

Inquiry Scenario Plan Design form for the promotion of Sustainability Citizenship



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School Details	
School Name	AE Castro Verde
City name (Rural/ small town/ middle town/ big city)	Castro Verde
Number of pupils and teachers	850/110
How many students and teachers will be involved in the Plan?	?

Sustainable Contact Details:	
Name	
Email	

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Title:

Exploring the Biosphere and SDG's

Short Description (Max 500 words):

The school project, "Exploring Castro Verde Biosphere and SDG's" which aims to provide students with a deep understanding of the Sustainable Development Goals (SDGs), focusing specifically on SDG 15 - Life on Land. This project is designed to immerse students in the study of our local biosphere reserve (Natural Sciences curriculum, 5th grade), allowing them to identify native and invasive animals and plants, and to understand the importance of preserving our natural habitats.

Our primary goals for this project are to:

- Understand the SDGs: Give students a comprehensive understanding of the Sustainable Development Goals, with an emphasis on SDG 15 - Life on Land.
- Identify Native and Invasive Species: Engage students in identifying and studying the native and invasive species within our local biosphere reserve.
- Promote Green Skills: Foster essential green skills among students, including:
 - Valuing sustainability and nature's diversity
 - Systems thinking
 - Critical thinking and problem framing
 - Futures literacy
 - Adaptability
 - Political agency
 - Collective action
 - Individual initiative

We will employ an Inquiry-Based Learning approach, where in each lesson students will be encouraged to ask questions, conduct investigations, and build their understanding through hands-on activities and collaborative projects. This active learning methodology ensures that students are not only passive recipients of information but active participants in their educational journey, because it will allow students to develop essential green skills while exploring and engaging with the theme of sustainability and biodiversity.

Key Activities

Introduction to SDGs: Group discussions and presentations to introduce the SDGs and their importance.

Virtual Tours and Field Trips: Exploring the biosphere reserve virtually and, if possible, through actual field trips to observe native flora and fauna.

Research Projects: Students will research and present on native animals and plants, as well as invasive species and their impacts.

Case Studies and Debates: Analyzing case studies on invasive species and debating strategies for their control.

Creative Projects: Creating digital herbariums, conceptual maps of ecological interactions, and recycling projects to promote sustainability.

Futures Workshops: Imagining future scenarios for our biosphere reserve and discussing ways to protect it.

Expected Outcomes

By the end of this project, students will have gained:

- A thorough understanding of SDG 15 and its significance.
- Practical knowledge about native and invasive species in their local environment.
- Enhanced green skills that are essential for sustainable living.
- A sense of empowerment to take individual and collective action towards environmental preservation.

This is more than just a school project; it is an opportunity for our students to connect with their environment, develop critical skills, and become proactive stewards of our planet. We look forward to seeing the innovative ideas and solutions that our students will generate through this project.

Note: This project can be developed by students aged 8-18, with activities appropriate for each age group.

Keywords (Up to 5):

SDG, Biosphere, active citizenship, arts

Information about the Implementation

Language of the students: Portuguese

Age of the students:

☒ 9-12 ☒ 12-15 ☒ 15-18 ☐ 18+

Number of Lessons – Duration (per lesson):

Number of Lessons: 12 at least

Duration per Lesson: 45'-90'

Is this activity a STEM Activity?

For which subject(s) the activity is usable, is it an interdisciplinary activity?

Science ☒

Physics ☐

Chemistry ☐

Biology ☒

Geosciences ☐

Environmental ☒

Other ☐

Technology ☒

Engineering ☐

Arts ☒

Mathematics ☐

Information about the Scenario

Curriculum and country:

Link of the current activity to the curriculum:

Country: Portugal

Class: Interdisciplinarity

Grade: 3rd-5th level

Topic: Interdisciplinarity, Biosphere, sustainability and SDGs.

Objectives (Max 100 words):

Description of the learning objectives

Provide students with a deep understanding of the Sustainable Development Goals (SDGs), focusing on SDG 15 - Life on Land, through the identification of native and invasive animals and plants in the Castro Verde biosphere reserve.

Promote green skills such as valuing sustainability, nature's diversity, systems thinking, critical thinking, problem framing, futures literacy, adaptability, political agency, collective action, and individual initiative.

Materials (Max 100 words):

Which resources and materials (software, hardware) are needed?

School Infrastructure	School Materials
ICT classroom, PC, Internet, Arts classroom, camera, printer.	Cardboard, glue, office tools mesh grids for the production of recycled paper sheets, pc, internet, padlet, software.

Use of School Infrastructure

How are school facilities and equipment used in your educational scenario?

School Infrastructure	School Materials
ICT classroom for research and investigation on topics Arts/ET classroom for sculpture/cardboard workshop's	Construction of sculptures in papier-mâché/cardboard; production of recycled paper and other products

Green competences:

Which green competences are covered by the activity?

