#OUTDOORCLASSROOM

Leap into the Outdoor Classroom

GUIDE TO TEACHING OUTDOORS

Aulikki Laine, Meri Elonheimo and Anna Kettunen (ed.)

Leap into the Outdoor Classroom - Guide to Teaching Outdoors

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SYKLI

FINNISH SCHOOLS ON THE MOVE

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Contents

1. Inspired by Outdoor Education

Anna Kettunen and Aulikki Laine, SYKLI Environmental School of Finland

"Sitting is the new smoking" concluded the American researcher Richard Louv a few years ago. The more we sit inside at the expense of moving outside, the sicker we get. Taking classes outdoors adds more physical exercise into lessons and increases daily activity levels. In nature, children also encounter motoric challenges that are essential for their development.

Nature is a more versatile learning environment than a classroom. It enables work methods that are active, artistic, and exploratory. In nature, students can use their senses in a variety of ways and to better absorb the studied topics. Learning in nature develops self-esteem and social skills, and often has an positive impact on the mood. Teaching outdoors also benefits the teacher's wellbeing. There is no noise pollution or indoor air -problems in nature!

Both early childhood and basic education play an ever-greater role in shaping a person's relationship with nature. In previous generations, a close association with nature was a self-evident starting point. Nowadays, there are many children to whom the natural world feels alien. The nature experiences acquired as a child have a significant impact throughout one's life. Outdoor education develops and deepens a child's relationship with the nature.

Children and youngsters are concerned about climate change and other troubling news about the state of the environment. The best way to alleviate this worry is by taking action, such as improving one's relationship with nature. Being in nature is balm to emotional and physical wellbeing, which makes in easier to withstand worries.

Movement and Sustainable Values for School Days

More physical exercise has been successfully added to school days with The Finnish Schools on the Move –initiative. First during recesses, then in standard lessons, and gradually by moving lessons outdoors. It has been wonderful to notice how much outdoor teaching has increased over the past years. This notion was still completely novel in Finland ten years ago, when a new teaching material for outdoor maths lessons was introduced. Today, there is an increasing number of teachers who conduct outdoor lessons in many different subjects.

The national curricula for schools and pre-schools emphasize skills over information. This leads to activity based learning and challenges teachers to prosper concrete practices in their lessons. The curriculum for basic education, enacted in 2016, provides a solid base for learning outdoors. Both the general part of the curriculum as well as the subject-specific objectives include guidelines for connecting children with nature. One core value is to utilize nature as a learning environment. During the early years of primary education, outdoor activities and strengthening nature relationships are prioritized. The importance of nature relationships and the necessity of a sustainable lifestyle as a central part of curriculum: "Humans are a part of nature and totally dependent on the vitality of ecosystems. Understanding this is a key to growing as a human being."

Nature is a more versatile learning environment than a classroom.

Support for Outdoor Teaching

Many teachers still shy away from teaching outdoors. Obstacles include: students' inadequate clothing, not knowing which teaching methods are suitable, and the steep demands about what needs to be taught. Safety is also an issue. Going out with a large group of children isn't considered safe. Teachers who teach outdoors have found support in sharing responsibilities with other teachers, meaning that two teachers join forces together, even if it means a larger group. Sometimes a special education teacher or counsellor has supported the teacher at the outdoor lessons.

Teachers can also get external support for teaching outdoors. E.g. nature school days (organized by the Finnish Association of Nature and Environment Schools) with an professional environmental educator, who designs and leads an outdoor teaching program. WWF, the Finnish Nature League, and the Finnish Federation for Recreational Fishing offer mentors for theme days. Suomen Latu, the Outdoor Association of Finland has regional hiking mentors, who can be requested for excursions. Thanks to the in-service training of teachers and early educators, many have dared to step outside in teaching. SYKLI Environmental School of Finland organizes both short-term training, and a year-long environmental education program with emphasis on outdoor learning.

Outsdoors, you can use your senses in a variety of ways.

Teacher training by SYKLI on Harakka Island.

Leap into the Outdoor Classroom -Publication

A wonderful group of professionals have been involved in writing this publication. Contributors have included teachers, researchers, educators, and organizations supporting outdoor learning. We hope this book will serve as an impetus for those interested in outdoor teaching and as an confirmation for those who already have found the joys of teching outdoors!

Outdoor education truly inspires.
Come join the Outdoor Classroom!

Editors

Totally into outdoor learning. Giving a final touch to the publication script. From the left, editors Anna Kettunen, Aulikki Laine and Meri Elonheimo

School with No Walls

Anna Kettunen,
SYKLI Environmental School of Finland

Imagine a school without walls. Where it would be difficult to distinguish recess from lessons. Where the environment transforms into a chalkboard. Students learn from each other, and parents are encouraged to participate. A walk in the woods can be a lesson in maths, art, biology, P.E., or history.

A Lesson on Wasps and Bees under a Tree

In September 2017, I had the opportunity to visit Maple Ridge Elementary School, set in Allco Park - a large woody recreation park, for two days. Thursday morning began at 8:30 am with the sound of a drum, which gathered the school children together. They were divided into four clans, where pupils of different ages studies together. I participated with the "Salmon"-clan. The lesson was held under a tree and was about wasps and bees. The trap had captured many wasps the previous night, and there was a lot to study. The group discussed about wasps, then bees, and the teacher read a story about them to conclude. After that, the pupils were cold, so we started hunting for natural treasures. Each group was given a card with 20 things that can be found in nature, and their task was to find them all!

A Story of my Stone

After snack-time, the pupils were divided into groups by age: 4-6, 7-9, and 10-13 year-olds. I followed the eldest group's lesson about stones. A week earlier, they had all collected a stone from the river. The stone was given a name and some of the stony characteristics were written down in a notebook. Today, the task was to find their own stone among 40 others based on their notes. They discussed about stones, and continued with a written story about their stone.

Searching for a Spider

In the afternoon, I participated in the 7-9 year-olds' lesson on spiders. To start, the pupils wrote "a spider web, spiderweb, spider's web" in their notebooks. Then they were let loose to search for a spider and a web, which they then sketched in their notebooks. The lesson finished, and all the school's children were allowed to play tag together. After this, they packed up their tarpaulins and other things into the school's trailer. To conclude, the clans gathered in their own places to discuss what they had learned. The school day finished at 14:20 and the parents came to pick them up.

The Salmon Theme Piqued a Bear's Interest

That morning, a bear was waiting for us at the school's meeting spot in Allco Park. What an adventure! We waited by the shelter, while the teachers shooed the bear away. School began as usual with the drumming. Everyone was informed about the bear and reminded of the protocol, if the bear were to approach again. Safety issues were thoroughly addressed, and the pupils were well aware of them.

A river runs through Allco Park. The first salmon had just ascended and more were arriving in the next few days. The bear was keen on the treat, but also pupils were intrigued by this natural phenomena. The following weeks were spent studying the riverine nature and fishes. The multidisciplinary theme lessons culminated in a visit by high-school and secondary school students, during which the elementary pupils got to show them what they had learned.

Girls drawing a spider in a school in Canada.

Maple Ridge Elementary School in Canada is specializing in outdoor education. It is a school with no school building!

The Food-Chain Game Charmed the Canadians

On Friday, I got to teach the pupils some Finnish favourites at Allco Park. The food-chain game with wooden clothes pegs was a hit among the Canadian children. We played four rounds, and the school's teachers and principal joined in. At the end of the school day I got many hugs from the little students and was warmly thanked by the teachers.

The entire school's final play session is about to start.

FOOD-CHAIN GAME

Materials: Colour-coded wooden clothes pegs

We need as many clothes pegs as there are pupils. Green pegs are plants, blue ones are herbivores, and red ones predators. Plants are the most abundant group, then herbivores, and predators – just as in nature, for eg. a ratio of 15/7/3. To begin, we can go through different examples of natural food chains. Everyone grabs one clothes peg from the bag. The animals close their eyes, while the plants go off to hide in the forest. In hiding, the plants take root and will no longer move. Then the teacher sends off the herbivores, and they start "eating" the plants by grabbing their clothes pegs. Soon after the predators are set off, and they will "hunt" herbivores by grabbing their pegs. The players must voluntarily hand over their pegs. The game ends when everyone has been eaten, or when the teacher finishes the game. At the end we can see who managed to find food and whether someone was left without. Did any plants survive the herbivores because they had found such a good place to hide?

Hunting for natural treasures at Maple Ridge School.

More on Maple Ridge School: www.foundintheforest.com/

Lessons from Abroad

Finland isn't the only country that values outdoor learning. Sweden has its At Home in Nature (I Ur och Skor) schools and daycare centers, where the teaching is outdoors every day. The At Home in Nature-pedagogy utilizes different senses, through which the whole body will support learning. Nature is the best classroom – it facilitates movement, play, and exploration. The At Home in Nature -activities incorporate wilderness skills and nature experiences. Besides teacher training, the At Home in Nature -teachers have also studied nature education and wilderness skills, which assures their ability to teach outdoors whenever possible.

In Cananda's Maple Ridge, there is an elementary school without a school building, emphasizing strongly on environmental and adventure education and outdoor pedagogy. Teachers, students, researchers, and parents work together to develop this unique learning environment, which challenges the traditional modes of learning. The learning environment mainly covers the park and forest areas, but libraries and other public places are used, too. Learning happens through personal experiences via active learning and outdoor exploration. There are 88 pupils, aged 4-13 years, 4 teachers, a principal and several assisting teachers.

There are many Forest Schools in England. Many of them are located close to schools, and the same teachers work there. Many of these teachers have attended a paid training by the Forest School Association. There are also other type of forest schools, such as Finnish nature schools, where the teacher is specialized in working solely outdoors and tutoring classes and teachers to carry out outdoor education.

In 2018, the International Outdoor Classroom Day gathered a total of 1 800 000 children out to learn. In Finland alone there were over 20 000. Other countries often look to Finnish schools as a model example regarding education. However, in outdoor classroom we can look up to the world for inspiration.

2. What is an Outdoor Classroom?

"Vision 2020: Outdoor classrooms are widely used learning environments in Finnish schools. Multidisciplinary learning takes place in outdoor classrooms in the vicinity of schools. Easily accessible outdoor classrooms are within a 5-10 minutes walking distance from school. Weekly classes are a standard routine, which increases physical activity and wellbeing at school." (Excerpt from "Outdoor Classrooms – exercise and learning in nearby nature"-project application, year 2015.)

The outdoor classroom can be a schoolyard, park, or even a nearby football field. It can be a nearby forest, marsh, creek, lake or seashore. The outdoor classroom lessons can sometimes be held in built structures such as tipi-like huts, lean-tos or even in schoolyard shelters. The outdoor classroom is a classroom outdoors, i.e. a learning environment outside of the school building. A place where the school's curriculum can be carried out. It is also a way of working – regular outdoor classes bring movement into school days. Movement is a natural part of being in nature. Outdoors the students turn into active doers. This chapter introduces the concepts of outdoor learning, and teachers' perceptions of it.

We are the steering group of the Outdoor Classroom -project. Here's out view of the outdoor classroom.

The steering group balancing at Villa Elfvik during the first meeting of the Outdoor Classroom -project in 2016.

Steering Group's Insights into Outdoor Classroom

- Place and pedagogy - the outdoor classroom is an environment for learning outdoors.
- The outdoor classroom can be located anywhere outside, in a safe area. It can be a schoolyard or a forest. It can be a structure or an open area. The same place can be used on a routine basis or teaching can take place in a changing setting, either in cultural- or natural environments.
- The outdoor classroom is as much a method as it is a physical place for teaching. There are rules, routines, practicalities, safety issues, continuity in lessons, and the specific needs of the group have to be taken into account. When using the same location, it is good to agree on spot where the teaching begins and where it ends.
- A good outdoor classroom is located close to the school or is easily accessible by bus or bike. Structures like lean-tos and tipi-like huts are not necessary, but very convenient when the weather is rainy or cold. It is advisable that the outdoor classroom has some protection from wind, sun, and rain, as well as an open area for running games. A good outdoor classroom is safe and serves as a learning environment for different needs and subjects. Different kinds of groups can be taught at the outdoor classroom. The aim of the outdoor classroom is to create a sense of belonging to this certain place.
- The outdoor classroom can better serve the diverse needs and contents of learning, if it is a naturally and culturally diverse environment, or alternatively if it is easy to change locations to differing environments during the outdoor session.

Outdoor Education Concepts and Teachers' Views

Jenni Hämäläinen, school teacher, environmental educator

Outdoor teaching and outdoor education are becoming increasingly popular in schools. What exactly do we mean with these concepts? In this study, I researched outdoor learning and related concepts, and reflected on the role of environment in learning. Participants included 57 basic education teachers in the Outdoor classroom-project.

Out of the Classroom – Schools Expand Their Learning Environments

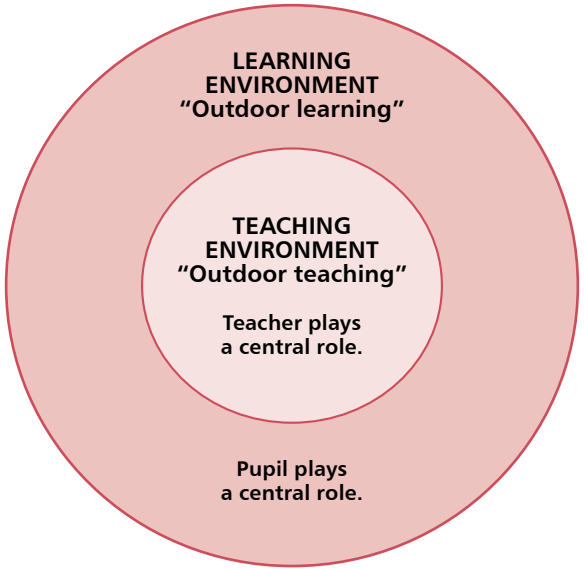
Learning environments were previously conceived as a school building and a classroom, isolated spaces, unaffected by the rest of the world. Nowadays, we have a broader understanding of a learning environment, and they are examined from many different perspectives. (Lindroos 2008, 7.) Outdoor learning and outdoor teaching refers to teaching that takes place in an environment other than the classroom.

The English term 'learning environment' translates to Finnish as 'oppimisympäristö' (Manninen, Burman, Koivunen, Kuittinen, Luukannel, Passi, & Särkkä 2007, 11.) An environment where learning takes place, in spite of if one is being taught or not. The learning environment in outdoor learning is a space outdoors, where participants learn. 'Instructional environment' is considered to be a sub-concept to this. This is used in relation to formal school settings to emphasize techers' role and how the possibilities of the learning environment are systematically being used by the teacher. (Manninen ym. 2007, 11.)

The environment plays a significant role in outdoor teaching. Teachers can plan ahead how big of a role they give to the environment versus the amount of teacher-led instructions. This can vary from day to day or hour to hour. Nature forms a pedagogically multidimensional and flexible learning environment. It enables exploring and studying things from different perspectives, in a real-life environment. (Kettunen & Laine 2017, 10.)

The concepts of social and didactic learning environments, are essential to learning environments. Different physical features affect the atmosphere of the learning environment and social interactions. While outside, the learning atmosphere is often different and influences the students' interactions with each other. Outdoors teaching often uses teaching and learning methods, which differ from the traditional teacher-led, class-based instructions.

Graphic diagram below is illustrating relationships between the concepts of learning environment and outdoor learning in comparison with teaching environment and outdoor teaching.



Students and Teachers in Expanding Learning Environments

Just about any environment is suitable as a learning environment. Criteria is met, if the stay in the location induces learning or if any specific learning targets are set for the stay in there. The outdoor learning environments are shaped by teachers' didactic thinking – how they are using the environment and what they want to convey. The learning environments ought to be chosen and built based on these didactic concepts, keeping in mind the methods and processes of teaching. During the lesson, the teacher offers stimuli, which support learning. The teacher takes into consideration the approaches and materials that best challenge and support the learning process. They also explore how the pupils can use their senses in diverse ways with various teaching materials and methods. Pupils are given more freedom and responsibility. Teacher's role is to be a facilitator, supporter, and aid. (Manninen ym. 2007, 41, 108-109; Lehtinen ym. 2016, 82-84; Koskinen 2017, 13)

At its best, learning is interaction and building knowledge together. New learning environments and methods should enable the social side of learning, and the student's role as an active member and individual. (Laakkonen & Juntunen 2009, 70.) Outdoor teaching is often depicted as collaborative learning, which is based on shared observations and experiences.

Photo: The Finnish Forest Association, Vilma Issakainen

It is important to coax the students' intrinsic motivation, so that they'll find learning as meaningful. A pupil who is intrinsically motivated doesn't require constant supervision and guidance. Rather, she needs support and help to build her knowledge alone or by working with others. (Koskinen 2017, 13.) Learning outside offers suitable variation to the traditional school format and increases pupils' motivation to learn.

According to the concept of learning in basic education, learning happens when different senses are being used. The topics in teaching should be tied to a time and place. A pupil is an active participant who learns holistically while using his body. He builds on knowledge by reflection, and by verbally expressing his experiences and feelings. He is guided to take into consideration the impact he has on other people and the environment. Efforts to take teaching beyond the classroom should be made regularly and methodically (National core curriculum for basic education 2014, 17).

Outdoor Education and Outdoor Teaching

The concepts of 'teaching outdoors' and 'outdoor learning' mean a variety of things around the world and concepts get easily mixed with one another. In the field of Finnish education research, these have not been studied or defined to the same extent as in abroad.

The term 'outdoor education' denotes active engagement and learning outdoors. It is based on environmental education and experiential learning (Parikka-Nihti 2011, 55; Nikodin ym. 2013, 32.) It transforms into 'outdoor teaching' via teacher's actions (Nikodin ym. 2013, 29). The term 'outdoor learning' is used to denote learning somewhere outdoors, so here the emphasis is on the student, and the effect that learning environment has on them.

The Swedish term 'utomhuspedagogik' can be translated as outdoor pedagogy, i.e. outdoor teaching. According to Linköping University outdoor education researchers Dr. Anders Szczepanskin and Lars Dahlgrenin (2011), outdoor education is a pedagogical trend which is based on pragmatic learning. Outdoor education, they say, is the interplay between written theories and practical experience. This means that under the guidance of their teacher, students in natural or cultural settings can practice interpreting and reflecting upon their observations. The scope of outdoor education encompasses everything that is taught at school and that can be brought outdoors. (Szczepanski & Dahlgren 2011, 25-28.)

The UK has a long history of outdoor education. The Scottish professor Peter Higging and Dr. Chris Loynes (1997) has studied the development and growth in outdoor education processes and divide it to three categories: A) activities that happen outdoors, B) education in sustainable development, and C) personal and social development. Outdoor education isn't random activity, instead it involves conscious pedagogical activity. (Higgins & Loynes 1997, 6-8.)

Active, Experiential, and Memorable Learning in Outdoor Teaching

Active and experiential learning methods are often used in outdoor teaching. Playful and tactile, as well as exploratory and creative means are the second nature when working in a natural environment. Experiential learning is practiced by tasks that involve deduction and problem-solving, using ingenuity and arousing curiosity. (Kettunen & Laine 2017, 10.) Active working methods reinforce creative thinking and motivation to learn, and increase the joy and memorability of learning (National core curriculum for basic education 2014, 17).

Through experiential learning, the learners take responsibility for their learning. This develops their assessment skills. In turn, this strengthens the development of self-esteem, which positively affects the learners' life-management skills. (Higgins & Loynes 1997, 6-8.)

Experiential learning that takes place in nature enables observations in a variety of ways: by exploring, sensing, and experiencing things personally. Sharing one's insights and observations is an essential part of experiential learning. This kind of activity specifically enhances communal learning. (Parikka-Nihti 2011, 55.)

Pedagogical Trends in Outdoor Education

Place-Based Education

In Place-Based Education (PBE), the learning environment and location is the basis for teaching. The core idea of place-based education is to tie educational content to pupils' immediate surroundings. According to the place-based education concept, pupils' experience of their local area contributes to their empowerment and development, meanwhile providing a significant pedagogical and philosophical basis for teaching. One's living environment, such as schoolyards or neighboring nature areas, can be critically viewed as part of pupil's personal identity development process. When planning teaching, it should be kept in mind that the environment or location is a not a thing or object, but an ever-changing phenomenon. (Wattchow & Brown 2011.) Every school should therefore be conscious of its uniqueness due to its location, and link its teaching and students to their own environment.

The active participation of both students and teachers is an essential part of place-based education. This is also true for environmental education and education for sustainable development. A stronger place-identity strengthens learner's ability to participate and contribute to local affairs. This, in turn, supports active citizenship both in solving local as well as global challenges. (Wattchow & Brown 2011; Ernst & Monroe 2004, 520; Hyvärinen, 18-19.)

