

THE FOREST

OUTDOOR Classroom

NORRTÄLJE 
NATURCENTRUM
ekologiskt science center


TEACHER 's Guide



GLOBALA MÅLEN
för hållbar utveckling




Nordplus

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The purpose of this teaching material is to aid teachers who want to move their teaching outside of the classroom. There are lessons with materials for primary schools, focusing on exploratory teaching in the forest.

We know that students learn in different ways and that through outdoor education under conscious leadership, their knowledge about – in this case, the forest – can increase. By engaging all their senses and being in the forest they will gain their own unique knowledge and experiences. Primary school students should have a good understanding of biotopes and ecosystems on land.

The aim of this box is to improve students' understanding of ecology and the connections within the forest ecosystems. The material is designed to be a foundation that can be adapted to the current learning objectives and students' abilities and prior knowledge. The teacher actively participates as a co-explorer and investigator, sharing their students' curiosity and wonder. Divide the students into pairs or small groups to encourage greater participation. You can read more about outdoor education in tab 2.

The following is a suggested approach to the classroom activities before and after using the material in the field.

Preparatory work in the classroom


- Introduce central concepts in ecology
- Read about forests
- Show on a map or chart where the field work is taking place

Hands-on exploration outdoors

- Go through the boxes and select the elements that best support your outdoor teaching. Choose things that complement your teaching and help you achieve your goals.

Follow-up work in the classroom

- Review and let the students tell each other what they did in the field.
- Process and validate knowledge, impressions and feelings from the excursion through various presentation techniques, games, and creative activities.

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- Expand your knowledge about life in the forest
- Encourage students to visit the forest.

This box is about exploring the forest. There are also boxes for exploring the ecological connections in the sea, meadows and lakes/rivers. All of these can be borrowed for free from Norrtälje Nature Center for 3 weeks.

The mobile classrooms have been developed by Norrtälje Nature Center in a Nordplus Horizontal project where the nature school in Tartu, Estonia along with the organization Håll Litauen Rent, Lithuania have been project partners.

Target audience

The primary target audience for the mobile classrooms is primary school students and teachers. Nonetheless, there are others who can also use and be inspired by the material in the box and the teacher's guide, such as teacher education and nature and environmental organizations. The boxes are also well-suited for activities with the general public aimed at improving understanding of ecology and the connections in nature, so that we can work together for more sustainable systems.

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Definition of outdoor education

Outdoor education is an approach that aims at learning in an interplay between experience and reflection, based on concrete experiences in authentic situations. Outdoor education is also an interdisciplinary field of research and education which, among other things, involves:

- *that the learning space is also moved out into social life, natural and cultural landscapes,*
- *that the interplay between sensual experience and bookish education is emphasized,*
- *that the importance of the place for learning is highlighted,*


to interact between outdoors and indoors in teaching and learning.

(cf. the definition in the National Encyclopedia NE, online version 2021, Dahlgren, and Szczepanski, 1998, Dahlgren et al., 2007, p. 11, Szczepanski, 2008, p. 15, Szczepanski, 2024 under publication at IBL, Linköping University)

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Outdoor education is a teaching approach where the personal experience, active learning and sensory impressions are central. By immersing students in diverse outdoor environments, this approach promotes deeper engagement and helps students remember what they have learned, as the knowledge is anchored in real-world experiences. The location is significant as an educational space from a learning and teaching perspective, and opens up more possibilities for different ways of learning. The didactic question of WHERE the teaching should take place is central. At the same time, it is important that the learning takes place alongside more traditional indoor teaching, in order to connect theory and practice.

Outdoor education is not only about nature, ecology and outdoor recreation, but equally about social studies, history, geography, sustainability and language. Outdoor education aims to highlight connections, making it well-suited for interdisciplinary studies. In an outdoor setting, with mindful leadership, students work toward many learning goals simultaneously. This is essential if schools and students are to achieve the ambitious goals and guidelines set out in the curriculum. However, this requires teachers to collaborate across subjects in order to give students a comprehensive view. Together with other

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students and the teacher, the students experience first-hand, and experiences form a basis for comparison, analysis, reflection and conclusions. The best learning is that which resonates and engages, a learning that is grounded in reality and facilitates the encounter between the student and the real world. It promotes questions about the content and meaning of the material.

