Co-funded by the European Union

Sustainability Education: Environmental Stewardship with a Focus on Nature-Inspired Activities

CONNECT Handbook 3

Erasmus+ projekt:
Cultivating Outdoor Nature-based Education for Competence and Teaching

2024-2-HU01-KA210-SCH-000265656

This project has been funded with support from the European Commission under the Erasmus+ Programme.

About the project

This handbook has been developed within the framework of the Erasmus+ project CONNECT: Cultivating Outdoor Nature-based Education for Competence and Teaching. Its primary target group is teachers working in secondary education, while remaining adaptable to primary education settings and teacher training contexts. The chapter responds directly to the project's core concerns: increasing stress among teenagers, growing social isolation, declining social skills, and the urgent need to support students' mental wellbeing while fostering inclusion and key competences through innovative teaching approaches.

Nature-Based Learning as a Response to Current Educational Challenges

Research and practice across Europe indicate that today's teenagers face unprecedented pressures. Excessive screen time, reduced contact with nature, academic demands, social comparison and uncertainty about the future have contributed to rising levels of stress, emotional overload and disengagement from learning. Schools are increasingly challenged to respond to these trends using methods that go beyond traditional classroom instruction.

Nature-based outdoor learning offers a concrete and experiential response to these challenges. By moving learning outside the classroom, teachers can create more dynamic, engaging and human-centred educational experiences. Outdoor environments provide rich stimuli for learning while simultaneously supporting physical, emotional and mental wellbeing. As highlighted in the project application, contact with nature can reduce stress, improve resilience and increase motivation to learn, particularly when combined with hands-on, participatory activities .

Making Outdoor Learning Inclusive

Inclusion is a central priority of the Erasmus+ programme and a guiding principle of this project. Inclusive outdoor learning does not mean treating all students the same way; rather, it means creating conditions where every student can participate meaningfully, regardless of ability, background or emotional state.

Nature-based activities naturally lend themselves to inclusion because they allow for multiple forms of engagement. Observation, movement, creative expression, cooperation and reflection can coexist within the same activity. This flexibility is particularly valuable in secondary education settings where classes often include students with diverse learning profiles, cultural backgrounds and levels of confidence.

Outdoor learning environments tend to reduce performance pressure and rigid hierarchies. Students who may struggle in academically demanding classroom settings often find new ways to contribute and succeed outdoors. This supports the project's aim of reducing isolation and social exclusion among teenagers by fostering shared experiences and a sense of belonging.

Supporting Social-Emotional Competences Through Experience

A key objective of the CONNECT project is the development of transversal and social-emotional competences such as communication, collaboration, self-awareness and resilience. These competences are not acquired through instruction alone but through experience, reflection and interaction with others.

Outdoor learning creates natural opportunities for cooperation, problem-solving and shared responsibility. Group tasks such as exploring local ecosystems, participating in sustainability actions or reflecting together during outdoor activities encourage students to listen to one another, negotiate roles and manage emotions. These experiences strengthen social skills that are essential for both personal wellbeing and active citizenship.

Importantly, nature-based learning also supports emotional regulation. Time spent outdoors can help students slow down, reconnect with their senses and shift attention away from constant digital stimulation. Simple activities such as short wellbeing walks, sensory exploration or outdoor reflection circles can support self-management and emotional balance, directly addressing the project's concern about declining mental wellbeing among teenagers .

Working with Mixed-Ability Groups

Secondary school teachers increasingly work with mixed-ability groups where differentiation is essential. Outdoor learning supports differentiation in a non-stigmatising way. Activities can be open-ended, allowing students to engage at different depths and paces. One student may focus on factual observation, another on creative expression, and another on emotional reflection, all within the same learning framework.

Teachers are encouraged to focus on process rather than outcomes and to value effort, cooperation and reflection. Pair and small-group work further supports inclusion and social learning, helping students build confidence and interpersonal skills while learning from one another.

Low-Cost, Low-Risk and Sustainable Implementation

A common barrier to outdoor learning is the perception that it requires significant resources, time or specialised training. In reality, many effective nature-based activities are low-cost and easy to implement. Schoolyards, nearby parks or local green spaces can become meaningful learning environments when used intentionally.

Short, regular outdoor activities are often more impactful than occasional large projects. Even ten minutes spent outside can contribute to wellbeing and engagement. Risk management should focus on awareness and responsibility rather than avoidance, with clear boundaries and shared rules supporting both safety and autonomy.

Aligning Practice with Erasmus+ Priorities

The approaches presented in this handbook directly contribute to Erasmus+ priorities on wellbeing, inclusion and the development of key competences. By integrating nature-based outdoor learning into everyday teaching practice, educators support students' personal growth, social cohesion and environmental awareness. At the same time, teachers strengthen their own professional competences by adopting innovative, experiential methods that respond to contemporary educational needs.

Ultimately, outdoor learning is not an additional burden but a powerful pedagogical resource. When used thoughtfully, it helps teachers create inclusive, supportive and engaging learning environments that empower young people to become resilient, socially connected and environmentally responsible future citizens.

PART I – THEORETICAL FOUNDATIONS

Chapter 1: From Environmental Knowledge to Environmental Responsibility

Over the past decades, environmental education has become an established part of school curricula across Europe. Students learn about climate change, biodiversity loss, pollution and resource depletion, often from an early age. Many young people can explain the causes of global warming, name endangered species or describe the consequences of deforestation. Yet despite this growing awareness, a persistent gap remains between knowing about environmental problems and acting in ways that protect and sustain the natural world. This gap raises a fundamental question for educators: why does environmental knowledge alone so often fail to lead to responsibility, care and action?

Box 1. Environmental education in National Education Policy

In **Italy**, the Ministry of Education introduced a policy requiring all public schools to *teach climate change and sustainable development as part of the curriculum*. Beginning with the 2020–2021 school year, Italian students are expected to spend about one hour each school week focused on climate, sustainability and environmental topics that are woven into subjects such as geography, civics and science. This move was announced by the Minister of Education as a way to make environmental issues central to students' learning experiences (Italian Education Minister announcement, 2019). Italy is the first country in Europe to implement such legislation.

While systematic requirements for specific hours of outdoor learning, or environmental education hours per week are not yet mandated uniformly across other European educational systems, **policy trends are increasingly supportive of environmental and outdoor education as essential components of schooling**. Across the continent, governments and educational authorities are embedding sustainability and nature-linked experiences into curricula, training teachers in outdoor pedagogy, and creating policies that help schools make the natural environment an active learning space rather than an occasional add-on.

Source: https://www.earthday.org/italy-first-country-climate-change-studies-in-schools/

Environmental stewardship offers a way to rethink this challenge. Rather than focusing primarily on information and awareness, stewardship emphasises relationship, responsibility and practice. It refers to the active care for the natural world, grounded in a sense of connection and obligation toward living systems and places. From an educational perspective, stewardship shifts the focus from teaching about the environment to learning how to care for it, not as an abstract ideal but as a lived and ongoing practice.

Box 2: What Is Environmental Stewardship?

Environmental stewardship refers to the responsible care and management of the natural environment through informed, ethical and active engagement. It goes beyond knowing about environmental issues and focuses on developing a relationship of care, responsibility and respect for living systems and natural places.

In an educational context, environmental stewardship means supporting learners to see themselves as part of the natural world rather than separate from it. It involves learning through observation, participation and action, such as caring for local environments, protecting ecosystems, and making thoughtful decisions that consider long-term ecological impacts.

Environmental stewardship encompasses a wide range of actions, from small, everyday practices to more structured collective initiatives. These actions may include maintaining and restoring local green spaces, school gardens or habitats; observing and monitoring

natural processes; reducing waste and resource use; participating in conservation or clean-up activities; and making responsible choices related to consumption, mobility and energy use. It also includes collaborative action within schools and communities, where learners take shared responsibility for environmental care.
Environmental stewardship emphasises shared responsibility, local action and ongoing commitment. It recognises that sustainability is not only about future outcomes, but about everyday practices that shape how people live with the environment. Through stewardship, learners develop agency, understanding that their actions can contribute to the health and resilience of natural systems.