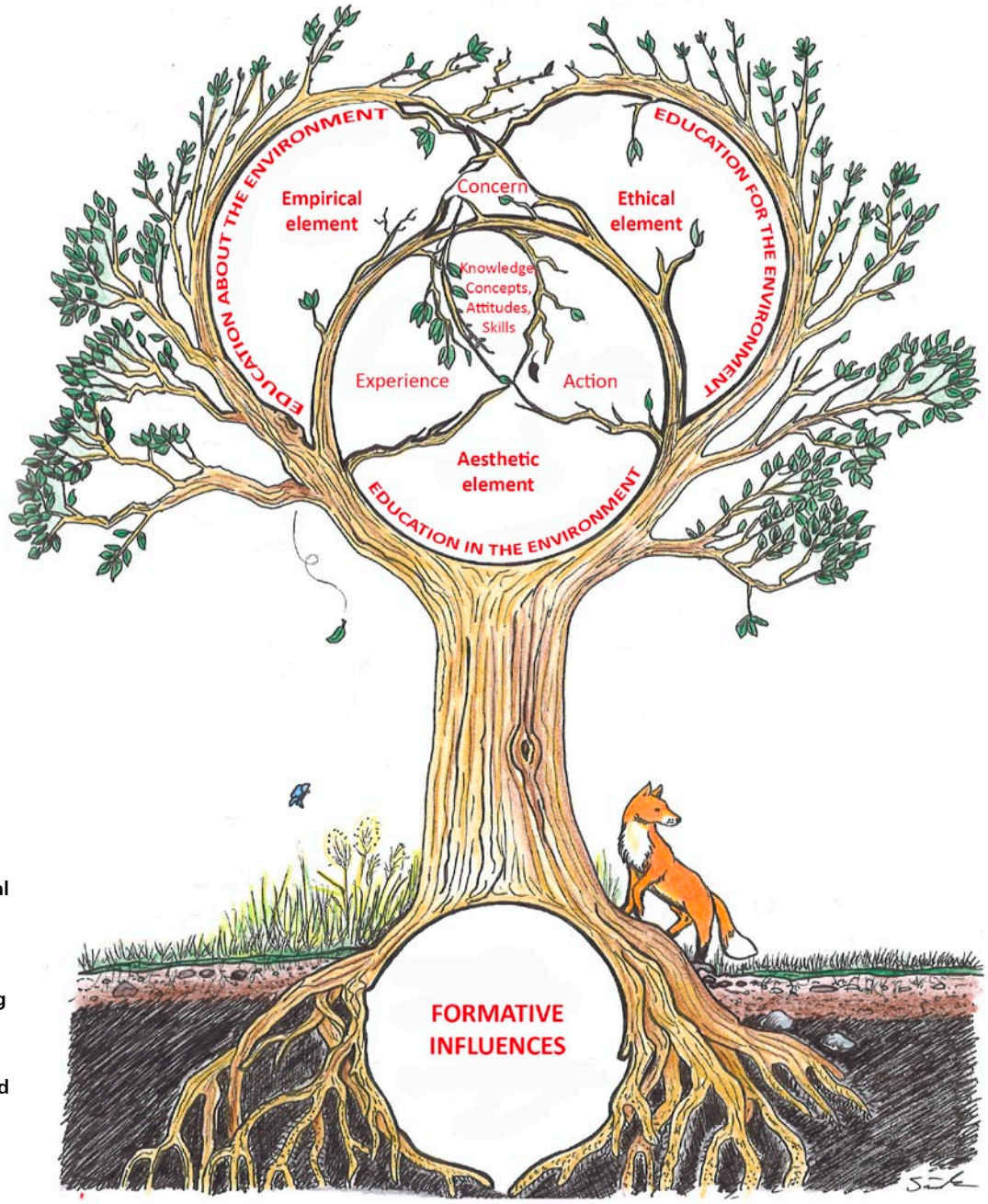
Sanna Koskinen (2010) combines environmental education and citizenship education in the concept of environmental citizenship. According to her, schools can help raise children into participative and impactful citizens by working with organizations that are not affiliated with schools, and in general simply opening their doors to the life around. (Koskinen 2010, 5.)

Environmental Education and Education for Sustainable Development – Building Relationships with Nature and Environment

The term Environmental Education (EE) is used for the pedagogical processing of environmental themes at schools (Käpylä 1991, 439–445; Eloranta 1998, 17). Environmental education aims to shape values, knowledge, skills and practices towards sustainable development, both at the individual and community level (Cantell 2011, 336; Nikodin ym 2013, 20). In this changing world, environmental education trys to ensure that we'll have a broader understanding and perception of the environment. Just as in Education for Sustainable Development (ESD), modern environmental education emphasizes on strong positive relationships both with urban nature and constructed environments, as well as cultural and social environments, in addition to the more traditional nature education.

The goals of environmental education can be divided into three categories that support each other: 1) knowledge about one's habitat and the Earth, 2) positive experiences in the environment which strengthen the affection and desire to protect it, 3) encourage people to act responsibly for the environment. In addition to this, Cantell (2011) considers empowerment from nature as the ultimate goal of environmental education, just as in place-based education. By empowerment she means the sense of belonging to one's local environment and the empowered feeling of ability to work for it. (Cantell 2011, 336.)

Joy A. Palmer's 'Environmental Education in the 21st Century: Theory, Practice, Progress and Promise' (1998) is one of the fundamental textbooks in environmental education. Here Palmer introduces her 'Tree Model', which remains one of the most commonly applied environmental education models. She underscores that environmental education must simultaneously and equally forcefully occur on three levels: assimilation of knowledge from the environment, activities and learning in the environment, and activities for the benefit of the environment, including environmentally responsible behaviour.



In Palmer's Tree Model, the prior life experiences, personal development and educational history form the foundation for environmental education. According to Palmer, when implementing environmental education one should take the starting level and previous experiences into consideration.

One of the aims of environmental education and outdoor teaching is to build a relationship with nature. The time spent in nature and first-hand experiences nurture children to respect nature, act responsibly, be tolerant, and participate in actions for sustainable development. (Higgins 1997, 8-9.) As human dwellings gravitate to cities, the relationship people have with nature has become weaker and weaker. As life becomes increasingly technological, there is deep concern for the nature relationship of future generations.

What do we mean by nature relationships? The term is used for the entity of interactions between nature and individual or nature and community (Nikodin etc. 2013, 27). A positive nature relationship is the foundation for a responsible and sustainable lifestyle that includes taking care of the environment and other people (Cantell 2011, 338). These foundations are laid already in early childhood by playing and making observations. Nature relationship includes questions such as: How meaningful nature is to a person? How one values nature and how it is manifested in his life? This relationship particularly affects how a person treats nature, and what kind of treatment measures he finds acceptable. An affirmative and solid nature relationship can be a positive asset for wellbeing. It readily transforms into action and a desire to affect the state of the world. Establishing this type of nature relationship has been identified as an integral part of environmental education in schools. (Cantell 2011, 332.)

The nature relationship also deeply impacts the development of an individual's identity. Identity is rooted in an awareness of one's own culture and the history of the community. A child, aware of his background and roots, will grow into a citizen and member of the community. An individual has only one personality, but possibly more identities, depending on the relationship with the surrounding environment, and the feeling of who he is or would want to be. Human identity is linked to the way an individual defines himself in relation to social relationships and culture. (Kronqvist & Kumpulainen 2011, 47-48.)

On the contrary to Education for Sustainable Development (ESD), environmental education emphasizes on ecological dimensions. Education for sustainable development highlights the different dimensions of sustainable development, categorised as ecological, economic, social and cultural sustainability. (Nikodin et al. 2013, 20.)

Education for sustainable development contains environmental and nature education. Education for sustainable development that takes place outdoors is concentrating in becoming acquainted with surrounding nature, recognizing and nurturing traditions and culture, and respecting the natural heritage. (Higgins & Loynes 1997, 6-8.) Environmental education can therefore be considered to be a part of the ecological dimension of sustainable development education.

Along with globalization and education for sustainable development, outdoor teaching has to find new practices. The approach in sustainable development education is no longer purely ecological, but also focuses on developing sustainable human relationships and critical thinking. (Wattchow & Brown 2011, 77-105.) This is how I managed to weave the theoretical approaches of environmental education, education for sustainable development, and place-based teaching into my research, connecting them with the theories of outdoor learning.

Experience and Adventure Pedagogy

Once discussing outdoor learning and outdoor teaching, one cannot ignore the experience and adventure pedagogy associated with experiential learning. This method can be considered an application of experiential and active education (Karppinen & Latomaa 2015, 37) in outdoor teaching and outdoor learning. The German concept of 'erlebnispädagogik', ie. pedagogy of experience, is also known as experiential learning. Since my research was about outdoor learning and teaching at schools, I ended up using concepts of experiential and adventure pedagogy. Experiential and adventure pedagogy is an effective way to strengthen self-esteem, self-knowledge and cooperation skills. (Marttila 2016, 5.) The purpose of experiential and adventure pedagogy is to provide the pupil with new, challenging activities and experiences in a stimulating environment, and to support student's personal development and growth as a group member.

Outdoor Education and Outdoor Teaching in Relation to Other Education Philosophies.

PEDAGOGY OR EDUCATIONAL VIEW	WITH OUTDOOR LEARNING AND OUTDOOR TEACHING SIMILAR/TYPICAL FEATURES
Experience and Adventure Pedagogy	• Experiential and exploratory activities in nature. • Goal: psychological growth
Education for Sustainable Development	• All dimensions of sustainable development are taken into account: ecological, economic, social and cultural. • Active, experiential and exploratory practices. • Active participation. • Goal: to raise citizens that value sustainable development.
Environmental education	• Emphasizes the ecological dimension of sustainable development • Active, experiential and exploratory practices. • Goal: to strengthen relationships towards nature and environment.
Place-based Education	• Activities emphasize active participation. • Learner's relationship with his/her own living environment is at the heart of the activities. • Goal: development of self-knowledge and self-esteem.

Teachers' Perceptions of Outdoor Learning and Outdoor Teaching

In my research, I examined the perceptions of outdoor learning and outdoor teaching with 57 teachers participating in the Outdoor Classroom -project. They described outdoor teaching and outdoor learning in various ways, through methods, content, and impact. Despite the variety of descriptions, the teachers seemed to have a very consistent perception of outdoor learning and outdoor teaching. According to them, outdoor education is defined like this:

- Teaching and learning outside the classroom and school building in both built and natural environments
- Teaching and learning by doing, experiencing, observing, actively participating and moving, either together or individually.
- Teaching and learning all curriculum contents by multiple methods. Nature and the surrounding environment are emphasized in the content, materials, as well as teaching environments.
- Supporting all kinds of learners by enhanced concentration and learning motivation. Outdoor areas offer clean and refreshing air to breath.

Conclusion

In addition to learning environment philosophy, outdoor learning combines many elements of the education curriculum, such as education for sustainable development, phenomenon-based learning, multidisciplinary modules, and active learning (Kettunen & Laine 2014, 9). Outdoor teaching and outdoor learning could be expected to be an essential part of Finnish basic education. In the national core curriculum of basic education, teachers are challenged to leave their comfort zone and look for new ways of teaching. In Finland, teachers are given a lot of freedom when planning their lessons. In this sense, they can also choose to teach outdoors.

According to my research results, its theoretical basis and to current understanding, outdoor education is a sector in education where learning is based on active participation, experiences and outdoor exploration in varied learning environments. The aim of outdoor teaching is to support pupil activity and holistic learning, but also to support the development of their relationship with nature and environment.

Finland has performed outstandingly in Pisa studies, but the pupils' school satisfaction is poor. In the WHO global student health survey (GSHS), children's school satisfaction rates were examined in 40 countries. Finland's rank was in the weakest third in the study. (Kämppi, Välimaa, Ojala, Tynjälä, Haapasalo, Villberg & Kannas 2012, 27; Lapsiasiavaltuutetun vuosikirja 2014, 82-83.) In 2012 the Finnish UNICEF published a school welfare survey with recommendations to increasing student involvement, paying attention to student-student and student-teacher relationships, and learning environments. Immaterial aspects were found to be more valuable than materials and expensive school equipment. (Harinen & Halme 2012, 71-72.) It is inevitable to notice the similarities between these recommendations and the opportunities offered by outdoor teaching and outdoor learning. When working outdoors, students are often very involved and active.

Promoting participation has been recognised as a pivotal aim in the prevention of marginalisation, inequality, and dropping out of school both within Finland and in the European Union. By practicing participation one learns to share opinions, make an impact, and take actions on communal and societal levels.

Participation can be practiced through pedagogies and concepts like like place-based education and education for sustainable development. Students are offered opportunities to practice active participation in their local environments, and to broaden perspective into global issues. The world of children and youth today is more global than it was for previous generations. Pupils are increasingly aware of phenomena around the world, but at the same time becoming alienated from their own living environment. By linking education and pupils' immediate surroundings, one can help them learn about their own roots, culture and social environment. This is essential for building their self-image and self-esteem. Everyone should have an insight in their origins and a sense of belonging to a certain place. This is one essential part of feeling accepted. Adherence to one's own school and environment increases students' communality, which in turn helps to prevent marginalisation. Participation and the sense of communality will have far-reaching impacts.

Working on this study was rewarding and allowed me to dive deep into topics that interested me. We are at the forefront of important matters, and we the teachers, together with parents, are in key positions in enabling children to get to know the world around them. After this educational and eye-opening research process, I want to give teachers these words of encouragement: "Come rain or shine, leave for greener pastures."

My research can be read and downloaded from the JYX publication archive of the University of Jyväskylä, under theses.

Real-World Learning Model

Anna Kettunen, SYKLI Environmental School of Finland, and Maria Aroluoma, Nature educator, Finnish Nature Centre Haltia

The Real-World Learning Model was developed by an international network of environmental educators from the UK, Croatia, the Czech Republic, Germany, Hungary, Spain, Netherlands, Nigeria and Turkey. The Real-World Learning Model provides a comprehensive and flexible vision for learning about sustainable development – a mode for thinking, reflecting, and existing. In particular, it emphasizes on the importance of outdoor learning!

Effective environmental education and outdoor learning include six elements that are presented in the Real-World Learning model:

1. FRAMES

Do the frames provide a structure and story for better learning?

Frames strongly influence how we understand and interpret the world around us. The word "nature" provokes various memories and emotions. In this model, the frame is found in the palm of the hand, ensuring that values, empowerment, experience, transferability, and understanding are connected to a solid and sustainable learning experience.

At its best, frames guide the teacher and learners, allowing for self-directed learning. Frames also provide the learner with a deeper understanding by collecting details into a bigger picture and common story.

2. VALUES

Are the promoted values consistent with a sustainable lifestyle?

Values affect attitudes and actions. Taking care of the well-being of people and the planet is essential in promoting a sustainable lifestyle.

3. EMPOWERMENT

Are learners involved in building a sustainable future?

Empowerment brings learners to the center of the learning experience: We need to recognise and express our ability to act, influence and make a positive change. Participating in activities for the environment enables students to collaborate and take responsibility for their own learning. Everyone can make a difference. The experience of empowerment can help students to act sustainably also in the future.

4. EXPERIENCE

Can learners get in touch with nature?

Learning from nature is a holistic experience - the details of nature can be looked at, felt and touched. In nature, the curiosity of the students often awakes - they see the connections around them and realize they are one part of a larger whole.

5. TRANSFERABILITY

Does the learning process include different aspects of life?

Sustainable development encompasses all aspects of life. Therefore, it is important to help learners combine knowledge, such as scientific concepts or natural phenomena, with personal experiences, activities, and values. This gives learners the opportunity to establish connections locally, globally, and also in relation to nature.

6. UNDERSTANDING

Does the learning process include scientific concepts?

Understanding scientific concepts such as life cycles or climate change require an understanding of the complex chains of life-sustaining interactions. It requires scientific knowledge to be combined with feelings, values, and all of humanity. Exploring the concepts of life in this holistic way develops sustainable thinking and action.

Each element is important in itself, but combining the elements into a whole leads to a deeper and more meaningful learning experience.

The original model can be found at **www.rwlnetwork.org**.

3. Why to Study Outdoors?

There is no good reason why not! Teaching outdoors has been studied worldwide and the results show that going out is worth it. While outdoors, the mind calms down, motoric skills develop, social relationships strengthen, and learning outcomes improve. When more movement is incorporated into school days, it will increase the well-being of both the students and the teacher! In the list, you'll find 16 good reasons for teaching in the outdoor classroom.

16 Good Reasons to Teach in the Outdoor Classroom

Outdoor Classroom -project steering group

1. Why not teach outdoors? Almost everything you can teach indoors, you could do outdoors, too.
2. The curriculum supports outdoor teaching. The outdoor classroom allows for multidisciplinary modules and phenomenon-based teaching.
3. An outdoor classroom is a real-world learning environment. Information is readily applied and put in practice when teaching outdoors. Investigation and contemplation occur naturally outdoors. Nature is the source of inspiration, there is all sorts to study.
4. Teaching readily becomes more holistic, part of a larger whole. Linking phenomena comes easily.
5. The students find a connection to themselves through nature and in nature.
6. In the outdoor classroom, social relationships and groups are readily formed. Nature supports social interaction, and the pupils' emotional skills develop in the natural environment. Many teachers have reported less social conflicts compared to regular indoor teaching.
7. In the outdoor classroom, different strengths are revealed. Special-needs students may find it easier to study. The outdoor classroom accommodates for sounds and feels spacious. Students can have their own peace and space. As a result, noise and stress levels are reduced. Even though the environment could be challenging to some at first, the benefits soon become apparent. Some special-needs students find the outdoors a very stimulating learning environment.
8. There are health benefits to teaching in an outdoor classroom.
9. Outdoor classroom teaching is active. In a rugged forest terrain, the motoric skills develop, which is recommended for enhancing physical activity.
10. Observation skills develop, as well as an increased sensitivity to noticing and appreciating natural organisms. Emotions and senses are switched on while learning outdoors.
11. In an outdoor classroom, plenty of additional learning occurs on the side. For eg., while playing an educational game, you ask students to move to the pine tree. Then, as if by accident, they learn how a pine tree looks like.
12. At its best, outdoor education is like a play, as the learning happens unconsciously.
13. Nature and the surrounding environment become familiar to students while learning in nature. A relationship with nature only develops by spending time in nature. If the outdoor classroom is a cherished nature destination to the pupils, they will want to protect it.
14. There are no indoor air quality problems.
15. It is important for immigrants to get to know the Finnish nature environment. At the same time, immigrant pupils get to know their surroundings in a safe way.
16. Outdoor classroom teaching is fun and valuable. Memorable moments create positive pedagogy!

The Added Value of the Outdoor Classroom

Kati Paakkanen, class teacher

Group-formation occurs over class boundaries and students get used to working in diverse groups, with different adults and in a variety of environments.

Our school's fourth-graders have welded into one united team thanks to the outdoor classroom. They work smoothly in different groups and know each other well. Both of the teachers also know the pupils of both classes, and consider them as "their own", since there has been a lot of shared interaction. Pupils are no longer distracted by little things, but are able to focus on studying in a variety of situations and environments.

Teaching is active.

It is inevitable that outdoor lessons are full of activity. When they have been scheduled ahead of time, this challenges the teacher to plan how the lesson can be taught with lots of physical action, especially because in the winter it is necessary to move around to keep warm. Already in the third grade, there is so much in the curriculum that two hours cannot be wasted every week in the forest just playing around, The activities must be in line with the objectives set in the curriculum.

Going outside is easy.

Holding a short lesson outside is easy with pupils who are already used to spending time outdoors. You can head outside for any lesson, to study anything, and it doesn't cause any extra hassle. Teachers and pupils already know many games and exercises that are suitable for outdoor learning that can be kicked off readily.

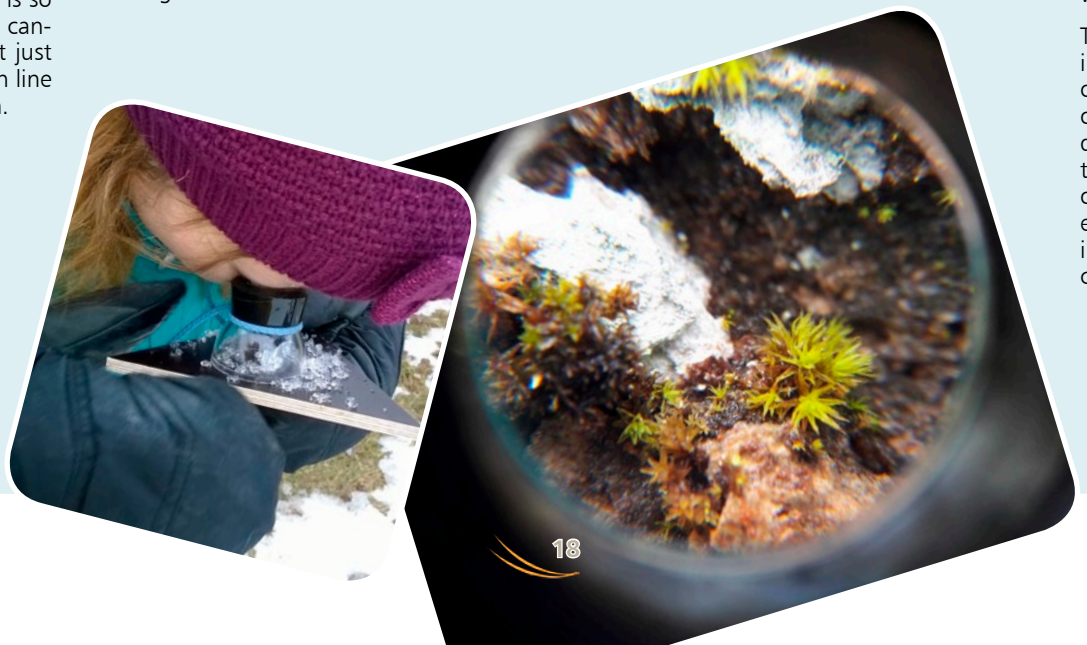
Writing skills are inadvertently practiced in the outdoor report.