The learning occurs in the interaction between the indoor and outdoor environments, the method, the leadership, and the interactions between students. The investigative work outdoors should be followed by a processing phase. How do we manage the students' new knowledge, experiences and insights? The indoor processing phase, which includes seeking new knowledge from books or online sources, reflection and analysis, can take various forms. Reflection is central in the process of learning, and is essential to convert experiences and activities to self-formulated knowledge. There are different ways to describe the learning processes of outdoor education. The following model is inspired by Arne Nikolaisen Jordet, *Klasserommet utenfor tilpasset opplæring i det utvidet læringsrom*¹. The goal of the teaching should always be clear to the student.

A. Introduction phase

Purpose and goal is made clear. The teacher presents the material to the students. Preparations.


B. Practical teaching in groups outdoors

B1. The students work in groups, in pairs or individually.

B2. Presentation of the groups' work – walking from group to group.

The teacher leads conversations and reflections and concludes by giving an oral summary (auditory structure).

¹ Nikolaisen Jordet Arne, *Klasserommet utenfor tilpasset opplæring i det utvidet læringsrom*, Cappelen Akademisk forlag, 2010

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C. Processing phase

Further work indoors in a classroom based on the students' new experiences, knowledge and questions.

Reading, writing and in-depth study. Reflection, analysis. Formulate one's knowledge.


Presentation/application.

... and then it starts over ...

It is important to make use of the student's earlier experiences and knowledge. The student must be actively involved in their learning. The group is significant in outdoor education. Conversation and communication are central for learning. Especially important are conversations that build chains of knowledge, conversations that train students' ability to reason and argue, as well as exchanges of experience of various kinds. It is important to succeed together, as well as being allowed to fail. The social climate in the group is crucial for a good learning environment. Hattie argues in his study *Visible learning*² that if the classroom environment is not only tolerant of, but also welcomes mistakes, is characterized by challenging tasks and supports engagement and perseverance, then successful learning can be further strengthened. Building an open climate in the classroom requires a conscious effort in leadership. Continuous outdoor education through the school years is a way to build strong relationships between students, as well as between students and teachers. In diverse environments students are provided with good opportunities to demonstrate different abilities and aspects, which builds self-esteem and helps foster a safe environment in the group.

In summary, outdoor education is about learning both indoors and outdoors in interaction, aimed at improving curriculum goal attainment and making teaching more accessible, as outdoor education naturally offers varied teaching in diverse environments. Moreover, outdoor education provides an active education that incorporates physical activity and movement in every subject, which is beneficial for students' health. Spending time in green

² Hattie John. *Visible learning: a synthesis of over 800 meta analyses relation to achievement*, Routledge, 2009


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environments also has a positive impact on students' mental health, which is very important today. Dare to step out of the classroom with your students!




For more information:

Research overview Outdoor Education, Linköping University
[Teaching with the Sky as a Ceiling \(2018\)](#)

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Positive effects of outdoor education with students in conscious leadership


- Increased knowledge of nature and a greater connection to it
- Diverse learning environments
- Opportunity to see connections and the bigger picture
- Opportunity to connect theory and practice
- Personal first-hand experiences
- Exercise, fitness, movement and pulse
- Physical and mental health
- Excitement, adventure and play
- Social and emotional competence
- Community
- Happiness, well-being
- Self-esteem through choosing one's own challenges

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Helpful considerations for outdoor education

Here are some tips and support to increase confidence in leadership during outdoor education and ensure successful outdoor lessons.

