

NBS EduWORLD Connections Stream:

Guidelines on Implementation of Nature-Based Solutions Activities in Education for Advanced Educators

Deliverable D5.2: NBS Connections Stream Guidelines

Version: 1.0



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Abstract	The NBS Connections Stream Guidelines aim to empower confident educators to expand the topic of nature-based solutions (NBS) in learning settings. Drawing from insights and examples from the first two years of NBS EduWORLD, they promote integration across formal and non-formal education, fostering NBS literacy for sustainable learning.
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Executive summary

The NBS EduWORLD Connections Stream Guidelines empower teachers and educators already familiar with nature-based solutions (NBS) education to expand their implementation within learning settings, and beyond. This includes outdoor activities, whole-school approaches, community projects, and other outreach programmes. These Guidelines integrate practical insights, best practice examples and materials accumulated from the first two first years of the NBS EduWORLD project, offering ways to connect NBS and non-formal education practices, as well as non-STEM subjects in formal education curricula. They also provide strategies to expand efforts at school and community levels, encouraging schools to adopt a holistic approach by integrating NBS across curricula and extracurricular activities. By fostering NBS literacy, the Guidelines aim to equip educational professionals to cultivate learning for sustainability in the minds and hearts of the generation of tomorrow.

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Abbreviations

CPD	Continuous Professional Development
EFDN	The European Football for Development Network
ETS	Education Through Sport
EU	European Union
LfS	Learning for the Green Transition and Sustainable Development
LS	Learning Scenario(s)
MOOC(s)	Massive Open Online Course(s)
MoYS	Ministry of Youth and Sports
NBS	Nature-based solutions
NGO	Non-governmental organisation
SDC	STEM Discovery Campaign
SSL	STEM School Label
SPE	School Practice Evidence
STEM	Science, Technology, Engineering and Mathematics
STE(A)M	STEM + Arts
TBVT	Big Van Ciencia
WSA	Whole-school approach

1. Introduction

This document serves as a comprehensive set of Guidelines designed for the NBS Connections Stream within the [NBS EduWORLD project](#). It targets **teachers and educators who are familiar with the topic of nature-based solutions** (NBS), have integrated it into their practice, and are now confident to take a step forward.

These Guidelines are closely linked to the NBS Knowledge Stream Guidelines¹ (Deliverable 5.1) of NBS EduWORLD and draw upon both pedagogical advice and the work conducted during the first two years of the NBS EduWORLD project, including insights from educators with intermediate to advanced knowledge of NBS education, practical experiences from the NBS EduSystems, innovative NBS resources for schools and beyond and pilot activities carried out during the project so far.

This document aims to equip teachers and educators who have successfully introduced NBS at a classroom/group level with the tools and knowledge necessary to **expand their efforts to the school or community level**, with the potential to integrate Learning for Sustainability (LfS), and NBS in particular, as a central theme in education policies (European Commission, Eurydice, 2024).

2. Objectives

The Guidelines aim to offer ways to connect NBS and non-formal education practices, as well as non-STEM subjects in formal education curricula, and strategies to expand efforts to school and community level.

One of the main objectives of the Guidelines is to seamlessly **integrate NBS literacy into existing curricula** to create a comprehensive educational experience, where learners understand the intricate connections between nature and the environment and other subjects. This holistic approach ensures that NBS becomes embedded in each student's learning journey, fostering positive attitudes towards complex issues, such as climate change.

Such transformative learning journey can only happen if school staff has enough support and professional development opportunities, hence why these Guidelines are also set to **support educators** in navigating the possible ways to achieve transformation in their educational practice, for the ultimate benefit of learners. Through practical tips on how to seize the potential of project outputs and resources, like the recommended strategies to **implement a Whole School Approach (WSA)** to benefit LfS, or the practical NBS experiences of the

¹ NBS EduWORLD Knowledge Stream: Guidelines on Implementation of Nature-Based Solutions Activities in Education for Starters:
https://nbseduworld.eu/fileadmin/user_upload/Resources/NBS_EduWORLD_D5.1_Knowledge_Stream_Guidelines.pdf

implementation in the NBS EduSystems, these Guidelines aim at paving the way for successful NBS integration in schools.

The Guidelines also recognise the pivotal role of **21st century skills** and the importance of supporting their development in young learners. NBS education is particularly fit to serve this purpose, as it fosters engaging, inquiry-based pedagogies, putting learners at the centre and enhancing critical skills, collaboration, creativity, communication skills, etc.

Ultimately, these Guidelines aim at promoting an **evidence-based approach**, in which schools, educators, and community members can demonstrate their continuous commitment to NBS teaching and learning, and eventually reach the status of NBS Expert Schools (more information in Section 5.2 "[Recognition of Schools' commitment to NBS](#)").

The objectives of the Guidelines are in line with the overarching goal of empowering educators familiar with NBS, who wish to expand from classroom/group to school/community level and integrate innovative ways of teaching NBS in formal and/or non-formal settings with the tools and motivation to do so.