Instructions for report writing had been glued into the pupils' notebooks to help with the report. The report had to have a date and a place, and in their own words, they were asked to describe the activity spots they visited, and the subjects and other things they studied there. Even those who had initially been reluctant to write, learned to produce a page of text during the year. Pupils also became accustomed to evaluating their own learning and actions.

Pupils get used to and learn to be in nature and they clearly begin to enjoy it.

The children no longer fuss about small things. For example, we made an excursion to a frozen lake, even though it was -32C and not one of them even suggested canceling the trip. The teacher would probably have agreed to do so, but the children wanted to go...

In my opinion this is one of the most important aspects of outdoor teaching. The children are constantly gaining a variety of nature experiences, thereby learning to appreciate the nature around them. On the other hand, even the difficulties grow their grit, and the children realize they don't melt in the rain, are not overwhelmed by minor discomforts, but can overcome them as winners. And that makes them feel good! Our students have learned to observe. They ask questions, make observations, eagerly show their discovered treasures, collect trash, and more.



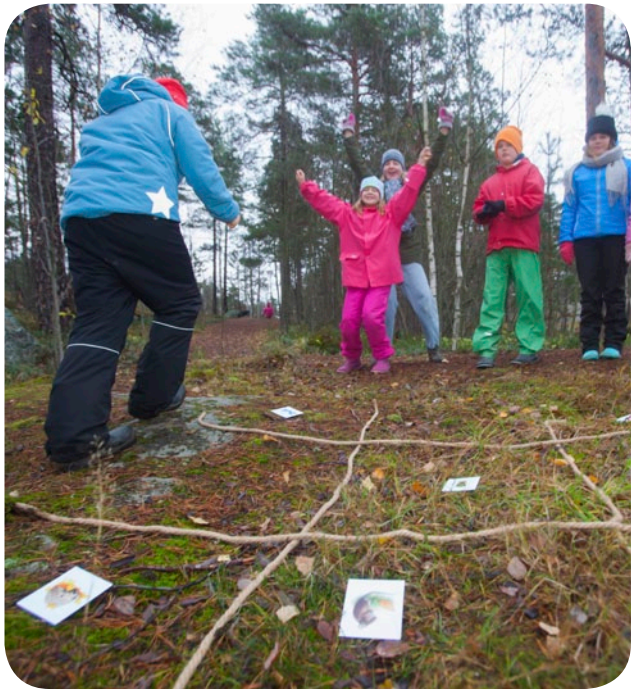
The forest encourages play and sparks imagination.

Spontaneous play with e.g. hut-building starts as soon as children are given free time in the forest. Although already some third-graders found playing in the schoolyard "too embarrassing", in the forest they felt free to throw themselves into the whirl of role-playing games. We try to hold outdoor lessons without a structured program a few times per semester, so the children can enjoy being in the forest and play with each other in peace.

The pupils' participation skyrockets and they want to head outside to nature

Many times during the spring semester, the students looked out of the window and spontaneously suggested, "Teacher, it is beautiful outside, can we take this lesson outdoors?!" One of the most memorable times was an arts-class when, on the pupils' request, we went out to build snow sculptures.

This autumn, the students were already hoping to be in the forest all day, that we could organize a forest day for the whole school, or that recess could be spent there! The outdoor-bug has clearly spread from the teacher to the students! I believe that the feelings of inclusion and participation are also influenced by the fact that in the forest an adult inevitably marvels, admires and makes discoveries together with students.



In the outdoor classroom, nature and exercise increase the feeling of belonging. Exercise creates opportunities for learning.

Movement in an Outdoor Environment Supports Learning

Susanna Takalo and Niina Loukkola, University of Oulu

School plays a significant role in keeping children and adolescents physically active. On average, one third of their brisk physical activity occurs during the school day. Most important it is for those who are the least active, and in these cases school days account for up to 40% of their brisk physical activity. The amount of movement can be increased by cutting down on sedentary time by adding diversity in working positions, introducing exercise breaks, or by integrating movement into lessons. Going out, pupils move and are physically active, in any case.

Approximately half of the schools in the Finnish Schools on the Move -initiative estimated that physically active methods were being used in the different subjects. However, there is a great discrepancy between primary and secondary schools: 58% of primary schools use physically activating methods compared with only 23% of secondary schools. 80% of primary schools use their yard and nearby environment to support teaching. In secondary schools, the corresponding figure is only 29%.

The curriculum encourages bringing more activity into school days, highlighting physically activating methods and the use of the local environment in teaching. Staff members felt that Finnish Schools on the Move -activities succeeded in supporting both the implementation of the curricular objectives and the school's main, learning.

Physical Activity Helps to Learn

Physical activity has positive effects on cognitive functions such as behavioural regulation, working memory, and cognitive flexibility. Physical activity integrated in education, in particular, has been noted to positively influence school grades. Physical activity does not necessarily affect the learning outcomes directly, but through a number of other factors. Physical activity seems to have a positive impact on executive function and attention, which can explain better school performance.

Physical activity also affects the brain. It increases brain volume and activity, which enables learning. The basic motoric skills are linked to learning, since the same central nervous system mechanisms control both motoric and cognitive functions.

Satisfaction and a Peaceful Working Environment

The school staff involved in the Finnish Schools on the Move -initiative felt that movement was useful – not only for the students – but also for the teachers. More than 90% of teachers felt that physical activity during the school day was beneficial for learning, making the working conditions more comfortable and peaceful. The Finnish Schools on the Move activities seems to have strengthened the sense of belonging and interaction between students and staff, as well as between staff members.

According to research, spending time in nature has many similar effects on wellbeing as physical activity. It helps in social interaction, soothes, improves attentiveness, and reduces stress hormone secretion, among other things.

Nature Induces Wellbeing and Health in School Children

Riikka Puhakka, University of Helsinki

Introduction

Urbanization has changed people's lifestyles, and led to some negative effects on health and wellbeing. The lives of Finns have become more sedentary. Even though children engage in more sports hobbies than previously, physically active leisure time and traveling by foot or bike have declined. Spontaneous and self-imposed outdoor activities and other leisure activities have become more pre-planned, organized, and adult-driven. Meanwhile, the time spent on various digital devices has risen beyond recommendations. Also in Finland, there has been a debate on the younger generations and the effects of their alienation from nature.

In this article, I present the positive effects of nature on physical, mental, and social wellbeing and health. Being in nature leads to imminent health and wellbeing effects, and has many indirect benefits as nature motivates people to physical activity. Research on the subject has become more abundant and more multidisciplinary, especially in the 2000s (Keniger et al. 2013). Although only few studies have focused especially on children (see Maller 2009; Chawla 2015; Kabisch et al. 2017), evidence of a causal link between children's contact with nature and their cognitive, emotional, and motor skill development has been obtained.

Recently, the health and wellbeing benefits derived from nature have been highlighted. In Finland there has also been initiatives to integrate nature into operational environments, which promote health and wellbeing. In an urbanised society, the importance of forests and garden environments close to schools or kindergartens is heightened to improve childrens' relationship with nature, as well as their physical, mental, and social wellbeing. Significant benefits can be achieved for children's wellbeing and learning when nature is used as a learning environment.

Effects on Mental Wellbeing

Being in nature has been shown to improve mood and self-esteem, reduce negative feelings, and increase overall mental wellbeing. This has a positive effect on feelings and behaviour (Kaplan 2001; Kuo & Sullivan 2001). Physical activity in nature relieves anxiety and apathy, and is therefore more useful than exercise in urban settings (Barton & Pretty 2010). Research has also found a positive impact of nature on children's self-esteem and mental wellbeing (Maller 2009). For example, children hiking in national parks seem to enjoy exercise, learn new skills, and gain affirmative experience in self-actualization and in boosting their imagination and creativity (Kaikkonen et al. 2014).

In terms of cognitive benefits, studies show that being in a natural environment increases attentiveness and reduces mental exhaustion (Kaplan 2001; Björk et al. 2008; Tyrväinen et al. 2014). The higher the proportion of leisure time spent in nature, the stronger the recovery experience and the greater the emotional wellbeing (Korpela et al. 2014). Being in wilderness and even in urban nature, improves problem solving abilities and concentration. Nature activities have been found to reduce the symptoms of ADHD in children (Hartig et al. 1991; van den Berg et al. 2003; Kuo & Faber Taylor 2004).

In addition, positive, revitalizing nature experiences can promote environmentally responsible behaviour. Early experiences in nature affect environmental sensitivity, ie. an empathic attitude towards the environment, which is an important prerequisite for environmental responsibility (Collado & Corraliza 2015).

Effects on Physical Wellbeing

Studies have shown that spending time in nature decreases the negative effects of stress factors caused by urban environments. Contact with nature has measurable physiological stress-relieving effects. Blood pressure, heart rate, and muscle tension are reduced, levels of stress hormone called cortisol decreases, and the parasympathetic nervous system is activated. Beneficial effects have been observed after a mere 15 minutes exposure to nature (van den Berg et al. 2003; Lee et al. 2012; Tyrväinen et al. 2014). Living environment's proximity to nature has also been found to correlate with lower stress levels in children (Wells & Evans 2003).

Being in nature increases the mental wellbeing of children and promotes environmental responsibility.

Shared nature experiences reinforce social relationships.

Nature encourages people to move more often and for longer periods of time, which has beneficial effects on mental wellbeing and physical condition. The recreational value of natural environments close to homes has been found to positively correlate with the physical activity of residents (Björk et al. 2008). Physical activity has also been found to be greater in children who have contact with green environments (Almanza et al. 2012).

Contact with nature is especially important in childhood when the immune system is developing. Being in nature strengthens human immunological resistance by increasing white blood cell production (see Lee et al. 2012). Contact with nature also enhances the human microbiome and thereby improves the functioning of the body's defense system. According to the biodiversity hypothesis developed by Finnish researchers, the rise in hygiene levels and the decrease in biodiversity has reduced exposure to microbes that are necessary for the normal development of the immune system (see Haahtela et al. 2017). This has led to a major increase in deleterious immune system disorders such as allergies, asthma, and type 1 diabetes.

Effects on Social Wellbeing

Nature and shared nature experiences also offer opportunities for social interaction and closer ties between families and communities. For example, children hiking in national parks have been found to enjoy spending time in nature and being together (Kaikkonen et al. 2014). Research shows that green areas can reduce social problems in cities. They can promote people's empowerment and interaction, as well as strengthen their sense of belonging. The natural environment contributes to the formation of a personal and community identity and increases social activity and participation (Maller 2009; Keniger et al. 2013).

Schoolchildren out to Nature

In order to enjoy nature's benefits on wellbeing and health, one does not have to travel far to the wilderness, as there are many areas suitable for recreational use within cities in Finland. The forests and other green areas nearby schools and kindergartens have been mapped in several cities. In recent years, landscaping projects in schoolyards and kindergartens have also been implemented in different countries (eg. Jansson et al. 2014). Studies have demonstrated the various health and wellness benefits of greenery (see Bell & Dyment 2008). Childrens' stress levels are lower and their psychological wellbeing is better when they are in yards rich with vegetation. Outdoor activities in green, varied, and high-quality environments are associated with a healthy body structure and a full night's sleep. Also, the amount of UV-radiation remains moderate in foliage-rich yards. According to international studies, green environments diversify children's play and learning opportunities, promote the development of motoric skills and physical activity, improve concentration and performance, and strengthen their relationship with nature and environmental responsibility. Similar benefits were found in the ADELE/KOTA-study, in which grass, peat, and other natural elements were brought to the yards of schools and kindergartens in Lahti, Espoo, and Tampere. Contact with nature's materials also transformed and diversified the microbiome in children. In the light of earlier research, such changes have been shown to have a beneficial effect on health improving immune system functions and regulation capacity.

Research results on nature and its beneficial health effects demonstrate the importance of not only preserving urban forests, but also garden landscaping for children's health and wellbeing. The various benefits of outdoor teaching are best attained by working in lush nature and yard environments nearby.

Outdoor Adventure Education Supports Social Development

Seppo J. A. Karppinen

Introduction

A sense of adventure is as old as humanity. Adventure education, on the other hand, is only a few decades-old trend in the Finnish wilderness and nature tradition, where experience was gained through natural experimentation, hands-on experience, and social learning. Finnish schools, youth work and parishes, have a long tradition of hiking trips, camp life and even gardening practices. The goal was to 'learn & understand by doing', by gaining shared experiences, feelings of success, joy of movement and recreation. From the 1980s onwards, the experience-based outdoors teaching-studying-learning process has been used as a method to treat personal and social problems, as well as socio-emotional exclusion in schools. The extreme ends - the very gifted or under-achieving pupils - tend to miss out on the possibilities offered by basic education (Siljander & Ulvinen 1996). Nowadays, learning environments are designed to enhance learning-objectives and to create opportunities for real understanding, instead of mere performance. This way, learning is about becoming conscious of one's own abilities and developing intrinsic motivation (National core curriculum for basic education 2014, 17).

The Finnish proverb "a child is healthy when he is playing" does not always actualise at school. It is a well-known fact that in addition to staying still, reading and writing, students need action and memorable experiences. A Finnish school health survey from 2017 found out that about 80% of 4-5 graders enjoy school "quite a lot" or "a lot", but in grades 8-9, the figure has fallen alarmingly to 60% (Terveyden ja hyvinvoinnin laitos 2018). The most recent core curriculum for basic education (2014, 17) encourages teachers to use versatile, experiential, active, and exploratory ways of working in order to increase learning motivation and school satisfaction. One of the most versatile and experiential method outlined in the curriculum is adventure education with an outdoor classroom as a learning environment. In this article, I examine adventure education as a method that activates the pupil to perform according to his/her own abilities, and supports the multidisciplinary modules in school education. This article is based on research on adventure education (Karppinen 2005, Marttila 2016) and aims to broaden its pedagogical and didactic understanding within school education.

From the Wilderness Tradition to Adventure Education

Already in the tradional wilderness culture, learning through adventure and outdoor experiences have been a natural way for Finns to accumulate knowledge, skills, and wisdom. Mother Nature is generous and fair. She teaches people to be courageous, determined, self-controlled, and to anticipate risks and to avoid them. Children learned the basics of life through experience and inherited tradition. Today in Finland, we live in a safe and risk-free society, which is our most valuable privilege. A suitable channel should be found for children's activity and curiosity, and their natural need for experimentation that belong to personal development.

In addition to common knowledge, the school imparts virtues such as curiosity, honesty, persistence, personal growth, and appreciation of others (National core curriculum for basic education 2014, 17). In Outdoor Adventure education, in an unusual learning environment, students practice social interaction, balance, patience, courage and concentration -building exercises, which often are overlooked in classroom teaching. Leaving the psycho-physical comfort zone may be a valuable future lesson for some: not to let failures press down, but to have courage to try again. Outdoors learning is an opportunity to familiarize pupils with the surrounding reality and promote nature-sensitivity, as well as support their wellbeing, body- and self-awareness, emotional growth, and interaction skills. Outdoor classroom activities are applicable to multidisciplinary modules, both within different subjects and while integrating several subjects together, in line with the overall instruction model.

Many teachers think that the spread of adventure education in schools is slowed down by the difficulty of planning classes, lack of time, and poor knowledge of outdoor teaching methods (Jeronen, Jeronen & Raustia 2009). During the last decades, the adventurous approach has gained more popularity in basic education thanks to the adventure work by the Finnish youth centers, sports institutes, and different camp school organisations.

But one doesn't always have to go far or raise money for adventurous learning. It can be integrated into the content of other school subjects. An off-road trip is a comprehensive lesson that teaches a wide range of knowledge and skills in one morning: forest biology, species knowledge, verbal expression, while practicing balance and the use of other senses, in addition to universal virtues such as concentration, ethical-, interaction- and social skills, taking others into consideration, helping, and overcoming adversity.

A pedagogical adventure event for a biology lesson could be a walk in the park or nearby forest. This can also be done in mid-winter. Sensory exercises could be done during the excursion, such as listening to silence or the sounds of nature, feel the coldness of water, the softness of snow and the roughness of bark. The class can finish with a small problem-solving task or game that develops balance, eg. a rope trail or a round of 'follow the leader' game. Sensory walks can be repeated at different times of the year. An all-day event could be a bird-watching trip with lighting a campfire and having a bite to eat, or a walk, orienteering, snowshoeing, or a ski trip to a nearby lean-to, depending on the school's surrounding terrain. Photographs and reflections from the trip could provide material for other school subjects. One week camp schools are organized throughout the year. The program is tailored to differing needs and directed by adventure education professionals. The teacher can participate in observing class activities and dynamics during the camping week.

Adventurous studying and school activities provide an opportunity to those who prefer alternative ways of learning without a pen and book, or who could demonstrate that they can manage themselves and different situations in practice. The teacher's observations during and after the activity can reach new dimensions when a student who isn't performance-oriented demonstrates practical life management and interaction skills. The sense of achievement in adventure activities boosts self-confidence and motivation for classroom learning and subsequent education.

Safety

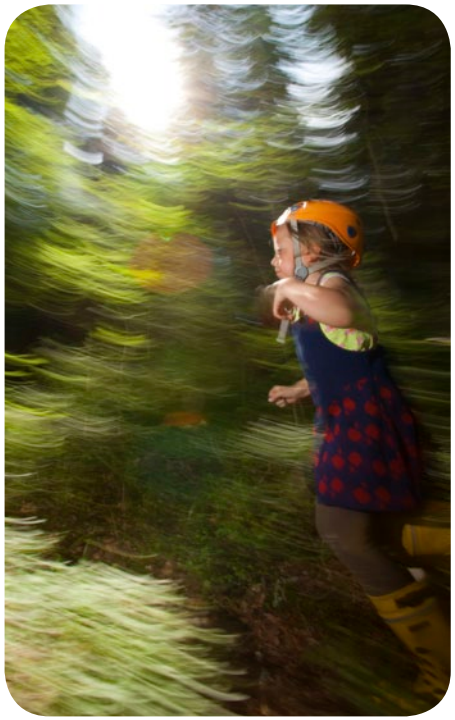
Physical safety must be ensured in adventure education, because activities often take place in unusual terrain instead of the familiar schoolyard. Only low risk activities are allowed. In line with the adventure pedagogical and didactic approach, the level of difficulty will be gradually increased. A solid foundation is built for the next stages of the experience, so that the student is able use previously learned skills in future challenges. For example, taking students out for white water rafting once a year is not advisable adventure education, as this type of a "sudden thrill experience" will not create any positive learning, but can cause traumas.

Adventure education can be used to influence emotions, anxiety management, curiosity, and the desire to experiment. Attention must be paid to the feel of mental security, so the teacher must stay aware of the students' psycho-physical states. Not everyone dares to spend a night in a tent or in an unfamiliar cottage right away. In this case, it would be helpful to organize a 'night at school' event, where students get to spend the night in a familiar class and parents are asked to supervise. For the sake of personal development, it is important sometimes to practice leaving familiar comfort zone and to be exposed to strange and uncomfortable situations, from where it's possible to return. To be able to overcome fears, strengthens pupil's self-conception. The perception of his own abilities is renewed, and he is no longer discouraged by small adversities.

Adventure Education as a Concept

Adventure education means using adventurous methods for growth and learning.

The process in a nutshell: design-action-evaluation-reflection. Nowadays there is already some theoretical knowledge, literature, and research available in Finnish, and we no longer need to copy designs from abroad as was the case twenty years ago when the imported models were somewhat confusing (eg. Karppinen & Latomaa 2015). In the 2010s, the adventure education has been structured into a legitimate and powerful educational tool and a logical method thanks to research and theoretical reflection.



Adventure education offers different types of learners the opportunity to practice overcoming their weaknesses and managing situations in practice. It is good to practice being in the dark, so that it starts to feel safe.

Adventure education is an active and experiential teaching method, where the pupil is offered the opportunity to grow, develop, and learn holistically with the help of "head, heart, and hand." (Karppinen & Latomaa 2015; Karppinen 2005; Marttila 2016). Whether it be observing nature, measuring snow, lighting a campfire, crossing a stream by stepping on stones, balancing with a rope, bicycling with the group, the teacher guides the pupil tolerantly and democratically, engaging in dialogue, holding their hand or encouraging with words until the goal is reached. Teacher must understand that the pupil, the child, the young person, is truly another "subject" that cannot be compared to an adult. Teacher chooses the appropriate didactic instructioning method for each particular event. Teacher has to possess pedagogical understanding for each student's individual needs: they all have their own life history, own skills and knowledge, their own bio-psycho-physical stage of development, and as a result she thinks and acts the way she does.