Embodying Sustainable Values	Valuing Sustainability <input checked="" type="checkbox"/>	Supporting Fairness <input type="checkbox"/>	Promoting Nature <input checked="" type="checkbox"/>
Embracing Complexity in Sustainability	Systems Thinking <input checked="" type="checkbox"/>	Critical Thinking <input checked="" type="checkbox"/>	Problem Framing <input checked="" type="checkbox"/>
Envisioning Sustainable Futures	Futures Literacy <input checked="" type="checkbox"/>	Adaptability <input checked="" type="checkbox"/>	Exploratory Thinking <input checked="" type="checkbox"/>
Acting for Sustainability	Political Agency <input checked="" type="checkbox"/>	Collective Action <input checked="" type="checkbox"/>	Individual Initiative <input checked="" type="checkbox"/>

The definition of the following terms can be found in [GreenComp](#) that is translated in all European Union languages.

Working with the community

Which external actors will be involved within the framework of the training scenario?

Organisation Type	Organisation Name
NGOs (Non-Governmental Organisations)	Protecting Nature League (LPN, ICN, ...),
PTA (Parent-Teacher Association)	-
Local business	China Shop's, local shop/organizations; LPN – League for the Protection of Nature AACB – Association of Farmers of Campo Branco CMCV – Castro Verde Municipal Council Somincor Parish Councils of the Municipality Learning From The Extremes/Maker Space Project Rádio Castrense School Library

	Buinho Association Biosphere Reserves, ...
Other (please explain)	Castro Verde City Council (transport, provision of spaces, ...) Local/regional companies; university/polytechnic Institute; local/regional artisans/artists, ...

How will the above-selected institutions help in the educational scenario?

Institutional partners play a crucial role in the development and success of our school project, for instance:

- **Technical and Scientific Support** - Environmental NGOs Provide experts and researchers to deliver lectures, workshops, and technical consultancy on biodiversity, sustainability, and environmental conservation.
- **Educational Resources** - Publishers and Educational Platforms: Provide educational materials, books, educational videos, and access to online learning platforms that cover the SDGs and topics related to biodiversity and sustainability.
- **Logistical and Infrastructure Support** - Technology Companies: Donate technological equipment, such as computers, tablets, and software, to facilitate research activities and digital projects.
- **Funding and Sponsorships** - local Government and Public Agencies: Offer financial and institutional support to ensure the project has the necessary resources to achieve its goals.
- **Mentorship and Training** - Environmental Sector Professionals: Offer mentorship to students and teachers, helping to develop green skills and providing guidance on careers in sustainability and conservation; Training Institutions: Offer courses and training to equip teachers with active and innovative methodologies for teaching the SDGs.
- **Community Engagement and Awareness** - Media and Communication - Publicize the project and its activities in local media channels, helping to raise community awareness about the importance of environmental preservation and the SDGs; Community Organizations: Facilitate community events, such as lectures and workshops, to engage the local community and promote active participation in biodiversity conservation.

Detailed activity description

Fill in the table below according to the hours of the training activity and its content (fill in the table with the subjects contained in your training scenario).

The educational scenario should follow the 5E didactic model of inquiry-based learning.

Number and name of courses	Course content	Teaching hours
Lesson 1: Introduction to the Sustainable Development Goals (SDGs) (Education and Citizenship)	<ul style="list-style-type: none"> • Activity: Group discussion on what the SDGs are and their importance. • Skills: Valuing Sustainability, Critical Thinking. 	45'
Lesson 2: Research about short movies about SDG and active citizenship. (ICT)	<ul style="list-style-type: none"> • Activity: Research, viewing, discussion and selection of short movies about SDG's, active citizenship, invading species, Castro Verde biosphere species, NDG, ... (workgroup) • Skills: Valuing Research, sharing and 	45'