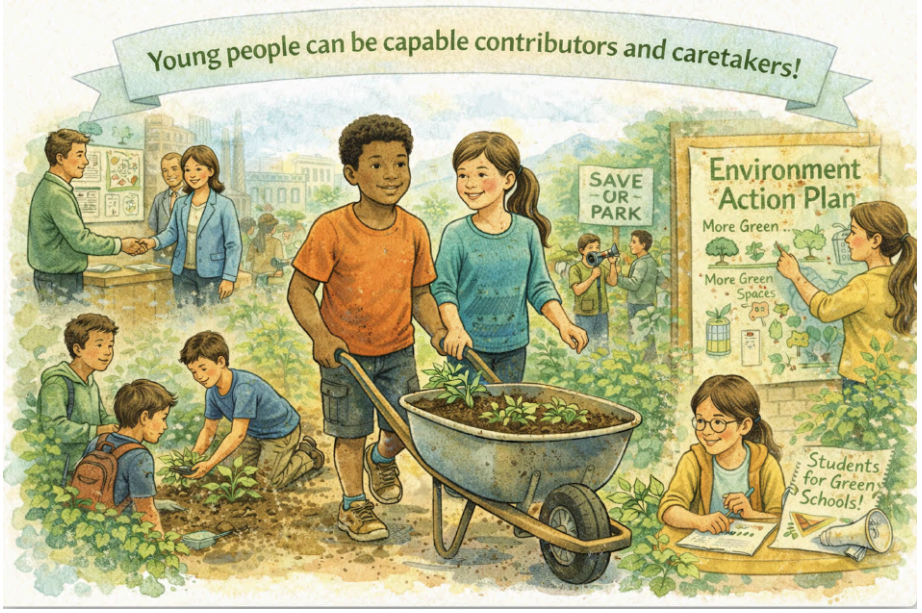
One reason why knowledge alone is insufficient lies in the way environmental issues are often presented. Global environmental challenges are frequently framed through large-scale statistics, distant impacts and alarming predictions. While such information is scientifically important, it can feel overwhelming and impersonal, particularly for young people. When students are repeatedly exposed to narratives of crisis, they should also be informed about their opportunities for meaningful engagement, so that they do not feel helplessness, disengaged or emotionalle distanced. In these circumstances, knowing more does not necessarily empower action; it can instead reinforce a sense that problems are too large to influence.
Graphs below show how the sterwardship can make a difference, even if students do not see it this way.

Environmental stewardship responds to this by reframing sustainability as something that begins close to home. Responsibility grows not from abstract understanding, but from relationship and experience. When young people engage with local environments, observe living systems over time and participate in their care, environmental issues become tangible and relevant. Stewardship education recognises that people are more likely to protect what they know, value and feel connected to.

At the heart of stewardship lies a different understanding of responsibility. Responsibility is not imposed through rules or moral pressure, but cultivated through trust and participation. When students are invited to care for a garden, monitor a local ecosystem or maintain a shared outdoor space, they are not merely learning facts; they are practising responsibility. These experiences help young people see themselves as part of an ecological system rather than external observers. Responsibility becomes something they enact, not something they are told to adopt.

This shift also challenges the traditional role of students in environmental education. Too often, young people are positioned as learners who must absorb information or change personal behaviours in isolation. Stewardship education, by contrast, treats young people as capable contributors and caretakers. It acknowledges their ability to act meaningfully within their communities and environments. This recognition is crucial for developing agency.

When students feel that their actions matter, even on a small scale, motivation and commitment increase.



Local action plays a central role in bridging the gap between knowledge and responsibility. While global environmental challenges require systemic solutions, education benefits from grounding sustainability in local contexts. Caring for a nearby green space, restoring a habitat, or observing seasonal changes allows students to see the effects of their actions directly. These experiences create a sense of continuity and accountability that abstract global issues often lack. Through local stewardship, students learn that environmental responsibility is not limited to future decisions or distant places, but embedded in everyday choices and practices.

Another key dimension of environmental stewardship is time. Knowledge can be acquired quickly, but care develops slowly. Stewardship requires repeated engagement, observation and reflection. It involves noticing changes, responding to needs and accepting that outcomes are not always immediate. This temporal dimension is educationally significant. In a world characterised by speed, instant feedback and rapid consumption, stewardship teaches patience, persistence and attentiveness. These qualities are essential for sustainability, yet rarely cultivated through conventio nal instructional methods.

Environmental stewardship also invites a shift away from fear-based educational approaches. While concern and awareness are necessary, education that relies primarily on fear can undermine agency. Stewardship offers an alternative narrative centred on care, responsibility and possibility. It acknowledges environmental challenges without reducing learners to passive witnesses of crisis. Instead, it emphasises what can be done, here and now, through collective and individual action. This does not deny the seriousness of environmental problems, but situates them within a framework of engagement rather than paralysis.

Importantly, stewardship education does not reject knowledge. Scientific understanding remains essential for informed action. However, stewardship integrates knowledge with practice and values. Facts about ecosystems gain meaning when connected to direct experience. Understanding biodiversity loss becomes more compelling when students have observed species decline in a local context. Knowledge, in this sense, becomes a tool for care rather than an end in itself.

For schools, adopting an environmental stewardship approach requires a shift in educational priorities. It invites educators to see learning environments as living systems and schools as places where responsibility can be practised, not only discussed. This may involve rethinking how outdoor spaces are used, how projects are structured and how students are entrusted with meaningful roles. It also requires educators to accept uncertainty, allowing learning to unfold through processes rather than predefined outcomes.

Chapter 2: Young People as Caretakers of the Living World

Young people do not experience the world as a single educational space. Their daily lives move between home, school, outdoor environments, indoor home activities- like computer, and phone usage, peer relationships and community spaces. Environmental stewardship develops most effectively when it is embedded within these everyday contexts, rather than added as a separate subject or taught only through instruction. This chapter explores how young people can grow into the role of environmental caretakers through direct engagement, care and action across the different spaces that shape their lives.

Stewardship at Home: Everyday Care and Responsible Choices

Home is often the first place where young people encounter ideas of care, responsibility and routine. Environmental stewardship at home does not require expert knowledge or major lifestyle changes. It grows through repeated, small actions that make environmental responsibility visible and meaningful. Teenagers may participate in separating waste, reducing food waste, caring for houseplants, saving water or energy, or supporting more thoughtful consumption choices within the household.

These actions become educational when young people are not simply told what to do, but are involved in noticing consequences and making decisions. For example, taking responsibility for a small garden space, composting organic waste or helping plan meals encourages awareness of resources, cycles and limits. Over time, such practices help young people understand that environmental care is not an abstract ideal, but part of everyday life. Stewardship at home develops through consistency, shared responsibility and the experience of seeing how small actions accumulate into meaningful impact.

Stewardship at School: Learning through Responsibility and Participation

Schools offer powerful opportunities for environmental stewardship when students are trusted with real responsibility. Rather than focusing only on environmental knowledge, schools can become spaces where stewardship is practised. Caring for school gardens, green spaces or biodiversity areas allows students to engage directly with living systems. Monitoring plant growth, observing insects or maintaining outdoor learning spaces helps students develop attentiveness and patience. These activities encourage regular observation and care, showing students that living systems respond to consistent attention rather than quick interventions.

Environmental stewardship at school is also expressed through everyday mobility and consumption choices. Choosing to cycle or walk to school instead of being driven by parents reduces emissions and strengthens students' sense of independence and responsibility for their impact on the environment. Similarly, bringing a second breakfast in reusable containers and using refillable water bottles support waste reduction and resource conservation. When schools provide access to safe drinking water, they actively enable these sustainable habits and make responsible choices easier for all students.

Even school policies related to clothing can be part of stewardship education. The introduction of school uniforms or shared dress guidelines can reduce overconsumption, limit social pressure related to fashion, and decrease the environmental footprint associated with constantly changing clothing trends. Such measures highlight that sustainability is not only about environmental projects, but also about thoughtful systems and shared norms that support more responsible everyday behaviour.

Stewardship also emerges through participation in school decision-making. When students are involved in shaping school sustainability practices, such as reducing waste, improving green areas or contributing to environmental action plans, they experience themselves as contributors rather than passive learners. These experiences support the development of agency and responsibility. The educational value lies not in achieving perfect outcomes, but in the process of caring, adjusting and reflecting together.

Stewardship in After-School Activities and Sports: Care Beyond Performance

Stewardship in after-school activities and sports develops when young people experience physical activity as something connected to place, care and continuity, rather than performance or consumption. While organised sport is often associated with competition, rankings and specialised infrastructure, it can also become a powerful space for environmental responsibility when activities are rooted in natural environments and everyday choices.

Choosing to run, walk or train in forests, parks or local green spaces instead of indoor facilities or commercial venues reconnects sport with nature and reduces dependence on resource-intensive infrastructure. Jogging along forest paths, stretching in a park or training on natural terrain allows young people to experience movement as part of the landscape rather than separated from it. Over time, regular use of these spaces builds familiarity and attachment, encouraging care for the environment in which activity takes place.