Adventure education and experiential learning play an important role nowadays when the use of information technology is becoming more common in schools. Active movement promotes health and counterbalances the pupils' time sitting in front of screens. In active education, each student works according to his or her own abilities, which emphasizes goal-oriented learning and does not solely measure performance. The method provides opportunities and support for students with special needs. Applications provide opportunities for practicing diverse skills, multidisciplinary modules, and thematic alternatives, as well as rehearsing participation and social interactions.

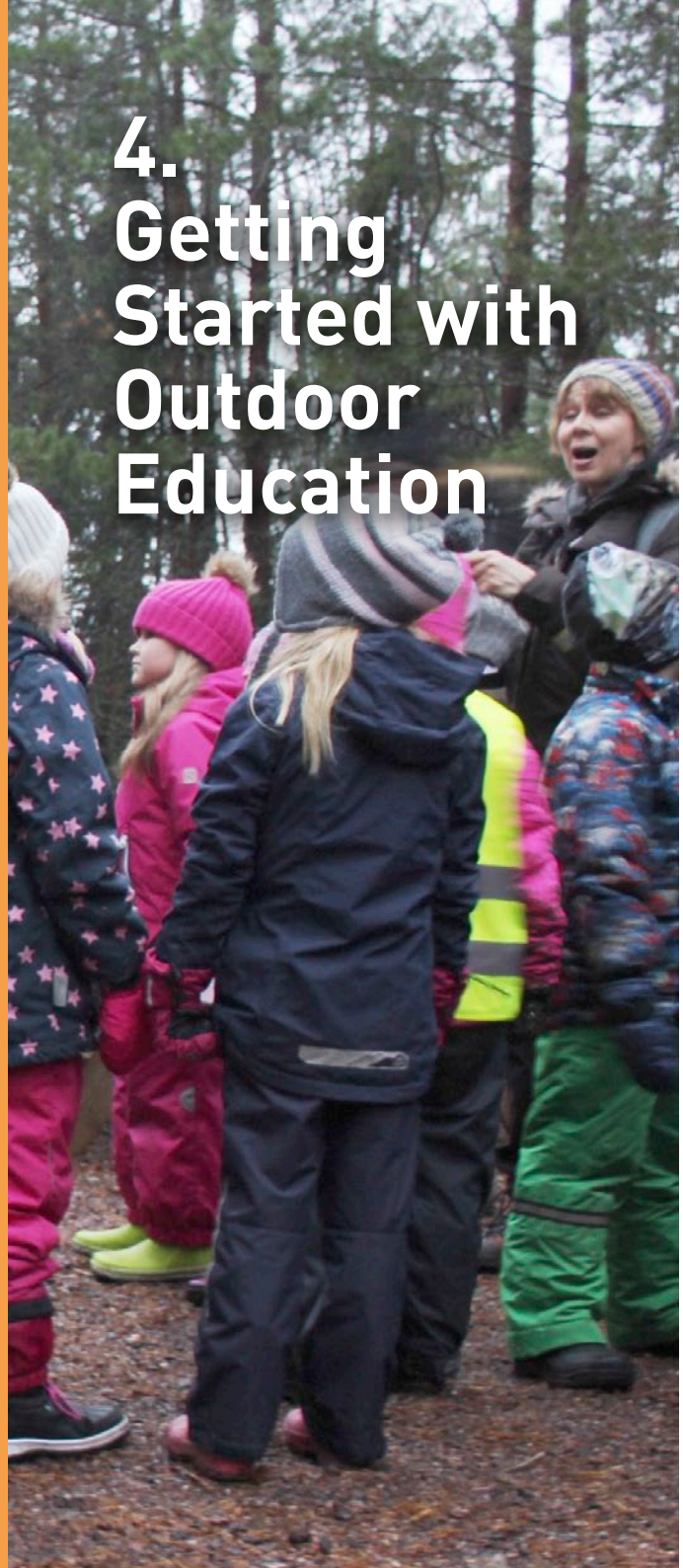
Fulfilling the Main Purpose of School

To understand the above findings, it is important to realize that even in outdoor activities, teaching is the central concept of the didactics and refers to goal-oriented interaction towards educational objectives that seeks to achieve learning (Hirsjärvi 1982; Uljens 1997, 59-60). The methodology and classroom activities of adventure education can contribute to the following theoretical and practical implications for society in terms of social development that are related to the above-mentioned school tasks (cf. Ulvinen 2017; Siljander 2016):

1. Reproduction of culture. The importance of fresh air and nature for health and wellbeing is conveyed to the child or young person, and he understands that his own actions affect environmental sustainability.
2. Education as the main task of school. The quality and quantity of education increases, for eg., by enhancing the pupil's self-awareness, such that he understands that he is a part of nature, environment, and society, and recognizes how a healthy lifestyle and physical exercise will serve him now and in the future.
3. Autonomy: Outdoor a pupil is freed from judgments that restrict his actions and thoughts that make everything seem predetermined. He learns to understand himself and others that may not be alike, and dares to go out of his comfort zone.
4. Expertise. In adventure education, this means that the student is offered concrete practice in overcoming difficult situations physically, socially and mentally. He learns to act in a goal-oriented way to the best of his own abilities, masters his own life, and promotes the wellbeing of the community by following principles and rules that have been found to be beneficial.

Conclusion

The most important contribution of adventure education to school education in the outdoor classroom is self-management via action and understanding of learning. An understanding of oneself and reality improves as the contents, student skills, and actions occur in new situations. When a student is aware of his/her own abilities, skills and habits in different situations (meta-cognition), he/she is able to appropriately control different ways of learning, or transfer what was previously learned to new situations (Tynjälä, 1999). By creating a learning environment where the pupil can experiment, fail, make mistakes and encounter risks safely, the adventure educator strengthens and develops the pupil's own performance management. The evaluation then tips in favour of the student's internal performance management, instead of measuring external displays of achievement (Karppinen 2005; Marttila 2016).



4. Getting Started with Outdoor Education

It is worth starting with small steps. In this chapter you will find tips for outdoor education by experienced teachers, as well as Species Card games, ready-made lesson plans for different seasons, and the first 20 steps to the outdoor classroom!

General Outdoor Instructions for Teachers

Ulla Myllyniemi, class teacher

Getting Started

The first outdoor session can be in the schoolyard in good weather. You can start with doing exactly the same things that you would do inside, so you don't have to spend extra time planning. It is easy to go out on a beautiful and warm autumn or spring day.

It is advisable to go through the rules of outdoor classroom with the pupils, its boundaries and safety instructions. This is simple in the schoolyard where the rules and limits are familiar. You can gradually venture into the rest of the nearby environment. Although the first time can seem chaotic, you should not give up. Teaching outdoors becomes easy when you develop a routine for it.

Communication

It is advisable to inform parents in advance about outdoor teaching, what it means in practice, and what clothes and equipment the child should have on these days. A parent-teacher meeting on the topic is a good option. It is a good idea to send a note to the parents before the forest days and remind them of the appropriate clothing and equipment. A good habit is to inform parents on the day's activities, so they have a clear understanding that we go outside to learn and not just for fun.

The outdoor teacher's equipment fits into a backpack.

The basket is always packed and ready to go.

Equipment

The teacher may opt to have a separate bag, rucksack or basket with the "basic setting" of necessary equipment ready for use. Then teacher only has to choose the additional materials needed for the day's teaching. See checklists for teachers for outdoor teaching.

Planning and materials

Outdoors, it has been good practice to either revise something that has already been learned, or introduce a new topic by making observations and then continuing indoors. So not all teaching needs to be carried out outdoors, as it's possible to use different models flexibly.

Materials for outdoor learning can be found online and in books. It is also easy to make the materials oneself, by enlarging handouts and either laminating them or putting them in plastic pocket folders. Exploratory and active learning is a very natural way of studying and being in nature.

Tips for beginners

Anniina Hakkarainen, class teacher, Espoo

- **Start small!**
- **Create a clear structure for outdoor classroom-days and tell it to the students!**
- **Be persistent, not everything works out the first time!**
- **Do not stress!**

Invite another class and teacher along. Find the nearest forest. At first, play a fun game. Divide the students into groups and ask them to build a hut. Enjoy their hustle and bustle. The hardest part comes when you have to get the students back to school. What makes it easier is promising they will return soon.

Anu Männistö, class teacher

If you are in the early stages of outdoor teaching, start with something small and easy. Working outdoors may initially be challenging for both the teacher and the children, when familiar settings change from restricted spaces with walls to an open environment, and before new outdoor learning routines are formed. So the first days may be restless if outdoor education is new to the students. That's why it's a good idea to go through the rules at the beginning of your first outdoor lesson.

It is hard to come up with something that cannot be studied and practiced outdoors. I have been a teacher at regular traditional schools, and taught all subjects varying from music to crafts, and maths to history outdoors. For me, the amount of outdoor teaching has steadily increased as my experience and opportunities have grown.

Johanna Sahila, class teacher

Teaching outside initially seems more difficult than it is. One often sets oneself such high expectations that everything should be planned to a tee, be amazing and fail-safe and pre-tested. In practice, however, outdoor teaching and the things that are done there, the exercises, and tasks often don't go as planned, starting from the fact that everything takes more time - but no pressure! Keep a few plan B's with you, and you will do well.

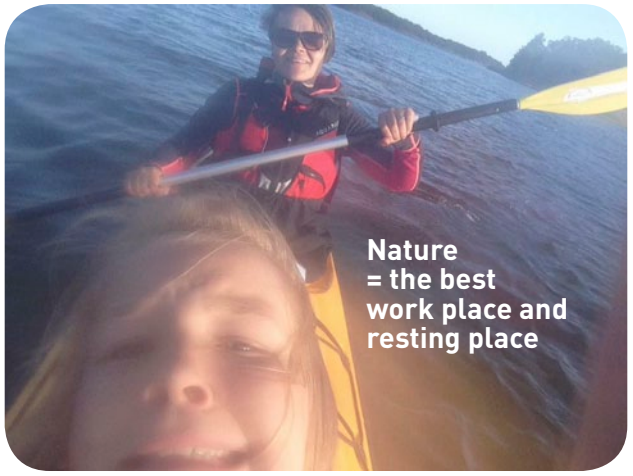
It is advisable to regularly teach outdoors, so you develop a routine with it. Be brave and open-minded in trying new things and ask for advice from someone who has tried outdoor teaching.

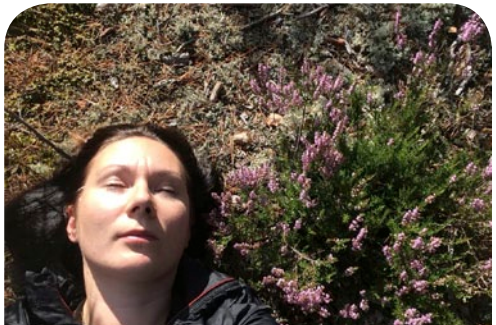
ElinaMarika Johansson,
special education teacher, secondary school

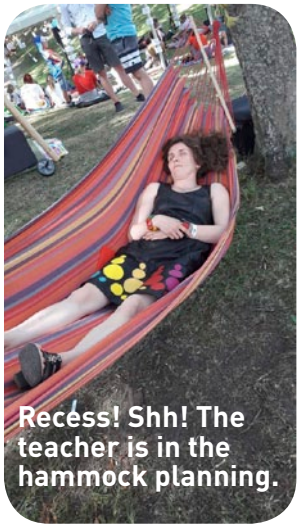
Countless Ways of Being an Outdoor Classroom Teacher

Make use of your strengths in outdoor teaching. Start with what comes naturally to you.

Hiker, researcher, and pleasure-seeker. Inspiring inspirer. A rambling jogger. Come rain or shine -type. Water lover. Athlete.

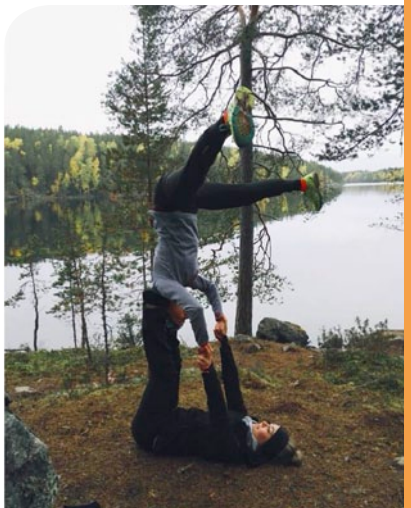


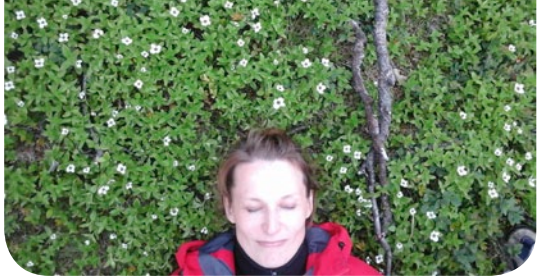


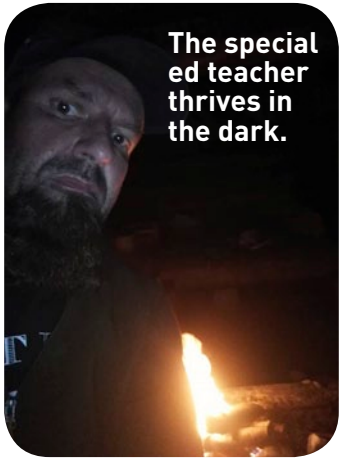


A bit of an adventurer. Face freezer. Aesthete.

Campfire reveler. A mover and shaker.

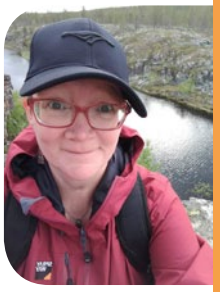






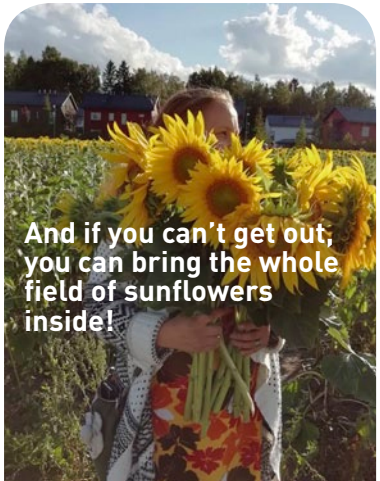
The special ed teacher thrives in the dark.

Water is my element. Cheek against moss. Outdoors - in all seasons.



Trickster. Hammock sleeper.
Experimental outdoor teacher in a yellow jacket!
Always pointing the way in wonder.

Camping, love for nature and joy.



And if you can't get out, you can bring the whole field of sunflowers inside!

20 steps to the Outdoor Classroom

Outdoor Classroom -project steering group

1. It is good to clarify safety and responsibility issues before outdoor classroom teaching. It is good to have a plan on how to work in the outdoor classroom. It is good to discuss outdoor classroom teaching in the work community, and it should be recorded in the school's annual plan.

2. Don't go out alone with the class for the first time. It is good to have a co-teacher with you. Co-teaching facilitates the planning and implementation of outdoor teaching. The partner can also be any adult. Sometimes parents are happy to be involved in outdoor teaching.

3. Take the opportunity to take a smaller group outdoors, for eg. during lessons when the class is split.

4. Appropriate clothing is a prerequisite for comfortable outdoor learning. Clothing instructions must be given well in advance. Clothing does not have to be of an expensive waterproof soft-shell fabric, simply weather-durable. It is a good idea to bring some spare clothes.

5. Talk with the students in advance about what you will be doing outdoors.

6. Group management is easier when everyone knows the boundaries of the outdoor classroom. Getting to know the outdoor classroom before you start teaching will increase safety. First, you should choose one place that will become familiar and safe.

7. Start the outdoor teaching in the schoolyard. The change in routine won't be too big and the amount of space is more manageable. Take note of other schoolyard users and recess times.

8. It is advisable to make students stand in a circle at the beginning and end of each task so that everyone can see each other. You can use a sound to call everyone to the circle.

9. Use small groups in outdoor classroom teaching.

10. You should start with a familiar game or exercise. Active group work is a good method for outdoor teaching.

11. Start with one or a few 15-30 minutes exercises. You can find many ideas with Species Cards from: ulkoluokka.fi/materiaalit/. Keep a relaxed schedule, so there is time to take in the natural surroundings.

13. Own your outdoor classes. Take advantage of your own strengths!

15. Ready-made lessons and plans can readily be found on the Internet. For e.g. MAPPA, the Finnish Material Bank for Environmental Education is a good source. www.mappa.fi

17. Many organizations provide in-service trainings for teachers. Take advantage of training opportunities to make outdoor teaching easier to begin.

19. Invite an expert to school: a bird-watcher, scout, leisure fisherman, nature enthusiast, backpacker.

12. Be forgiving towards yourself when starting outdoor teaching. New environment will offer a lot, but it will take some time time for the teacher and pupils to get adjusted to the new teaching style.

14. There is more than information-based learning. In the outdoor classroom, know-how and skill-oriented education is easy to apply.

16. Various organizations lend supplies for outdoor teaching. For eg., nature and environmental schools lend outdoor teaching materials.

18. Go with a class to a nature school and apply what you learn from the nature school teacher. Find someone who can advise. www.lyke.fi

WWF, Essi Aarnio-Linnanvuori

20. Network! Find other outdoor teachers from Facebook groups and learn from them.

#Outdoor Classroom - Species Cards – Learning Outdoors through Play

Meri Elonheimo

Nature offers a lot of material for outdoor learning. When using natural material, it is worth paying attention to everyman's rights, which are compiled further in this guide. Getting started can be easier with readily-prepared material and a few extra ideas for games in the back-pocket.

The Outdoor Classroom Species Cards are a collection of Finland's most common plants and animals beautifully illustrated by Milja Laine and Laila Nevakivi, and designed for outdoor use. Many of the species are familiar, but it is also easy to check the names of unfamiliar species. The Species Cards can be printed and laminated for outdoor use from www.ulkoluokka.fi from the materials section ('materiaalit'). In the same address, you will also find over 70 game- and exercise tips that will help you play with the Species Cards.

Playing games with these cards will help children to learn about the nature, and the Species Cards will familiarize us with biodiversity. With a card in hand, it is easier to focus on one organism at a time. It can help us become aware of details. When studying outdoors, you should always make real observations and compare the living species with the images on the cards. In addition to learning species and sharing knowledge about nature, the cards can be used in many ways e.g. stimulating maths, language and art classes.

Joy and play are important for learning. In the species games, children learn to empathize with other organisms. It is good for practicing interaction, and a sturdy base for value-based upbringing. The species in the games become familiar to the children, and as a result future lessons involving species identification become so much easier. Here are some examples of the use of Species Cards.

STORIES IN A ROW

The players pair up, and arrange themselves in a row. Each pair is dealt one card. They discuss the species on the card while walking. The discussion is allowed to be fictional, based on imagination and tales.

COCKTAIL RECEPTION

Each player is dealt one Species Card. The species name on the card becomes the player's surname.

Everyone introduces themselves to each other with a handshake and greeting: "Hello, I'm Willa Wasp! What's your name?" The other replies: "Hello, I'm Adam Ant! Pleased to meet you!" Then, Willa Wasp and Adam Ant exchange cards, making them Willa Ant and Adam Wasp. They introduce themselves to the next players, and so on.

FLY SWATTER CHAMPIONSHIP

Divide the group into teams of 4-8 players. Each team forms a circle. Species Cards are placed in the middle, picture side facing up. Two players in each circle will get fly swatters. The remaining players take turns in instructing which species the swatters should swat. When someone says "fly", the "swatter players" will try to hit the fly-card as fast as possible. The fastest keeps the card. The winner is the one who collects most cards. Then new swatter players will be chosen, and a new round begins.

BINGO

Look for the species that appear on the cards. Mark the species you have found in the bingo card and try to get a strike through.

Instructions for Teaching Outdoors

Meri Elonheimo, trainer, environmental educator

Leave Space for What Is Most Important

Outdoor education makes it possible to make real nature observations and have shared learning experiences. The materials are less important than encountering nature with your own senses. So leave time for wonder, experience, and feelings, and to discussion.

Giving meaning and structure to new natural elements, experiences, and information in an appropriate group expands understanding and vocabulary. In the outdoor classroom, different kinds of learners get to shine, so cheer them on.

In the Schoolyard

The schoolyard is the easiest outdoor learning environment to reach. There is much more room for activities and social learning than inside. There is a greater variety of stimulating things than in a gym. An asphalt court can be used as a gigantic chalkboard.

There are many ways to utilize a schoolyard: In good weather, work that was planned for indoors can simply be moved out. A small part of the lesson can be done in the yard after recess or towards the end of class. Even a short excursion outside is possible, since the outdoor exercises don't take a long time. An outdoor exercise as an introduction to a lesson, or spending half the class on practical exercises after learning theory indoors can be enough. However, an entire hour or day of combining different subjects can be planned for the yard, or a longer project can be done.

When learning in the schoolyard, it is important to take into account the timetables of other classes. Concentrated working in the yard is difficult when others have recess. It might be a good idea to have a reservation system for the use of a popular outdoor learning area, like there is for other school facilities, too.