- Strong subject, nature and outdoor skills increase confidence in leadership.
- The outdoor learning environment should be carefully chosen. If you have not been at the location before, it is always a good idea to go there in advance so you know how you can organize the teaching in relation to the environment. For younger children in preschool or students in the lower grades of primary school, it is beneficial to often return to the same location as it builds a sense of security and makes it easier to focus on the teaching. On the other hand, for older students new and unknown environments can lead to increased focus in investigative work.
- Prepare the students carefully for what you will be doing when you go outside. What rules should apply?
- Respect any fears in the group (for example fire, water or insects).
- The teacher should always be a good role model when it comes to clothes, safety and attitude.
- The teaching should be adapted to the season and weather conditions. Gather the students in a circle for briefings and find shelter so that the voices can be heard clearly. On sunny days it is best to stand so that the students have the sun behind them and do not have to squint.
- Have good safety routines and equipment with you (see the section on Safety in outdoor education)
- Remind the students to wear appropriate clothing and durable shoes/boots.
- Aim for long outdoor sessions to avoid stress. The best approach is to collaborate with other teachers to integrate subjects, allowing you to spend a half day or full day outdoors.

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The work with the mobile outdoors classroom covers multiple different subjects in the curriculum, and subject integration takes place with biology, language, art and physical education. It is beneficial for multiple subjects to collaborate, enabling outdoor education for a full day. The hope is that through outdoor education in different biotopes you will be able to concretize and provide students with first-hand experiences both related to both core content and knowledge requirements.

The following are connections between the mobile classroom and Swedish *the Curriculum for Compulsory School, Preschool Class and School-Age Educare* (lgr22);

2.1 Norms and values

Schools shall actively and consciously influence and stimulate pupils to embrace the common values of our society and express them in practical everyday action in different contexts.

Objectives


The school's objectives are that each pupil

- *shows respect and care for the local environment as well as the environment from a broader perspective.*

2.2 Knowledge

Schools are responsible for ensuring that pupils acquire and develop the knowledge necessary for each individual and member of society. This knowledge also provides a foundation for further education. Schools shall contribute to the harmonious development of pupils. A sense of discovery, curiosity and the desire to learn shall form the basis of the school's activities.

The natural sciences evolved from people's curiosity and need to know more about themselves and the world around them. Knowledge of biology is of great importance for the development of society in areas as diverse as the use of natural resources, the environment, and health. Knowledge of nature and humans gives people the tools to not only shape their own well-being, but also promote sustainable development.


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Core content f-3

- *Animals, plants and fungi in the local environment, how they can be grouped, and the names of some common species. (Biology)*
- *Simple food chains that describe relationships between organisms in ecosystems. (Biology)*
- *Simple field studies, observations and experiments. Performing and documenting the investigations with words, images and digital tools. (Biology)*
- *Oral presentations and oral narration. Objects. (Swedish)*
- *Active listening and retelling important parts of the content. (Swedish)*
- *Exploration of possibilities for and realisation of games, physical activities and spending time in nature and other outdoor environments. (Physical education and health)*
- *The basics of the right of public access. (Physical education and health)*


Core content 4-6

- *Food chains and cycles in the local environment. The interplay between animals, plants and fungi, and how some environmental factors affect them. Photosynthesis and cellular respiration. (Biology)*
- *How animals, plants and fungi can be identified and grouped in a systematic way, and the names of some common species. (Biology)*
- *Human dependence on and impact on nature, with links to the use of natural resources, sustainable development and ecosystem services. Nature as a resource and our responsibilities when using it. (Biology)*
- *Field studies and experiments using both analogue and digital tools. Planning, performance, evaluation of results and documentation with words, images and tables. (Biology)*
- *Oral presentations and oral narration for different listeners. Organisation, with introduction, content and conclusion. Key words, images, digital media, tools and other aids for planning and delivering an oral presentation. How gestures and body language can affect a presentation. (Swedish)*
- *Exploration of possibilities for and realisation of outdoor activities, games and physical activities in various nature and outdoor environments during different seasons. (Physical education and health)*
- *Rights and obligations in nature according to the right of public access and its application in practice. (Physical education and health)*

