareness of ecological and environmental issues. • Promote awareness of resources real and potential territorial assets of each individual community in order to facilitate students' choices of further studies and careers (school-work relationship); • Foster a relationship with nature through eco-friendly sports activities; • Learn new work methodologies that can be practically verified in the field; • Propose and coordinate initiatives, activities, and projects aimed at enhancing the environmental and cultural assets present in the territory in which they operate.

HISTORICAL AND CULTURAL: • Acquisire information on the historical and cultural heritage of the islands of Ventotene and Santo Stefano, and the Pontine Islands in general, along with the territories of Lazio and the Campania Region, starting with the Romans; • Engage with the issues of active citizenship and legality in relation to Europe; • Promote relations with the Foster relationships with the local area through knowledge of the historical events that, having taken place on the island, had wider resonance, particularly with regard to the birth of the European Idea; • Acquire knowledge of the actual and potential territorial resources of each individual community in order to facilitate students' choices of further studies and careers (school-work relationship); • Propose and coordinate initiatives, activities, and projects aimed at enhancing the environmental and cultural assets present in the area in which they operate;
PROMOTION AND MARKETING: • Acquire the ability to develop promotional projects and plan market strategies, including through the use of IT and multimedia techniques, for the offering of eco-friendly tourism products such as sailing;
ENTREPRENEURSHIP TRAINING: • Acquire the knowledge to establish and manage a sports company/association, knowing how to decide on the corporate form and acquiring management, organizational, and control skills in the various operational phases (administration, marketing, planning, and business management). • Acquire basic knowledge for the use of funding sources provided for by European, national and regional laws in the field of entrepreneurship and in particular youth entrepreneurship.

D-WELCOME PROJECT

This proposal stems from twenty years of experience organizing educational trips, summer camps, and refresher courses, and from the idea of further enhancing the Welcome Project that schools offer to first-year students of each cycle, to foster understanding and cohesion within the class. The project involves organizing a field trip at the beginning of the school year, reserved for first-year students, possibly accompanied by "older" students from the same school who, in the case of upper secondary schools, could simultaneously undertake a work-study program. Through the symbolic value of the trip, first-year students will gain a positive and dynamic image of the school that welcomes them, offering them the opportunity to get to know each other, discuss their educational plans, envision their entry into the world of work, learn new terminology and language, explore new places, and be supported throughout this journey by future teachers. The school as a whole will benefit from this experience: on the one hand, teachers of the participating classes will be able to immediately get to know their students in an environment less restrictive than the classroom, on the other, students will have the opportunity to socialize with each other and feel a sense of belonging to their new class and the welcoming school. The metaphor of "journey," an opportunity to discover new places and people, will become an opportunity for new students to begin their new educational journey within the school without hesitation.

THE CONTEXT: VENTOTENE, THE STUDENTS' ISLAND

On the island, students and teachers will find a welcoming environment, prepared to meet the needs of a field trip. Ventotene is, in fact, a true open-air interdisciplinary educational laboratory. The island's small size allows for historical and archaeological sites, testimony to the great history that has passed through here, to be within walking distance; To be constantly immersed in a unique environmental heritage, ranging from the lush and fragrant Mediterranean scrub to the incredible coastline, made up of cliffs overlooking the sea; to always have in your eyes the blue of the sea, a vast container of biodiversity and a training ground for scuba diving and sailing, and the horizon stretching from Capri to Punta Campanella, Vesuvius and Ischia, the Phlegraean Fields, the Campanian and Lazio coasts all the way to Geta, Circeo, and the island of Ponza. The island, with its vegetable gardens, is a guardian of forgotten products and flavors.

THE VENTOTENEUROPA TRAINING CENTER

With the VentotenEuropa Training Center, we propose the island of Ventotene, where Altiero Spinelli and Ernesto Rossi wrote the Manifesto "For a Free and United Europe" during their fascist exile. This center serves as a place for study and discussion on European issues and the role of the Mediterranean, to

educate young people in a new pro-European culture and active citizenship, based on respect for human dignity, diversity, and a culture of solidarity and acceptance.