Environmental stewardship also emerges through how young people treat the spaces they use. Respecting trails, avoiding damage to vegetation, staying on paths when needed and leaving places clean reinforces the idea that natural environments are shared and fragile. Simple practices such as collecting litter after training, reporting damage to paths or adjusting

activities to protect wildlife help young people understand the impact of their presence without moral pressure or instruction.

Consumption choices related to sport also play an important role. The culture of constantly changing sportswear, equipment and accessories often reinforces unnecessary consumption. Stewardship-oriented approaches encourage young people to value durability and functionality over fashion. Using the same sports clothing over time, repairing equipment when possible and sharing resources within clubs or groups demonstrate that responsible participation does not require constant replacement or novelty.

Team-based outdoor activities such as scouting, hiking clubs or nature-based extracurricular programmes further strengthen stewardship through shared responsibility. Preparing equipment together, planning routes, adapting to weather conditions and supporting one another during activities highlight cooperation and care rather than individual achievement. These experiences help young people see that responsibility is collective and embedded in practice.

Through these choices, sport and after-school activities become spaces where environmental stewardship is learned through movement, repetition and experience. By engaging with nature as the setting for physical activity, young people develop a sense of respect and responsibility that grows naturally over time, rooted in lived experience rather than instruction alone.

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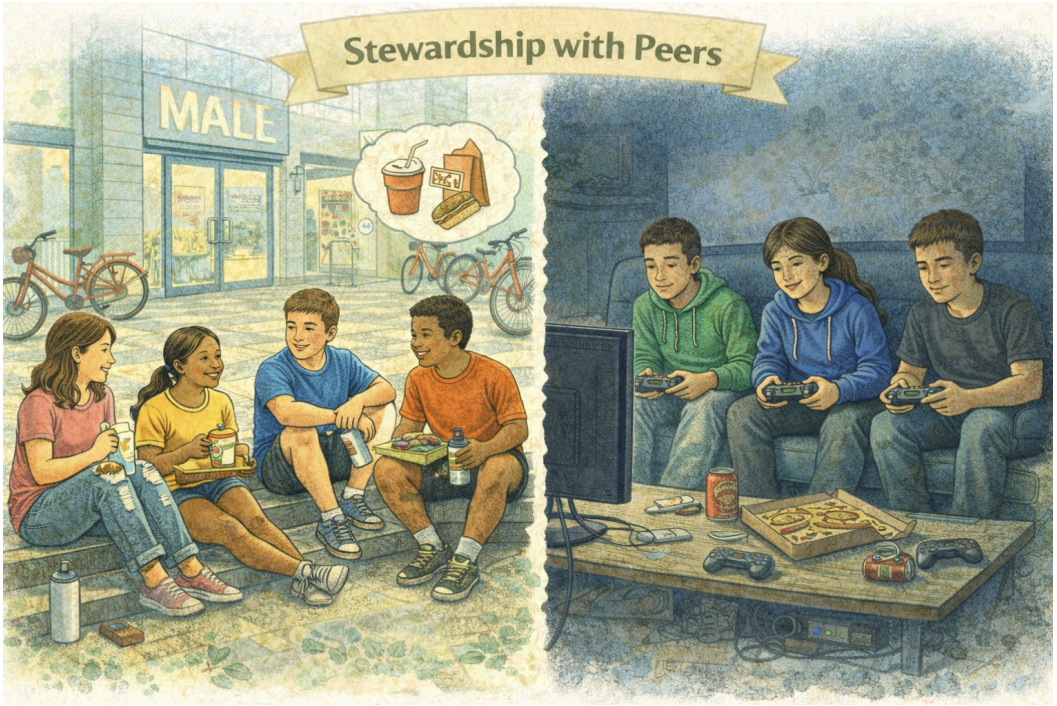
Stewardship with Peers: Belonging, Identity and Shared Action

Peer relationships play a central role in adolescence, shaping identity, values and everyday behaviour. Environmental stewardship becomes particularly meaningful when it is shared with friends and peers and embedded in how young people spend time together. Working collectively on small environmental projects, creating awareness campaigns within schools or neighbourhoods, or supporting local initiatives allows young people to experience stewardship as a social practice rather than an individual responsibility. Writing letters of support, preparing materials for school or community events, or participating in local consultations helps them see themselves as active voices within their communities.

Stewardship among peers also develops through the everyday choices young people make about where and how they meet. Choosing to gather outdoors in parks, green spaces or schoolyards rather than spending time in shopping centres or indoor commercial spaces reduces consumption while strengthening connection to place. Organising picnics or shared outdoor meals instead of visiting fast-food outlets supports more sustainable habits and encourages a slower, more mindful way of being together. These choices demonstrate that social life does not need to be built around constant consumption to be enjoyable and meaningful.

Digital spaces are also part of peer relationships, and stewardship can extend into these contexts as well. Young people may choose to reduce screen brightness, limit unnecessary device use when playing online together, or balance digital interaction with time spent outdoors. Even small, shared decisions—such as agreeing to switch off devices during outdoor gatherings or to meet offline more often—help reinforce awareness of energy use and the importance of presence.



What makes these peer-based actions powerful is their connection to belonging and identity. When environmental care becomes something young people do together, it strengthens social bonds and reinforces the idea that responsibility is shared rather than imposed. Importantly, stewardship in peer contexts does not need to take the form of protest or confrontation. Collaborative and constructive engagement focused on dialogue, creativity and shared experience, helps young people learn how to participate respectfully in democratic and community processes while developing a sense of agency and care that grows naturally from their relationships with one another.

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PART II – PRACTICAL EXAMPLES FROM AROUND THE WORLD

While theory helps clarify what environmental stewardship means and why it matters in education, it is through practice that stewardship becomes real and meaningful for young people. Across different countries and educational contexts, teachers, schools and community organisations have developed practical ways to engage students in caring for their local environments. These initiatives show how sustainability education can move beyond awareness and instruction toward responsibility, participation and action rooted in everyday life.

The examples presented in this section illustrate how young people learn to become caretakers of the living world through direct engagement with nature and their communities. They demonstrate how environmental stewardship develops when students are involved in observing ecosystems, maintaining natural spaces, contributing to local initiatives and taking part in shared decision-making processes. Rather than focusing on distant environmental problems, these practices emphasise local action, continuity and care, helping students experience themselves as capable contributors within their environments.

The case studies included here are not intended as fixed models to be copied. Instead, they are offered as sources of inspiration and reflection. Each example shows how educators have adapted stewardship-oriented learning to their specific context, working with available outdoor spaces, local partners and community needs. Together, they demonstrate that environmental stewardship education can take many forms, from small-scale school-based actions to broader community collaborations. By exploring these practices, teachers are invited to reflect on their own context and consider how similar principles of care, responsibility and participation might be applied to support young people's engagement with sustainability in meaningful and lasting ways.

Eco-Schools programme

The Eco-Schools programme is one of the largest and most established frameworks worldwide for *student-led environmental stewardship* in schools. Originating in Europe and now present in over 67 countries, the programme helps pupils move *from awareness to action* by guiding them through a structured process of assessing their school's environmental performance, identifying priorities (such as waste, energy, water or biodiversity), and implementing real changes in their school and community. Students form *Eco-Committees*, lead audits, organise campaigns, and monitor improvements to earn awards such as the internationally recognised Green Flag. Participation not only builds ecological knowledge, but also nurtures responsibility, leadership and agency as students see the tangible results of their efforts in their school and beyond. In Northern Ireland, for example, the Eco-Schools programme grew from a handful of schools to full national participation, with pupils shaping sustainability activities and working with local councils, teachers and community partners (Eco-Schools Northern Ireland).

relying on performance, competition or technology. The approach offers transferable principles for schools and educational settings seeking to reconnect young people with their bodies, rhythms and the natural world in supportive and sustainable ways.

Spain

In Seville, Spain, a project called We Are Students Tackling Environmental WASTE (OrgWASTE) engages high school students directly in developing and testing organic waste recycling methods in their local communities. Students learn practical techniques like

composting organic waste, maintaining small chicken coops and creating terrariums, turning waste into *useful resources* such as compost for gardening or livestock feed. By involving students in hands-on work with biological systems and community education, this project builds *practical stewardship skills, environmental awareness and leadership* among youth, preparing them to implement real solutions for waste reduction.