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Core content 7-9

- *Local and global ecosystems. The relationships between populations and available resources. Photosynthesis, cellular respiration, material cycles and energy flows. (Biology)*
- *Human impact on nature locally and globally, and how to promote sustainable development at the individual and societal level. The importance of biodiversity and ecosystem services.(Biology)*
- *Field studies and experiments using both analogue and digital tools. Formulation of research questions, planning, performance, evaluation of results and documentation with images, tables, diagrams and reports.(Biology)*
- *Different forms of dialogue. Active participation; expressing feelings, thoughts and knowledge; listening; asking questions; making inferences; and expressing and responding to arguments.(Swedish)*
- *Oral presentations and oral narration for different listeners. Adapting language, content and organisation to the purpose, listener and context. Speech scripts and various tools for planning and delivering oral presentations, both with and without digital technolog.(Swedish)*
- *Planning and performing outdoor activities in different environments during different seasons. (Physical education and health)*
- *Rights and obligations in nature according to the right of public access and its application in practice. (Physical education and health)*
- *Cultural traditions in outdoor life and other outdoor activities.(Physical education and health)*


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Agenda 2030 and the Global Goals were established in 2015 by leaders from around the world. The goals aim to help us achieve social, ecological and economic sustainability. The goals are to be reached by 2030. Agenda 2030 and the Global Goals aim to foster sustainable development. This means we must live in a way today that ensures future generations will have the same opportunities as we do. The Global Goals are indivisible and interconnected. It is best to use the Global Goals as a starting point for learning about sustainable development in schools. Working with sustainable development should not be seen as something separate, but as something that permeates all subjects in school.

According to the curriculum, one of the school's missions is to "provide students with the opportunity to develop knowledge about how the various choices people make can contribute to sustainable development". Everyone knows we face major challenges, and by providing all students with a good education, we contribute to Goal 4. This is the school's primary mission in working towards achieving the Global Goals. The materials in the boxes are a step towards more outdoor education in schools and giving more students knowledge about ecology and science, as well as their own personal experiences of nature and scientific phenomena. All activities are linked to the curriculum and the Global Goals.



By teaching in the forest, we have the opportunity to develop awareness and knowledge about ecology. The forest hosts a great diversity of life and ecosystems, contributing to various ecosystem services. Among the Global Goals, it is of course Goal 15, *Life on Land*,

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that is the primary focus here. In the process, we also create opportunities to reflect on several other goals, such as Goal 3, *Good Health and Well-being*, and Goal 12, *Responsible Consumption and Production*.



Read more about the Global Goals;

<https://www.globalgoals.org/goals/>

<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

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To teach in the local environment and in different biotopes, it is important to think about safety. Thinking through the planned teaching situation and carrying out a risk assessment with associated measures to mitigate risks enables the teacher to teach effectively and be present.

Having a well-prepared backpack specifically for outdoor teaching is highly recommended.

Suggested contents:


- First aid kit
- Bag with hygiene items such as toilet paper, hand sanitizer, and garbage bags
- Water
- Consider creating safety cards with action plans for emergencies, such as accidents, a missing student, or any other potential risks.

Always bring a fully charged phone to use in emergencies. If a child goes missing, immediately call 112. A child can move far in just 15 minutes, and the search radius expands quickly. If a child/student is seriously injured, stung by a wasp, or similar, call 112 or the medical advice line for guidance. If an emergency response is required, the responsibility lies with the emergency operator. Other useful numbers to have include those for the school, students' guardians, the poison information center, and local healthcare clinics.

When conducting outdoor lessons near the shore, water, or natural ice, it is especially important to conduct a thorough risk assessment and prepare as much as possible to prevent accidents.

With these preparations, we hope you have exciting, meaningful and high-quality school days.


Good luck!

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The Right of Public Access ("Allemansrätten") gives us a unique opportunity to experience nature in Sweden. All nature is owned by someone, so we are visitors and must show consideration and respect, both for animals and plants, as well as for other visitors and landowners. The Right of Public Access applies both on land and water. We use the Right of Public Access when we hike in the forest, climb, play in nature, pick berries, kayak, or sit on a rock in the archipelago and watch the sunset. The Right of Public Access is freedom with responsibility. It is not a law, but guidelines for how we should behave in nature. A good summary is "do not disturb, do not destroy". Remember that fishing and hunting are not included in the Right of Public Access, nor is driving motor vehicles off-road. If you're unsure about what you're allowed to do in a specific area, ask the landowner.



