



NATURE-BASED SOLUTIONS LEARNING SCENARIO

Nature Changing Our Surroundings



Research and
Innovation

Nature Changing Our Surroundings

European Commission

Directorate-General for Research and Innovation

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Nature Changing Our Surroundings

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ABSTRACT

The lessons built for this learning scenario are based on photos of different cities. By analysing photos, students endeavour to perceive the logic behind using nature in solving problems that cities might face. Then students try to define whether their school faces any of the analysed problems in which nature could prove to be of use. With the teacher's help, students design a plan to address problems around school using nature-based solutions and implement change.

Keywords

Nature, Ecology, NBS, School, Green Cities

1. Introduction

"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."

https://ec.europa.eu/info/research-and-innovation/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](#)
- Read about [Nature-based solutions: Transforming cities, enhancing well-being](#) (also [available as a PDF](#))
- Contact local NBS practitioners or scientists working in their area (they can be found through [Oppla](#)).
- Use the "[Ask Oppla](#)" service to request help in case of any technical/scientific question on NBS.

2. Overview

Overview	
Subject	Primary school subjects
Topic	Understanding NBS
Age of students	6–9 years old
Preparation time	30 min
Teaching time	2 lessons – 90 min
Online teaching material	Example of pictures used https://wke.it/w/s/nALukP
Offline teaching material	Paper, pencils, and coloured pencils
NBS resources used	Urban Nature Atlas: https://naturvation.eu/atlas Connecting Nature: https://connectingnature.eu/ Oppla - EU Repository of Nature-Based Solutions: https://oppla.eu/case-study-finder

3. Integration into the curriculum

During the lesson students will:

- Think creatively and logically.
- Improve the ability to ask questions, notice problems, search for and gather the necessary information to solve these problems.
- Planning and organising work for problem-solving.
- Develop the ability to understand the relations between various elements of natural surroundings.
- Learn to search for information from various sources.
- Value nature in the city.

4. Aim of the lesson.

The lesson has two main aims: (1) students can understand what Nature-Based Solutions are and (2) they can try to implement Nature Based Solutions in their closest surroundings (school, home).

5. Outcome of the lesson

Students will be able to realise that nature can help people and that people are dependent on nature. Students plan a nature-based solution for their closest surrounding (school and house) by drawing pictures.

6. Trends

Project-Based Learning, Collaborative Learning, Visual Search and Learning, Learning Materials

7. 21st century skills

Creativity, problem-solving, decision-making, collaboration, and teamwork

8. Activities

The teacher should make a break when necessary, as 90 min is too long for young students to concentrate.

Name of activity	Procedure	Time
Introduction	Students are sitting in a circle on the carpet/floor. The teacher presents many pictures of different cities (some showing impervious concrete surfaces, some with pollution smog, some with green spaces); children choose a place they would like to live in and explain why. Suggestion and examples of pictures to be used: https://wakelet.com/wake/7b854d88-c5d8-426d-b390-908f209fa630 (also available to download from here)	10 min
Collections	Divide the photos in groups (students try to find common features in some photos, the teacher may ask questions and give them clues). Hopefully, students will create 2–3 collections. Then, summarise what are the features common to each collection.	10 min
Group work	Students work in groups of 2–3. They focus on the photo collection presenting cities with green spaces. Their task is to understand what values nature provides to cities and their residents.	10 min

Name of activity	Procedure	Time
Explanation	Teacher explains the idea of NBS and gives some more examples of NBS projects. Teachers can find examples of NBS projects from their city/country using Oppla, the EU Repository of Nature-Based Solutions .	10 min
Our school's problems	<p>The following question is asked by the teacher: "What problems do you think our school has (such as problems connected with the lack of green spaces)?" The teacher should think of problems to suggest in advance, in case students fail to come up with anything. If the LS is used with older students instead of finding a solution for school the teacher might ask them to plan a solution for their city, which gives more possibilities.</p> <p>Afterwards: develop a brainstorming session. Teacher/students make a mind map with ideas.</p>	15 min
Solutions	<p>Group work – in groups of 2–3 students develop an idea to bring nature to school to solve a problem of their choice.</p> <p>The teacher may take the students for a walk around the school to help them look at some places at school that might need nature intervention – examples: a corridor with no plants, a classroom that has many south windows and is very hot in the summer, a classroom that is from the northern side of the building and has no sunshine, an inner court which doesn't easily drain the water after intensive rain, etc.</p>	30 min
Homework	Think about your house – are there any problems that nature could help solve? Talk to your parents and draw a possible NBS solution around home.	5 min

9. Assessment

No assessment. The evaluation is based on whether students can see a problem at their school and can come up with a nature-based solution to solve the issues.

10. Student feedback

My 6-year-old students liked the lesson. Even though it was online, the most interesting part for them was creating their own nature-based solutions at home and in their gardens. They said they felt like real architects. Students came up with different ideas:

- planting ivy to cover an old ugly fence.
- using trees to build a playground or a rope course.
- planting fruit and vegetables in the garden so that parents did not have to go to the shop and risk getting sick.
- designing a garden and having many plants in the room to make it cosier and more pleasant.
- After the lesson we met online, and students said it was easy for them to understand NBS and to plan a solution. They agreed that "it was a nice lesson".

11. Teacher's remarks

The fact that the scenario has a practical part was very positive. Based on students' projects, of which parents have sent me photos, they understood what NBS is. After the lesson they could quickly provide a few examples of NBS, not in terms of naming places where NBS was implemented but explaining how nature is used.

If teachers are implementing this LS online, groups could be larger, and discussions could happen on the chat instead of speaking. Teachers can also use tools such as Padlet so students can write their opinions. Students could also express themselves through art and afterwards in an online session present their drawings and ideas.

This LS will be more attractive and understandable for the students if the teacher finds some photos of Nature-Based Solutions from their city.

Finally, here is an example of a presentation that can be used during the lesson, also during online teaching: <https://view.genial.ly/5e9802a5898eea0db71bc1d0/interactive-content-nbs-in-english> (also available to download from [here](#)).

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About the NBS project

The NBS project is initiated and funded by the European Commission Directorate-General for Research and Innovation and coordinated by PPMI, in collaboration with European Schoolnet (EUN). PPMI (www.ppmi.lt/en) is a leading European research and policy analysis centre, aiming to help public sector and civil society leaders from around the world, presenting evidence in a way that is simple, clear and ready to use. European Schoolnet (www.eun.org) is the network of 34 European Ministries of Education, based in Brussels. EUN aims to bring innovation in teaching and learning to its key stakeholders: Ministries of Education, schools, teachers, researchers, and industry partners. Find out more about nature-based solutions: <https://ec.europa.eu/research/environment/index.cfm?pg=nbs> and all the NBS Learning Scenarios created in this project as well as the overall reports can be found at <http://www.scientix.eu/pilots/nbs-project>

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Studies and reports