THE STAY IN VENTOTENE

The stay in Ventotene can be organized as a school camp of varying lengths, with particularly advantageous costs if planned in advance and held in the period October-November.

THE OBJECTIVES

During the trip/stay, students will be simultaneously engaged in educational, cultural, and training activities on land and at sea, as well as an experience of learning and socializing with one another and with others. The goal is to create new cultural and cognitive environments for the children, laying the foundation for a healthy relationship with nature and the environment in general, and with humanity, especially with a view to promoting sustainable activities. The "Welcoming" project with the Sailing School can strengthen the development of the new class group, if it was already formed before the trip, or even contribute to its formation, using the trip and shared work, particularly on the boat, as tools for its formation. Below is a summary of the project's general and specific objectives.

GENERAL OBJECTIVES

Pedagogical Objective - Acquire and develop critical and responsible behaviors towards the human and natural environment (feeling involved, interacting, engaging, and becoming involved) - Form critical and responsible behaviors towards the external and internal environment of one's crew (feeling involved, interacting, engaging, and becoming involved). Develop dynamic skills in the relationship with the reality of the sailing boat not only as a tool for sailing sports but also as a means of transport equipped with sustainable tools and technologies - Educational and Training Objectives - Acquire and develop unique skills in interpreting the environment (measuring and assessing situations, accepting the constraints imposed by the context, making reasoned decisions, acquiring technical and motor skills). - Develop unique skills in interpreting the boat system (measuring and assessing situations, accepting the constraints imposed by the context, especially in terms of safety, making reasoned decisions, acquiring technical and motor skills). - Develop skills for personal and collective use of the boat, equipment, and sails. - Develop the ability to interact with others in various contexts.

Educational Objectives - Acquire and develop individual and group study and observation techniques; acquire and develop skills in self-assessment and evaluation of general and specific results. Acquire practical knowledge and skills, and study methods that can be used during curricular activities in the various thematic disciplines (choosing study paths, organizing one's study, creating connections with other disciplines, using research tools).

SPECIFIC OBJECTIVES

● Acquire the basic knowledge for sailing a dinghy. ● Provide knowledge and assessment of sailing risks and related safety decisions. ● Provide information on the possibilities of practicing sailing based on the type of boat and the possession of basic psychophysical requirements. ● Provide information on the different types of vessels. ● Encourage the learning of work methods that can be practically tested during sailing, from navigation techniques to teamwork. ● Through practical and theoretical activities, promote the learning of methodologies, knowledge, and skills in the field of sport in general, and sailing in particular. ● Acquire and develop information on current environmental issues related to the rational use of natural resources in specific habitats. ● Acquire and develop information on current issues related to the construction of a Federal Europe by exploring the themes of active citizenship, respect for human dignity, diversity, and solidarity among peoples; ● Raise awareness of issues related to the protection and conservation of the territory (the relationship between nature conservation and sustainable development); ● Develop adequate knowledge and awareness of ecological-environmental and political-cultural issues related to Europe; ● Promote the learning of work methodologies that can be practically verified in the field; Promote knowledge of the real and potential territorial resources of each individual community in order to facilitate students in choosing further studies and work activities (school-work relationship). ● Promote the relationship with nature through environmentally friendly sports activities. ● Promote the growth of a participatory culture in compliance with democratic rules and the rejection of violence as a tool for conflict resolution. ● Promote the relationship with nature through environmentally friendly sports activities. ● Promote the growth of a participatory culture in compliance with democratic rules and the rejection of violence as a tool for conflict resolution.

THE METHOD

Through a series of study experiences, students will be able to experiment with "scientific" investigation techniques using new teaching aids. Regarding socialization activities, in consultation with teachers,

questionnaires will be administered and group activities will be implemented to foster both interpersonal relationships and the experimentation of conflict mediation techniques, typical of communities, particularly in non-elective groups. The techniques used, although already tested by our organization over several years of activity, can be adapted to the needs of the school, both in terms of tools and methodologies and the presence of experts designated by the school itself. Some knowledge and skills, not only educational but also behavioral, acquired during the trip can therefore be used during the strictly academic curriculum.