- Be considerate of those who live or work at a location - you are free to roam in forests and nature. You use the Right of Public Access when you pass houses from a distance and take a detour around fields or newly planted forests. If you're unsure whether you're disturbing someone, feel free to ask. Remember to keep your distance from grazing animals and always close gates.
- Make safe fires - you can make a fire in nature under safe conditions. It's best to always choose a designated fire site, or select gravel or sand if you need to make a fire in other places. Always keep an eye on the fire and put it out properly. It's your

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responsibility to check if there's a fire ban in the municipality or county and, if so, bring food that doesn't require a fire.

- **Pick berries, flowers, and mushrooms** - the Right of Public Access gives you the opportunity to enjoy what nature offers. You can take branches, pine cones and nuts that are already on the ground. You may pick berries, as well as flowers and mushrooms that are not protected by law.
- **Take your trash home** - leave no trace of your presence in nature.
- **Cycling** - adjust your riding style to the terrain and avoid areas that are wet or sensitive. If many of you cycle frequently in the same area, remember to talk to the landowners.


The Right of Public Access does not apply in all areas. In nature reserves, parks, golf courses, beaches and national parks, the Right of Public Access is often restricted. You need to find out for yourself what rules apply in these areas. Learn more about the Right of Public Access:

The Swedish Environmental Protection Agency website:

<https://www.naturvardsverket.se/en/topics/the-right-of-public-access/>

Norrtälje Nature Center's website: <https://norrtaljenaturcentrum.se/allemanstratten/>

Do not disturb, do not destroy – go out and enjoy!


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What exactly is a forest? It can be described as a large area covered with trees. Forests are crucial biotopes and ecosystems. They provide habitats for various plants, trees, insects, birds and animals, while also serving as a vital source of oxygen and a major absorber of carbon dioxide. The world's great forests, particularly tropical ones, are often referred to as the "lungs of the Earth".

The forest is also a space for humans to enjoy outdoor recreation, nature, play and adventure. Additionally, forests provide us with products such as raw materials for paper production, timber for construction, berries, mushrooms and much more.

Forests can be divided into three categories: old-growth forests, unmanaged forests, and managed forests (production forests). Forests can be managed and maintained in various ways. There is a constant struggle between production and conservation, and significant

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research is being conducted on forests and climate, exploring how we can manage and use forests for production with minimal environmental impact and maximum climate benefit. The mobile classroom aims to spark curiosity and inspire exploration of the coastal life in the Baltic Sea and near your school. Through practical investigations involving all the senses we gain first-hand experiences and develop knowledge about the Baltic Sea's organisms and ecology. It is also important for students to get a sense of the place – to experience the shore and the sea with all their senses. The Baltic Sea is a special sea. There are many challenges for all living things, whether you are a fish, a clam or a human. Through wonder, knowledge and awareness we create engagement for a vibrant Baltic Sea. The mobile classroom aims to spark curiosity and inspire exploration of the nature close to your school or in nearby nature reserves with forested areas. Through practical investigations involving all the senses, students gain first-hand experiences and deepen their understanding of ecology. It is also important that students develop a connection to the location. By fostering wonder, knowledge, awareness and engagement, we create the conditions for understanding nature, ecological connections and biodiversity. There is a lot of great material available for schools about the forest. Below are some websites, links, literature, etc.

Websites

Swedish Society for Nature Conservation <https://www.naturskyddsforeningen.se/in-english/>
Swedish Environmental Protection Agency <https://www.naturvardsverket.se/en>
World Wide Fund for Nature <https://www.worldwildlife.org/>
Norrtälje Nature Center <https://norrtaljenaturcentrum.se/>
Swedish Forest Agency <https://www.skogsstyrelsen.se/en/>

Literature


Vatten och land- för det vilda, Redaktion Lars-Erik Nilsson, Bo Nilsson, Lennart Stensson, Umeå universitet