3. Methodology

The methodological approach followed to develop the Connections Stream Guidelines consists of several aspects. The Guidelines are based on the **observation of the application of NBS concepts, practices, and pedagogies** in formal and non-formal education settings among key education stakeholders (schools, sports centres, Youth centres and Youth camps, municipalities, NBS practitioners and demonstrator sites), **using the first two years of the work of NBS EduWORLD as a practical example**. To better understand them, it is important to understand how the project is structured into three distinct streams, with the goal to cultivate a transformative NBS culture, where teachers and educators will evolve from the Knowledge Stream to the Network Stream:

- **NBS Knowledge Stream:** aims to educate teachers with little to no knowledge of NBS, enabling them to introduce these concepts into classrooms.
- **NBS Connections Stream:** targets educators familiar with NBS theory but lacking practical experience, encouraging them to implement NBS at school level and to foster collaboration among peers.
- **NBS Network Stream:** supports advanced NBS practitioners in expanding their initiatives and disseminating best practices, thereby creating engaged NBS communities within and beyond schools.

The work of NBS EduWORLD in introducing NBS in: 1) formal education activities (e.g., the transformation of schools into NBS EduWORLD Living Labs using the Whole-school approach); 2) non-formal education activities (e.g., in Sports clubs and Youth Centres), and 3) connecting NBS with Arts and performance art, has been crucial to develop the set of

recommendations and tools to benefit educators at a more advanced stage of NBS implementation, as outlined in these Guidelines.

Additionally, the development of the Guidelines was informed by the lessons learnt in the **implementation of practical NBS experiences in NBS EduSystems**, local demonstrators for NBS education supported by NBS EduWORLD. These sites, located in diverse settings – urban Paris (France) and Belgrade (Serbia), rural Offaly (Ireland) and Moldova, and coastal Almada (Portugal) and Genoa (Italy) – provided valuable insights into the challenges and opportunities of integrating NBS education into different contexts. The learnings from these core NBS EduSystems informed the development of the Guidelines, which can be adapted to a wider range of educational settings and geographical locations.

Moreover, the efforts of NBS EduWORLD towards building and supporting the Connections Stream (i.e., educators familiar with NBS theory but lacking practical experience, as described above), have been reinforced through **its online repository of resources for educators (including as well NBS EduWORLD-created resources)**, covering a wide range of topics and providing practical strategies, tools and guidelines that educators can directly implement in their practices for formal and non-formal education. The ongoing **use of these materials within the NBS EduCommunity** has contributed to refining the methodology for developing the present Guidelines, aimed at scaling up past efforts.

Overall, the Guidelines are strongly grounded in the project's actions and learnings. The tools and tips included in the Guidelines are therefore based on research, implementation of best practices, and expertise, providing educators with valuable input to bring their commitment to NBS education to the next level. A visual representation of the methodology behind the development of the Connections Stream Guidelines is provided in **Figure 1** below.