In the Forest

A school's nearby forest can be a rewarding teaching spot just as is a more distant recreational forest area. In a good forest location, there is plenty of room for group gatherings and games in addition to natural diversity. Take advantage of different forest locations for different activities.

The safety boundaries of the forest area should be readily perceived, and if not, everyone should stay within sight of the meeting point. A frequently visited outdoor classroom terrain should be able to withstand use. Nature reserves can only be used for occasional visits.

Forest provides protection, but always stay prepared for the season and weather conditions. In the cold season, it is important to choose a windproof place, and a shady spot in hot weather. You can stretch out a tarpaulin as a temporary shelter from rain. Fixed structures such as seating around a fire pit, shelter, and dry toilet allow for a fixed outdoor classroom.

Before Going Out

Go through the schedule and rules. Also, check for relevant everyman's rights. When the course of the outdoor classroom has been spelled out clearly, the pupils feel safe and know that we are going to the forest to learn, not for recess.

Routines Create Safety

Routines are as important in outdoor teaching as they are indoors, and allow for focus on the task at hand. Examples of time-proven routines: always going out on a specific day of the week, always gathering in the same place and circle in the forest, the organizers carry the supplies out and back, backpacks are placed in a specific place, a forest-recess and snack-time are maintained.

The Circle

It is good form to give instructions and tasks while standing in a circle. Standing close to each other side by side, so that the instructions are heard despite wind and other sounds. Close contact creates a sense of community and is also an exercise in social activity.

Working in Small Groups

Two or three students together often form a good working group. Grouping is sometimes difficult, but it is beneficial for students to work with a variety of different people. Outdoors, they get to know new aspects of each other. The group should not have more than six people, or else some fall into passive roles.

Different Ways to Divide into Groups:

According to the number of legs on an animal: Insect groups, hedgehog groups, etc.

According to species groups: Pre-selected suitable set of Species Cards, everyone is dealt one.

Depending on the colour of your clothes: Look for a partner who has the same colour as your clothes.

Numbers and body parts: Warm-up exercise in changing groups, for e.g. "find three thumbs & press them together".

Based on an object collected from nature, or a Species Card: The number of members per group is announced, the students can then come up with reasons why certain objects or species belong in the same group.

Rope ends in pairs: Place children in a circle, you stand in the middle. Take a bundle of yarn, hold them from the middle. Then ask each pupil to grab an end of one string, the person who grabbed the same string as you, is your partner.

Warm and cold: Split into two groups based on whether the person standing next to you has warm or cold hands.

Colour-coded clothes pegs are suitable for the food-chain game and other group divisions.

Materials and preparations

Don't bring too many things. Select the appropriate Exercise Cards and Species Cards in advance, and leave behind the card stacks and materials that are not needed. Use natural materials found on site. You can leave them on the ground when you leave.

Having many helpers speeds up preparations. Ask students to make materials, and given them the responsibility for handing out supplies and collecting them after exercises. Take turns in carrying materials, so that everyone takes responsibility on his turn. Everyone can take care of their own equipment, such as seat covers and snacks.

Out to Learn in Kuopio -Project (Ulos oppimaan Kuopiossa) Forest Backpack Equipment:

White cloths are used under collected natural materials, and the Exercise and Species Cards. The natural materials stand out better on the cloth. In windy weather, small rocks can be used as weights on the corners of the cloth. If needed, use a water or alcohol-soluble pen to write on the cloth.

1-metre long red wool yarn can be used in many ways: for marking observations and paths, framing and grouping, as well as different measuring-tasks and verbal tasks.

Magnifying glasses and loupes allow you to observe the small details of nature. You can "take a hike in a micro-landscape" even in the middle of a city on a lichen-covered tree trunk. With loupes you have to put the transparent part against the research object, your eye close to the lens.

Colour-coded clothes pegs are suitable not only for the food-chain game, but also for dividing into groups, and can be used to attach cards to twigs etc.

Wooden animals can be used as group mascots and in games.

The Species Cards are a compilation of over 200 common species in Finnish nature, see materials at www.ulkoluokka.fi. The cards can be carried along and used to elucidate the species encountered in the outdoor classroom, e.g. to show what a redwing really looks like after one flew by. Who noticed the red sides or white line above the eyes? The cards can also be used in a variety of exercises and games enhancing species identification and ecological understanding.

Handing out Materials and Instructions

Give instructions before handing out materials. Introduce the materials and how to use them.

At first, it might be difficult for students to remember the instructions, so keep them brief. For long tasks, explain one part at a time. Tell students what to do when they are ready. For eg.: Find an object that is the opposite of this stone. Then come back with the item.

Use body language, gestures, facial expressions, and natural materials to explain the task.

Exclaim "You're welcome!" to prompt the students to disperse to carry out the task. When it's time to gather together, call them with an sound agreed-upon, for e.g. ringing a bell.

Checking exercises

It may be difficult for the teacher to take in all the input and things discovered by students. You should go through the exercises in small groups, by presenting the findings to an other group or pair who already has finished the task. Later, it is advisable to discuss with the whole group what was learned.

Action alone does not lead to learning. An important part of the learning process is reflecting and analyzing the lesson by discussing together, through drama, pictorial expression, or independently by writing in a learning diary.

Lesson Plans for Every Season Using Species Cards

Johanna Sahila, class teacher

Outdoor learning may resemble gym lessons or environmental studies. I would rather encourage you to study larger entities and phenomena that encompass many subjects, as well as to get out in all seasons. Many lessons can readily be divided into indoor and outdoor teaching.

Taking into account skill level and group size, the education modules I have devised are applicable to grades 1-6. Customize them to fit your schedule and group: add or remove parts, and make them more difficult or easy. You can also use the exercises for teaching different themes.

In winter, sledding down the hills warms pupils up in the outdoor classroom.

SUMMER

Content: ice-breaker games, bug research

Aim: getting to know each other, increasing knowledge on species

Tools: Species Cards for invertebrates, jars, spoons, magnifying glasses, and if available, a sheet for species identification (invertebrates).

1. Your nature name
Think of an animal or plant found in nature with whom you share the first letter in your name. Standing in a circle such that everyone can see each other, introduce yourself, eg., "I am Matti the Mole".

2. Bug game with Species Cards
- Kim: Getting to know all the cards, ie. species. The players close their eyes, the instructor removes one card, and then everyone tries to remember which species is missing.
- Guess My Mystery Friend: Played in pairs, pick one of the cards on the ground. The partner asks questions and tries to find out which species is her partner's secret friend. Only yes/no answers are allowed.

3. Search for bugs in the schoolyard or nearby forest
Good places are tree branches, trunks, flowers, plants, under rocks, or compost soil. Examine your findings with a loupe. Identify species into species groups, for e.g. by the number of legs or even more accurately with a species identification sheet. Keep in mind that the most important thing is to explore and find characteristics. One does not have to end up with the correct identification for every insect or invertebrate.

4. Millipede tag
There are four catchers in the game. Those who are caught become legs on the millipede, by going behind the catcher and holding the one in front by the waist. The millipede with the most legs wins. The game ends when everyone is part of a millipede.

5. Reflection
What did I learn outdoors? How did it feel? Get together to talk about what was the best thing that day.

AUTUMN

Content: Wintering of animals and trees, making mathematical stories with natural materials, finding colours and shapes from nature and making a collage.

Goal: Learn which animals winter in Finland and how they spend the winter. Enhancing the ability to observe nature and making mathematical calculations relevant and more vivid.

Tools: Species Cards, multiplication cards, sticks, pinecones, colourful leaves, and anything else you can find in nature.

1. Assembly and introduction
How do you know that autumn has come? What observations have you made?

2. Touch what I found - game
One member of the group tells the others about an item close by, eg. "Touch a fir-cone!" Others locate the item, touch it, and return. Then switch callers. The game can be made more difficult: "Touch (item) with your leg/head/knee..."

3. Get to know the species
The teacher has Species Cards with birds, reptiles and mammals. Together, discuss:

a) Which birds fly south? Why?
   - There is no food available for insectivores in the winter.

b) What do reptiles do in the winter?
   - They hibernate in a sheltered hole.

c) Which mammals move in the winter? What happens to others?
   - Hibernation, torpor.

d) Cards are classified based on these categories and placed on for eg. cloths on the ground: migratory birds, stationary birds, hibernating animals, active in winter.

4. Mathematical stories
Depending on the age of the pupils, choose the calculations that are used for the exercise.

- Choose one counting card
- Find sticks, leaves, and other items nearby that can depict numbers.
- Come up with counting stories in small groups and tell them to others.
- Example: Three wedges of cranes flew over the field. There were 7 birds in each wedge. How many cranes flew over the field altogether? You'll need the crane-card, counting card 3 * 7, sticks 3 * 7, ie. 7 + 7 + 7 groups: IIIIIII IIIIIII IIIIIII. The answer is not marked separately, instead it's interpreted from the sticks: A total of 21 cranes flew over the field.

5. Active search
Look for as many different colours and shapes as you can in nature, and collect these items into a pile in 2 minutes. The time can vary.

6A. Make a collage
combining items with the same characteristics, and place them together on the ground. These can be polygons, round shapes, oblong shapes, cold, hard, or jagged etc. At the end, admire how the autumn looks like in this collage. Take a photograph as a memento and put it up on the classroom wall.
OR

6B. Write a list
of adjectives based on the collected items. Then, under the title 'Autumn', write a poem, or a short-story using adjectives in the list. Poems or stories can also be written later and put up on the classroom wall.

WINTER

Content: In the winter, life is hidden under the snow. Study the trees, shrubs, and birds.

Goal: Learn to observe the surrounding nature near the school.

Materials: Winter-study handout, in which you record the results of the observation, details of bird observations, a pen, a ruler or a short tape measure, winter bird cards.

1. Who is afraid of the yeti - game for warming-up.

2. Discussion about nature in winter

Where do you find signs of life around you? Are the trees and shrubs alive? Have you seen animal tracks in the winter?

3. What is a bud?

Look for buds on plants. Feel it and compare it to other plants' buds. Discuss the observations. The teacher explains that the following year's leaves and flowers are formed from the buds. So the plant is indeed alive and waiting for spring for it to continue growing. Pupils get a short while to look for as many different buds as possible.

4. Looking for animal tracks!

Let's go together to look for animal tracks. Good places can be found near house edges, bird feeders, ditches, fields, under trees and on the road sides. After the trip, the teacher instructs the pupils to go to their own places with a partner to fill a research-form based on their findings. The best timing for a trip is when it has snowed 1-2 days earlier and the temperature is below 0°C!

5. Bird observations in the schoolyard

Assemble in the schoolyard in a place where you can hear birds' sounds. An ideal place is close to bird feeding spot. The teacher guides the observations: Where is the bird? What is the bird doing? What does it look like? Is it making any sounds? Do you recognize the bird? The pupils must be silent. After making observations together, partners choose their own place to stay put, where they watch the birds for 5 minutes. Observations are recorded in a handout.

6. Winter bird sledding

Spread winter bird cards next to a stack of sleds or snow gliders. One by one, pupils pick up a bird card and tell its name to the teacher. If the identification is correct, the pupil can sled down the hill. The same is repeated until all winter bird cards have been identified or time runs out.

SPRING

Content: Exploring spring phenomena and making your own observations, revision of migratory birds and making observations.

Goal: Learn the signs of spring, learn to recognize at least one familiar bird by song.

Materials: A shared research form for recording results. Dice-assignment form for spring treasures (see section 3). A pen, ruler, timer, cough medicine measure cup, egg cartons, twigs/sticks, and a big die.

1. Fruit salad game with migratory birds

Everybody, except the caller, draws a circle on the ground. The teacher whispers to each which migratory bird he/she is, eg. chaffinch, white wagtail, crane, skylark. When the caller shouts "chaffinches!", the chaffinches must exchange nests while the caller tries to occupy a free nest. The one who is left without a nest becomes the caller. If "migratory birds!" is shouted, all birds exchange nests.

2. My experiences and sensations

What spring observations have you seen or can you see now? What can you hear? What can you smell? How does the spring air and sun feel on the skin? Could you taste spring somehow? You can taste, for eg., rowan shoots, birch buds, wood sorrel, and the small leaves of ground elder.

3. Spring into spring studies!

Pupils cast a die and perform tasks in pairs. Die Tasks: 1. Look at the bottom of the egg carton for an adjective and look for a treasure that fits the cup. 2. Using a ruler, measure the thickness of the snow from three places. 3. Find a stick that is a. as long as your index finger, b. little finger, c. foot. 4. With the help of a timer, for 1 minute collect water pouring from a chute into a vessel. 5. Using a ruler, measure the depth of a puddle at its deepest point. 6. Listen to the song of the bird. How would you spell what you heard? Write it down.

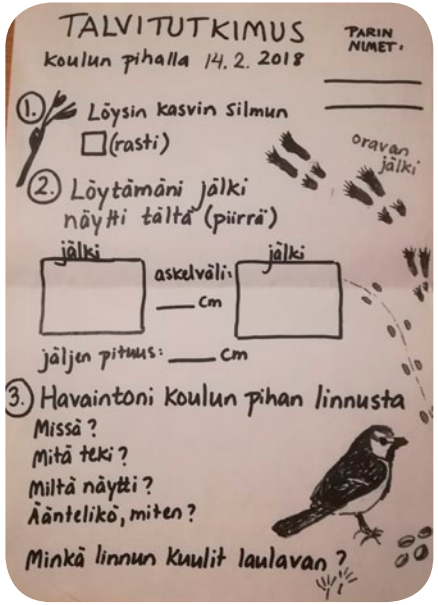
The teacher follows the progress of the groups, and the groups can immediately compare their results to others as they are reporting their results on a collective "research form".

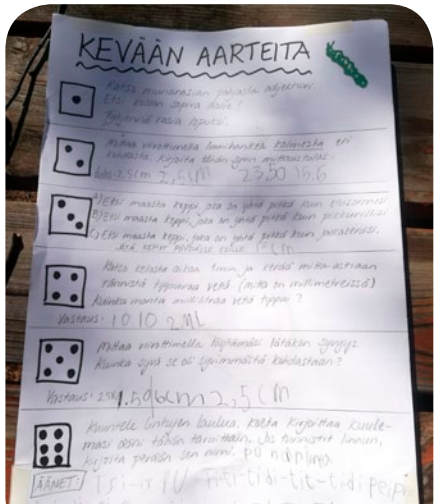
4. Final discussion

How did the research work go? How did it feel? Did anything surprise you? What was most fun?

5. Listening to the bird sounds

To finish, listen to one familiar bird singing in the yard, for eg. a chaffinch or a white wagtail, and learn to identify the song together by saying "Raise your hand when you hear a chaffinch sing." Also, learn the distinguishing features of the bird if it is in view, or from a picture.





5. Outdoor Teaching as a Routine

You can regularly teach outdoors - even several times a week and entire days. Regular outdoor teaching adds movement to the school days, because you are naturally active in nature. You can teach all subjects outdoors - languages, maths, art, crafts or music. You can also teaching during any season, as long as the equipment and materials are weatherproof. There is no such thing as bad weather when the equipment is in order. E.g forest recesses, a spare clothes reserve, co-teaching and colour coding for materials are tips recommended by experienced outdoor teachers.

Outdoor teaching requires routine: go boldly out into the outdoor classroom in any weather!

Outdoor Teaching during the First Years of Primary Education

Ulla Myllyniemi, , school teacher and environmental educator
- Photos by the author, except clothes reserve by Henrik Kettunen

It is easy to start outdoor teaching right from the first grade. That way it becomes a natural part of school, children learn to anticipate it and are prepared for outdoor activities. But also since the first two years of school are filled with topics and themes suitable for outdoor teaching. The only difficulty is the plentiful possibilities! Outdoors, you can teach anything from languages, maths, environmental and physical education, art, crafts to music and more. Multidisciplinary modules are easy to implement half-outdoors and half-indoors.

Outdoors the formation of a group spirit takes place naturally in the bustle of action and play. Learning is deeper when things can be memorized through a variety of sensory channels and motoric actions. Exploratory learning happens naturally outdoors. Games are readily transformed into pedagogical events. Being outdoors in nature has beneficial health effects and cuts down the time spent in sitting. These are just a few of the reasons why to use the outdoor classroom from the very start of one's school track.

With my 1st grade class, we did outdoor learning two days a week and had joint-teaching with a nature-education oriented pre-school. We designed the exercises so that everyone benefited. The great benefit of this cooperation was that many adults were involved, and so there was always someone watching over the children at each exercise. The most effective solution turned out to be 3-4 activity points where the children visited in small groups. The activities were brief, allowing everyone to follow and participate. In addition, we always had a 'forest recess', which meant free time in an agreed-area, following the same recess rules as at the school yard.

We also had many theme days and excursions, when we enjoyed the outdoors for a longer time and also ate outside. We even linked harvest festivals, Halloween, Finnish Independence Day and Christmas to some outdoor activities. On longer trips, we walked further and enjoyed snacks during breaks. In the spring, we did a phenomenon study in nature that was so inspiring that everyone became fascinated by stones and rocks.

Organising outdoor activities regularly resulted in the children being well equipped on forest days. As a teacher, I had a reserve of spare clothes with me, and I would distribute tube scarves, gloves and rainwear as needed. My 'forest basket' was also equipped with a first aid kit, some water and cups.

In the 2nd grade, our collaboration with the pre-school became more rare, but we still visited them a few times during the school year. For practical reasons, our 'forest day' was one double-class per week. As the number of adults helping out decreased, new ways of working in the forest had to be invented. Hence, children's responsibilities were increased. The routines were already in place, but the variety of work mode's increased. The activities were often in short bursts and connected with games that required exercise. Activities were divided into different stations, out of which only one or two had an assisting adult. The amount of group work grew, and we practiced taking responsibility for oneself and consideration for others.

The tenets of positive pedagogy guided our steps the whole way, regardless of whether we were in- or outdoors. We fit one longer project per school term, autumn and spring. We also learned to grasp the moment and explore things that just happened to get across our path. It was easy to arrange long excursions that lasted the whole day when the children were already familiar with the outdoor classroom area. Play and action always started as soon as they had free time. The weather was never a problem, even when it was slippery or wet, although this did require the spare clothes reserve to

come into use. Working in groups became smooth and anticipated. The teacher set the groups, so that no one was left out and the children learned to work with everyone. For both the teacher and the pupils, it was refreshing and rewarding to have visitors to join in with us, allowing them to contribute to the teaching, observing, and being together.

The themes were determined by what was being studied. Generally, at the beginning of the week, I set a learning plan and decided what would be the most fruitful topics to introduce, review, research, or study outdoors. When you teach all the subjects yourself, it is easy to creatively combine the different subjects and lessons. Outdoor teaching is a way of life. You can go outside when there is something that can be taught actively. Or when the children clearly need something other than sitting at their desks. Or they just feel like going out. In the spring, the children asked if they could go to the forest and take toys with them during their reward-hour. You probably aren't surprised that I did not refuse…

Teacher's tip: FOREST RECESS

A forest recess is a free play time in the woods. This time is meant for games, playing, making voluntary investigations, building huts, socializing and other freely chosen activities.

The concept of forest recess includes the following:

1. Recess is a short and limited period of time.
2. Recess is for unrestricted activities.
3. Recess is held in a predefined area of the forest.
4. The rules of the school apply at recess.
5. The forest recess strengthens children's personal relationship with nature.

Group activities can be practiced with the help of a sheet.

During forest recess you can slide down nature's slide. The rule is that you can only slide by sitting down.

Teacher's tip: LIST OF ITEMS IN MY SPARE CLOTHING RESERVE:

- rain gear
- tube scarves as scarves or hats
- knit gloves/mittens
- socks
- outdoor pants
- beanies/ hats
- a few pairs of rubber boots

The equipment we have is from various sources - donated, self-purchased, discarded from lost-and-founds - and have all been washed. Tube scarves have been the most used part of the clothes reserve. Rain gear has been important on rainy days. When you have worn the wrong size of outdoor trousers on a few excursions, you start to remember to bring your own for the next outdoor days... Mittens and socks have been essential when a child's equipment has been too light or incomplete.

A Outdoor Teacher's Workday, One of Many

Ulla Myllyniemi, class teacher and environmental educator

It's Friday, a forest day. Every week I go outdoors for activities with my class and 'The Flying Squirrels', a nature pre-school group. We've planned together this morning's lessons already on Tuesday. Every adult has prepared her own activity station. Working together feels like child's play, and the children can already be considered as accustomed forest-visitors.

Today I am responsible for the animal tracks. The second activity point is an art station, where we look for beautiful natural materials, design, compile, and freeze icy pictures. A hole is drilled into these, and they are hung up on trees with sisal rope as an art collection. At the third point, there is physical exercise in the form of the 'King of the forest'-game. In this way, children get to experience a varied and functional set of actions that allows both 1st graders and pre-schoolers to participate in it.

