



NATURE-BASED SOLUTIONS LEARNING SCENARIO

Title

The Sea begins in my neighborhood.

Author(s)

Antonia Trompeta – SCIENTIX AMBASSADOR

Abstract

“The Sea Begins in My Neighbourhood” is a community project that tries to encounter a real problem situation, using IBSME and STEAM educational methodology, and addressing the SDG 2030 (Sustainable Development Goals)

Considering some everyday clearer evidence of Climate change consequences, and the loss of Oceans' biodiversity, the project enhances the need for critical awareness among all citizens. In that sense, it proposes to unite educational and cultural institutions of Alicante, Spain, in a common goal: To work for the sustainability of Oceans, promoting care actions in pro of the Mediterranean Sea, bringing the European educational idea of “The sea begins here” to our neighbourhood.

The project has been coordinated by the cultural section of a neighbourhood association, Sociedad Cultural y Deportiva San Blas (SCDSANBLAS) in Alicante; that has more than 200 partners, and more than 100 supporters. With the help of SCIENTIX ambassador, they have spread the idea to schools, and associations of the neighbourhood, being more than ten the institutions interested in the project.

As the result of their implication, they have extended their concern to other citizens, associations and schools of Alicante capital and nearby towns. And it is bound to continue with the project in coming years, following the idea of the millennium goals and the 2030 Alicante agenda.

Keywords

Oceans, sustainability, Mediterranean Sea, plastic pollution, integral cycle of water, climate shelters, biodiversity.

Introduction (leave this section as it is)

“Nature-based solutions (NBS) are solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. Nature-based solutions must therefore benefit biodiversity and support the delivery of a range of ecosystem services.”

Source: https://research-and-innovation.ec.europa.eu/research-area/environment/nature-based-solutions_en

To use this Learning Scenario more effectively, teachers are encouraged to:

- Check out the list of [recent EU publications on nature-based solutions](#).
- Learn about the European Union’s [Green Comp framework](#) for sustainability competences and how these can help students develop other skills
- Search for inspiration in [the Learning Scenarios](#) developed during the Integrating Nature-Based Solutions in Education Pilot (funded by the EC and coordinated by PPMI, in collaboration with EUN).
- Take a look at [the Learning Scenarios](#) published during the STEM Discovery Campaign 2023, with the support of NBS EduWORLD.
- Read about [Nature-based solutions: Transforming cities, enhancing well-being](#) (also available as a detailed PDF).
- Learn more about nature-based solutions by looking at NBS case studies in repositories, such as [NetworkNature](#), [Oppla](#) and [Urban Nature Atlas](#).
- Contact local NBS practitioners or scientists working in their area (they can be found through [Oppla](#)).
- Use the [“Ask Oppla”](#) and [NetworkNature Helpdesk](#) service to request help in case of any technical/scientific question on NBS.
- Read about the European Union’s [European Green Deal](#) to understand the current EU strategy on climate change and COVID recovery
- Read the European Union’s [Biodiversity Strategy 2030](#) to learn about the challenges Nature faces in Europe

Overview

Summary

<i>Subject</i>	<i>Interdisciplinary lessons: math, science, geography, history, arts</i>
<i>NBS Societal Challenge Areas</i>	<p>Indicate below which of the twelve NBS societal challenge areas your Learning Scenario addresses:</p> <p><input type="checkbox"/> Air quality</p> <p><input checked="" type="checkbox"/> Biodiversity enhancement</p> <p><input checked="" type="checkbox"/> Climate resilience</p> <p><input checked="" type="checkbox"/> Green space management</p>