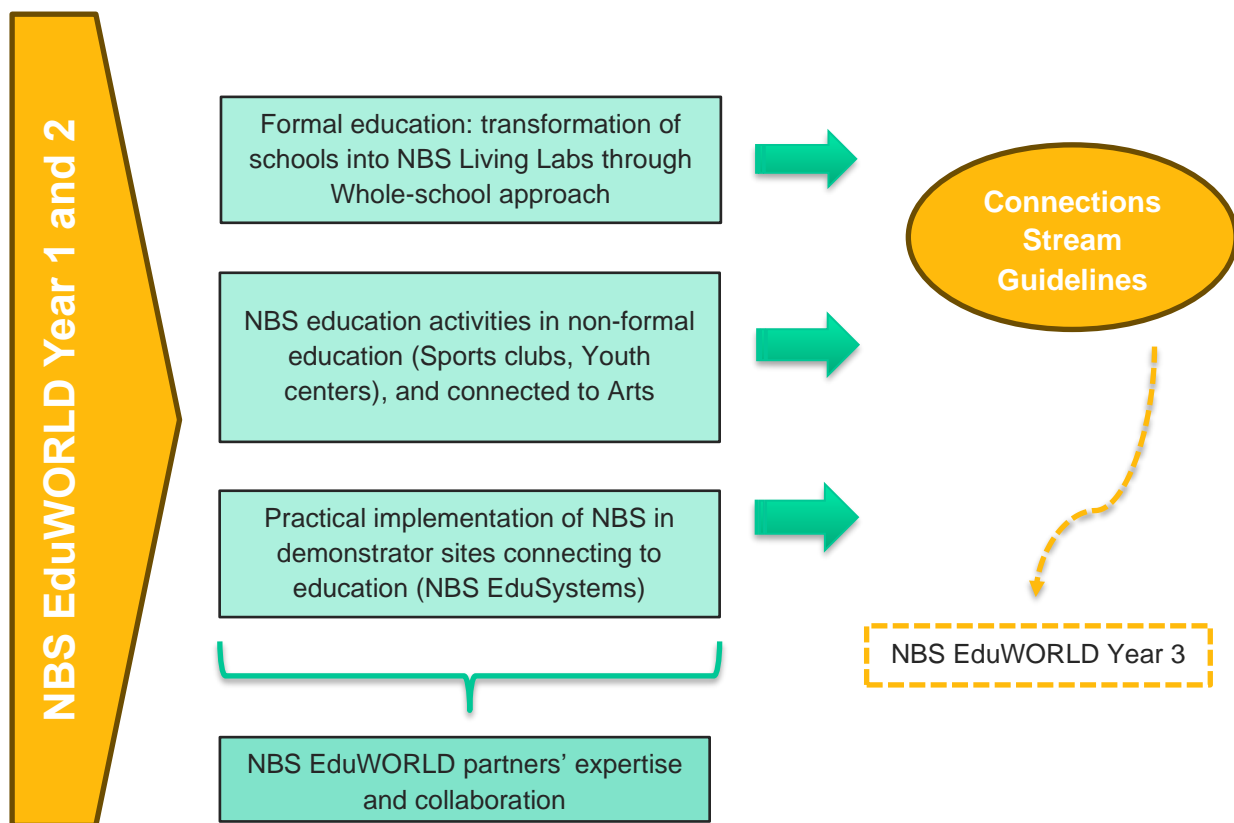


Figure 1. Connections Stream Guidelines methodology

4. How to: take nature-based solutions in education one step further

Teachers and educators familiar with NBS concepts and practices can further integrate them in both formal and non-formal settings by adopting a multifaceted approach. The NBS EduWORLD Knowledge Stream has developed materials to help teachers embed NBS into diverse curricular areas, from Science, Technology, Engineering and Mathematics (STEM) subjects to the Arts, thereby creating interdisciplinary connections that enrich learning experiences. Beyond the classroom, the NBS EduWORLD Knowledge Stream has also explored how NBS learning can be integrated into football clubs, youth centers, and summer camps. Additionally, it has showcased examples of piloting activities and shared good practices from the NBS EduSystems of NBS EduWORLD.

4.1. Formal education

According to UNESCO's *Greening Curriculum Guidance, teaching and learning for climate action* (2024a), teacher agency is crucial for achieving social change through education, as it empowers educators to adapt the national curriculum to local contexts, thereby enhancing their ability to effectively teach about complex topics such as NBS. As a teacher familiar with NBS

and determined to further integrate them into their pedagogical practice, one can find a wealth of resources, training opportunities, and events in NBS EduWORLD. Here are some offerings and how they could be used in more advanced ways:

- **Create materials linked to the curriculum:** teachers already confident with the Learning Scenarios (LSs) focused on NBS can go one step further and **create LSs**, based on the subject(s) or topic(s) taught. By creating these materials, teaching can be tailored to inspire curiosity among students, while fostering a deeper understanding of NBS, helping them connect with real-world challenges.
- **Exploit teacher training and professional development:** some educators might have prior experience completing Massive Open Online Courses (MOOCs) on the topic of NBS or have participated in workshops or hands-on activities with other experts. By participating in such teacher training opportunities, educators can stay up to date on innovative approaches to teaching NBS. Expanding upon that, the next time training is attended, these educators may consider **holding a presentation, preparing an activity for peers and acting as multipliers in their school community or seeking feedback** about the materials created. Additionally, they can benefit by participating in training activities offered in the framework of NBS EduWORLD Expert Teachers Academy, like the [NBS EduWORLD Summer School](#).
- **Showcase what students and the school have accomplished:** NBS is already a popular topic in some schools, with learners creating a community garden in the playground or teaching staff inviting NBS experts to give talks to the students. There are many opportunities to showcase these **good practices, spread the word and inspire others**. For example, joining the STEM Discovery Campaign (SDC)², which celebrates integrated STEM learning in Europe every year. Sharing materials or events through the SDC can be beneficial to both educators and students alike. For schools seeking further recognition, more tips can be found in the section “[Recognition for Schools’ commitment to NBS](#)”.

4.2. Non-formal education

Wals et al. argue in their 2017’s research work on critical case studies of non-formal and community learning for sustainable development that the distinction between formal and non-formal learning can be “at times artificial and can be critiqued from a sustainability perspective”, emphasizing the need for boundary-crossing and connection making rather than rigid boxes. These Guidelines prioritize practicality by showcasing examples of how NBS education is integrated within local communities, Youth clubs and camps, and sports organisations working

² STEM Discovery Campaign, an initiative of Scientix: <https://www.scientix.eu/campaigns/sdc/sdc24> (the 2024 edition was co-organised with [Life Terra](#)). In 2024, the “Scientix: Nature-Based Solutions in Education” Award, supported by NBS EduWORLD, invited educators to showcase their commitment to sustainability education through NBS activities.



with youth. They underscore the key role of non-formal educators in empowering youth to understand and act on NBS outside traditional school settings.

- **Engaging the youth through Youth clubs, centers and summer camps:** Youth clubs, centers and camps provide crucial non-formal learning settings, where young people can participate in real-world environmental and societal actions (Paraskeva-Hadjichambi et al., 2020). Moreover, they are officially recognized and supported as a framework for youth growth that facilitates their capacity building and learning, such as in Türkiye, where the Ministry of Youth and Sports (MoYS) oversees these initiatives. NBS EduWORLD developed a Booklet³ with specific learning activities for non-formal educators, tailored for different age groups (3-6, 7-10, 11-15, and 16+) and structured into three levels (beginner, intermediate, and advanced), designed to be easily adaptable to the resources, settings and needs of the educators and young people.

From September 2023 to August 2024, a total of 19 Youth Leaders were trained by NBS EduWORLD through the Ministry of Youth and Sports of Türkiye (MoYS) to become NBS Ambassadors, one for each Youth Center located in the urban region of Ankara, Türkiye. The trainings were part of the piloting of NBS EduWORLD's work with Youth Centers in the country, and focused on the dissemination of NBS as a concept, and the application of the NBS EduWORLD Booklet through its non-formal education activities. These NBS Ambassadors were equipped with the necessary knowledge to promote NBS, and to practically and effectively use the Booklet's activities in their local context through interactive participatory approaches. They will be responsible for establishing and leading NBS activities in their respective centers, overseeing the implementation of NBS-related initiatives, and further extending the reach of NBS EduWORLD to this specific target group.

