NBS EduWORLD - Project Education Learning Unit Template - DRAFT

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Learning Unit (LU) Planning Template - High Level Overview

Name of Learning Unit (LU) Topic		Exploring Biodiversity and Conversation Strategies of NBS using GreenComp					
NBS Context (e.g. urban rural, coastal)	NBS keywords **complete checklist at the end of the document**	Other Keywords (topics other than NBS) **add in Other below**	Linked or complementary concepts to NBS (to assist curriculum integration)	Prior learner knowledge of NBS (high, moderate, low/none)	Prior instructor knowledge/ skills/ competences of NBS or equivalent	Key EU NBS resources used (for instructor preparation) include link	Type of LU - lecture, workshop, field trip/site visit
any			Sustainability, biodiversity	low	low		Field Trip / Site Visit
Target academic subject / discipline / professional area or group	Target learners/ groups [age range of learners] if applicable	Min/ Max # of learners (if applicable)	Sector (e,g, professional, higher education, community)	Prerequisites required of learners if applicable (education)	EQF (European Qualifications Framework) level (or Irish NFQ) indicative only	Time for LU (aim is 50 minutes per learning unit	Course delivery format (e.g. in-person, hybrid, online)
Science, biology, sustainability,	higher education	n/a	higher education	n/a	EQF 6 - Irish NFQ 7/8 Ordinary/Hc	50 minutes	In-person / On-site
Overall Purpose	The purpose of this site visit/field trip exploration learning unit is to offer prompts and an appreciation of NBS in biodiversity and conversation strategies.						
LU Summary (2-3 sentences)	This learning unit offers hands-on examples of nature-based solutions in practice through a site visit or field study. The PowerPoint offers prompts and questions to maximise the learning and reflection on NBS strategies related to biodiversity and conservation. The LU starts with NBS definitions, the link to GreenComp: The European Sustainability Competence Framework and how elements of the field study/site visit may enhance some of these skills and competences. The field study/site visit provides a structure to enable a teacher to offer learners some context on choosing a good NBS site, and how NBS can contribution to biodiversity and conservation through reflective questions drawing on elements of GreenComp.						
Learning Outcome 1	Understand the elements and factors to choose an ideal site visit/field study location to highlight biodiversity and conversation nature-based solutions and in the context of GreenComp.						
Learning Outcome 2	Identify nature-based solutions and understand how these strategies promote biodiversity drawing on the skills/competences of GreenComp.						
Learning Outcome 3	Identify nature-based solutions and understand how these strategies promote conservation, drawing on the skills/competences of GreenComp.						
Learning Outcome 4	Assess the benefits for choosing NBS as biodiversity or conservation strategies and consider the reasons why NBS was not chosen in other contexts.						

LU designer resources for writing learning outcomes (click Learning Outcomes - Using Taxonomies tab or pyramid here)

Activities and Elements of Learning

Aim that each learning unit include at least 4 activities for an interactive learning experience

Time (duration of activity)	Aims - linked to NBS concepts or topics)	Link to Learning Outcome	Learning Activity [PPT Slide # - if applicable]	Teacher action/ activity (Learner action/activity)	Confirmation of learner's learning (assessment of learning)	Link to online NBS resources	Offline resources and materials (e.g. post-its,)
00:00 (5 minutes)	Introduction to NBS	1	PowerPoint (or verbal sharing of content) PPT Slides 1-4	Share NBS EU definition and GreenComp components to explore biodiversity and conservation	Learner's confirms understanding	EU Definition GreenComp Framework: https://publications.jrc.ec.europa.eu/repository/handle/JRC128040	PPT Slides 1-4
00:05 (5 minutes)	Sharing the location for the site visit/field study and present an example of Almada of a field study and factors of GreenComp	1	PowerPoint (or verbal sharing of content) PPT5 - 10	Ask: what factors might make for a good NBS field trip/site visit?	Learners respond to the question.	FIND: factors for a good site visit for NBS	PPT Slides 5-10
00:10 (30 minutes)	Visit/Tour of NBS biodiversity/conservation strategies	2,3, 4	Identify at least 2-3 biodiversity and conservation strategies applying NBS ; Responding to Reflective questions linked to GreenComp areas 1-4 (linked to 4 stops on a field study/site visit) PPT 11-19	Stop (or provide photo slides) at 4 to 6 biodiversity and conservation examples of NBS. Ask: what makes this NBS good for biodiversity/conservation? ASK: 4 reflective questions	Learners consider the NBS and consider the factors that make them promote biodiversity and/or conservation.	https://nbseduworld.eu/fileadmin/user_upload/Resources/NBS-EduWORLD-flipbook-final-pages.pdf pages 14-18.	Tour/photos - with 4 stops - PPT questions Slides 11-19