WELCOMING AND INCLUSION

The companies and associations participating in VentotenEuropa have extensive experience in welcoming and managing training programs dedicated to students with disabilities, particularly in the practice of sailing sport together with the Circolo Velico Ventotene which has developed the "Liberi di Navigare" project to teach sailing to children with disabilities.

E - FREE TO NAVIGARE PROJECT

FREE TO NAVIGATE chooses the Boat and the Educational Activity as a unique, inclusive collective context for integrating and enhancing everyone's abilities (not disabilities, but different abilities - ref. International Classification of Functioning, Disability & Health (ICF)), which are integrated throughout all phases, from the Design to the Construction of the boat, from the conception of the project and teaching materials to the training of students, teachers, and technicians. The project is primarily aimed at students with disabilities and collective and welcoming stakeholders such as schools, families, and associations.

The use and construction of the boat, made from kits in schools by students in the School-Work Alternation program, uses low-impact technologies: glebanite molds (regeneration and recovery of fiberglass), a hull made of recyclable fiber and bio-resin, photovoltaic sailcloth, wind power, and an Arduino microcontroller for the electronics.

The project draws on the experience of the Circolo Velico Ventotene and its partners and involves several activities and implementation phases:

• **disseminating sports culture** among people with disabilities and their families through the design and construction of collective, one-design boats, to be built in kit form at their schools by teams of students, teachers, and instructors who will identify solutions to the challenges posed by their different abilities;

• **Information campaign** aimed at schools, public bodies, and associations via email, meetings, and social media

• **Theoretical and practical training** for volunteers, technicians, teachers, and instructors in Ventotene and remotely (e-learning in collaboration with experts, universities, the Italian Sailing Federation, and social cooperatives) to promote sailing in schools and associations;

• **Introductory sailing activities** through Sailing School Camps in Ventotene and the Gulf of Gaeta

• **National event in Ventotene** to bring together crews with different abilities, teachers, operators, technicians, and schools.

NEEDS

• Overcome the concept of disability with that of functional ability in the formation of the group/crew

• Practice sailing at an affordable cost

• Acquire specific knowledge/skills

• Become not just users/consumers but protagonists in the implementation of a project through self-training and the construction of the training boat

• Define new training programs integrated with the curricular ones through the boat system and using STEAM (science, technology, engineering, and mathematics) and SELF (history, Economics, Literature, Philosophy)

THE PROJECT CHOOSES SCHOOLS AS ITS MAIN TARGET

Italian schools, with over 8 million students, including 250,000 with special educational needs, 9,000 schools, 371,000 classes, 820,000 teachers, including 139,000 support teachers, 780 sailing clubs, and 1,500 sailing instructors, represent a unique target for engaging young people with disabilities in sports, particularly sailing.

NOT FOR PEOPLE WITH DISABILITIES, but rather training sessions for everyone and boat-sharing among people with different abilities. Promoting sailing among all students also fosters awareness, respect, and inclusion of diversity in the world of sport and education.

The project involves schools, from students to families, from associations to local authorities, and therefore society not only in the sports sector but also in:

- new low-cost, environmentally friendly technologies
- training for curricular and support teachers and specialized operators
- new school-work experience programs
- new models for integrating people with different abilities to be used locally
- new business models and job opportunities

HOW TO CONTINUE

• The project, part of an already established framework for sailing courses in Italian schools, will continue to be supported by family funding, as is the case with traditional sailing camps.
• The project will therefore be self-financed through Sailing Camps during the school year and Summer Camps supported by families.
• Schools participating in the project will be able to activate forms of crowdfunding and sponsorship, also in connection with the School-Work Program.