As of August 2024, three among these Youth Centers are already officially engaged in implementing NBS EduWORLD activities. Two of them (Etimesgut Youth Center and Ufuktepe Youth Center) carried out the activities with participants of the MoYS Youth Summer School, while the third (Çankaya Youth Center) collaborated with a renowned Turkish environmental NGO. Within each of these centers, an NBS Club was established, with the aim of engaging youth and the general public in NBS-related activities and raising awareness on NBS principles and practices. In each case, NBS EduWORLD materials were adapted to the specific needs of youth in the local context.

So far, the program has reached a total of 105 youngsters through five different NBS-related activities carried out in the Youth Centers. Sessions there focused on providing young people with hands-on experiences related to NBS, including workshops on NBS principles, practice-based discussions and projects based on the Booklet, and dissemination activities, contributing to the ongoing efforts to integrate NBS into the

³ NBS EduWORLD Nature-based solutions Learning Activities for Ages 3 and Above. A Booklet for Non-Formal Educators, <https://www.scientix.eu/resources/details?resourceId=130406>



non-formal education programs provided by the Centers. Both educators and young people expressed positive feedback on the activities, especially with regards to the interactive and hands-on approach, and the adaptability of the materials.

- **Sports inspiring youth towards EU green goals:** Education Through Sport (ETS) facilitates youth development by fostering personal growth and promoting sustainable social transformation. According to the European Commission's 2023 *Sport sector playbook*, for the sports sector, to contribute to the European Green Deal, creating connections between sports organisations and youth services is essential. An example of similar efforts targeting sustainability to inspire youth actions, is [Sheffield United Football Club's](#) project "Nature Based Blades" (supported by the [Sheffield United Community Foundation](#))⁴, which will target a collaboration with NBS EduWORLD to scale up some of the materials of Nature-Based Blades with a focus on NBS and GreenComp, ensuring its quality and impact in the football sector with relation to NBS in particular.
- **Insights from NBS EduSystems:** These core demonstrators offer valuable perspectives into the integration of NBS education, which allows NBS EduWORLD to test, refine and expand the NBS materials and resources created. In these Guidelines, we highlight the following initiatives from the NBS EduSystems:
 - **Knowledge exchange:** The work of the core NBS EduSystems inspires and facilitates peer-to-peer learning exchanges with the new systems allowing for experience sharing tailored to urban, coastal and rural contexts. For example, the Paris site developed a [citizen science programme](#) for children aged 3 to 18 that encourages direct contact with nature, while developing a scientific approach.
 - **NBS EduWORLD Hackathon⁵ and app:** The Hackathon, a collaborative event, challenged higher-education participants to create solutions for environmental issues in Moldova, Belgrade and Genoa presented in the form of case studies, focusing on spatial design and policies, and applied science. Through a unique virtual game format, students navigated the case studies, gaining practical experience into the importance of NBS in addressing complex challenges in real locations. An app promoting the application of NBS in local contexts is currently also in development to further facilitate innovative learning experiences.
 - **Case studies on integrating NBS education in local communities:** The core NBS EduSystems are inspiring stories, which provide valuable insights and practical examples on how NBS education is being effectively integrated into

⁴News article from Sheffield United Community Foundation announcing the launch of "Nature Based Blades"
<https://sufc-community.com/news/foundation-announce-pl-pfa-nature-based-blades-project/>

⁵ NBS EduWORLD Hackathon: <https://nbseduworld.eu/events?c=search&uid=IXhh4wWn>



local communities. These successful case studies are available in the Oppla repository⁶. For instance, the [Offaly site](#) showcases how to transition away from industrial peat extraction and move towards NBS of rehabilitation.

5. Connections Stream: consolidating efforts in NBS education

Following the implementation of NBS in their formal or non-formal teaching practices, educators might benefit from recommendations aimed at solidifying and broadening their efforts to integrate NBS in their practice, ultimately expanding to school and community level. Through several key strategies, the NBS EduWORLD Connections Stream presents the opportunity for educators to explore how they can strengthen their NBS education practices, by integrating NBS across curricula into STEM and non-STEM subjects (e.g., connecting NBS with Arts through non-formal education practices, such as theatre and participatory performance), as well as by expanding beyond the classroom level, and implementing NBS at the school level to ensure recognition in a community actively shaping the future of NBS education across Europe (and beyond). Some examples of activities (co-)organised by NBS EduWORLD in this respect can be found in Sections 5.1 and 5.2 below.

Moreover, to ensure a successful transition to an expert status in NBS education, the NBS EduWORLD Connections Stream strongly encourages collaboration between formal and non-formal educators. This would contribute to crossing traditional boundaries, and enable a more holistic and integrated approach to teaching that is suitable to an advanced, and subsequently even expert, level of NBS knowledge and educational activities. Exchange of knowledge, skills, and practices between formal and non-formal educators can thus foster a more comprehensive understanding of NBS and its effective application in real-world contexts.