Cyprus

In Cyprus, a "whole-school approach" transformed selected public schools into *living laboratories for sustainability*. While this initiative includes upgrades for energy efficiency and green infrastructure, it also *immerses students in hands-on sustainability learning* that extends into environmental stewardship behaviours. Students witness and contribute to real changes such as green roof gardens and energy systems, helping them *internalise stewardship through experience and example*. Schoolwide engagement also encourages students to bring sustainability practices back to their homes, reinforcing that environmental responsibility extends beyond the classroom.

Youth-Led Local Sustainability Campaigns -Europe

Some Erasmus+ and youth networks support student-led local green projects that encourage young people to *design, plan and implement sustainability initiatives* in their communities. For example, youth climate bootcamps in Europe help young participants transform sustainability skills into local action projects, *raising awareness within their towns and schools*, often through outreach, educational materials and community events. These initiatives build *voice, agency and civic stewardship* in young people as they engage with real audiences and contribute to community wellbeing.

PART III – LESSON PLANS & USEFUL ACTIVITIES

Lesson 1. TREE IDENTIFICATION PROJECT IN NATURE

PROBLEM – Low student interest in the surrounding environment. We have noticed that students do not recognize tree species. Subjects to be integrated into the tree-identification project – mathematics, geography, computer science, English, biology. Goal – To develop students' cognitive and environmental competence by encouraging them to learn about local nature, identify tree species, and understand their importance to ecosystems and people.

Objectives:

- Describe and compare tree species according to specified criteria;
- Analyze information sources while collaborating in groups;
- Independently investigate the environment using collected theoretical material;
- Summarize collected material and prepare a project presentation;
- Share the knowledge gained during the project with their classmates. By participating in the project, the student will:
- Work in groups and learn mutual cooperation (communication, social and emotional competence);
- Be acquainted with park behavior rules (cognitive competence);
- Carry out planned activities (communication, cognitive, digital, social and emotional, creativity competences);
- Search for information in the library and useful online platforms (digital, communication competences);
- Identify and distinguish trees (cognitive competence);
- Expand their vocabulary with new terms (communication, social and emotional competences);
- Be able to compare prior and newly acquired knowledge (cognitive competence);
- Present the collected material — create a presentation about trees (creativity, social and emotional competences).
-

Project plan

- Introductory part: present the project procedure, goal, objectives, and assessment. Interactive student survey about trees (first lesson).
- Children are divided into groups — group names are assigned (first lesson).
- Discuss what materials will be needed for specific activities (first lesson).

- Specify tasks and set deadlines for task completion. Provide a literature list. Carry out tasks. (first lesson). (second lesson).
- Review park safety rules. Experiential activity in the park (second lesson).
- Project presentations to their class (third lesson).
-

Materials needed for the project

- Sheets of paper (various sizes),
- Notebook,
- Writing and drawing tools,
- Scissors,
- Glue,
- Measuring tape,
- Smart devices,
- Compass,
- Projector,
- Speakers.
-

Recommended literature for students

- Kęstutis Kazimieras Vilkonis, "Lietuvos žaliasis rūbas" (The Green Robe of Lithuania), 2020.
- Šarūnas Baranauskas, "Medžiai. Vadovas pradedantiesiems" (Trees. A Beginner's Guide), 2019.
- Usborne, "Discover Nature", 2019.
- Wojciech Grajkowski, "Trees", 2018.
- Jen Green, "The Magic and Mysteries of Trees", 2022.
- S. Paltanavičius, "Let's Go into Nature", Alma littera, 2021.
- Plant anatomy and physiology
  - http://old.kmaik.lt/e-mokymas/augalu_anatomija/fcontent.html
- And other information sources.

Assessment criteria

Assessment criteria	5 points Criteria fully met. Appropriate strategy chosen.	4 points Not completely clear fulfillment, minor inaccuracies.	3 points Not completely clear fulfillment, inaccuracies but not essential.	2 points There are uncertainties, essential inaccuracies.	1-point Superficial work, lack of coherence and order. Work submitted late.
• Description and comparison of tree species					
• Distribution of tasks within the group, interpersonal communication					
• Use of theoretical material					
• Completion of assigned tasks					
• Quality, justification, and innovativeness of the project presentation					
• Activity level, selection of problem-solving methods					

LESSON 2. TREE RECOGNITION: QUIZ AND WORK WITH TEACHING MATERIAL

During the lesson, the teacher introduces students to the project topic "Tree Identification Project in Nature," presents the project goal and objectives, and explains the project procedure.

The assessment criteria are explained in detail: what and how their work will be evaluated, emphasizing active participation, group cooperation, quality of task completion, and the final project presentation. To engage students and determine their initial knowledge, the teacher conducts a short interactive survey (using a digital platform, e.g., Kahoot, or orally by raising hands).

During the survey, students answer questions about trees they know, their characteristics, and their environmental importance. The teacher motivates students by saying: "This project will help you become tree identification experts — you will learn to recognize trees and understand their importance to nature and people." After the introduction, students are divided into groups. Each group chooses or invents a name related to trees (e.g., "Oaks," "Birches," "Pines," "Maples"). This fosters student cooperation, division of responsibility, and group belonging, which will be important throughout the project.

QUIZ "WORLD OF TREES"

What forms in the trunk each year and helps determine a tree's age? A) Knots B) Rings C) Buds D) Branches	What is a tree? A) Herbaceous plant B) Woody plant with a trunk C) Shrub D) Moss
Which part of the tree absorbs water and mineral nutrients? A) Crown B) Leaves C) Roots D) Trunk	What is the main importance of trees for humans? A) Only decorates the environment B) Produces oxygen C) Only provides shade D) Has no importance
What happens in leaves during photosynthesis? A) Produce water B) Produce oxygen and food substances C) Roots grow D) Trash accumulates	Why are trees important for reducing climate change? A) Because they are beautiful B) They capture carbon dioxide C) They increase temperature D) They are useless
Which tree in Lithuania is considered a symbol of strength? A) Birch B) Pine C) Oak D) Linden	Which tree has white, peeling bark? A) Maple B) Birch C) Ash D) Spruce
How do deciduous trees differ from conifers? A) Deciduous have needles B) Conifers shed leaves in autumn C) Deciduous shed leaves in autumn D) No difference	Which tree has palmate (hand-shaped) leaves? A) Ash B) Maple C) Linden D) Alder

What does sustainable forest use mean? A) Cutting without limits B) Protecting and replanting forests C) Cutting only old trees D) Not using forests at all	Why shouldn't young saplings be broken? A) Because it's ugly B) Because they grow slowly and are important to the ecosystem C) Because the teacher forbids it D) Because they have no leaves
Which activity harms the forest the most? A) Planting trees B) Littering C) Observing nature D) Hiking on trails	How can a person contribute to forest conservation? A) Litter less B) Sort/recycle waste C) By planting trees D) All answers are correct
What would happen if trees disappeared? A) Nothing B) Oxygen would decrease C) Climate would improve D) Animal numbers would increase	How long can an oak live? A) 50 B) 100 C) Up to 500 and more D) 20
Which tree is often planted in city parks for shade? A) Linden B) Spruce C) Pine D) Fir	Which tree often grows near bodies of water? A) Oak B) Alder C) Pine D) Maple
What is the canopy of a tree called? A) Roots B) Trunk C) The combination of branches and leaves D) Bark	Why is it worth learning tree names? A) For a grade B) To know nature and protect it C) To make drawing easier D) Because the teacher orders it
Which part of the tree reacts first to drought? A) Trunk B) Leaves C) Roots D) Fruits	Which tree most often grows in sandy places? A) Pine B) Linden C) Alder D) Maple
Which tree is best adapted to grow in wet places? A) Pine B) Alder C) Oak D) Fir	Why are trees important to animals? A) Only as shelter B) As a source of food and habitat C) Only for shade D) Not important
What effect do trees have on the urban microclimate? A) Increase noise B) Cool the air C) Increase pollution D) Reduce oxygen	Why is the forest litter layer important? A) Because it's pretty B) Because it protects soil and life C) Because it obstructs growth D) Because it has no significance
Which tree feature protects the soil from erosion? A) Crown B) Root system C) Bark D) Leaves	What do trees do after rain? A) Increase floods B) Retain water and reduce runoff C) Evaporate all the water D) Have no effect
Which forest is more resistant to diseases? A) Monoculture B) Mixed-species (diverse) forest	In which season is it best to plant trees? A) Summer B) Winter

C) Young forest D) Artificial forest	C) Spring or autumn D) Only July

In the second part of the lesson the teacher distributes textbooks and teaching books about trees. It is explained that during the lesson students will work only with the provided teaching material, so they will not need to search for information in the library or on the internet. The teacher gives each group Latin names of trees and explains their meaning, emphasizing that Latin names are international and help precisely identify plant species.