	Critical Thinking.	
Lesson 3: Focus on SDG 15 - Life on Land (Natural Sciences)	<ul style="list-style-type: none"> • Activity: Presentation on the importance of terrestrial life and biodiversity preservation. Terrestrial life and biodiversity Identification memory Game. • Skills: Nature's Diversity, Systems Thinking 	45'
Lesson 4: Exploring the Biosphere Reserve (Natural Sciences)	<ul style="list-style-type: none"> • Activity: Virtual tour of the biosphere reserve to explore native flora and fauna. LPN visit and LPN Activities. • Skills: Critical Thinking, Problem Framing. 	45'
Lesson 5-6: Identifying Native Animals (Natural Sciences; ICT)	<ul style="list-style-type: none"> • Activity: Research and presentation on native animals in the reserve. • Construction of Animal Identification Cards/Native animal fact file • Skills: Futures Literacy, Adaptability. 	2 x 45'
Lesson 6-7: Identifying Native Plants (Natural Sciences; ICT)	<ul style="list-style-type: none"> • Activity: Data collection and creation of a digital herbarium with native plants. • Skills: Nature's Diversity, Systems Thinking. 	2 x 45'
Lesson 8-9: Invasive Species - The Problem (Natural Sciences; ICT)	<ul style="list-style-type: none"> • Activity: Case study on invasive species and their impacts on the reserve. • Data collection and creation of a digital collection with invasive species. • Skills: Problem Framing, Critical Thinking. 	2 x 45''
Lesson 10: Strategies to Combat Invasive Species (Natural Sciences)	<ul style="list-style-type: none"> • Activity: Debate on possible solutions to control invasive species. (ICN/LPN debate/videoconference). • Skills: Collective Action, Political Agency. 	3 x 45'
Lesson 11: The Role of NGOs and GOs in Preservation (Education and citizenship)	<ul style="list-style-type: none"> • Activity: Investigation on the role of NGOs and GOs in environmental protection. • Skills: Political Agency, Individual Initiative. 	45'
Lesson 12-13: Systems Thinking and Nature (Natural Sciences; ICT)	<ul style="list-style-type: none"> • Activity: Creation of conceptual maps showing ecological interactions. • Skills: Systems Thinking, Adaptability. 	2 x 45'

Lesson 14-20: Valuing Sustainability (Arts)	<ul style="list-style-type: none"> • Activity: Recycling and material reuse projects - cardboard (China shop, LPN workshop, local, resident, teacher artisans/artists workshop) • Skills: Valuing Sustainability, Individual Initiative. 	6 x 45'
Lesson 21: Possible Futures for the Biosphere (ICT, Education and citizenship)	<ul style="list-style-type: none"> • Activity: Futures workshop to imagine future scenarios for the biosphere. • Skills: Futures Literacy, Critical Thinking. 	2 x 45'
Lesson 23: Final Exhibition of Works (ICT, Education and citizenship, Natural Sciences)	<ul style="list-style-type: none"> • Activity: Organization of a student work exhibition at the municipal forum. • Skills: Collective Action, Political Agency, Individual Initiative 	3 x 45'

Evaluation (if any):

Please write how students are going to be evaluated

Students:

- Through the processes and products produced in classes

Teachers:

Through the number of teachers participating in the project and their involvement in it

References (if any)

- Antunes, J., Nascimento, VS do, & Queiroz, ZF de. (2018). Education for sustainability, interdisciplinarity and the contributions of mediation to the collective construction of knowledge. REMEA - Electronic Journal of the Master's Degree in Environmental Education, 35(1), 260–278. <https://doi.org/10.14295/rema.v35i1.7310>
- Carvalho, I., Schmitt, L. & Pereira, M. (2020). Education and sustainability: learning from an urban garden. Social Pedagogy. Revista Interuniversitaria, 37, 173-183. DOI: 10.7179/PSRI_2021.12
- Nusche, D., M. Fuster Rabella and S. Lauterbach (2024). Rethinking education in the context of climate change: Leverage points for transformative change. OECD Education Working Papers, No. 307, OECD Publishing, Paris, <https://doi.org/10.1787/f14c8a81-en>. Available in https://www.oecd-ilibrary.org/education/rethinking-education-in-the-context-of-climate-change_f14c8a81-en https://www.dge.mec.pt/sites/default/files/ECidadania/ref_sist%C3%ancia.pdf <https://www.youtube.com/watch?v=HCB2Rxxj7zE> <https://recicla.pt/abc-da-reciclagem/upcycling-e-downcycling-diferentes-formas-de-reciclagem/>

Sustainable Contact Details:

Name	Paula Freire
Email	PaulaFreireescastroverde.edu.pt

Annex

Feel free to add any more information and material you have, indicatively photos from the activity, constructions needed or any handbook that may be available online.

- <https://aecastroverde.pt/wp-content/uploads/2024/02/Disciplina-de-Biosfera-projeto.pdf>
- https://www.dge.mec.pt/sites/default/files/Curriculo/Aprendizagens_Essêncios/2_ciclo/5_ciencias_naturais.pdf
- DOME Project -<https://aecastroverde.pt/wp-content/uploads/2024/02/Plano-Plurianual-e-Anual-de-Atividades-2023-26.pdf>;<https://aecastroverde.pt/2023/11/27/projeto-dome/>
- <https://aecastroverde.pt/2024/07/05/âculos-do-agrupamento-de-escolas-de-castro-verde-promovem-a-conservacao-dos-insetos-polinizados/>
- <https://aecastroverde.pt/2024/06/23/visita-ao-geres/>