5.1. STEM meets Art: learning NBS through performance arts

To break traditional barriers and mainstream NBS in non-STEM subjects through non-formal educational practices, NBS EduWORLD leverages the experience of Big Van Ciencia (TBVT) to bring NBS to young people in an innovative and creative way. NBS EduWORLD has put into practice several actions to introduce NBS in non-formal education via theatre performance and participatory processes, bringing audiences with limited knowledge of NBS closer to the topic.

The **benefits of connecting STEM and performance arts** have been demonstrated by research and actions. The [PERFORM](#) project is one such example of bridging the gap between scientific and technological research and performance. The project was built upon the belief that while technology and scientific subjects go hand in hand for obvious reasons, the arts and

⁶ Oppla is the EU Repository of NBS: <https://oppla.eu/>

humanities are equal allies of science, bringing young learners closer to topics, ideas, and theories that might seem abstract and complex through participatory and performance-based processes (James, 2017). Moreover, the potential of applied drama in science education extends beyond merely conveying scientific concepts. By integrating arts-based methods, educators can address the transformative nature of science within societal contexts. These methods not only bring STEM concepts to life but also challenge stereotypes, in line with recent theories about the power of arts-based approaches to evoke emotions that dismantle false myths associated with scientific research and activity (Villanueva Baselga et al., 2022).

NBS EduWORLD has undertaken two main actions in line with these trends, aimed at mainstreaming NBS through non-STEM subjects, specifically performative arts:

1) Including NBS EduWORLD in the [Ciencia Show](#) project (2024 edition). This is a unique program that blends science education with stand-up comedy to spark interest in scientific and technological careers among young people. This innovative approach replaces traditional lectures with humorous monologues, fostering a fun and interactive environment where complex scientific concepts become accessible and entertaining (in the form of “Scientific Monologues”). This program targets the levels ESO, Bachillerato and FP of the Spanish education system.⁷ The 2024 tour was carried out in two regions of Spain. In the Basque Country, the show was performed six times in February 2024, reaching 1,000 students and 50 teachers (example in [Figure 2](#) below).



Figure 2. Scientific Monologue during Ciencia Show 2024, Bilbao, Spain, February 2024

In the Canary Islands, the show was performed eight times in March 2024, reaching 800 students and 35 teachers (example in [Figure 3](#) below). One of these shows was also streamed⁸ online. It is estimated that the video reached about 300 students and 10 teachers. The success and outreach of the show contributes to the NBS EduWORLD Connections

⁷ ESO: mandatory secondary education (lower secondary); Bachillerato: upper secondary; FP: professional training (vocational education).

⁸ <https://www.youtube.com/live/4Cf6VLTURr8?t=3070s>

Stream goal of bringing NBS educators (formal and non-formal) to an advanced stage, in which NBS is integrated into STEM, and non-STEM subjects and taught through creative and innovative pedagogies.



Figure 3. Scientific Monologue during Ciencia Show 2024, Gran Canaria, Spain, March 2024

In addition, Ciencia Show 2024 prepared a teacher training course with one module on NBS, encompassing what they are and how to introduce them in the Scientific Monologues by addressing local issues relevant to the youth. The [NBS EduWORLD EduDirectory](#) including an ever-expanding number of NBS educational resources has also been included in the module (example in **Figure 4** below). The second part of the training consists of an online synchronous session⁹, in which teachers learn about course content in detail. This session focuses on how to implement the educational methodology for creating Scientific Monologues in the classroom. More than 100 teachers have accessed the training materials of Ciencia Show 2024.

Learners developed their Monologues with the guidance of their teachers. In 2024, 280 videos from 25 different schools were submitted. 50 of them addressed environmental challenges that can be solved by implementing NBS.