Summary

	<input checked="" type="checkbox"/> Health and well-being <input checked="" type="checkbox"/> Knowledge building for sustainable urban transformation <input checked="" type="checkbox"/> Land regeneration <input checked="" type="checkbox"/> Natural and climate hazards <input checked="" type="checkbox"/> New economic opportunities and green jobs <input type="checkbox"/> Participatory planning and governance <input type="checkbox"/> Social justice and social cohesion <input checked="" type="checkbox"/> Water management																								
<i>Green Comp Competences</i>	<p>Indicate below which of the 12 Green Comp competences your Learning Scenario addresses (for more information, refer to pages 12-15 here):</p> <table border="1"> <tr> <td colspan="2">Area: Embodying sustainability values</td> </tr> <tr> <td><input checked="" type="checkbox"/> Valuing sustainability</td> <td><input type="checkbox"/> Supporting fairness</td> </tr> <tr> <td><input checked="" type="checkbox"/> Promoting nature</td> <td></td> </tr> <tr> <td colspan="2">Area: Embracing complexity in sustainability</td> </tr> <tr> <td><input type="checkbox"/> Systems thinking</td> <td><input checked="" type="checkbox"/> Critical thinking</td> </tr> <tr> <td><input type="checkbox"/> Problem framing</td> <td></td> </tr> <tr> <td colspan="2">Area: Envisioning sustainable futures</td> </tr> <tr> <td><input checked="" type="checkbox"/> Futures literacy</td> <td><input type="checkbox"/> Adaptability</td> </tr> <tr> <td><input type="checkbox"/> Exploratory thinking</td> <td></td> </tr> <tr> <td colspan="2">Area: Acting for sustainability</td> </tr> <tr> <td><input type="checkbox"/> Political agency</td> <td><input checked="" type="checkbox"/> Collective agency</td> </tr> <tr> <td><input type="checkbox"/> Individual agency</td> <td></td> </tr> </table>	Area: Embodying sustainability values		<input checked="" type="checkbox"/> Valuing sustainability	<input type="checkbox"/> Supporting fairness	<input checked="" type="checkbox"/> Promoting nature		Area: Embracing complexity in sustainability		<input type="checkbox"/> Systems thinking	<input checked="" type="checkbox"/> Critical thinking	<input type="checkbox"/> Problem framing		Area: Envisioning sustainable futures		<input checked="" type="checkbox"/> Futures literacy	<input type="checkbox"/> Adaptability	<input type="checkbox"/> Exploratory thinking		Area: Acting for sustainability		<input type="checkbox"/> Political agency	<input checked="" type="checkbox"/> Collective agency	<input type="checkbox"/> Individual agency	
Area: Embodying sustainability values																									
<input checked="" type="checkbox"/> Valuing sustainability	<input type="checkbox"/> Supporting fairness																								
<input checked="" type="checkbox"/> Promoting nature																									
Area: Embracing complexity in sustainability																									
<input type="checkbox"/> Systems thinking	<input checked="" type="checkbox"/> Critical thinking																								
<input type="checkbox"/> Problem framing																									
Area: Envisioning sustainable futures																									
<input checked="" type="checkbox"/> Futures literacy	<input type="checkbox"/> Adaptability																								
<input type="checkbox"/> Exploratory thinking																									
Area: Acting for sustainability																									
<input type="checkbox"/> Political agency	<input checked="" type="checkbox"/> Collective agency																								
<input type="checkbox"/> Individual agency																									
<i>Age of students</i>	<i>Primary and secondary students, citizens of all ages</i>																								
<i>Preparation time</i>	<i>10 h</i>																								
<i>Teaching time</i>	<i>20 h</i>																								
<i>Online teaching material(s) used</i>	<i>Blue schools, Ocean Maritime forum EU. Ocean literacy materials. Oppla materials</i>																								
<i>Offline teaching material(s) used</i>	<i>Whiteboards, computers, and projectors. Ocean stories for children. "Realia" from beaches for exhibition of sea materials.</i>																								
<i>NBS resource(s) used</i>	<i>NBS sceneries in SCIENTIX - "There is not planet B"- by Katerina Glezou Teach green: Integrate sustainability and nature – SCIENTIX TV</i>																								

Summary

--	--

License

Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under identical terms. This is the license used by Wikipedia and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

Integration into the curriculum

The learning scenario is addressed citizens and scholars, in all the courses at Primary level, and Secondary level. Citizen's literacy comes with talks and outdoor activities.

Aim of the lesson

Improve Ocean literacy.

Address Mar Mediterranean sustainability problems.

Enhance better civic behavior, especially with the use plastic and bad use of water.

Estimate environmental and historic places related to the sea.

Value historical and local figures dedicated to the sea.

Promote maritime education, and new jobs in relation to maritime sustainability.

Increase the consumption of sustainable fish.

Encourage nautical sports.

Dissemination of the project in the city, and at national and international level.

Outcome of the lesson

Actions to save water – use of water reducers, drip irrigation in school orchards.

Reduce use of plastic – Filter in tap drinking water. Citizen Workshop participation.

Regenerate green spaces:

- *Participation in calls.*
- *Reports sent to Town hall authorities.*

Clean beaches: Participation in calls

Ocean literacy: Participation in talks

Study of civic behavior: Water footprint, and use of plastic bottled water reports

Future jobs: Number of new students in maritime studies

Maritime sports: Number of schools engaged in maritime sports.

Water spaces visits: Participation in visits

Trends

Project based learning

Colaborative learning

Outdoor education

Lifelong learning

Steam learning

21st century skills

Add here how the Learning Scenario corresponds to 21st century skills. To find out more: <http://www.p21.org/our-work/p21-framework>

The lessons are child centred, with formative assessment, and with experiences to develop critical thinking, creativity, collaboration and communication.