At my activity point, we get acquainted with animals and their tracks in the snow. I have printed and laminated pictures of the animals, and their real-size tracks, and prepared a stick that shows the size of animals at their wither height. I head out with a head lamp to make the trail at 7:30 am. Along the trail I prepare a mystery task with the theme "Which animal was here and what happened?" I make mole tracks from under a spruce on an open rock, mess the snow, add a drop of red watercolour, and make buzzard wing traces on both sides. I leave clear blank snow all around: the buzzard has captured the mole. I find a suitable place for roe deer tracks. I make a series of small hoof prints. Then, from deer droppings I had collected earlier, I make a pile between the prints. I walk a little further and make a fox trail with drops of yellow watercolour as urine near the tracks. Luckily, I find hare tracks to examine as well.

I hurry to school to fetch the students. We walk in line to the nearby forest, where the nature pre-schoolers are already waiting for us. We form a circle and go through the programme. We tell them about the activity spots, and divide them into groups. It's great - collaboration and diverse activities every week!

Time flies and the work with activity stations is rewarding. There is no time for a forest recess today, we have to rush to school for lunch. Our class eats big portions and everyone has worked up a good appetite. Indeed we had lots of exercise during class. Better to avoid unnecessary sitting if you can! We are in school the rest of the day with class assignments. I am pleased with myself as I start the weekend, because while preparations take time, the activities in the forest are so rewarding that I already look forward to planning the next sessions.

Operating model for collaboration between pre-schoolers and first-graders:

- On Wednesdays and Fridays, mornings are spent together in the forest.
- Teachers have an hour a week of joint planning.
- Activity stations are used regularly in teaching. Simultaneously, 3-4 activity stations, lasting 15 minutes each. Start and finish by gathering in a circle.
- Various groups and group sizes are used: partnering, small group activities and collaborative work.
- Activities are in line with the pre-school and basic education curricula.
- All subjects are taught in diverse ways.

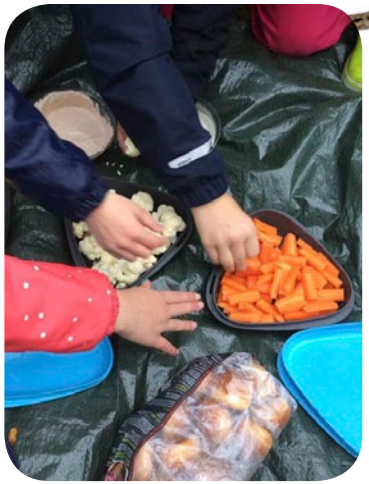
Vegetables are eaten on a picnic trip.

Alphabetic Exercise: Find and write down things that start with the same letter.

After the framed mathematical task, a game was built around it.

Hammer printing is a good technique in the outdoor class.

Pupils make miniature hare tracks with their fingers.



Helsinki Central Park as an Outdoor Classroom

Kerttu Sirviö, class teacher, French teacher, Helsinki

I am excited to learn outdoors with my class. For me the leading idea has been to go out without major plans: the same things are done outdoors as in the classroom, but only with fresh attitude, more enthusiasm, and with a higher activity rate. I have been working as a class teacher only for two years. In the beginning, keeping the threshold and objectives low, allows us to go out often. I have been teaching the same class for two years, during their 1st and 2nd grades.

Our school, Pasila primary school, is located adjacent to Helsinki Central Park. Except for cultural excursions, all of our outdoor learning has taken place there. I have followed the so-called X-schedule with my class all year around. The different subjects don't have their own specific slots in our timetable. It means that one day I may have a whole day of maths and environmental studies outdoors guided by the goals of broad-based learning, and will then focus on another subject the next day. If we define lessons as traditional subjects, we have been outdoors studying: maths, Finnish and literature, P.E., environmental studies, art, introductory French, and crafts (focusing on collecting materials). Ie. all of the subjects outlined for the first two years of basic education!

We have a few bases in Helsinki Central Park very close to the school, but we have also ventured further. We have been out at least 1-2 times a week, every day in May, sometimes several times during school days.

My class is accustomed to going out, and I have not found it necessary to let parents know about outdoor lessons in advance. The children keep their focus really well in the forest and learning happens with joy. Many indoor problems such as concentration difficulties, tiredness caused warm & confined classroom spaces are greatly reduced or completely eliminated when outdoors.

I find it important that children become accustomed to learning outside already when starting their school. My students know how to walk in pairs, listen to directions in nature, be quietly in the woods when necessary. They take learning outdoors just as seriously as they do indoors. They never ask me what the subject is, instead they focus on the task at hand. This does not always happen with classes that go out only for special trips.

Teacher's tip
TEACHING BASKET CONTENTS:

- pencils
- clothes pegs
- sheets with squares
- Species Cards
- dice
- big wax cloth
- bingo grids
- two counting cards 0-100
- fly swatters
- ball
- first aid kit

I always take the basket with me. I add new things if needed and take out what is not needed. There is also a cuddly hedgehog, a toy that always comes with us for outdoor learning. At times, it travels in the pocket of a student. My newest purchases are seat covers and plastic cups for everyone.

Outdoor Teaching at Ruonala School's Third Grade

Kati Paakkanen, class teacher

Outdoor classes have been conducted at Ruonala School in Kotka during the 2017-2018 with classes 3A and 3B. There were 40 students in total, with two class teachers and a resource teacher.

Framework and planning

In the first and second grades, we spent a lot of time outside and in the forest, and implemented the teaching in a physically active way. As the third grade came closer, we came to the conclusion with my colleague that it would be a good idea to arrange a fixed time for outdoor teaching to ensure that we continue with it.

That time was set for Friday mornings from 10-12 o'clock. We also got appointed a resource teacher, and were given the exemption to have lunch at the end of the outdoor class at 11:45. The fixed time proved to be a really good solution. It was easy to inform parents that on Fridays we always spend two hours outside. Students, too, learned this quickly, and they caught up with dressing appropriately for the weather over autumn. It became a routine for students to dress in warm clothing and rubber boots, and have spare socks on Fridays.

Also, once it was decided that we would be outdoors, and parents had been informed, it was harder to come up with excuses not to go out as planned if the weather forecast didn't look so promising. Throughout the school year, we cancelled outdoor classes only twice because of the bad weather. One time was sometime in late autumn when rain was pouring non-stop and the wind had reached storm levels. Another was in the winter, when the Rescue Department had a warning on their website against going into the forest because of the huge snow loads falling from trees. All other Fridays we spent in the schoolyard, on the beach, or in the forest. Drizzle and freezing cold temperatures were no bother, and in the spring we survived a black fly attack, although only barely...

The planning work was didvided with my co-worker so that we took turns in planning the outdoor classes, on month by month basis. The person in charge planned the theme of the month, as well as the subjects, topics, and some ideas for activities. The theme of the month could be, for eg., forest animals in August-September, animal adaptations to winter during the winter term, and spring monitoring and birds over spring. Sure, there were always activities and lessons on other topics, but having a theme made planning easier and brought continuity to the outdoor classroom each week. Every teacher designed and prepared his or her own activity point as instructed by the one in charge that month. During the year, all the third grade subjects except music and English were taught in the outdoor classroom. This year, in fourth grade, English has been included. Environmental studies, Finnish, maths and P.E. were our most common outdoor classroom subjects.

Structure of outdoor classes

We quickly formed a clear routine and a fixed structure for outdoor classes. This was useful in many situations, as the framework of activities was clear to the pupils.

The outdoor lesson started after a long break. This, too, turned out to be a great arrangement. During the break, teachers had time to assemble materials and make last-minute adjustments. If necessary, we were able to leave earlier to the outdoor classroom, if we had planned to go further than usually.

Teacher's tip:
GET LOTS OF CLOTHES PEGS!

With clothes-pegs you stick tags on trees, score points, mark places or children, practice division, play clothes-peg tag, affix things that would fly off in the wind.

At the end of the break, the students got in line with their classmates under the school shelter. From here we set off to the outdoor classroom area. Pupils got used to carrying materials in solidarity, and generally there were more enthusiastic carriers than equipment. We had and still have a few standard spots near the school, the nearest of which is on a wooded slope next to the school, which takes about five minutes to reach.

When we came to the outdoor classroom, we gathered in a big circle where the teacher introduced the lesson of the day. E.g. "Today we study maths at two activity stations (multiplication tables), and at one activity station we will review winter birds." We also made observations about the environment, such as the weather, changes in nature compared to previous weeks, listened to birds, and the like. The group was divided in three, one teacher in each activity point. Within an hour and a half, each group had time to visit each teacher's activity. The blow of a whistle alerted when it was time to move to the next point. About 20 minutes per activity station was a suitable length. This is a perfect time for the third graders to concentrate. At the beginning and at the end, we allowed for time for getting organized, and there was no sense of hurry.

At the end, we reassembled in a circle to check that everyone was present, and maybe a bit of reviewing of what we had done. Then back to school and straight to eat. We had a great appetite every Friday after a couple of hours of outdoor activities!

Throughout the year, students had to write an outdoor classroom report for homework. Their notebooks had a report writing guideline glued to it. It had to include a date and the place where we had been. In their own words they had to write what kind of activity stations they had visited, and consider what subjects and other things they learned. They also had to complete the same four sentences in each entry: "I learned... I studied... I practiced... It most enjoyed..."

The Strength of the Three

In addition to routines and pre-scheduled outdoor classes, the success method has been the three-teacher system. Getting the help of a resource teacher reduced the size of groups, which allowed for a variety of activities, but it was also useful in situations when one of the teachers was absent. It was easy for a substitute teacher to get involved, when someone present had been involved in planning the activities. There were even times when two regular teachers were absent and two substitutes had been alerted to attend that same morning. And still it worked out wonderfully! The students knew the routine, and the substitutes had clear instructions for manning the pre-planned activity points, so nothing could go wrong! If the activity were dependent on one adult, the planned outdoor teaching would probably have to be canceled or postponed if the teacher was ill.

When Do We Go to the Woods? – Teaching Outdoors around the Year with 5.-6. Graders

Anniina Hakkarainen, class teacher, Espoo

In the mornings of outdoor classroom days, students wait at the school entrance before the bell rings. Their clothing is a bit different from the usual school day, a few already have their rubber boots on, some still in their backpacks. Packed lunches and water bottles are filled in the school cafeteria. When the bell rings, the whole group is ready and waiting to go to the woods.

We have been learning outdoors for a few years now, 1-4 days a month depending on the season. Outdoor classroom days are always eagerly awaited, and students check the calendar for the next time they get to go to the woods. In my experience, the youngest pupils are open to outdoor education from the start. The experiences they have outside carry them through primary school, and they don't become averse to this mode of learning even at the onset of adolescence. In contrast, older primary school students with no experience of working outdoors may be reluctant to go into the woods. For two years, I worked in a multi-grade class, with half being experienced outdoor pupils and the other half not. Outdoor classroom days in the autumn were full of complaints about mosquitoes, long trips, and embarrassing clothes, and studying outdoors did not take off. After persevering with them, by the time our Christmas trip came around, this complaining-half already conceded that outdoor classes were "okay". By spring, the whole group had been turned and everyone was asking for the next forest trip.

I saw the team spirit-building effects of outdoor learning, particularly when I was working with multi-grade classes. For the first year at school, the class was clearly divided into 5th and 6th grade, and the students did not voluntarily work with each other. On outdoor classroom days, that boundary between the grades gradually started to disappear and they became one group. By the second year, the pupils also worked in mixed groups at school.

We have several destinations where we hold outdoor classes during the year. We use the school's yard on a weekly basis. Helsinki Central Park, about a 20-minute walk away, is in active use from early autumn and spring. Especially in colder conditions we visit the nearby camping area, which has fire pits and toilets. We travel there with public transport, by bus.

We have been working together with my current class since 3rd grade. At first the outdoor learning moments were very short and we emphasized movement. Now, outdoor classes have been going on for several years, and the number and scope of outdoor studies have increased as students learn to concentrate and work outdoors. Especially for very lively students, concentrating outdoors is often challenging because so many interesting things are happening in the surroundings in addition to the teacher-led activities. On the other hand, for a student who needs movement and activity, the outdoor class offers the opportunity to release that energy. A familiar structure helps with keeping the focus on a task outdoors, just like in the classroom.

We hold outdoor classroom days regularly. I consider outdoor learning a value in itself, because while working in the forest social interaction increases, students are physically active, their relationship with nature develops, and we are around themes of sustainable development, even if the forest trip had no purpose other than for outdoor activities. However, in the upper grades of primary school, the curriculum already contains plenty of diverse contents, so the outdoor classroom days have to be carefully designed to support these and the topics underway in the class. Outdoor education emphasizes on experiential learning, where the student can build, experiment or experience with the topic being studied. In outdoor education, concreteness is strongly present all the time. Outdoors, there is room to try things you can't experiment indoors, such as the size of an acre or hectare. These outdoor classroom experiences are verbalized together in the forest. Shared experiences can be revisited in the classroom, thus moving from concreteness to abstraction in the learning process. Topics and issues of the outdoor classroom day are always somehow returned to at school. We either discuss them together, take them to the next level, or write a learning diary of the experiences and lessons of the day.

Outdoor classroom days always include a tremendous amount of physical activity, which in turn contributes to the learning process. If we spend the day in a specific place, we'll move around doing different tasks around the learning environment.

During outdoor classroom days, we have carried out the following modules:

Measurement Day: We walked a 6 km hiking trail that included volume measurements by a creek, learning how to measure tree height, estimating traveled distance, measuring 100 metres and timing how fast everyone can run it, and practiced unit changes from the kilometer markers on the sign posts along the route.

Life in the Middle Ages: We spent a winter day near the campfire site. Each student received a role as a member of medieval society. According to class, the students were given various tasks that they had to perform during the day. The peasants built a snow fortress under the crown vassal, the knights prepared a tournament, the craftsman made firewood and carved wooden spoons for the lady of the castle, the priest and others at the monastery built a church and concocted natural remedies and familiarized themselves with the first aid kit. From time to time, the village priest or crown vassal summoned the entire crowd to the central market square and each class had to tell what they had done. The day progressed according to general script written by the teacher, but the students brought their own to the story. The day also included chance cards that the teacher or assistant could give to the students, such as "You have injured your foot, go to the monastery right away for healing." The day culminated in tournaments that each class had prepared for with their own contribution.

Life in the Stone Age: We built a Stone Age dwelling from sticks and twigs found in the forest. The dwelling was appropriately finished with a fire ring surrounded by stones we collected. We reflected on the tools and weapons that Stone Age humans used. Many different types of spears were made by carving with a knife. We thought of ways in which they hunted large prey animals. Then, we dramatized the hunt for a mammoth, which was painted on kraft paper and hung on spruce branches with clothes pegs. At the same time, we also organized a precision throwing competition with spears. After the prey had been caught, we considered different ways of preserving the meat and wondered what other edible things we could find from the surrounding nature. We finished the successful day with rock paintings of the day's experiences.

Species Knowledge Day: We did a day-hike in a familiar nature destination, and held learning sessions at pre-arranged locations marked on a map. The theme was about marshes, so we stopped by one to think about how it once was formed. We also studied the ability of peat moss to absorb huge amounts of water. Measuring how much water 1 decilitre of moss contains - provided an excellent way to remind the students of the maths they had studied earlier. During the second learning session, we got to know the different mosses and lichens and practiced describing their appearance and identifying them in the vicinity. During the meal break, we played a memory game and species identification tag with the plants we already knew. On the return trip, the students received a bingo grid listing the plants we knew. Our goal was to get a strike through the plants on the bingo grid. A photo of the spotted plant was taken with a cellphone, as a proof.

Teacher's tip
STARTING OUTDOOR TEACHING

Our outdoor classroom days begin once we arrive at the destination, just as we would in the classroom. We form a circle, quiet down, and wait for each student to be ready to start the day. In the morning circle, we go through the day's activities: How long is the walk? How many lessons are included today? When and where do we eat lunch? With students who have a challenging time concentrating in the woods, a goal is set for how many lessons they try to master and actively participate in.

We have studied outdoors all the subjects taught in primary school. Sometimes it takes a lot of time to prepare for the outdoor classroom day. If this is the case, it usually has been a theme that has captivated me, like the medieval role-playing game. Sometimes you can go into the woods with a minimum effort and focus more on physical exercise, group spirits and social growth during the day. In good weather, e.g. reading lesson or relaxing in a peaceful place in the forest is the most wonderful experience, and requires no preparation. Traditionally, the last forest trip of the fall semester and spring semester has focused on just being together. To relax and enjoy the peace of nature, in good company and possibly a small feast.

Outdoor Teaching in Secondary Schools

Elinamarika Johansson, special education teacher, Lempäälä

Teaching Materials

In outdoor education you can get by with surprisingly little material, a good plan and implementation are more important. You can also find teaching materials in nature. After we have used the materials, I have put them in a box and labelled them for further use.

Many ready-made teaching materials are usable as such, some need to be modified for your own use. There is a great deal of ready-made outdoor education material, especially for primary school children. By combining your own needs with ready-made ideas and materials, you get a very useful toolbox of impressive and diverse teaching sessions for your own needs. It is also advisable to involve secondary school students in the practical arrangements of outdoor learning, unloading and carrying materials. Students' helping hands will slightly reduce the time needed for pre- and post-preparations.

The other outdoor education colleagues are a seminal support in planning teaching materials, in exchanging ideas and sharing materials. Often, the ready-made materials do not contain exercises that are directly applicable to 9th graders, but can be made so by tweaking the contents of each subject. I have collated an secondary school teaching material bank for our school and I share it via Office365 SharePoint. By talking about outdoor teaching and sharing information with other teachers, I hope that the threshold for outdoor teaching will be lowered and that other teachers will try it out, too.

Attitudes towards Teaching Outdoors

I teach 9th grade students, who are usually 15-16 year-olds. Adolescents of this age may not have had instruction in nature before, except for possibly some biology classes. If a young person is not accustomed to being in nature e.g. through a hobby, it can be challenging at first to get him or her excited about learning outdoors - or even going out. However, some young people are used to working in nature, for example through Scouting. It is easier to get others involved when there are some youngsters like this in the class.

One of the biggest challenges in teaching 9th graders outdoors is their attitude towards spending class-time outside. In a survey I accomplished for my Specialist Qualification for Environmental Education studies, nearly 70% of students and nearly 60% of teachers would prefer to have outdoor teaching as part of their education. The construction of an outdoor classroom was supported by 70% of pupils and 81% of teachers. That's the attitude in theory. But in practice, especially if the weather is foul, many are not willing to go out. Teacher can prepare herself towards challenges with careful prior preparation, and the persistence will have students grow accustomed to it.

Managing Students in an Outdoor Classroom

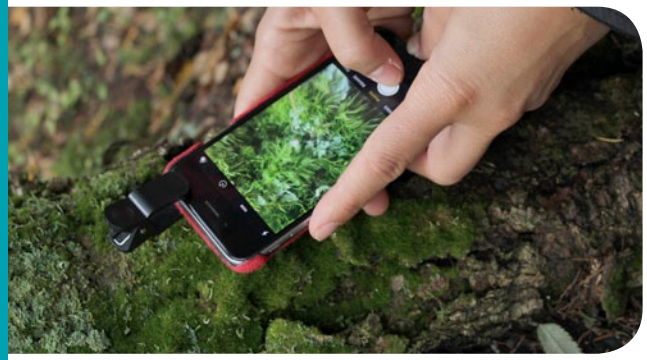
Another challenge raised by the teachers is managing the student group in an open outdoor space. Good pre-planning helps and keeping a few alternative tasks or activities in the back-pocket, makes it easier. Teaching outdoors may not always work as planned. Almost regularly, activities will take more time than you have planned. For this reason, it is good to think about alternatives.

Outdoors, it is a good idea to instruct the student group carefully in each subtask. You can have them sit in a semi-circle on foam pads while you check they understood what is expected of them. When everyone's attention is on the teacher, assignments can be given. A calm and thorough briefing facilitates activities, and students calm down by having them sit and listen from time to time. Some competitiveness in the activities appeals to many students that age.

Opportunities for Teaching Outdoors

In the survey, teachers highlighted their lack of knowledge about the practical implementation of outdoor teaching. Some teachers think that teaching as such is merely shifted outdoors, with papers and all. The perk of teaching outdoors is that everything can be done differently than in the classroom, collaboratively, experientially, using your own body and functional teaching aids. The lack of papers and textbooks also makes teaching easier on rainy days or in winter. Teach-

You can explore nature with a macro lens.



The Game is also known as the 36-game.

Outdoors you learn in a different way than in the classroom, collaboratively.

ing outdoors diversifies the teacher's daily life, but I think it enables deeper and more effective collaborative learning. The doer-type of pupils with different learning difficulties, behavioural problems, absence or motivational problems, may often become enthusiastic about studying outdoors.

Informing

I teach a flexible basic education class. Already when applying to this class in the spring of 8th grade, these students will be informed about outdoor learning being part of the curriculum in 9th grade. It is good practice to keep outdoor education as a scheduled regular event and mode of working. Planning outdoor teaching is time consuming, but it becomes easier when you do so regularly. Whenever I get new ideas on outdoor teaching, I write them down before I forget.