⁹ https://www.youtube.com/watch?v=ounxdl_nzHo&t=1191s

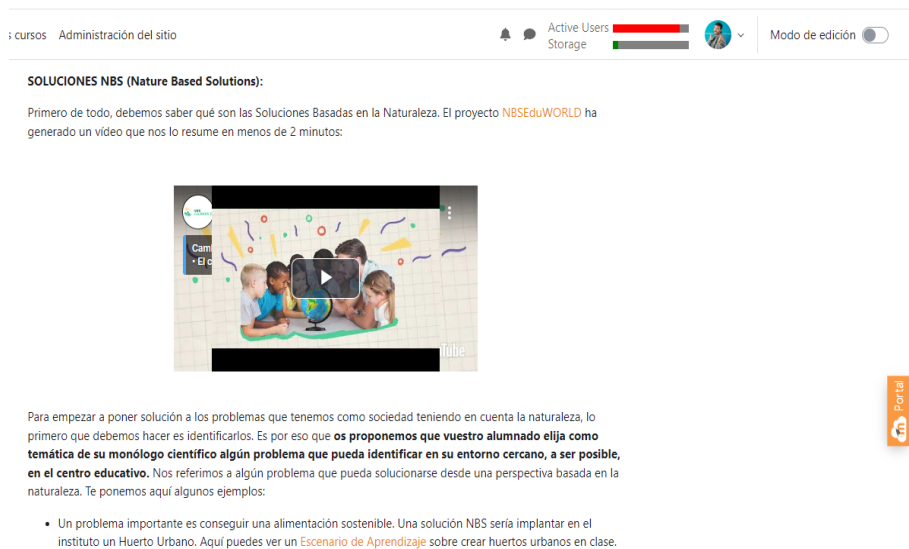


Figure 4. Screenshot showing part of the asynchronous training

2) Organising a session dedicated to NBS EduWORLD during the [2024 Macaronight European Researchers Night](#) in Las Palmas de Gran Canaria¹⁰: NBS EduWORLD will join this event on September 26th 2024 in Las Palmas de Gran Canaria, Spain. The 2-hour session aims to introduce the general public to the topic of NBS through performative arts. The event will feature an introduction about NBS and its integration into education, followed by live performances of Scientific Monologues about NBS selected and talks by local researchers. The event will conclude with a debate involving both speakers and the audience around the implementation of NBS in the Canary Islands, aiming to promote dialogue among citizens, researchers, and educators. NBS EduWORLD pre-selected five videos from Ciencia Show in Canarias contest featuring NBS, inviting the relevant teachers to participate in the 2024 Macaronight European Researchers Night NBS EduWORLD session, and conducted workshops at two schools¹¹ in June 2024 to train students on performing Scientific Monologues (see [Figure 5](#) below). Researchers are also invited to participate in the event, especially if their research work focuses on NBS. NBS EduWORLD has invited potential candidates, e.g., Instituto Tecnológico de Canarias, the University of Las Palmas de Gran Canaria, the Oceanographic Platform of the Canary Islands, and the Horizon Europe project [PHAROS](#).

¹⁰ The event is organised by TBVT in the framework of the project Macaronight (Marie Skłodowska-Curie actions under the Horizon Europe program of the European Union, Grant Agreement No. 101162328).

¹¹ IES Perez Galdós and IES Faro de Maspalomas (secondary schools).



Figure 5. Workshop in preparation for the NBS EduWORLD event at Macaronight 2024, IES Perez Galdós, Spain, June 2024

5.2. Recognition for Schools' commitment to NBS

Research has found that initiatives such as recognitions and certifications, as well as awards or labels rewarding schools' commitment to promoting sustainability education, have multiple benefits for both the participants and education as a whole. They can inspire a sense of pride among school staff and students and provide the best examples for others. Moreover, they significantly enhance the visibility of sustainability education, contributing to support the overarching goals of LfS (European Commission, Eurydice, 2024).

NBS EduWORLD joined forces with the Scientix®¹² [STEM School Label](https://www.scientix.eu/), to launch a **recognition program for schools who demonstrate a strong commitment to NBS education**. The result of these joint efforts is the [NBS School Expertise](#), launched in February 2024, hosted on the STEM School Label Platform.

Obtaining an Expertise means proving a school's proficiency in a specific subject or field. In the case of the NBS School Expertise, schools get a unique opportunity to highlight their commitment to NBS education internationally, connecting with like-minded institutions. Achieving this status means schools will feature on the [NBS EduWORLD EduHub](#), in an online repository of NBS schools, as well as in an interactive map. Their achievements will also be

¹² Scientix, the community for science education in Europe, is an initiative of European Schoolnet: <https://www.scientix.eu/>.

showcased in a [Gallery](#) on the STEM School Label Platform alongside activities from NBS schools worldwide.

Schools which obtain the NBS School Expertise are promoted as **good practice examples** by NBS EduWORLD and the Scientix STEM School Label on social media, serving as inspiration for others shaping the future of NBS education. Schools may also get opportunities to share their expertise in online events organised by NBS EduWORLD and/or the STEM School Label. The recognition program was introduced in the webinar "NBS School Expertise: Unlocking Nature-Positive Excellence", in April 2024¹³.

As of August 2024, four schools have already been awarded the NBS School Expertise. As interest grows and more schools continue to apply, it is foreseeable that the pool of Expert schools will become wider, contributing further to the expansion of the NBS EduCommunity created by NBS EduWORLD. **Figures 6 and 7** below illustrate the interactive map of NBS Expert Schools (to be updated as the number of awardees increases), as well as the gallery showcasing their NBS School Practice Evidence (proof of a school's commitment to NBS through various activities), both published on the [NBS School Expertise Network](#) on the STEM School Label platform.