Working in groups with textbooks, students complete tasks: find the Lithuanian name of the tree assigned to their group, determine whether the tree is deciduous or coniferous, describe its main characteristics, and fill in the provided tables. At the end of the lesson the teacher discusses the completed tasks with students, checks whether the information is understood correctly, and explains that this theoretical material will be used in later project lessons, especially during experiential activities in nature.

Task 1

Five Latin tree names are distributed.

Tree Latin name	Lithuanian tree name	Tree group (coniferous/deciduous)

Task 2.

Scientific classification

Tree name	Kingdom	Division	Class	Subclass	Family	Subfamily	Genus	Spieces

Task 3. Identify and write the Lithuanian and Latin names of the trees according to the pictures

Task 4. Fill in the table

Name of the tree	Root system	Crown types	Flower form	Fruit and seeds	Lifespan (in years)	Latitudinal zones

At the end of the lesson the teacher summarizes the activities carried out and the results achieved with the students. During the discussion students review the quiz questions and answers, clarify unclear concepts, and note which topics their knowledge was strongest in and which need further study. The teacher emphasizes that the quiz helped not only to check existing knowledge but also to prepare for further focused work on the project. When discussing work with the textbooks, students state what information they managed to find about the assigned trees, which new terms they learned, and how they distinguished different tree species. The teacher praises the students' ability to work with the provided information sources, to purposefully search for necessary information, and to record it. Concluding the lesson the teacher encourages students to reflect on their learning by verbally completing the sentence: "Today I liked most…" or "In the group I learned …" "I found it difficult to…". This way students reflect on their learning experience and the teacher receives feedback about the lesson content and student engagement.

LESSON 3. LET'S GET TO KNOW TREES IN THE PARK AND NATURE

Integrated lesson with English, mathematics, geography, biology

The lesson takes place in a park or other natural environment where various tree species grow. At the start the teacher reminds students of rules for safe and responsible behavior in nature, stressing that students are guests of nature and must respect it, avoid damaging plants, not break branches, and not litter. The teacher also briefly recalls which tree species were studied in previous lessons and how that knowledge will be applied in practice.

Students work in the groups formed at the project's start. Each group searches the park for their assigned tree species or the closest example. Based on prior theoretical knowledge, students observe external tree features: leaf shape, bark color and texture, crown type, trunk thickness, and branch arrangement. During the biology integration students identify the tree species, determine whether it is deciduous or coniferous, and discuss its growth conditions and its role in the ecosystem.

During the geography integration students analyze where in the park or natural area their chosen tree grows. Observing the surroundings, students consider terrain features, soil moisture, lighting, and nearby natural conditions. Using a compass, students determine cardinal directions and assess how the tree's growing location relates to sunlight exposure and wind direction. Additionally, students work with maps — marking their tree's location on a park or area map. By marking tree locations, students learn to orient on a map, relate a real place to its representation on a plan, and understand the spatial relationship between an object and its environment. This activity develops spatial thinking, the ability to use geographic information, and understanding of how natural

phenomena and human-created schemes help describe and analyze the environment. Tasks 2, 3.

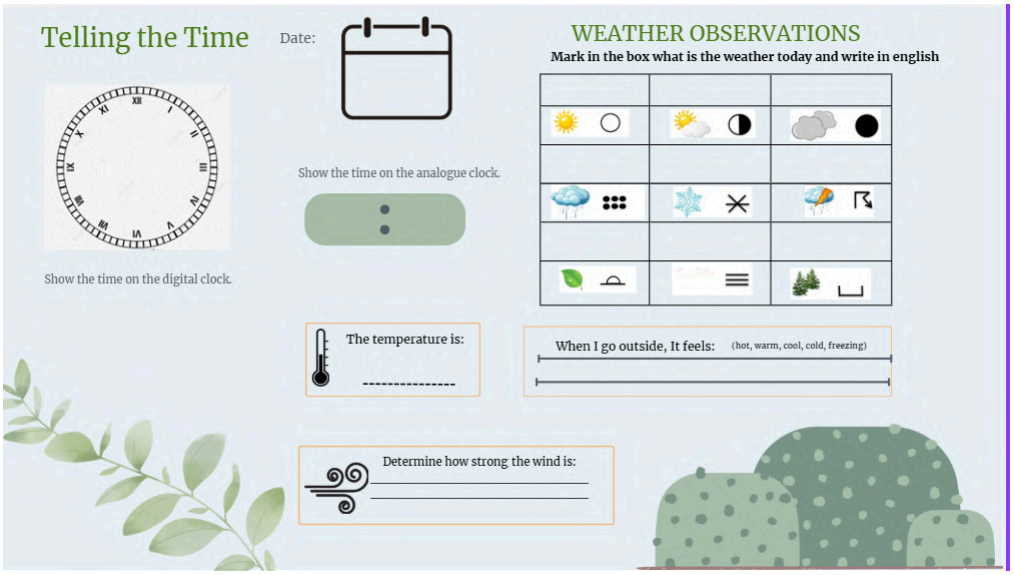
During the mathematics integration students perform practical measurements and calculations in the field. Students measure the circumference of the selected tree trunk using a measuring tape and estimate tree height using simple measuring and comparison methods. Collected data are recorded on task sheets and later compared with results from other groups. Students also count how many steps they walked from the school to the park or chosen study site. Based on step count and an estimated step length, students calculate the distance from school to the park. This develops the ability to apply mathematical knowledge in everyday real situations. By performing these activities students learn to measure accurately, record numerical data, perform simple calculations, and draw conclusions (for example, which tree is thicker or taller and how distance and environmental conditions may affect tree growth). Task 2.

During the English integration students work with a prepared task sheet in English. Observing the park or natural environment, students record basic weather and environmental features: note the time of day, weather conditions, air temperature, and wind strength. While completing the task, students use English vocabulary related to weather and seasons (e.g., weather, temperature, wind, sunny, cloudy, cold, warm). Task 1. Students write short phrases or sentences in English describing current conditions, for example: “The weather is cloudy. It is windy.” In this way they learn to apply English in a practical situation, connect it to the real environment, and see that a foreign language can be used not only in the classroom but also in nature study activities. This helps expand students’ vocabulary and shows that nature study can be integrated with foreign language learning.

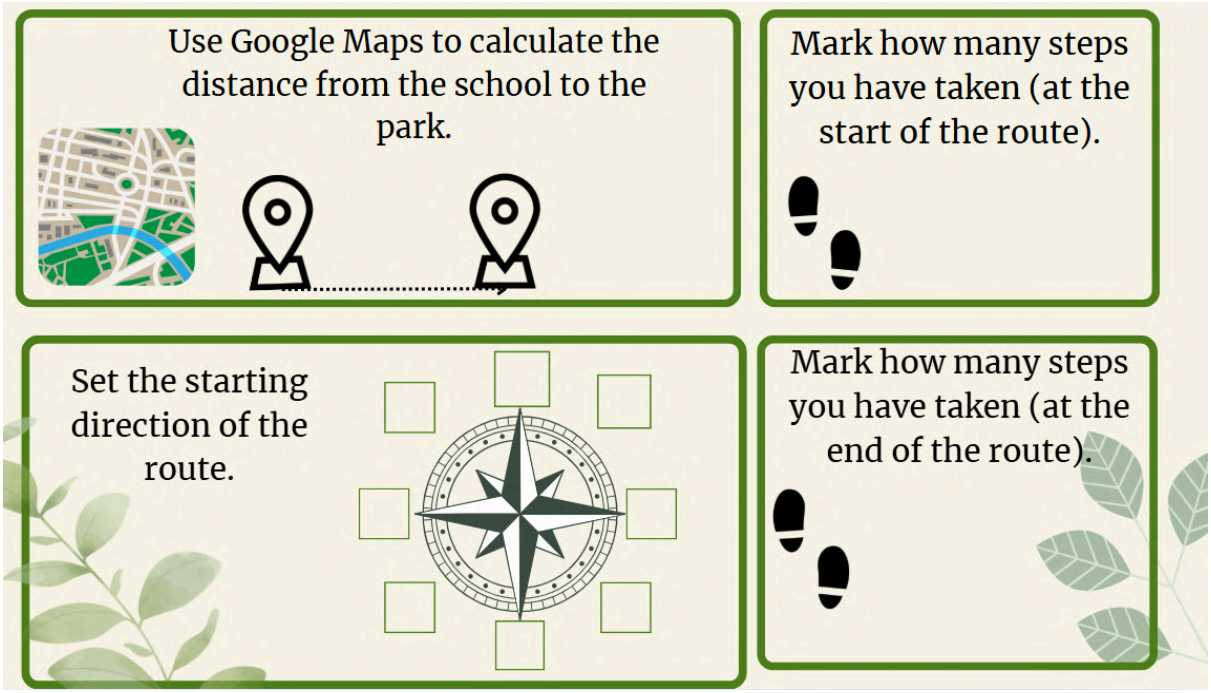
During the biology integration students observe life associated with the selected tree and carry out a simple biological survey. Working in groups, students look for and identify living organisms they notice near or on the tree — these may include insects, spiders, birds, lichens, mosses, or other small organisms. Observed organisms are noted on task sheets and, if possible, photographed while following principles of responsible and safe behavior in nature. Additionally, students collect fallen leaves from the ground (without tearing them from the tree) and compare them. They observe leaf shape, size, margins, venation, color, and texture. Based on observations, students fill in a table comparing the collected leaves according to given criteria. This activity helps students better understand differences between tree species and learn to identify plants by their morphological features. By completing biological tasks students develop observation, comparison, and analysis skills and understand that a tree is not only an individual plant but an important part of the ecosystem providing habitat for other organisms. Tasks 4, 6.