It is advisable to inform parents in a timely and thorough manner about outdoor teaching being a part of classroom practice. At the beginning of the school year, it is a good idea to give them a list of the equipment. Rubber boots and a raincoat are needed, and in the winter warm boots and jackets, trousers that are long enough to cover the ankles, and a hat and gloves. Alternatively, get some clothes in the classroom for students who forget to bring their own. For secondary school students it may be awkward to use the "spare wardrobe", but once they have been out in the cold with too little to wear, they start to embrace the spares. It is worth informing parents about learning outdoors; what has been done and what will be done. Parents are unparalleled partners in shaping students' attitudes.

Why do I Teach Outdoors, even though It Brings All Sorts of Difficulties with 9th Graders?

I have wanted to offer my students even some bits of the world of experience that I have personally enjoyed in nature. Initially subconsciously, but over the last few years increasingly consciously. I have received memorable experiences, strength, and ideas from nature, and it has been my constant source of wonder and admiration. Nature has comforted me and allowed me to seek answers to even the toughest questions in life. I have noticed that the potential of outdoor teaching is absolutely unlimited.

Teacher's tip:
PLANNING OUTDOOR TEACHING

Planning outdoor teaching is time consuming, but it becomes easier when you do so regularly. Whenever you get new ideas on outdoor teaching, write them down before you forget them.

I am bursting full of energy and inspiration after each outdoor teaching session. The students' interest, enthusiasm and joy in studying outdoors are rewarding. Almost without exception, the feedback I have collected after each class has been positive. I also discovered that learning is often more effective outdoors, actively working on exercises with cross-disciplinary topics, and students get to come up with solutions themselves. Nature and the tasks performed there are an impressive team-spirit builder, or grouping tool.

The school week has a nice rhythm when outdoor learning is included. It's nice to be able to deviate from the routine and do things differently. The content of the teacher's work gets some variety, too. Pupils behave differently outside than inside a school building. It is not necessary to take breaks either. Concentration and calmness increase when you are in nature with your own crowd. The fresh air and exercise have a stimulating and calming effect on students. That's why I want to continue with the rewarding outdoor teaching!

THE GAME

The instructors spread 50-120 task notes around the game area. The pieces of paper should be clearly visible, in a limited area. Each note has a simple short task. Teachers can invent the tasks they want on the game. I have ready-made task notes that are needed in the game. The tasks require both physical action and brainwork.

One of the adults has been appointed as the game leader, who decides on all controversial issues. The game manager tells the rules and gives a time limit, for e.g. 45 minutes. The game starts when the leader gives permission.

Each group has its own game table/area. The game area has a paper, a pencil, and die. The group must also come up with a name. Each group throws the die on their territory. The result is recorded on the paper. The group breaks up to search for a task note with that number. The task finder calls the group together. You must not look at or complete the assignment until every team member is present. Unless otherwise stated in the task note, it should be performed in their own game area.

When the task is completed, the die is rolled again and the next number is added to the previous one, for e.g. 1 and 6 = 7. The game continues until the winner is announced or the leader calls it off. The game is won by the group that is the first to find the last card and completes the task in it, or the group that has done the most in the time limit.

Bonus Round: Teams have the opportunity to earn extra points by fetching the notes from the playing area. 1 note = 1 point.

Challenges and Practices of Outdoor Teaching in Secondary Schools

Jussi Tomberg, subject teacher

It Takes Time for Active Teaching to Become Established

Active education has ingrained more slowly in secondary than in primary education. One reason for this is the lack of time for planning. As the subject matter becomes more advanced, designing active ways of teaching is also perceived more difficult. Subject teacher training is very different from class teacher training. The attitude of the teacher is the most important factor. The teacher desides to start with active teaching and is given the adequate time for planning lessons. A change in one's own mode of working happens when one notices that students enjoy the outdoor teaching and are more active. It pays for the time spent!

Active teaching, and especially outdoor teaching, is perceived by teachers to be more fitting to some subjects than others. So far, language learning happens more often in the classroom and for biology we head out going outdoors. Multidisciplinary learning modules enable us to go further away from school.

You develop a relationship with nature with the Natural Science course. What you don't know, you don't value.

Experiences from secondary school in Oulu

In Oulu e.g. the seppo.io platform is used for outdoor education. According to the secondary school teachers, it is a good idea to acquaint the new seventh grade students with outdoor learning immediately. Some teachers make good use of the school's nearby environment in teaching. Only the sky sets the limits to active education. Some are afraid of liability issues, which is understandable. Going out with students requires a decision and a conscious risk that something unforeseeable happens there. On the other hand, there are great rewards when carrying through with it. The school looks like its leader. Things work best when the principal is an encouraging facilitator.

About five years ago, Laanila School switched to 75-minute classes. When we voted about returning to 45-minute classes, everyone wanted to keep the longer ones. The number of lessons started has fallen from seven to four. In the longer classes, the importance of breaks is heightened. When we revise Swedish words while walking around the corridor and in the yard, we inevitably go outdoors. Plus, learning this way allows for new insights, fun, and the students like it.

There is also an optional applied natural science course for all secondary students in Oulu. The aim is to nurture the nature relationship of the students and to awaken their interests in natural sciences. The course contains a pedagogical pearl, a weekend-long forest hike. There, at the latest, the student becomes aware of what it's like to be immersed in nature. During the weekend we sleep in tents, make our own food, and observe nature. The schedule has been deliberately kept loose. We found that survival is the main program there and does not require any special tricks.

During the weekend, students get a little taste of what happens within themselves when they are in the woods. The first night is usually a badly slept one, but by the second it's better. Many are a little cold and fearful. Together we unload our experiences. The relationship with nature gradually evolves. What you don't know, you don't value.

I believe that teaching in a natural environment is beneficial for students who have learning challenges. And we have students who do well regardless of how they are taught. These outdoor methods help students who learn a little differently from others.

I encourage other teachers to experiment with outdoor teaching. In addition to courage, leaving the class requires tolerating uncertainty, because not everything goes as planned. You have to be compassionate to yourself. The most important thing is not whether we get the expected result, but that we might get another result that could be even more valuable.

Co-Teaching –Possibilities for Outdoor Teaching

Taina Ek, Hannele Tallqvist ja Maija Ylevä,
class teachers and special education teacher, Espoo

Kalajärvi School has 415 students from all grades, and is located in Northern Espoo, near Nuuksio National Park. Tremanskärr Nature Reserve and Luukki recreation park are in the immediate vicinity of the school. The schoolyard has a beautiful forested area and great cliffs. The Kalajärvi fitness track is also next to the school.

We have been doing outdoor co-teaching for three years from the first grade onwards. The goal has been to be outdoors at least 3-5 hours a week in addition to P.E. lessons. This target has usually been achieved or exceeded. 47 students in our group, consisting of two general education groups and a smaller, special education group. The group was taught by a class teacher and two class teachers with expertise on special education. Plus the small group has been assisted by a special needs counsellor.

During outdoor classes we have covered a variety of learning modules, projects, and separate subject contents based on the curricular guidelines. The weekly lessons include active methods for subject contents in mathematics, Finnish, environmental science, as well as emotional and social skills and building team spirit. Also subjects such as religion, ethics, and Finnish are equally suitable for enhancing these skills. Trained school dogs have often accompanied us in these lessons. We have also done projects and multidisciplinary learning modules, for e.g. a year-long "Good Life" -project and "Tremanskärr in different seasons", several Finland's 100 years of Independence -projects lasting some months, a Sustainable Development Fair -event, and traffic safety projects. These have been carried out using a variety of learning tools: the Seppo learning platform, students' own phones, school iPads, Species Cards, and tools such as magnifying glasses and cameras.

In our experience, co-teaching in outdoor education has many benefits. In particular, it promotes wellbeing and physical activity during pupils' school days. From the teacher's point of view, co-teaching improves in-depth knowledge of student's personalities and helps in targeting resources. The teachers can use their own strengths and areas of expertise, share their skills and learn from colleagues. Collaborative planning reduces the workload of the teacher and evens out responsibility. Brainstorming together increases creativity and helps in self-development as a pedagogue. At its best, a sense of flow is created in the team and it increases the wellbeing of the teachers. Sharing materials makes work easier and also makes projects feel lighter.

It is a good idea to set aside a regular time for planning. For us, one hour per week was scheduled, as well as some recess-meetings and a WhatsApp discussion group. We have been able to take part in various training programmes by SYKLI (Outdoor Classroom, Phenomena by the Beach, and by the Forest). These have been extremely rewarding both in terms of content, as well as for support and coping and in building team spirits among peer teachers. In co-teaching, it is worth discussing shared values and upbringing practices, and thoroughly familiarize parents with our practices right from the start. When parents know the educational goals and procedures, cooperation proceeds smoothly.

Outdoor learning should be goal-oriented and follow the curriculum. The things learned in nature are worth dissecting and reviewing together. It is easy to integrate a broad range of skills and connect the lessons with the students' own experiences in everyday life.

In planning the lessons, we are able to address individual student's needs through flexible group divisions and differentiate teaching in many varied ways. We dare to say that students benefit tremendously from studying outdoors. Firstly, in a large group, students become acquainted with three different teaching personalities and ways of working. In addition, they gain a great deal of experience from different kinds of learners. The pupils' involvement and influence on the stewardship of their own learning is increased. Pupils have planned lessons for others, and have created learning materials based on common goals, such as videos, interviews, lyrics, and concept maps. Pupils learn to identify their own strengths and evaluate their learning through self-evaluation and peer review. While learning outdoors, pupils are agents in their own learning process and are also able to utilize previous knowledge learned outside the school.

It is a good idea to expand the learning environment beyond the classroom. You can get outdoors at a low thresholds and with small steps. The courage to teach outdoors increases as you do so. You'll learn from mistakes. The mode of working requires flexibility and openness, because process-oriented work requires making the most of the moment. We have gained so many experiences of collegiality by teaching outdoors, and joy and enthusiasm from our students, that there is no turning back.

1 + 1 + 1 = MORE THAN THREE. CO-TEACHING HARNESSES EACH INDIVIDUAL'S STRENGTHS AND WE GET TO KNOW THE STUDENTS BETTER.

Project Rock – a Multidisciplinary Outdoor Learning Module

Ulla Myllyniemi, class teacher and environmental educator
Otalampi School class 1A and the nature pre-school Liito-oravat ('Flying Squirrels'). *Photos by the author.*.

We implemented a multidisciplinary learning module through design-oriented pedagogy (DOP). DOP means collaborative project learning, where teachers and learners work together to design and build responses to open challenges. The project utilizes the learning community's expertise, tools, technology and external experts.

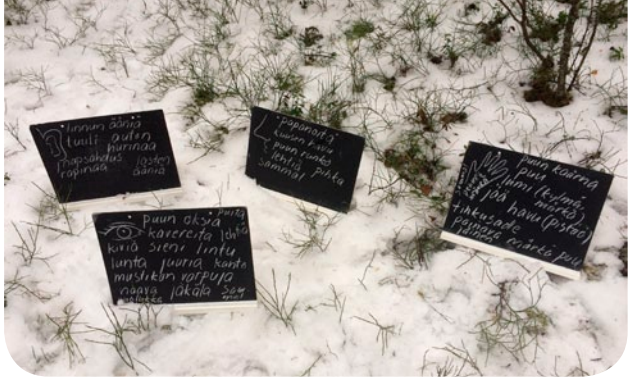
1st class: Forest, 2h

The active and child-centered study began by making observations about the environment of our own "home nests" by using different senses. We closed our eyes and listened. We opened our eyes and looked near and far. We felt nearby objects with our hands. We smelled the air and different objects.

The observations were written on chalkboards and paper, and collected together. We continued to questions and eventually to the research topic. It was wonderful to watch how concentrated the children were, as they made their observations from their "nests" under the trees.

2nd class: Classroom, 1h

We gathered together to review the observations and asked questions based on them. The questions were bundled into subject groups, and then we voted on which research question we wanted to work on. In the last vote, eyes were closed to prevent the influencing factor of other opinions. The winner was the subject: rocks and cliffs, and the question: How are rocks and cliffs formed?



How can a car's sound be heard in the woods?
How does water carry sound so far?
How can a snowball get so hard?
How can a snowball have a scent?
Why does the snow smell?
How can moss be so soft when the ground is so hard?
How can a stick be so easily broken when it is so hard?
How can trees grow so old when people don't live as long?
Why is moss sometimes so crunchy when it should be soft?
Why is wood hard?
Why does wood become soft when it grows old,
but was hard when it was younger?
Why do bilberry shrubs last so long?
How does wood grow?
How is a seed formed?
How is a rock formed?
How can there be a star-shaped moss?
How do people produce sounds?
How does the wind come about?
How does water come about?
How is a cloud formed?
Why is the sun so bright?
How was the first animal born?
How did Earth come to exist?
How were other planets formed?
How did the sun come about?
How can the sun be so big?
How does the forest form?
How did the sea come about?
How is a rock formed?
How can the sun and moon be suspended in space?
How does a hurricane/tornado take shape?
How can the Earth rotate?
How is glass made?

Observations:

We saw:
tree branches and trees, big and small
friends, people
leaves, tree bark
rocks
snow, snow tracks, snowflake star
roots
stump
mushroom
bird
bilberry twigs
beard lichen
lichen
moss (star-shaped)
raindrops
small dots on a spruce

We heard:
bird sounds / bird shrieks / birds singing /
a great spotted woodpecker
wind
clicks and knocking sounds
cars' humming
rustling
children's voices, squeals

We felt:
moss: soft, wet
snow: thick, cold, cool, rough, wet, hard
ice: cold, hard
tree branches: rough, sharp
/stick: hard, easy to snap
conifer: needles prick
bark: crispy
drizzle
wood: wet, heavy, icy
lichen: flexible

We smelled:
conifer fragrance / spruce
"droppings"
tree trunk
wet leaves
resin fragrance
moss scent
the smell of snow
lingonberry twigs (woody scent)
exciting smells
the snow ball smelled
the gloves smelled
bark

3rd class: Day Trip to the Boulder, 3h

The purpose was to define what rocks and cliffs are. How big can a rock be, before it's called a cliff? How can this be determined? How small can a rock be? Is a tiny little grain of sand still a rock?

Discussion heard over lunch:

We concluded that a cliff goes on forever, but a rock does not.

A piece of rock can come off a cliff.

A cliff continues underground.

A cliff may fall apart.

Every rock has once been a part of a cliff.

Is the erratic boulder a rock or a cliff?

It is a big rock because there is ground beneath it.

Where did it come from?

It could have been a meteorite.

Could it have somehow come up to the surface?

There is no cliff in sight from which it could have been detached from.

The teacher told about the Ice Age, and how large rocks were loosened by the Ice and transported far from their original location along with it.

Magnifying glasses were used to examine boulders and nearby rocks. What do they look like? Are they all the same? They are not: why not?

We tested whether rocks would come off by ponding.

Do carved and natural rocks look alike?

Could this be a stone axe?

Children exploring the boulder.

What does the rock look like close up? Are all rocks the same?

On the way back, they saw a large rock from which boulders had fallen off. Like a big puzzle. It was noted that this is how rocks can detach from cliffs, and small rocks become smaller.

This is how rocks split.

"But how do they split?" The teacher drew a picture and answered the children's question.

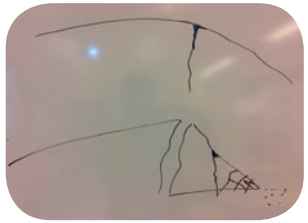
An Ice Age cliff formation called 'whaleback' (silokallio) was seen. We identified it as a cliff, and the teacher showed the direction the ice had passed.

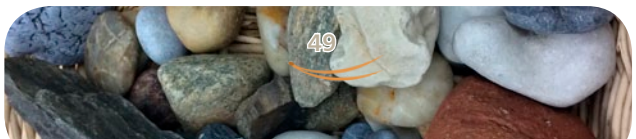
"This is a cliff. You can't get under it. "

We examined different sizes of rocks at the esker, and pondered whether they were rocks. Does the definition depend on the size of the rock? Samples were taken to class, and conclution was made: different rocks look different.

Students are exploring the boulder and rocks.

The rock samples are ready to be examined!





4th class: Studying Rock Samples in Class, 2h

The adults had brought different rocks from all over Earth. There were rock samples from Finland, sorted by how they were formed and a box with ore samples. Some curious rocks with cavities were found. A variety of books and guide books on rocks were at hand. We used the "Geology made-easy"-handbook and sorted the rocks according to their shine, colour, hardness, and smoothness. Magnifying glasses were used. We briefly introduced the process of rock formation. We familiarized ourselves with Finland's national stone granite, and provincial stones.

Questions for the expert:

How did these rocks come about?
How did that glittering thing come in there?
Where in the world can you find these rocks?
Why were there spikes inside?
How can stones become brittle on the inside when they are hard on the outside?

Children's observations on rocks:

Different colours
One stone looked like a volcano had erupted
Pyrite is really shiny
One rock contained a piece of meteorite (I have seen a piece of a meteorite)
Some of the rocks were rough, some smooth (beaches have smoother rocks)
Rocks can be monochrome or multicoloured, often multicoloured.
Quite a heavy rock for its small size.
Rocks of different weights.
This rock is soft.
It's so light! It has air inside.
These rocks smell different.
This has some black dots.
Some of the rocks were smooth, some rough.
Here are lines that go together.
Some of the rocks were shiny.

5th class: Visual Arts Class - My Rock, 2h

The children made their own rock, either by examining a model or creatively designing their own. They drew, coloured, and cut them and glued the rocks on black cardboard and gave them names. This is how we acquired a rock exhibition of our own: 1A rocks!

6th class: Research and Wrap-Up, 2h

Earth's Structure Illustrated

We built a simulation model of the Earth's inner structure: A metal ball represented the solid core of Earth which consists of iron and nickel, red play-dough was the molten and solidifying layer of magma, and paper hand towels represented the solid shell of bedrock. We also looked at illustrations of Earth's structure. We concluded that rocks are formed and shaped in the magma layer and bedrock.

Search for Information

We went to look for information about rocks with our 5th grade 'tutor pupils'. The children were allowed to search for whatever interested them most about rocks. The groups consisted of 1-2 pre-schoolers, 2-3 1st graders, and 1-2 5th graders.

We searched for information on the following topics:
How do granite and garnet differ?
What does garnet look like?
What kinds of gemstones are there and what do they look like?
How are they formed?
Information about provincial stones
-> Lapland's provincial stone is gold
-> How much does a kilogram of gold cost?
Underwater rocks
How are diamonds formed?
How can a diamond be polished when it is the hardest substance on Earth?
If a rock is formed underground, how does it get to the surface?
Mining and searching for ore in Finland
Chemical formula for rock formation

Wrap-up

Each group was allowed to show a screenshot of a topic they had searched for, and tell the rest of the class about it. The teacher had made a large chart on cardboard depicting the cycle of a rock. Rock specimens were placed on it at their correct points of origin. A concrete rock cycle formed from the deep magma rocks to the surface rocks, through rupture and migration to the seabed, where they are deposited and hardened to sedimentary rocks and then transformed into metamorphic rocks, and back into magma. The children listened carefully and studied the rock samples again. This is how we got our answer on how rocks and cliffs were formed.

7th class: Clay is Rock, too - Grain Size and Working with Clay, 2h

Today we looked at samples of moraine, gravel, sand and clay and considered how they were formed. We sifted our sand samples through filters, and saw how it was made up of bits of different sizes, including very fine particles. We pondered which forces in nature cause tiny rocks to become even finer. We concluded that clay is composed of the finest and smallest rocks that have been carried along with water and wind to the bottom of lakes. We made amulets from the clay and left them to dry. We plan to fire the amulets in sand at our tipi-like hut in the spring.

The mineral soil and sieve set are ready for research.

The structure of Earth can be illustrated with simple tools.

With the help of a sieve set we got a result from our sample of sand.

We are working on clay amulets.
The clay works are left to dry.

Students looking for diamonds.

8th class: Expert Visit, Final Wrap-Up, 1h

For our project's final class, we invited a high school biology and geography lecturer. He listened as we told him about the whole project from start to finish, we asked questions, and he commented on our project. It was satisfying to go through the whole project from beginning to end and see how our research had progressed, and to then to learn something new even in the final stages. After the end of the actual project, we will still fire the clay amulets and venture out to new challenges.

9th class: Firing Clay at the Tipi-Like Hut, 1h

One of the forest day activity points was to see how our clay handicrafts could be fired in the hut's fire pit. We filled a tin can with sand, placed the amulets inside, covered them in sawdust, and then more sand, and placed it in the fire pit. Handsome amulets with smoky hues came out!

10. Surprise Continuation of the Project: Visit to the Tytyri Mine Experience

The following academic year, our project got a surprise continuation when we visited the Tytyri Mine in Lohja. Here's an excerpt from the Wilma-message sent to parents:

> The trip to Tytyri was a great success! We went underground with a new lift that is being piloted and tested there for the tallest building in the world. It went as fast as 6 m/s, and we felt the pressure in our ears. In the mine we saw many interesting things: old tools and old machines that we got to try and climb on, a musical light show in the big quarry, artworks, and old lifts and draisines we got to climb in. We also looked for our own gemstones in the sand and identified them from the identification charts. We were the only group with helmet lamps, and yes, the whole quarry was aflicker with lights going on and off. Underground the temperature was +8 C, which felt really cold after the heat outside. It was nice to watch the children eat their lunches in bunches and everyone fit in. When I asked what was the best thing that day, the most common answers were "Everything!" and "Searching for gems." Almost everything we had experienced, was mentioned. The excursion was ever so satisfying and the smiley faces were certainly deserved.