F- STEAM PROJECT

Developing Maritime Culture in Schools Through Sailing and Scientific Education. Through the use of a boat, students acquire the basic knowledge for sailing a dinghy, mini-offshore, or offshore sailing vessel and address scientific education issues: the STEM approach (b) The Reach project - The Boat as an environment in which to address these issues.

The STEAM method = (S = Science -T = Technology - E = Engineering - A = Arts and Humanities - M = Mathematics). STEAM is a curriculum based on the idea of educating students in four specific disciplines: science, technology, engineering, and mathematics, using an interdisciplinary and applied approach.

Rather than teaching the four disciplines as separate and discrete content, STEAM integrates them into a cohesive learning paradigm, based on real-world applications.

The difference between the STEAM approach and traditional science and mathematics teaching is the blended learning environment and the demonstration of how the scientific method can be applied to everyday life.

The STEAM approach leverages computational thinking and focuses on the application of everyday problem-solving strategies.

STEAM education can begin very early: Primary School - at this level, teaching focuses on research and structured problem-solving (i.e., intended as a non-extemporaneous method).

SAILING AND STEAM

Sailing is an excellent STEAM learning environment. Every time a child climbs into a sailboat, steers the tiller, or trims a sail, they are experiencing effective and meaningful lessons. The weather above, the water below, and everything on the boat can provide concrete, everyday science lessons. Connecting this experiential learning with educational goals can open up a whole new world of learning. Adding or enhancing STEAM to a sailing curriculum can have a significant beneficial effect, both philosophically and financially.

US Sailing's Reach Program

In 2012, US Sailing launched Reach, a national educational initiative aimed at inspiring schools to use sailing as a learning platform. Reach exposes young sailors—intuitively our future workers and environmentalists with more skills and knowledge—to STEAM and environmental education.

MODULES

Module 1 - Measuring the Wind - Module 2 - Buoyancy - Module 3 - Perimeter and Area of Sails - Module 4 - Simple Machines on Board - Module 5 - Testing Water Quality - Module 6 - Marine Trash - Module 7 - Upwind Angles - Module 8 - Wind Shifts - Module 9 - The Power of the Wind - Module 10 - Underwater Exploration - Module 11 - Microscopic Mysteries - Module 12 - Geology of a Marine Basin - Module 13 - Fishing for a Change - Module 14 – Robo Sailing - Module 15 - Extreme Meteorology - Module 16 - Exploring an Estuary - Module 17 - Dangers of Underwater Navigation

- Module 18 - A Sailor's Environmental Footprint

EXAMPLES

TO FLOATS OR NOT TO FLOATS - The activity was conducted in a third-grade classroom. In the first phase, students were presented with ten objects and asked whether they would float when immersed in water. The results were recorded on a sheet. The last object, a small ball of plasticine, was particularly important for subsequent developments. In the second phase, students were asked to create a floating object using the plasticine ball and a small basin to perform buoyancy tests. No instructions were given regarding the size and shape of the "boat" they would make. The third phase, a "competitive" phase, tested the ability of an identical mass of plasticine to support different weights. The "boat" floating in the basin was loaded with a succession of small weights until it sank. The pair of children whose boat supported the most small weights won.

MEASURING SEA FEVER - The activity was conducted in a fourth-grade classroom. The goal was to present the sea as a living organism, with its "health states" and therefore its propensity to become ill. In the first phase, after viewing some slides on the sea in varying degrees of health, a brainstorming session was held in the classroom to identify the elements to focus on. The discussion revealed that the three important (and easy to measure) parameters are temperature, electrical conductivity (salinity), and pH. In the second phase, after procuring measuring instruments (digital, for easier recording), six students and one teacher went out to sea on four different days, measuring the parameters in the same locations (identified with a simple GPS). The four teams of "researchers" completed a worksheet comparing their results.

LET'S BUILD AN ANEMOMETER - Measuring the wind, something you can't see, using humble materials and the philosophy of tinkering: these are the objectives of the example presented. After the usual classroom discussion to define what wind is and how it manifests itself, we proceeded to build a very simple anemometer using four plastic cups, two straws, a pin, and a stapler. Then we went outside to test our creations; each group was equipped with a meter, a counter, and a recorder. Measurements were taken at different points on the beach.