At the end of the lesson students briefly share their observations, state how their studied tree differs from others, and discuss why it is important to know and protect trees. The teacher summarizes the lesson, emphasizing that practical work in nature helped students better understand theoretical material and strengthened their connection with the environment.

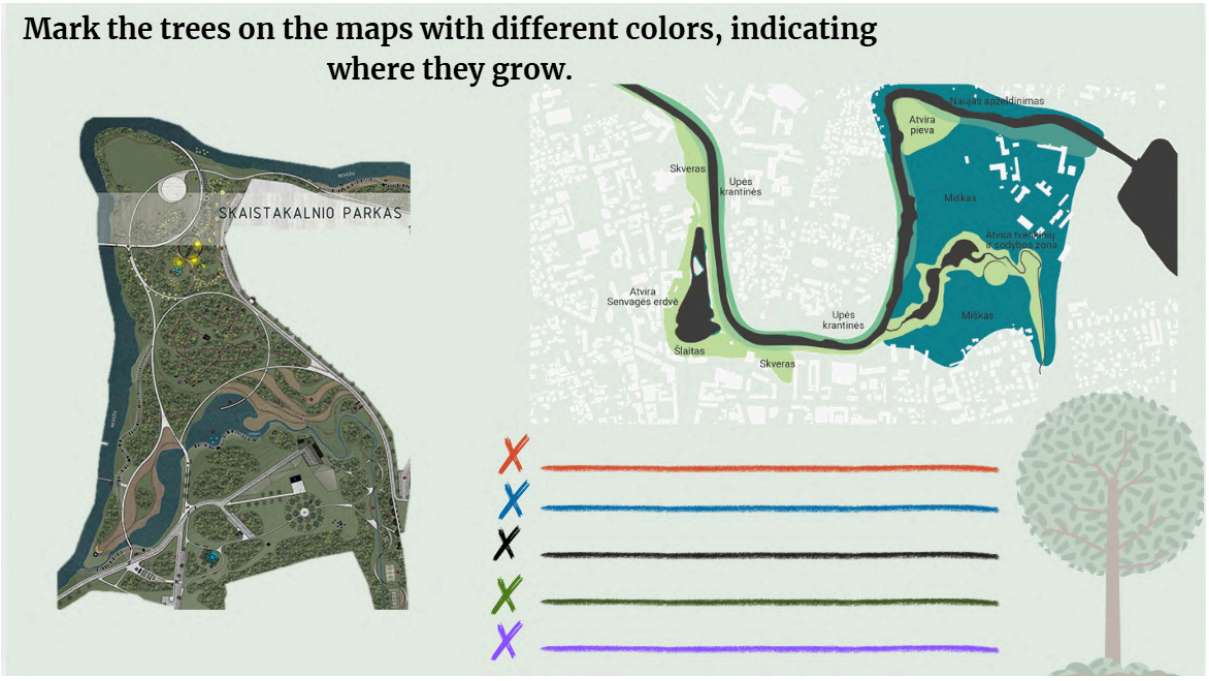
Task 1



Task 2.



Task 3.



PROJECT PRESENTATION

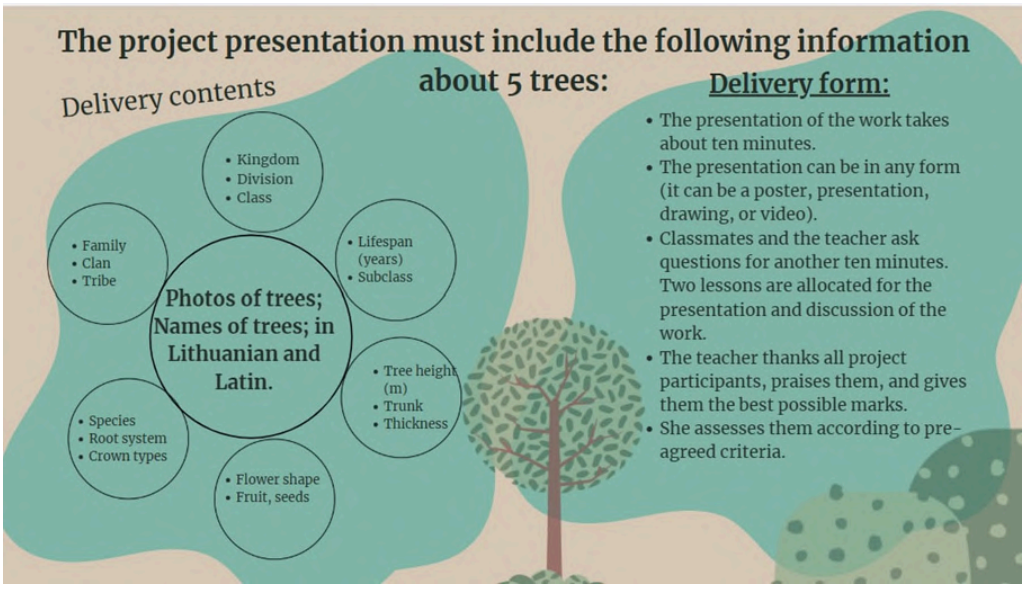
After the research and information-gathering stages are complete, students prepare their project presentations and present them to their classmates. The aim of the presentation is to summarize collected knowledge, demonstrate the results of practical work, and share experiences gained during the project.

Students work in the same groups formed at the start of the project. Each group prepares a presentation about their chosen tree species and the related research results. The presentation may be delivered in digital form (e.g., slides) or as a poster. Students assign roles within the group — some are responsible for presenting information, others for visual materials or managing the presentation flow.

During the presentation students systematically provide the following information: state the tree's Lithuanian and Latin names, describe its external features, growth location and conditions, and present measurements and observations. Biological observations about organisms found near or on the tree and results of leaf comparisons are also presented. Photographs, if taken, are included in the presentation as visual evidence.

During the presentation students explain the methods they used to complete tasks, the difficulties they encountered, and how they solved them. Classmates are encouraged to ask questions, and the presenting group learns to answer with reasoned responses, justify their conclusions, and listen to others' feedback.

After each presentation the teacher gives feedback, highlighting strong aspects of the work, effort, creativity, and group collaboration. Students are also invited to briefly reflect on their experience — naming what new things they learned, what they found most interesting, and what they would do differently if they ran the project again. This presentation stage helps students develop public speaking, communication, and critical thinking skills, builds self-confidence, and shows that their work is meaningful and may be useful to others.



REFLECTION

At the end of the lesson (or project) a collective reflection is held in which students think over their learning experience, evaluate their work, and share impressions. Reflection uses a visual scheme where each student can choose the reflection aspect that suits them best and express it verbally or in a short written note.

Students are invited to share what they liked most while carrying out activities in nature or in the classroom. They name their **favorite tasks**, for example: tree identification in the park, measurements, photographing, or group work. Students also discuss **what was difficult** — the challenges they faced and what required more effort or time.

During reflection students consider what they learned while working in the group, how responsibilities were distributed, and whether they managed to agree and cooperate. They also evaluate the teacher's help, indicating **how the teacher supported** the learning process — by explaining tasks, encouraging them, guiding in the right direction, or helping to solve problems.