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Book about outdoor education- methods. *Lära in ute*, Swedish Society for Nature Conservation <https://www.outdoorteaching.com/sv/vara-bocker/serien-att-lara-in-ute/>

<https://www.outdoorteaching.com/sv/vara-bocker/serien-att-lara-in-ute/e/45/learning-in-the-outdoor-classroom-e-book/>

Mobile-app
Seek


 NORRTÄLJE NATURCENTRUM <small>ekologiskt science center</small>	9 EXERCISE 1 INSECTS IN DEAD WOOD			
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	Purpose: To investigate and learn more about insects and biodiversity.			
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MATERIALS Loupes, small containers, white cloth, iPad or phone for photographing animals, or alternatively, sketch pads and pencils to draw them on-site.

INSTRUCTIONS

- Begin the lesson in the forest.
- Divide the class into small groups, with around 4-5 students in each group.
- Let the students investigate dead wood.
- Have a field guide, species identification key or other resource on hand to help name the insects. Let the students classify the different species.
- Ask the students to observe the insects closely. They can use loupes and answer the following questions:
 - Are there many of the same kind?
 - Are they fast?
 - Do they have the same number of legs?
- Is dead wood necessary in the forest? Have the students survey the nearby area to see how much dead wood they can find. What would happen if all the dead wood disappeared from the forest?
- At the end of the lesson, gather the students and ask them to share their findings. Was it as expected? The teacher summarizes.

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Species Identification - trees



MATERIALS Bingo cards, whiteboard markers and white cloth.


INSTRUCTIONS

- Begin the lesson in the forest.
- Divide the class into small groups, with around 4 students in each group.

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- Distribute bingo cards to the students and let them mark off the squares as they find each tree species.
- Gather the class together. Lay out leaves from different tree species. Practice identifying the species together by saying the names aloud as a group.
- Kim's Game: Have all the students close their eyes while the teacher removes one leaf. Then, students open their eyes and try to identify which leaf is missing. If they're correct, the teacher shows them the missing leaf. Repeat the game until all students are confident with identifying the different species.

At the end of the lesson, gather the students in a circle and reflect on what was learned. The teacher summarizes.

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MATERIALS Garden spades, loupes, field guide, species identification key, white cloth, iPad or phone for photographing, or alternatively, sketch pads and pencils for on-site drawings and documentation protocol. Optional - Microscope for more detailed studies of soil in the classroom.

INSTRUCTIONS

- Season: Autumn, for the best conditions
- Start with an introduction (either at school or in the forest) about ecological connections and the significance of different species to one another. Define symbiosis. Go over the different parts of fungi and trees. How do trees and fungi interact? What do they gain from their symbiotic relationship?
- Are there fungi that do not live in symbiosis, but are instead parasites? What are they called, and where can they be found?

INVESTIGATIVE FIELD STUDIES IN THE FOREST


- Divide the class into small groups, with around 4-5 students per group.
- Let the students investigate the ground for mushrooms (fruiting bodies). Keep a field guide or species identification key handy to help identify and classify the different species.
- Ask the students to dig up a small patch of peat/litterfall, about 20 x 20 cm. Turn the patch over and study the root threads and the soil content. Use a loupe – can you

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see fungal hyphae? Feel free to take some soil back to the school for more detailed study under a microscope. Have the students restore the investigation site as best as possible.

- Ask the students to identify the trees at the investigation site—are they conifers or broadleaf trees? Are they young or old? How do they appear? Study the trees to see if there are any parasitic fungi on them.
- At the end of the lesson, gather the students and let them share their findings. Was it as expected? The teacher summarizes.




 NORRTÄLJE NATURCENTRUM ekologiskt science center	12 EXERCISE 4 STUDY A TREE			
	BOX 3 The Forest			
	GRADES	f-3	4-6	7-9
	Purpose: To study and observe a tree throughout the seasons, learning about.			
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MATERIALS Note-taking materials.