Adults learning explore the environment to develop ocean literacy consciousness and civic behaviour.

STEM Strategy Criteria

Elements and criteria	How is this criterion addressed in the Learning Scenario?
Instruction	
<i>Personalization of learning</i>	x
<i>Problem and project-based learning (PBL)</i>	x
<i>Inquiry-Based Science Education (IBSE)</i>	x
Curriculum implementation	
<i>Emphasis on STEM topics and competencies</i>	x
<i>Interdisciplinary instruction</i>	x
<i>Contextualization of STEM teaching</i>	x
Assessment	
<i>Continuous assessment</i>	x
<i>Personalized assessment</i>	x
Professionalization of staff	
<i>Highly qualified professionals</i>	x
<i>Existence of supporting (pedagogical) staff</i>	x
<i>Professional development</i>	x
School leadership and culture	

Elements and criteria	How is this criterion addressed in the Learning Scenario?
<i>School leadership</i>	x
<i>High level of cooperation among staff</i>	x
<i>Inclusive culture</i>	x
Connections	
<i>With industry</i>	x
<i>With parents/guardians</i>	x
<i>With other schools and/or educational platforms</i>	x
<i>With universities and/or research centers</i>	x
<i>With local communities</i>	x
School infrastructure	
<i>Access to technology and equipment</i>	x
<i>High quality instruction classroom materials</i>	

Activities

Name of the activity	Procedure	Time
Presenting the project to associations, schools and teachers center of Alicante	Meeting of school's managers, Stem assessor from educational authorities, and Presidents of local associations. SCD San Blas, coordinate the meeting.	2h
Presenting the Project to other schools	Presenting the project to the "Projects Feria ABP" TEACHERS CENTER OF ALICANTE	2 DAYS
Call to local island cleaning	First motivating activity: "Cleaning Tabarca island", call for all the citizens, SCD San Blas and schools	2 days
Clean Oceans conference	"The sea begins in my neighborhood conference." Items: Biodiversity - Posidonia, Integral cycle of water, fish consumption, micro plastics, sustainability in Port, tap water consumption. Collaboration with UA, Teachers Center, SCD San Blas, Local authorities.	2 days
		1 h
		3h
. Presenting the project - international level	EduVision International conference	15 min.
. Following the project path - international level	Eduvision International conference	15 min.
. Presenting the project - national level	National and International conference University of Burgos.	20 min.

Name of the activity	Procedure	Time
Tribute conference to local marine and historical figures.	Tribute to our Marines and scientist <i>Jorge Juan Santa Cilia</i> Round table tribute to archaeologist <i>Solveig Nordström</i> for his contribution to preserving roman city of <i>Lucentum</i> by the sea	2 h 2h
Visits to integral water cycle spaces	Visit to a historical swamp of <i>Tibi</i> . Visit to desalination, and waste treatment plants. – In process	5 h
Visits to historical water spaces	Visit historical roman fish salting factory – " <i>Illeta dels banyets</i> "; and Orchard Towers	3h
Visit local green spaces	Call to cleans the urban mount of <i>Tossal</i> . (Three Day)	3h
Visit regenerated NBS space	Visit a flood zone - regenerate habitat created with recycled water and rainwater – <i>La Marjal</i> , an NBS space.	4h
Workshops for teachers	<i>IBSE</i> workshop for primary teachers – schools joined the project	5h
Workshops for small children	- Talk for children to motivate to " <i>Recycle written material</i> " and get money to help others. Collaborative activity between University and SCD San Blas - Talk to children to motivate " <i>Healthy food</i> " Collaboration with the group " <i>La Pandi</i> "	1h 1h
Talks for secondary students.	- Climate change and new work opportunities - Roundtable about " <i>Fishery history in Alicante</i> " and problems of sustainability, joined to " <i>History of fishing school</i> " and the lack of new fishing students	2 h 2h
Expositions visits	- Visit to " <i>Sea Museum of Santa Pola</i> " - Visit " <i>Ocean Race Museum</i> " - Exposition of " <i>Micro plastics in the sea</i> " – all schools engaged – Local Sea authorities' collaboration. - Art exposition made by children and teachers:	4h 2h 15 days each
Art and activities	. <i>Bonfire</i> dedicated to the sea without plastic. . " <i>Carnaval</i> " festival dedicated to the sea. . Creation of merchandising for the sea. . Music concert dedicated to the sea . Creation of sculptures with plastic waste . Dramatization of problems in the sea	
Interest in nautical sports	Participation in nautical sports, in collaboration with Nautical local clubs	
Workshop for citizens	Workshop for all citizens about integral cycle of water, encouraging to drink tap water – " <i>Acualogia for all</i> "	3h
Looking for solutions, not plastic bottles	Promote students not to use plastic for their food packaging.	-