An important part of reflection is future planning. Students answer **what they would like to do in the future** if this activity or project were repeated. They propose ideas for further improvement of activities, additional things they would like to try, or topics they would like to explore more deeply.

Lesson 4. GEOGRAPHY & ENVIRONMENTAL-EDUCATION LESSON IN THE FIELD
"Nature Detectives"

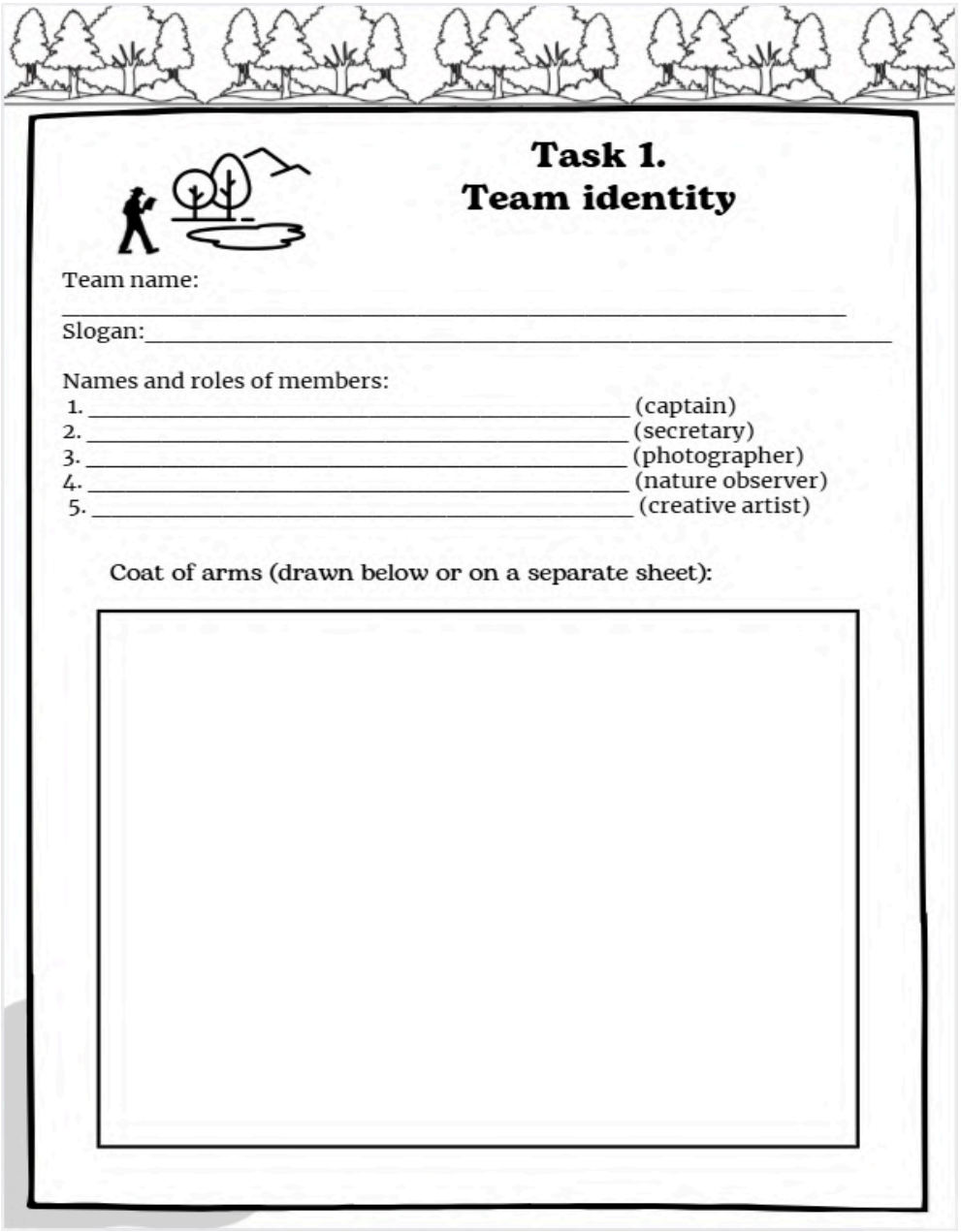
Lesson's aim
Develop pupils' ability to see the natural environment as a single ecosystem, understand the mutual relationship between humans and nature, and shape responsible, sustainable outdoor behaviour. While exploring, pupils practise observation, investigation and evaluation, grow respect for nature and realise that every individual is responsible for its preservation.

Lesson objectives

- Recognise a forest or park as a living system of biotic and abiotic components; understand that the same ecological processes occur in an urban park as in a wilderness forest. While observing, pupils learn to notice animal signs, plants and micro-habitats usually overlooked in everyday life.
- Encourage pupils to analyse environmental phenomena and frame hypotheses. By tracking animals, examining plants or studying surroundings they draw evidence-based conclusions, developing critical thinking and inquiry skills.
- Strengthen teamwork and communication. Activities are designed so that pupils share roles, co-operate, exchange observations and make joint decisions, learning responsibility, respectful dialogue and listening.
- Shape values and environmental awareness. Through personal contact—e.g. the "Tree Friend" activity—pupils learn not only to know nature but to respect it, understand its fragility and its importance for human life.
- Prompt reflection and personal commitment. At the end pupils consider what they have learnt and how they can change daily behaviour to help protect nature.

Competences developed

- Cognitive: observing, comparing, analysing natural objects and phenomena; understanding ecosystem functioning and human impacts.
- Communication: discussing in teams, presenting discoveries, formulating ideas orally and in writing, expressing opinions clearly and respectfully.
- Social & civic: co-operating, keeping agreements, taking responsibility for joint tasks, recognising nature protection as a civic duty.
- Creativity: inventing team symbols, finding creative solutions, interpreting nature through language or images.
- Personal: self-reflection, self-confidence, responsibility for one's actions, understanding oneself as part of nature.



Task 1.
Team identity

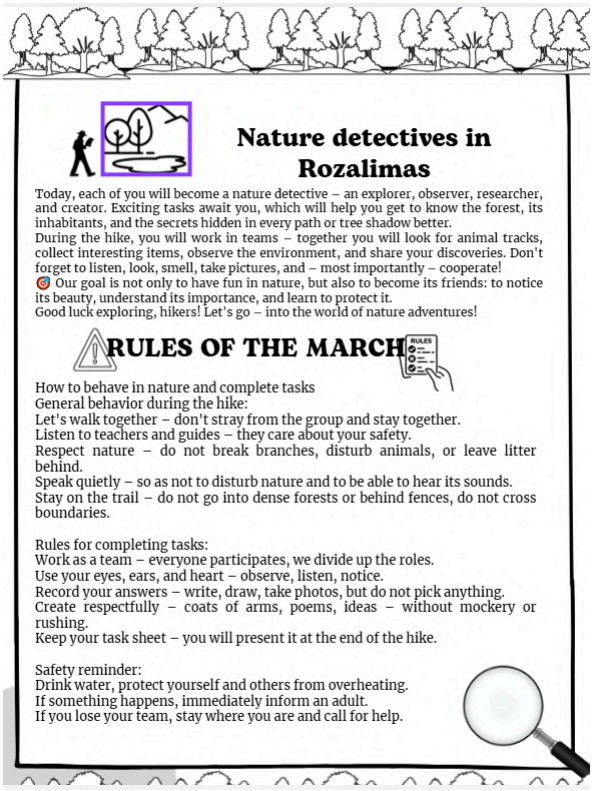
Team name:
_____

Slogan:_____

Names and roles of members:
1. _____ (captain)
2. _____ (secretary)
3. _____ (photographer)
4. _____ (nature observer)
5. _____ (creative artist)

Coat of arms (drawn below or on a separate sheet):

Beginning – setting the tone
The teacher explains that today's learning will happen outdoors. Every pupil becomes a "nature detective"—an observer, investigator and creator whose task is to notice, understand and respect the environment. Safety and responsibility rules are discussed together: stay with the group, listen to adults, leave no litter, pick nothing, disturb neither plants nor animals. Pupils are encouraged to explain the meaning of each rule, turning obligation into understanding.