00:40 (10 minutes)	Conclude site visit/field trip by summarising the benefits of NBS for biodiversity	2,3, 4	Complete tour- summarise locations and NBS applied PPT 20	Ask: what are the benefits of NBS for promoting biodiversity/conservation - summarise the factors Ask: why wasn't NBS used in other places? Have you seen other NBS in your communities?	Learners respond to the questions, initiate discussion		Tour/photos/ portable white board to write down responses PPT 20

NBS- Application of Curriculum, Trends and Skills

Curriculum integration (how it may connect to curriculum)	Complement a course that aims to bring elements of biodiversity to life. Offering a hands-on introduction to NBS and recognition of NBS in the community.				
<u>Teaching & Learning Trends employed</u> **<u>Highlight all that apply</u>** <u>(Source)</u>	**Project-based learning**: e.g., students work in groups on a research project on greenhouses and the greenhouse effect, alternatives to waste management or investigate what are the views of their peers on climate change.	**Peer learning:** e.g., students work in groups, evaluate the work of their peers, or develop assessment questions to assess peers.	**Problem-based Learning**: e.g., students are introduced to a problem and challenged to find a solution together based on the information provided to them.	**Student-centred learning:** the learning scenarios are not based on classical instruction by the teacher, but they are expected to actively engage students in the lessons.	

21st Century Skills **Highlight all that apply** (Source)*	**Creativity:** e.g., students think of various solutions for promoting a better lifestyle in their communities or encourage greener solutions to their schools' issues.	**Information/ Media literacy:** students explore examples of NBS, research similar solutions in other communities.	**Collaboration:** e.g., students work in groups and engage in task division to produce outputs.	**Critical thinking:** e.g., students learn that a debate on deforestation or climate change does not consist of two opposing camps only but involves many stakeholders with different perspectives.	**Communication:** e.g., students present their work to the whole class and learn to put forth strong arguments based on facts.

*Gras-Velázquez, À., Mulvik, I. B., Campodonio, A., Nada, C. & Pocze, B. (2020) *Nature-Based Solutions in education - Validation report, European Commission, August 2020* [accessed on 25/03/2024 https://files.eun.org/NBS/NBS-pilot-validation-report-final.pdf] p.8.

GreenComp - European Sustainability Competency Framework **Highlight all that apply** (Source) 1- Embodying Sustainability Values and 2 - Embracing Complexity in Sustainability (see pp.13-14)	**1.1 Valuing Sustainability:** To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values	**1.2 Support Fairness:** To support equity and justice for current and future generations and learn from previous generations for sustainability	**1.3 Promoting Nature:** To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems	**2.1 Systems Thinking:** To approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems.	**2.2 Critical Thinking:** To assess information and arguments, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.	**2.3 Problem Solving:** To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems

GreenComp - European Sustainability Competency Framework **Highlight all that apply** (Source) 3-Envisioning sustainable futures and 4 - Acting for Sustainabilty (see pp.13-14)	**3.1 Futures Literacy:** To envision alternative sustainable futures by imaing and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future.	**3.2 Adaptability:** To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk. generations and learn from previous generations for sustainability	**3.3 Exploratory Thinking:** To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.	**4.1 Political Agency:** To navigate the political system, identify political responsibility and accountability for unsustainable behaviour, and demand effective policies for sustainability.	**4.2 Collective Action:** To act for change in collaboration with others.	**4.3 Individual Initiative:** To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet
Author and organisation to credit when using the LU						

NBS Keywords Checklist (tick here below)

	Forest Preservation
	Forest Restoration

Teacher Resources (If 'Notes' are used in the related PowerPoint presentation please indicate here)	**Learner Resources (e.g. academic articles or links) for advanced reading or review (citation in individual cells)**
In advance: Teacher	reading: **1 of 2** Bianchi, G., Pisiotis, U. and

	Forest enhanced management for woodfuel harvest
	Forest Production
	Grassland Preservation
	Grassland Restoration
	Grassland grazing management
	Coastal Preservation
	Coastal Restoration
	Coastal maintenance of slope vegetation
	Maintenance of coastal, floodplain and riverine vegetation
	Agroforestry
	Reduce tillage and carbon restoration practices
	Agricultural intensificiation
	Urban forests and green spaces
	Urban green roofs
	Climate-change adaptation and mitigation
x	Sustainable cities/ sustainable communities
	Re-naturing cities/ re-naturing communities
x	Urban regeneration
x	Coastal resilience
	Multi-functional watershed management
	Enhancing the insurance value of ecosystems
	Sustainability of the use of matter and energy
x	Sustainable development
x	Innovating with nature
x	Biodiversity
	Nature-based enterprises
	Nature-based enterpreneurship
	NBS and new business and investment models
x	Citizen participation, stakeholder/community consultation
	Disaster risk reduction
	Risk management and resilience
x	NBS policy development and implementation
	NBS research
	Green infrastructure
	Green finance / sustainable finance
x	Ecosystem services and ecosystem-based approaches

identifies a site visit location/field trip for NBS with 4 possible stops to explore the 4 GreenComp themed components of reflective questions in the PPT. The teacher may wish to share the PPT in advance with learners so they can follow along with the questions asked on site.

Cabrera Giraldez, M., GreenComp The European sustainability competence framework, 2022, ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040. https://publications.jrc.ec.europa.eu/repository/handle/JRC128040 **2 of 2:** Utkarsh et al 2023 *Learning from NBS EduSystems inspiring initiatives* pp.14-18 https://nbseduworld.eu/fileadmin/user_upload/Resources/NBS-EduWORLD-flipbook-final-

	Rural municipal/local authority/government planning	
	Coastal municipal/local authority/government planning	
	Urban municipal/local authority/government planning	
x	Improving well-being and quality of life	
	NBS and new business and investment models	
	NBS and CCAM (Connected, Cooperative and Automated Mobility)	
	Other 1: (Please specify)	GreenComp
	Other 2: (Please specify)	
	Other 3: (Please specify)	

Keywords Source 1: United Nations Environment Programme (2020). The Economics of Nature-based Solutions: Current Status and Future Priorities. United Nations Environment Programme Nairobi., p.5. (keywords above in italics)

Keywords Source 2: Faivre N, Fritz M, Freitas T, de Boissezon B, Vandewoestijne S. (2017)'Nature-Based Solutions in the EU: Innovating with nature to address social, economic and environmental challenges.' Environ Res. 2017 Nov;159:509-518. doi: 10.1016/j.envres.2017.08.032. Epub 2017 Sep 8. PMID: 28886502.

Keywords Source 3: European Commission (2015). *Towards an EU Research and Innovation policy agenda for Nature-Based Solutions & Re-Naturing Cities: Final Report of the Horizon 2020 Expert Group on 'Nature-Based Solutions and Re-Naturing Cities' Full Version. Luxembourg: Publications Office.*