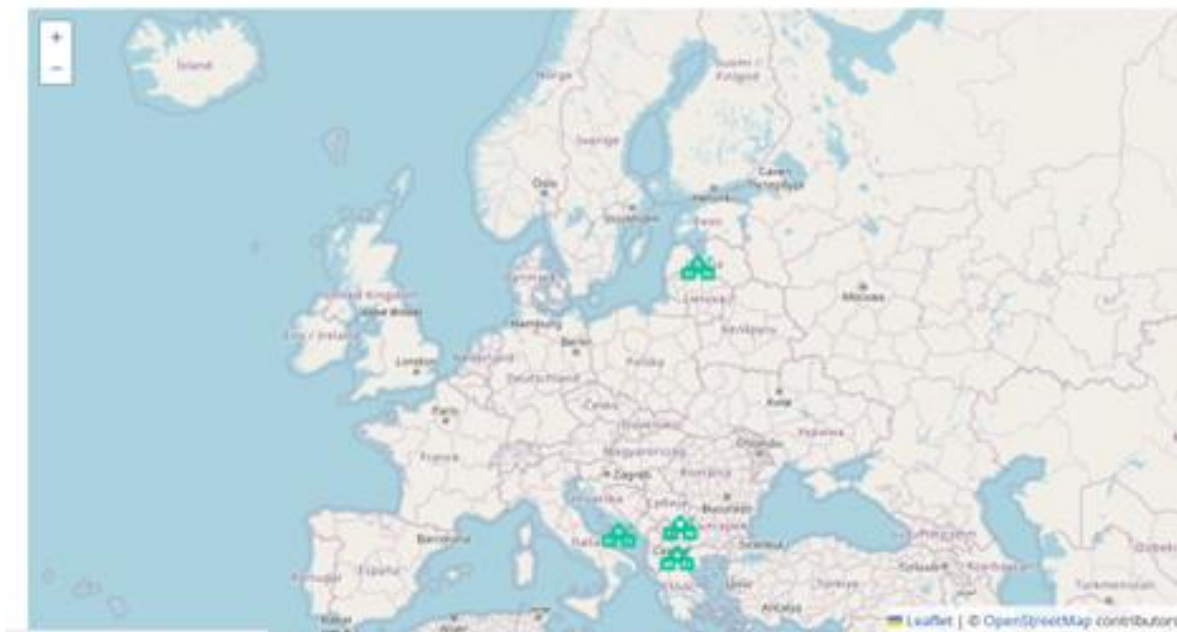


Figure 6. Map of NBS Expert Schools on the STEM School Label Platform

¹³ Recording available [here](#).

Gallery of NBS School Practice Evidence

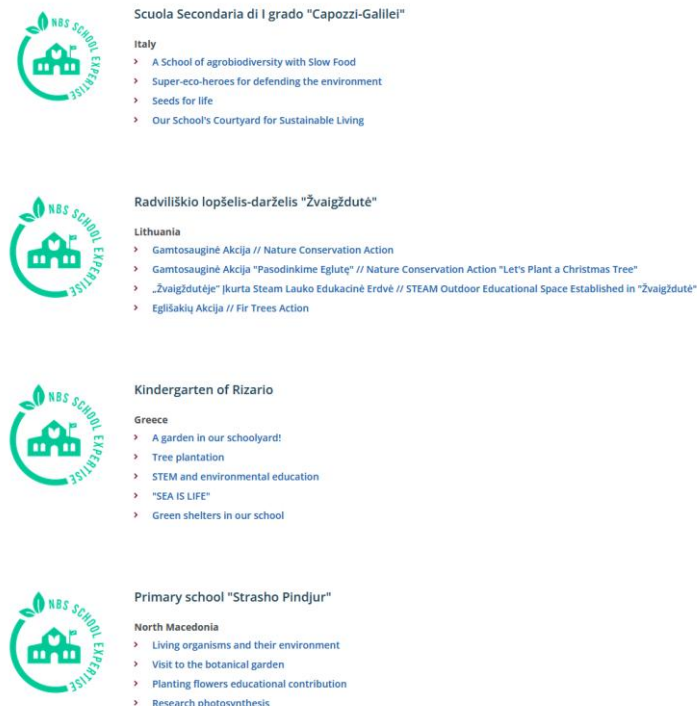


Figure 7. Gallery of NBS SPE on the STEM School Label Platform (August 2024)

The NBS School Expertise represents a great **opportunity for educators to bring their engagement in NBS education to the school level**, adopting a **holistic approach** that ensures the **whole school** is recognized for its contribution to the advancement of NBS and sustainability education. The NBS School Expertise indeed encourages adopting the WSA, i.e. addressing *all* aspects of the school and not just curriculum (such as school governance, pedagogy, resource consumption, community outreach, curriculum development, landscaping etc.) and ultimately transforming schools into NBS Living Labs to ensure medium and long-term impact of NBS education (Henderson and Tilbury 2004).

This transformative process creates **dynamic, interactive environments**, where students can engage directly with nature, and therefore develop a deeper understanding of sustainability and connection with the environment. The NBS Living Labs also provide a **hands-on learning experience**, in which students get to face real-world challenges, merging education and real-life issues pertaining to their school's local area and to their own community. All these elements ultimately contribute to connecting learners to sustainability concerns and decision-making processes, instilling a sense of belonging to the environment and pushing them to sustainable action (European Commission, Eurydice, 2024).

Moreover, **transforming schools into NBS Living Labs through the WSA** promotes continuous professional development of teachers and staff. Educators equipped with the knowledge and skills to implement NBS projects and pedagogies build capacity for high-quality

sustainability education. The professional development of staff and school's vision are indeed essential for maintaining NBS initiatives relevant and effective over time.

The WSA is key to enable this transformative process, as such approach promotes a holistic vision of education in which the culture of sustainability gets embedded not only in all aspects of school life, but also in the broader community made of students, families, workers, and so on, and from different perspectives. As stated in the recently published *Green school quality standard: greening every learning environment* by UNESCO, this approach promotes the well-being and holistic development of learners, empowering them to participate as critical thinkers engaged in the school community, capable of addressing complex societal, economic and environmental challenges (UNESCO, 2024b).

6. Forward-looking perspective: what comes next?

The NBS education landscape is evolving, and this section aims to provide a glimpse into its future, while offering educators pathways to maintain long-term engagement with NBS. This is particularly relevant for educators with existing knowledge of NBS, as well as those with some experience in teaching it.

NBS EduWORLD's work so far has not only paved the way for the Connections Stream Guidelines, but also set the ground for Year 3 of project activities, which will focus on scaling up lessons learnt and further consolidating actions to ensure the sustainability of the project's impact over time.