Nature detectives in Rozalimas

Today, each of you will become a nature detective – an explorer, observer, researcher, and creator. Exciting tasks await you, which will help you get to know the forest, its inhabitants, and the secrets hidden in every path or tree shadow better.
During the hike, you will work in teams – together you will look for animal tracks, collect interesting items, observe the environment, and share your discoveries. Don't forget to listen, look, smell, take pictures, and – most importantly – cooperate!
🎯 Our goal is not only to have fun in nature, but also to become its friends: to notice its beauty, understand its importance, and learn to protect it.
Good luck exploring, hikers! Let's go – into the world of nature adventures!

RULES OF THE MARCH

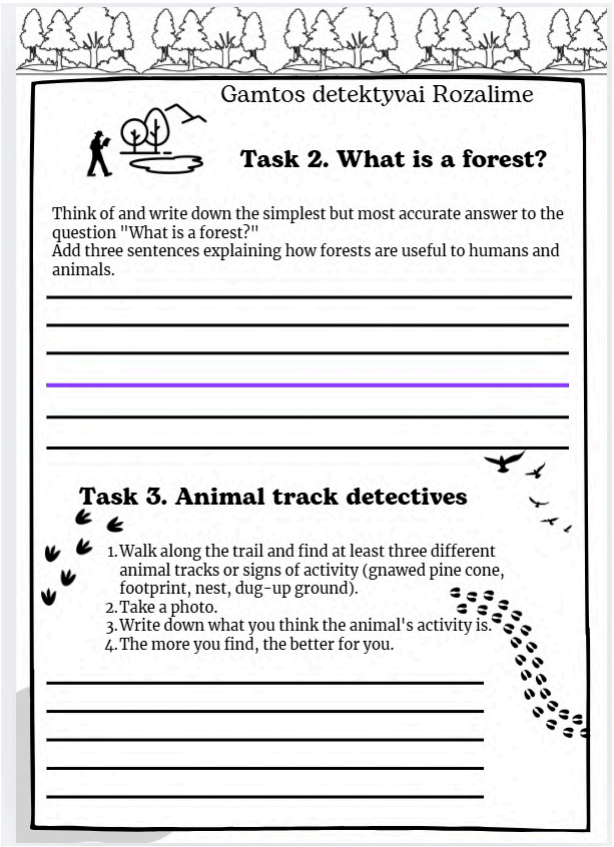
How to behave in nature and complete tasks
General behavior during the hike:
Let's walk together – don't stray from the group and stay together.
Listen to teachers and guides – they care about your safety.
Respect nature – do not break branches, disturb animals, or leave litter behind.
Speak quietly – so as not to disturb nature and to be able to hear its sounds.
Stay on the trail – do not go into dense forests or behind fences, do not cross boundaries.

Rules for completing tasks:
Work as a team – everyone participates, we divide up the roles.
Use your eyes, ears, and heart – observe, listen, notice.
Record your answers – write, draw, take photos, but do not pick anything.
Create respectfully – coats of arms, poems, ideas – without mockery or rushing.
Keep your task sheet – you will present it at the end of the hike.

Safety reminder:
Drink water, protect yourself and others from overheating.
If something happens, immediately inform an adult.
If you lose your team, stay where you are and call for help.

Team building

Pupils form investigation teams. Each team chooses a name, slogan and roles (leader, recorder, time-keeper, etc.) and creates a simple team emblem. This stage boosts emotional engagement, team spirit and creativity.


Gamtos detektyvai Rozalime

Task 2. What is a forest?

Think of and write down the simplest but most accurate answer to the question "What is a forest?"
Add three sentences explaining how forests are useful to humans and animals.

Task 3. Animal track detectives

1. Walk along the trail and find at least three different animal tracks or signs of activity (gnawed pine cone, footprint, nest, dug-up ground).
2. Take a photo.
3. Write down what you think the animal's activity is.
4. The more you find, the better for you.

What is a forest?
Teams try to define “forest” in one meaningful sentence and list benefits for people and wildlife. The discussion shows that a forest is more than a collection of trees—it is a complex system with ecological, social and economic value.

Tracking & signs of life
Even if animals are invisible, signs remain. Pupils search for footprints, gnawed cones, nests, burrows, droppings, feathers, etc., photograph them and hypothesise which species left them. The activity trains close observation, hypothesis-building and awareness that humans are only one part of the ecosystem.

Task 4. Find me in nature

Find, collect, or photograph and mark all of the items listed

2 items that are green
Something very soft
Something round
☒A flower
☒Something brown
☒Something heavy
☒Something very light
☒An object smaller than your thumb
☒Something that starts with the letter k
☒Something that smells very good

Task 5. Tree friend

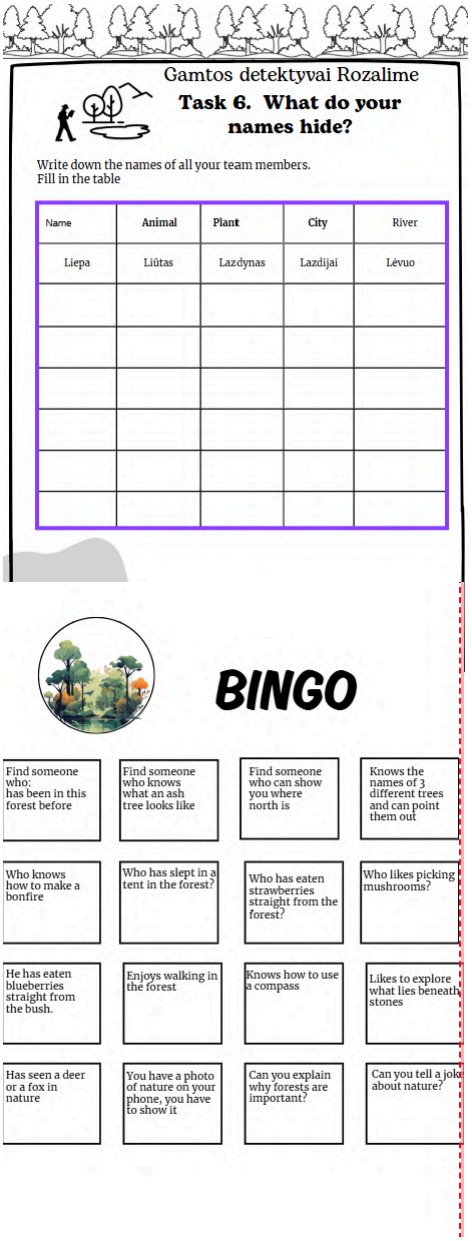
Choose the tallest tree:
Measure its circumference with your hands and take a photo.
Find out whether it is deciduous or coniferous.
Come up with a name for it and explain why you like it.
Examine the area around the tree to see if there are any anthills,
moss, or mushrooms.

Sensory hunt – "Find me in nature"
Pupils look for objects that match given qualities—colour, weight, texture, scent—using only senses, without picking or damaging anything. They learn that investigation can be respectful.

Tree Friend – creating a personal bond
Each team selects one tree, measures its girth, identifies the species, gives it a name and records what lives on or around it. By "adopting" their tree pupils practise slow observation and develop emotional attachment to a living organism.

Language & logic tasks
Pupils decode hidden proverbs, analyse their own first names for nature connections, and interpret nature-themed sayings, integrating geography with language and culture.
Example proverbs (decoded):

- Who protects nature protects themself.
- Where a tree grows, a person rests.
- Nature obeys only those who listen to her.
- Nature is the only book whose every page is meaningful.
- Nature is a book that must be read and understood correctly.
- A person's behaviour in nature is the mirror of their soul.



Gamtos detektyvai Rozalime

Task 6. What do your names hide?

Write down the names of all your team members.
Fill in the table

Name	Animal	Plant	City	River
Liepa	Liūtas	Lazdynas	Lazdijai	Lėvuo

BINGO

Find someone who: has been in this forest before	Find someone who knows what an ash tree looks like	Find someone who can show you where north is	Knows the names of 3 different trees and can point them out
Who knows how to make a bonfire	Who has slept in a tent in the forest?	Who has eaten strawberries straight from the forest?	Who likes picking mushrooms?
He has eaten blueberries straight from the bush.	Enjoys walking in the forest	Knows how to use a compass	Likes to explore what lies beneath stones
Has seen a deer or a fox in nature	You have a photo of nature on your phone, you have to show it	Can you explain why forests are important?	Can you tell a joke about nature?

End-of-lesson
“Bingo” & reflection

A short bingo game encourages sharing findings and self-evaluation. Finally pupils state concrete promises: e.g. “I will always take my litter home,” “I will tell friends not to pick flowers,” etc. The teacher closes with the key message: behaviour in nature reflects personal values; by protecting nature we protect ourselves.