Name of the activity	Procedure	Time
	Placing a filter in a font to drink tap water, and to be used for all the school community	
Reports	Visit the <i>TossaL</i> urban mount by San Blas to get evidence of lack of care. Send a letter to the Town hall authorities asking for attention to them. Visit <i>Postiguet</i> beach to get evidence of lack of care, and collecting suggestions of improvement	
Citizens reports	Water footprint, in every school, and at home. Parents associations collaboration. Communication of results in local press – in process.	3h
Promoting healthy fish consumption	Participation in the EU Call “ <i>Taste the ocean</i> ” 15 to 29 April	4 h
CALL for Cleaning the beaches - Ocean Day	Join to European call of cleaning beaches, <i>Your m²</i> , each school and individual decide about the Alicante beach to clean.	4 h
Participation in European campaigns	. <i>Earth day – planet versus plastic</i> -22 April . <i>Become a European Blue school</i> – up 31 May . <i>Scientix Discovery campaign</i> – up 30 April . <i>Make Europe Blue campaign – your pledge</i> . <i>Capture your climate action. Enter photo</i> - 28 June	
Participation in greening calls from local organizations. Participation in local photo calls	Regreening some local spaces – San Gabriel – March; Villafranqueza – Nov – Alicante Renace org. IX Concurso Fotográfico Alicante Renace 2024 – 30 June	
Sending information to press, social network, messenger service.	Sending of term plannings, information posters of each activity, report of activities; and collecting ideas from stakeholders.	
Evaluation of results	Participation in evaluation meeting - June Evaluation Survey response – in process	1h 5 min.

Assessment

Ocean Literacy quiz in every school level.

Collaboration in different activities, reports, art products.

Interest in the messages received from talks and visits: Feedback received from participants and number of participants.

Change of habits: reduction of plastic bottled water, reduction of trash in different spaces.

Participation in calls.

Number of new suggestions from stakeholders for future events.

Increasing number of partners, and supporters.

Increasing number of students interested in maritime studies.

Number of survey responses and participants in the evaluation meeting

Student feedback

Lessons are open to discussion; outdoor activities offer a way to feedback, with a survey and test prepared by teachers.

Citizens communicate their ideas and feedback by meetings and via an online group.

Teacher's remarks

Difficulties to introduce the lesson in the curriculum, especially at secondary level.

Some schools declined to go on with the project because it took so much time preparing; but they thought it was worth to go on next years.

About the NBS EduWORLD project

The "Nature-Based Solutions Education Network" (NBS EduWORLD) is an EC-funded Horizon Europe project (Grant Agreement No. 101060525) that aims at nurturing an NBS literate society, supporting a just transition to a sustainable future. For this, NBS EduWORLD will create an NBS community that facilitates synergies between NBS professionals and education providers and ensures free and easy access to NBS knowledge and resources for all. The project's Consortium comprises 16 partners from 13 European countries, all of whom visionary organizations and leading NBS / education stakeholders across Europe, who will work together in the creation of an NBS EduWORLD, a community that makes a difference. More information on the project available at: <https://nbseduworld.eu/project>.

About Scientix

Scientix is the number one community for science education in Europe. It aims to promote and support a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other educational stakeholders to inspire students to pursue careers in the field of Science, Technology, Engineering and Mathematics (STEM). Scientix is an initiative of European Schoolnet. More information available at: <https://www.scientix.eu/about>.

About the Life Terra project

Life Terra is Europe's initiative to lead the fight against climate change, prepare future generations, drive greener policies across the board and generate investment and growth in green jobs. Life Terra is founded on the knowledge that tree planting is regarded as the most cost-effective nature-based solution to capture carbon. As part of a multi-faceted mitigation strategy, planting trees can play an important role in the fight against climate change and the devastation it causes (heat waves, drought, forest loss, desertification, erosion, flooding). More information on the project available at: <https://www.lifeterra.eu/en/about-the-project>.

Annex

Ideas have been taken from stakeholders, Sociedad Cultural y Deportiva San Blas (Alicante) that has coordinated the project, and Alicante schools committed to the project.

Number of schools and individuals has been changing during the period. At the moment, may, 24, three primary schools and three Secondary schools are engaged in the project, and they have participated in SCIENTIX DISCOVERY CAMPAIGN 24.

Some of the activities are in process, and they will be made if the evaluation meeting, in June indicates the convenience of following the project in the coming years.

More information about activities of this project done in Alicante capital, 2023/2024

<https://scdsanblas.es/seccion-de-cultura/> (Report of activities)

More information about activities done in Alicante province, 2021, 2022, 2023

<https://antoniatormpeta.com> (Océanos)