INSTRUCTIONS

- Divide the students into pairs. Each pair selects a tree in the forest as "their" tree.
- Let the students examine their tree. They should look for buds, leaves, flowers and fruits. Encourage them to take photographs or make sketches of their observations.
- Students can then continue observing their tree throughout the year, documenting changes and studying how leaves, flowers, fruits and berries develop over time.
- Discuss with the students: Which trees are wind-pollinated, and which rely on animals for pollination?
- Let the groups compare their documentation. Do they notice differences or similarities in budding, flowering, etc.?
- At the end of the lesson, gather the students in a circle. Let them share their findings and reflections. The teacher summarizes.
- Return to the tree regularly over the course of a year to observe seasonal changes and transformations.


 NORRTÄLJE NATURCENTRUM ekologiskt science center	13 EXERCISE 5 LEAF PRINTS			
	BOX 3 The Forest			
	GRADES	f-3	4-6	7-9
	Purpose: To discover different tree species and learn more about biodiversity.			
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MATERIALS Scissors, cotton fabric, cutting boards, round stones or hammers.

INSTRUCTIONS

- Begin the lesson outdoors in the forest.
- Divide the class into small groups and have each student find a beautiful green leaf.
- Students cut a piece of fabric measuring 20x20 cm. Place the fabric on a sturdy surface, such as a cutting board. The leaf should be placed on one side of the fabric, then covered by folding the other side over it. Using a round stone or a hammer, students gently tap the fabric where the leaf is positioned. A green pattern will soon emerge as the chlorophyll transfers onto the fabric. Continue until the imprint is clear, then unfold the fabric and remove the “leaf skeleton”.
- Gather the class to display their prints and reflect on what they’ve learned about leaves. This activity provides a tactile experience with chlorophyll and the structure of leaves. The teacher summarizes.


 NORRTÄLJE NATURCENTRUM ekologiskt science center	14 EXERCISE 6 WHAT HAPPENS IN THE FOREST?			
	BOX 3 The Forest			
	GRADES		4-6	7-9
	Purpose: To develop an appreciation for the forest and nature while exploring key ecosystems and ecological concepts.			
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MATERIALS Seat pads.

INSTRUCTIONS

- If students have mobile phones, collect them before starting.
- Provide instructions to the students before they head off and ensure that everyone understands the task. Distribute seat pads. Explain that they will be sitting alone. Younger students should be placed at different spots with enough distance so they can't communicate with each other. Older students can choose their own spots, under the same conditions.
- Instructions for the students:
 - Sit completely still and quiet. Start by closing your eyes and listening. What sounds do you hear?
 - Then open your eyes and look, listen, feel the wind, smell the air and observe your surroundings. Can you see or hear any insects or birds? Any beautiful plants?
 - How many different colors can you see? What do you think it looks like at night?
- Allow students to walk to their chosen spots with their sitting pads.
- After some time, the teacher should gather the students one at a time, in silence, and form a circle.
- Let the students share what they saw, heard, felt and smelled. What emotions did they experience?

	15 EXERCISE 7 FETCH VERSES			
	BOX 3 The Forest			
	GRADES	2	4-6	
	Purpose: To increase knowledge about biodiversity and practice following written instructions.			
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MATERIALS White cloth and Fetch Verses

INSTRUCTIONS

- Start the lesson outdoors in the forest.
- Hand out cards with Fetch Verses to pairs of students. They will need to search for, discuss, investigate and find everything mentioned in their verse. Decide together whether the items should be collected or left in place.
- Let them report their findings to another pair.
- Gather the class in a circle and allow the students to share their experiences. Were there any challenges in finding everything? Reflect together. The teacher summarizes.

This activity can also serve as an introduction to another lesson focused on investigative work in biology or ecology. The Fetch Verses are available in both Swedish and English.

 NORRTÄLJE NATURCENTRUM ekologiskt science center	16 EXERCISE 8 REFLECTION EXERCISE			
	BOX 3 The Forest			
	GRADES		4-6	7-9
	Purpose: To reflect on the forest and ecology, exploring the relationship between humans and nature. This exercise encourages argumentation and understanding others' perspectives.			
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Who Has the Most Right to the Forest?

This is an exercise in arguing and putting yourself in the shoes of others.



MATERIALS Cards to hang in trees with low branches (green bag).