SMALL AND LARGE BOATS - A natural progression from the experiences on floating is the construction of a sailing boat (catamaran), using only recycled materials. The activity extends from class III to class V. In class III, the boat has minimal dimensions (about 30 cm). The natural continuation in class V was the construction of a sailing model, also using recycled materials...

THE SURFACE AREA OF A SAIL - This is an interesting topic for several reasons:

- It allows us to address the problem of determining the force exerted by the wind on the sail (and, consequently, the force required to control it).
- Requires approximate calculation techniques due to the sail's non-precise triangular shape.
- When the sail is laid out on the floor, its concavity becomes evident; thus, it is possible to introduce some aerodynamic considerations.

SIMPLE MACHINES - Marshall's formula: provides an empirical value of the force exerted by the wind on a sail per unit area, expressed in newtons. For example, with a 10-knot wind, a 10-m2 sail is subjected to a pressure of approximately 625 N. Since an adult's arm exerts a force of 35 N, it is clear that a simple machine capable of "multiplying" the arm's force is needed.

LET'S BUILD A U-ROV - The acronym U-ROV stands for Underwater-Remote Operating Vehicle, in other words, an underwater robot. Movement is provided by three motors derived from bilge pumps with model propellers attached. Two LED bulbs provide illumination, while filming is captured by a waterproof GoPro-type action camera. The ROV is powered by a 12V battery, connected to the control box with a 15m-long eight-core cable.

WHAT SKILLS ARE REQUIRED?

Creating a STEAM program in the sailing/marine field requires not only the obvious skills and knowledge in science and sports, but above all the skills to create authentic learning situations. This program is facilitated by being "immersed" in an environment like the marine and sailing world, which is an inexhaustible source (for better or worse) of inspiration for meaningfully applying elements of the STEAM approach. Ultimately, it is important that personnel involved in a STEAM program have sufficient IT skills and, as we will see later, familiarity with the Arduino environment.

DEVELOPMENTS

THE ARDUINO ENVIRONMENT - Arduino is a microcontroller (i.e., a computer measuring just a few square centimetres) designed and manufactured in Italy. Its unique feature is its digital and analog inputs and outputs, allowing for the creation of control devices (sensors/actuators) with great ease, relatively little expense, and, above all, rapidity.

THE LABORATORY BOAT - A first example of Arduino application in a STEAM/sailing environment is the creation of a laboratory boat. This is a boat whose equipment, appropriately coupled with sensors (load cells, etc.), can display/store data relating to: • Loads on standing rigging • Loads on running rigging • Mast • Tiller • Centreboard • Speed and direction of the wind and the boat • Airflow between the sails

NOT-SUPER-ABLE - Finally, the project closest to our hearts: Building a boat (not necessarily a sailing one) that can be sailed by people with severe disabilities (up to tetraplegia).

Not just a boat to take for a ride at sea, but one that, equipped with a suitable two-way joystick/Arduino/linear actuator system coupled to the tiller, allows a person with severe physical limitations to experience the joy of sailing a boat.

G-COMPETITIVE ACTIVITIES – REGATTA ORGANIZATION

The SAILING WITH SCHOOL project has also given rise to a high-level activity reserved for all Sailing School students with particular competitive aptitudes and for the world of sailing in general. The Circolo Velico Ventotene, which for the first 15 years of its existence had not paid particular attention to competitive commitment, when it decided to activate a competitive team, began a process of training and selecting Sailing School students with particular aptitudes to form a competitive team. Over the years, the team has helped young people achieve great results nationally, internationally, Europeanly, and worldwide. Added to this is the commitment to planning and organizing internationally prestigious competitive events such as the Regatta www.carthagodilectaest.com (Rome Ventotene Cartagine Hammamet), which has become a classic of offshore sailing in the Mediterranean.