Besides what has been explored in previous sections, NBS EduWORLD solidified its efforts by means of transforming schools into NBS Living Labs through the WSA and by developing envisioned "Scenarios for Plausible Futures for NBS in Education"¹⁴. This section will provide a summary of these efforts to date, as well as outline strategies for schools, educators, and stakeholders to remain actively involved in the broader European conversation on NBS education, ensuring the continued success of the project's NBS EduCommunity.

NBS EduWORLD's Deliverable D6.1 "NBS EduWORLD Network Stream: Scenarios of Plausible Futures for NBS in Education" outlines several key points for the methodological approach needed to transform schools into NBS Living Labs following the WSA. These steps can help schools to plan the next steps to explore the WSA:

1. Have **strong vision** and demonstrate **solid leadership** in prioritizing sustainability in various aspects of school life.
2. Connect with **communities** and form partnerships with **external societal actors** to enhance the implementation of NBS activities.

¹⁴ Deliverable D6.1, NBS EduWORLD Network Stream: Scenarios of Plausible Futures for NBS in Education: https://nbseduworld.eu/fileadmin/user_upload/Resources/NBS_EduWORLD_D6.1_Scenarios-Plausible-Futures-NBS-Education.pdf

3. **Building management** is needed through school practices and by implementing sustainability at the school's location. Transforming schoolyards, buildings, and other spaces by **installing or co-creating NBS** can foster collaboration and engagement with the whole community.
4. Link the transformative process with **relevant pedagogies** such as **transformative learning**, an approach that aims to develop autonomous thinking and empower students with critical reflection and analysis.
5. NBS needs to be **integrated in the curriculum** across various subjects and disciplines and linked to **specific skills**. Such skills need to be **transversal** and not dependent on specific topics. Specific **assessment** schemes and goals can be established by following European frameworks such as the GreenComp.¹⁵
6. Ensure capacity building through **Continuous Professional Development (CPD)** opportunities to maintain coherence in school's vision, objectives, and leadership.

Besides exploring the WSA and becoming an NBS Living Lab, schools (in addition to educators and stakeholders who wish to remain actively involved in the broader European conversation on NBS education), can join the community that came into shape through project events, the **NBS EduCommunity**, by starting from the NBS EduWORLD portal. There, many opportunities to engage arise: workshops, activities, challenges, and recognition programs to take part in, educational resources to replicate or take as inspiration to create one's own, online and in-person trainings, etc. This presents a great opportunity to ensure the thriving future of NBS education by inspiring new individuals that come across project outputs to pursue this transformational path and enter a network of experienced educators and experts that can provide inspiration for change. The project's [NBS EduDirectory](#) represents a starting point for those seeking inspirational materials, whereas the [NBS Discussion Space on Scientix](#) can offer a place to exchange and discuss on relevant topics, ideas, challenges, and more.

The NBS EduCommunity, set up by NBS EduWORLD, functions as a fertile ground for **new ideas and a space for those who are passionate about NBS education**, by fostering connections between them and policymakers, public authorities, and other decision-making entities. This represents an asset, as it can bridge the gap between localised, smaller actions and broader policymaking spheres. Moreover, it ensures that fresh perspectives are continuously added to the flow, responding to the ever-changing needs of society and education in the face of complex issues such as climate change. In a future where teachers who are new to the field can encounter the knowledge and experience of those who became experts in the application of NBS education and leverage it, the efforts of NBS EduWORLD in making NBS accessible for all and mainstreamed across educational levels and settings will keep staying relevant over time.

¹⁵ GreenComp: the European sustainability competence framework: https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework_en



7. Conclusion

NBS EduWORLD continues to empower teachers and educators, and with these Guidelines it aims to reach those already competent in NBS education to help deepen their impact both in the classroom and at their schools by integrating NBS across topics, disciplines and settings, thereby creating a more sustainable educational environment that extends from the classroom to the school and to the broader community.

Throughout the Guidelines, there are examples and best practices from the educational activities developed by the project thus far, and depending on the educator's interests and role, they could adapt some of them into their practice.

Advanced-level NBS teachers in formal education are encouraged to:

- **Create** resources and materials and **facilitate** CPD opportunities focused on NBS in education.
- **Showcase** their school's achievements through national and international campaigns, and search for initiatives to recognise their efforts.
- **Implement** the WSA (see Section 6), transforming their school into an NBS Living Lab to **pioneer the change in NBS education**.

Advanced-level NBS educators in non-formal education are encouraged to:

- **Adapt** the good practices from NBS EduWORLD's non-formal activities and resources to their specific settings.
- Draw inspiration from the work and resources prepared and shared by the project to **create** their own resources and materials.
- **Explore** the NBS EduSystems' case studies to integrate NBS in local communities.

Both formal and non-formal educators are encouraged to **use an innovative approach**, such as performing arts, in NBS teaching and learning to **inspire the youth**, as well as to come into contact with each other through the channels and spaces available to them to **share expertise, collaborate, and co-create**, to ultimately consolidate their advanced status in the NBS education journey, **overcoming boundaries** between formal and non-formal education settings.

NBS represents a vital pathway toward sustainable solutions for complex challenges. **The generation of tomorrow will inherit this responsibility and continue to shape the world.** Today's **teachers and educators** play a key role in profoundly influencing their capacity to tackle these and new challenges, and in **inspiring them to always remain curious and connected to nature**.

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Project partners





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