INSTRUCTIONS

- Start the lesson outdoors in the forest.
- Choose a suitable tree. Distribute cards to the students with different roles, such as animals, politicians, landowners, the Swedish Environmental Protection Agency, ticks, etc.
- Students should now reflect on who has the most right to the forest. Then, they should place the cards either high or low on the tree, depending on who or what they believe has the greatest right.
- Once all cards are placed, students share where they put theirs. They can move the cards if they wish. This is an opportunity to consider others' arguments, reassess, listen and empathize with different perspectives.
- Summarize and reflect on how complex the interactions between animals, humans and ecosystems can be, emphasizing the importance of knowledge and sustainability from various perspectives.

17 EXERCISE 9

BOX 3 The Forest

GRADES

f-3

6


7-9

Purpose:

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 NORRTÄLJE NATURCENTRUM <small>ekologiskt science center</small>	18 EXERCISE 10 THE MOOSE			
	BOX 3 The Forest			
	GRADES		4-6	7-9
	Purpose: To learn about ecology.			
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Ecological Activity/Game: "The Moose"



INSTRUCTIONS


- Begin the lesson outdoors in an open space. Divide the class into two groups. One group represents moose, and the other represents their essential needs. The moose group stands at one end of the area, and the needs group stands at the opposite end.
- What do moose need to survive? Food, water and shelter. The class collectively decides which gesture represent each basic need for the moose, for example:
 - Food: Hands placed on the stomach
 - Water: Hands held to the mouth
 - Shelter: Hands held above the head
- The two groups now turn away from each other and each person chooses one of these basic resources - either food, water or shelter. They will use the gestures to show their chosen resource. After everyone has chosen, the teacher signals for everyone to turn around. The people in the moose group must now run and try to "collect" the resource they need by tagging a person from the needs group representing that resource.
- If a moose reaches its resource (food, water, or shelter), it survives the season and can reproduce by bringing its resource back with it, turning that resource into a moose.
- If a moose cannot find its resource, it dies and becomes a resource, moving to the needs side of the field.

	18 EXERCISE 10 THE MOOSE		
	BOX 3 The Forest		
	GRADES		4-6 7-9
	Purpose: To learn about ecology.		
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- Play a couple of rounds so everyone understands the rules. Afterward, take a break to reflect together on the changes in the moose population and the resource availability.
- To add more complexity, introduce other elements of the ecosystem, like predators or hunters. These can stand on the sides and chase moose as they try to reach their resources. If a moose is tagged by a predator or hunter, it becomes a predator/hunter in the next round.
- The class can also suggest other potential risks for moose, such as traffic, and incorporate them into the game.

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	white cloths
	small jars
	loupes
	clipboard
	species identification keys
	field guides
	cutting boards
	whiteboard markers
	hammers and round stone
	green bags with educational materials

	20 ABOUT NNC & NORDPLUS HORIZONTAL			
	BOX 3 The Forest			
	GRADES	f-3	4-6	7-9
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Norrtälje Nature Center is an ecological, outdoor-based science center. We work with knowledge development, experiences and learning through nature conservation, outdoor educational activities and the management of Färsna Gård in Norrtälje. The work is carried out through projects and initiatives at local, regional and national levels. Norrtälje Nature Center has many different collaborations and initiatives with Norrtälje Municipality. This material has been developed by our outdoor education program as a resource for schools and preschools to increase students' interest in science and sustainable development.

The loan boxes have been made possible through a Nordplus Horizontal project, which in 2024 aimed to highlight the unique status and challenges of the Baltic Sea. The project was conducted in partnership with organizations in Norrtälje, Sweden, Tartu, Estonia, and Vilnius, Lithuania. The purpose of the boxes, or "mobile classrooms", is to lower the barriers for teachers and simplify teaching with outdoor teaching methods in the school's local environment, providing more varied instruction.

Nordplus is the Nordic Council of Ministers' program for cooperation between the Nordic and Baltic countries, as well as Åland, the Faroe Islands and Greenland. Through Nordplus, organizations across the educational sector can apply for funding for various types of exchanges and collaborations.