Outdoor Classroom Calendar

Aulikki Laine, trainer, environmental educator

The purpose of the outdoor classroom calendar is to provide topics and tips for planning outdoor education in different seasons. From the annual calendar you can choose topics that suit your lessons: seasonal themes and natural phenomena, or different theme-days. It is easy to combine different subjects with the outdoor classroom calendar. For example, you can combine mathematics (diagrams, multiplication tables, or tally marks), Finnish (bird descriptions, fairy tales about migratory birds, or poetry about changing seasons) and arts (pictures of bird species or art images of crane wedges). On Aleksis Kivi Day you could make a multidisciplinary video project about 'Seven Brothers', one of the Finnish classics. This may include subjects such as Finnish, crafts, visual arts, history, music and maths.

In addition to the Outdoor Calendar's fixed environmental days and seasonal themes, it's a good idea to keep an eye out for fun nature challenges and campaigns, and participate in them, such as the Sleep a night outdoors -challenge and the One million nest boxes -campaigns.

Outdoor Classroom Calendar

August
Suitable topics
- Team-spirit and group formation
- Plants, collecting for a herbarium or digital herbarium
- Investigating invertebrates or bugs
- Water studies

Noteworthy days
- Finnish Nature Day, the last Saturday of August.

September
Suitable topics
- Berries and mushrooms
- Everyman's rights
- Nature photography
- Orienteering
- Traffic education, cycling

Noteworthy days
- Endangered Species Day 7.9.
- Autumn Equinox 22 or 23.9.
- Traffic safety week, week 37
- Mobility Week 16.-22.9. and Car Free Day 22.9.
- Hunger Day Collection
- International Peace Day 21.9.

October
Suitable topics
- Autumn colours and shapes, nature art
- Nature preparing for winter
- Animal rights
- Vegetarian food
- Saving energy
- Global justice

Noteworthy days
- World Vegetarian Day 1.10.
- Animal Week and International Animal Day 4.10.
- World Food Day 16.10.
- UN Day 24.10.
- Energy Saving Week, week 41
- Fair Trade Week, week 43

November
Suitable topics
- Nature prepares for winter
- Maths, languages, music, ethics outdoors
- Studies such as air, light, temperature
- Yard games
- Recycling, waste reduction
- Crafting from natural and recycled materials

Noteworthy days
- Father's Day, second Sunday in November
- Nordic Climate Day 11.11.
- European Week for Waste Reduction
- Buy Nothing Day
- International Day for Tolerance 16.11.
- Children's Rights Week and Day 20.11.

December
Suitable topics
- Night Trips
- Winter feeding of birds
- Soil studies if the soil is not frozen
- Christmas crafts from natural materials
- Intangible Christmas gifts
- Christmas forest trips

Noteworthy days
- Volunteering Day 5.12.
- International Soil Day 5.12.
- Winter Solstice 21.-22.12.

January
Suitable topics
- Night trips
- Study of wintering birds
- Winter nature: wintering of animals, snow tracks, snow studies, different forms of water
- Skiing, ice skating and snowshoeing

Noteworthy days
- Backyard Birding by BirdLife Finland on the last weekend of January, the previous week for schools.

February
Suitable topics
- Snow and ice art
- Winter nature: wintering of animals, animal tracks, snow studies, different forms of water
- Skiing, ice skating and snowshoeing

Noteworthy days
- Green Flag Day 2.2., Remember one another
- World Wetland Day 2.2.
- Loan Day ('Lainan päivä') by the Finnish Library Association 8.2.
- Valentine's Day 14.2.

March
Suitable topics
- Maths, Finnish, languages, music, ethics etc. outdoors
- Various studies, eg. air, light, temperature
- Sensory exercises
- Spring monitoring

Noteworthy days
- World Nature Day 3.3.
- Equality Day (Minna Canth's Day) 19.3.
- Spring Equinox 20.3.
- International Day of Forests 21.3.
- World Water Day 22.3.
- Earth Hour on the last Saturday in March, the previous week for schools

April
Suitable topics
- Spring monitoring: spring migration of birds, growth in plants
- Investigating invertebrates or bugs
- Reduce consumption

Noteworthy days
- International Mother Earth Day 22.4.
- Thrifty week ('Nuukuusviikko') week 16 or 17

May
Suitable topics
- Spring monitoring and spring excursion
- Species identification, birding, collecting plants, invertebrate studies
- Water studies
- Neighbourhood cleanup party
- Cycling

Noteworthy days
- Children's Bird Week by BirdLife Finland
- Bike Week
- Outdoor Classroom Day
- International Day for Biological Diversity 22.5.
- Sustainable Development Day 27.5.
- World No Tobacco Day 31.5.

June
Suitable topics
- Identifying, photographing or collecting plants
- Seas
- Nature conservation

Noteworthy days
- World Environment Day 5.6.
- World Oceans Day 8.6.
- World Wildlife Day 27.6.

July
Suitable topics
- Swimming

Noteworthy days
- Big Jump - River Swimming Day 11.7.

Advice and Examples to Making Outdoor Learning Materials

Satu Mälkiä, class teacher, Lahti
Photos by the author.

Marvellous Moments in Nature - Outdoor Teaching Path

As part of my environmental educator studies, I surveyed outdoor education in Jalkaranta School. I gathered together remarks about school personnel's working culture, i.e. the current state of outdoor learning in the curriculum, the use of materials, learning environments, knowledge, and skills. Where did they need help, see challenges, desire for support? And what were their attitudes towards teaching and their relationship with nature?

The results of the survey revealed that the school's adults already have the knowledge and skills for outdoor teaching and a positive attitude towards it and nature. What they needed were ready-made materials and instructions, and with those they would teach outdoors more often. In addition to this, also help, support, collaboration and guidance in all its forms, such as collegial tips, tutoring, mentoring, training and peer support, would add the amount of outdoor teaching.

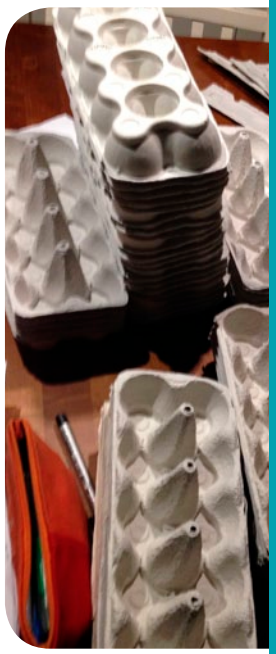
I wanted to spread the marvel and joy of learning outdoors as widely as possible, and as part of my studies, I developed an outdoor teaching path called Marvellous moments in nature (originally Liekkihetkiä luonnossa, direct translation being 'On Fire In Nature'). The aim was to enable students to have varied and regular outdoor learning experiences, and for teachers to lower the threshold of teaching outside, and finally, to put together a material and activity bank for outdoor education.

There are four education modules in my Marvellous moments in nature -outdoor teaching path: Winter, Spring, Autumn and the Marvels of nature activity track. Each package of materials is in its labelled and transparent plastic box. The modules include laminated teaching materials that can be used outdoors, ready-made lesson plans, tools, instruction manuals, games and assessment templates. The folder contains the original templates if something is lost or broken. Some examples of the modules' contents can be seen below after the tips for making the materials.

Ready-made modules, their introduction to staff, experimenting together, co-teaching, and setting an example clearly lowers the threshold for teachers to teach outdoors. This allows a wider range of students to study outdoors and develop their own relationship with nature. As the joy of outdoor learning spreads, the collaboration between adults and students can blossom and create something new.

Outdoor learning materials are easily accessible and available to the whole school. They are packed in transparent plastic boxes.

The marvellous moments in nature - activity track materials are kept in boxes and measuring sticks next to them.



Egg cartons are handy for many things.

Material preparation tips in brief:

- Colour-coding helps with sorting.
- For storing, use small plastic bags for each individual set of cards.
- Write down the original source of the materials when printing.
- Keep the originals in a folder.
- When laminating, be sure to leave edges around the paper.
- Pack the items for each activity station to its own plastic box.

Tips for Making Materials

The school's outdoor teaching materials are shared, they are for everyone's benefit and everyone can borrow them. It is a good idea to use teamwork and collective strength in preparing materials. For e.g. during one teacher training day (the so called 'Veso-day' in Finland), the materials can readily be completed together in workshop-style. Some sew bags, some make the hard materials in the technical work classroom, some laminate cards and instructions, and some prepare labels. This requires that the materials and instructions have been planned beforehand and the supplies have been purchased.

Colour Coding

I have become quite a colour-coder while preparing the outdoor learning materials. Based on my experience, I know that exercises work smoother and are understood better in small groups, so I colour-coded identical materials to be used in small groups with separate colour symbols. I use different colours for the groups, either by printing out exercises on different coloured paper or marking finished cards. Six groups colour-coded: red, blue, green, yellow, orange, and pink. Colour-coding also eases the stacking of materials before going out and collecting them together at the end, and it is easier to make sure nothing is missing.

Group Work Papers in Sealable Plastic Bags

I put materials from different groups, eg. games and assignments, into small sealed plastic bags. Experience has taught that rubber bands alone do not last very long.

Remember the Source

When making multiple copies, it is important to note the source of the material. It is a good idea to use a folder or other storage location for originals before laminating. Too often, I have found myself looking high and low for misplaced materials.

Laminating and Plastic Pockets

I have laminated instructions, lesson plans, task cards and other "paper materials" to withstand several years of eager use outdoors. When laminating cards, be sure to keep edges that are wide enough after cutting, so that water and moisture doesn't seep in. Remember first to cut the cards to the right size, and then laminate them so that a wide-enough plastic edge remains. The stages of work are thus making copies, cutting, laminating, and cutting again. Only frequently used materials need laminating. Otherwise, you can also use plastic pockets.

Activity Stations' Materials in Transparent Plastic Boxes

When preparing various activity stations or entire outdoor classroom days, I have found it practical to pack the materials for each activity point in one transparent plastic box. This keeps them protected from moisture, are easy to manage, and carry. Before going out, it is best to count and record how many items of everything and stacks of cards there are, for e.g. on a sticky note inside the plastic box. That way everything will definitely come back, too. After outdoor teaching, it is important to dry all materials properly.

Everything Necessary Can Be Found in Nature

When preparing outdoor education materials, one becomes overwhelmed by a great passion for making everything as active and involving as possible. One starts to consider how and with what materials students would learn the best? Letting them move, play, and get facinated by nature. The aim is to prepare multi-purpose materials that will work, bend, and be used for many different things. Outdoor education itself does not necessarily require extra materials, as nature already contains everything that is needed. As Leonardo da Vinci once said: "Kind nature will see to it that there is always something new to learn."

In the forest, I have arrived! Nature enchants and illuminates. The splendour of the outdoors grants all with marvellous moments!

The colour-coded cards are laminated with edges that prevent moisture from seeping in.

You'll do fine in the forest even with very few teaching materials.

Marvellous moments in nature -learning module

Autumn

Materials:
All materials are colour-coded or labelled with different symbols. The papers are laminated to be weatherproof.

English
(Notice! This exercise is applied from the Finnish language drill, might not work quite similarly in English!)
- alphabet sheet (180 X 200 cm base, white shower curtain)
- different coloured subordinate conjunction cards
  - Write a sentence that starts with the word…
  - subordinate conjunctions: because, while, since, when, even though, until, unless, after, if, once, etc.
- sentence cards
  - Main clause, subordinate clause, conjunction, comma and the period
- Main clause - subordinate clause cards
- Compound word colour-cards + answer cards

Mathematics
- 100 grid (180 x 200 cm base, white shower curtain)
- 5m ropes with a knot every 50cm in a sports bag

Nature, senses, evaluation/expression of opinions
- 180 x 200 cm underlay (white shower curtain)
- 20m yellow cord, thickness 4mm
- scent and odour hunting and sound hunting cards
- colour and shape hunting cards
- cards for the main groups of forest invertebrates
- A3 Moving with the magnifying glass - instructions
- Towards Christmas - activity track cards
- Everyman's rights cards

Visual arts
- nature's artwork title cards:
  flower fairy, tree spirit, rock spirit, spruce spirit, stick spirit, hay spirit, sand spirit, trash spirit, cone spirit, bearer of autumn, bearer of fall foliage, pine spirit
- white A3 papers with these colours at the top: green, yellow, black, brown, purple, blue, orange, red

Lesson Plans:
- Senses class
- Everyman's rights class
- Proper nouns class
- Main and subordinate clauses class
- Sentence class
- Nature's art class
- Forest invertebrates class

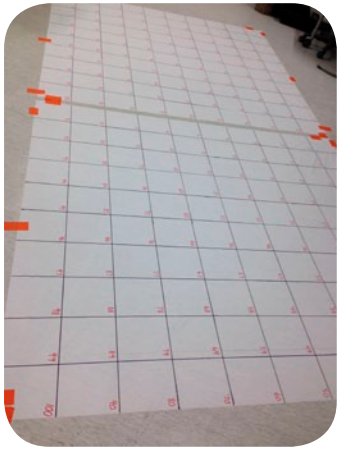
Example task:

Mirroring in pairs

Find a partner. Collect together equal amounts of sticks, pinecones, rocks, or other natural materials for each. Then sit back-to-back. One builds a pattern on the ground from the collected materials and explains what is being done step-by-step. Meanwhile, the partner tries to make the same pattern. At the end, the patterns are being compared, and roles are swapped.

Mirroring is a wording exercise.

The alphabet-sheet and 100-grid are multi-functional.



Marvellous moments in nature - education module
Winter

Materials:
All materials are colour-coded or labelled with different symbols. The papers are laminated to be weatherproof.
- Black snow traps (dark paper) in stacks of 10 papers each
- Magnifying snow crystals and flakes - identification forms
- Snow crystals build around a particle -forms
- 1m measuring sticks for measuring the depth of snow, measuring units every 10 cm
- blue and yellow ribbons
- animal card bundles, with pictures of the animals, tracks and track patterns, general information on animal and its tracks, food and nest descriptions
  - animals: elk, bear, fox, lynx, wolf, otter, raccoon dog, pine marten, mink and ferret, mountain- and brown hare, stoat and weasel, squirrel, muskrat, voles, shrews and mice, birds
- bird feeder pictures with wintering birds
- A4 pictures "Plants and animals have many different ways of surviving winter" (physiological differences between hibernation, torpor and dormancy explained)
- nine-piece animal dominoes presenting animal overwintering habits
- Snow track identification card series (21 cards in a series), material from the Finnish Wildlife Agency:
  - elk, squirrel and flying squirrel, bear, deer and reindeer, marten, wolverine, Red fox and Arctic fox, muskrat and beavers, mink and ferret, otter, lynx, mountain- and brown hare, raccoon dog, badger and wild boar, stoat and weasel, white-tailed deer, wolf, roe deer
- animal card bundles (snow tracks) with image and tracks, pack of 8 animals, "In the Kingdom of Snow and Ice"-material: lynx, hare, bear, elk, wolf, squirrel, fox, black grouse
- Snow track cards, with conifer cone eating patterns on the other side
- sheets with openings (blue, yellow, red and green), circle and square openings
- tennis balls

Lesson Plans:
- Snow study and seasons
- Animal survival in winter
- Animal tracks and protective colour
- Overwintering and preying on animals
- States of water

Snow crystals, a magnifying glass and a black snow trap are the basic tools for snow studies.

The depth of snow can be measured with a metre-long measuring stick.

Guessing Tracks
Materials: Snow track cards with name and tracks of the animal, pack of 8 animals

Each player is dealt a snow track card. The players scatter to draw similar tracks on the snow. When the tracks are complete, the cards are collected, shuffled, and dealt again. Now the purpose is to search the tracks on the new card from the ground.

Snow tracks can be identified or created with the help of a snow track card.

Snow crystals are studied on snow traps.

Marvellous moments in nature - education module
Spring

Materials:
All materials are colour-coded or labelled with different characters. The papers are laminated to be weatherproof.

English
(Notice! This exercise is applied from the Finnish language drill, might not work quite similarly in English!)
- verb card bundles
- noun card bundles
- adjective card bundles
- A4 Dice words
- synonym cards
- find the opposites (adjectives) - four different and numbered egg cartons to collect into:
  1: hard-soft, dark-light, moist-dry
  2: jagged-smooth, sharp-blunt, old-new
  3: clean-dirty, long-short, round-angled
  4: straight-curled, ugly-fine, smooth-spiked
- alphabet collecting
- egg cartons
  1: K, M, S, N, T, P
  2: O, H, N, A, L, R
  3: H, S, K, E, P, M
  4: K, O, N, R, T, A
  5: A, S, E, O, H, J
  6: E, S, T, K, V, L
- movement verbs
- laminated parts of speech -playing cards
- Find in nature -adjective cards

Mathematics
- Fraction dominoes
- "Fractions to whole numbers" -memory game cards
- Units of measure -memory game cards
- 36-games task cards and answers

Environmental studies
- Species Cards and their A4 assemblage papers: invertebrates, reptiles, birds, mammals, plants, trees, lichens, fungi and mosses
- A3 and A4 aquatic animal - species identification charts
- Aquatic invertebrate data collection charts
- A3 and A4 invertebrate - species identification charts
- Daring dragonfly - nature trail track and user's guide

Lesson Plans:
- Letters
- Parts of Speech
- Synonyms, opposites, and sentences
- Food chains and mini national parks
- Water

Synonyms Outdoors
Materials: Synonym cards

Synonym Relay
Getting started: Divide students into teams. Place the word cards at the other end of the play area so that texts are facing down and piles well mixed up for each team.

Teams line up at the starting line. One by one, run to fetch words one card at a time and find their synonyms (such as STOMACH and TUMMY). When the team has fetched all their cards and placed the synonyms side by side, the team stands in a straight line and shouts: SYNONYMS!

Synonym Pair
Distribute synonym cards to students. Students start asking questions and trying to find their matching "synonym pair", without saying their own word out loud.

Egg cartons can be used to collect opposites: dark-light, moist-dry, hard-soft.

Instructions laminated beyond the edges withstands even rain.

Outdoors in Any Weather – Clothing Guide

Aulikki Laine, trainer and environmental educator

Studying in the outdoor classroom is fun, if dressed appropriately for the weather. For outdoor activities that are one or more classes long, warmer clothing is needed than for shorter commutes and recesses. The microclimate in the outdoor classroom can be different than in the schoolyard. It is much colder in a shady forest than in a sunny schoolyard. On a windy day, the air feels colder than what reads on the thermometer.

It is better to wear many layers of clothing than one or two very thick garments. The under layer is in direct contact with the skin, and its purpose is to remove moisture from the skin. The middle layer is for warmth. The outer layer protects against wind and rain. Middle layers can be added as needed.

In cool weather, one can take an extra shirt, warm gloves and spare socks to the back pack to be put on if needed. There is a lot of exercise during the activities, but also times when we stand around or sit. While still, one starts to feel cold quite fast, and it's a good idea to wrap a warm scarf around your neck and put a hat on. It is not worth having too many layers on at the beginning. One quickly gets cold from standing around while sweaty, if there are no spare clothes to pull on.

In cold, shoes should have enough air space, and have room for woolly socks. Especially when walking on snow, one should wear ankle-covering boots, and trouser legs on top. Feet should be kept dry and wet socks need to be changed as needed. If shoes are wet, you can put a plastic bag between the sock and shoe.

Lots of heat dissipates from the head. So, instead of a cap, it is advisable to wear a beanie well into spring and early in the autumn. In winter, you need a balaclava, a hood, or a thick hat with ear flaps in the freezing cold. The cap or hood should be wide enough to prevent wind from reaching the face. The neck can be protected with a balaclava or neckwarmer.

Spare clothes to have when it's cold in spring, autumn and winter seasons:
· spare gloves
· spare socks / wool socks
· thick shirt / wool jumper

Spring and Autumn

Wear 2-3 layers of clothing.

Under layer:
- short underwear
- socks
- T-shirt on a warm day
- long sleeved shirt of underwear in cool weather
- long underwear or leggings in cool weather

Middle layer:
- Thicker long sleeved shirt
- woolly socks or other thermal socks

Outer layer:
- windproof jacket, raincoat in the rain
- windproof trousers, waterproof trousers in the rain
- sneakers or hiking boots, rubber boots
- a cap in warm weather and a thin beanie in cool weather
- gloves
- scarf

Winter

Wear 3-5 layers of clothing.

Under layer:
- short underwear
- long sleeved undershirt or thermal underwear
- long underwear, leggings, or thermal underwear
- socks

Middle layer:
- Thermal long sleeved undershirt in case of severe cold
- Thicker long sleeved shirt
- Thermal underwear or sweatpants
- woolly socks or thermal socks

Outer layer:
- quilted jacket - the colder it is, the warmer the jacket
- outdoor trousers - the colder it is, the warmer the lining of the trousers
- winter boots
- thick winter hat or balaclava and hat that protects ears and cheeks
- padded gloves or mittens + gloves
- Warm scarf

Dressing for thaw weather
- When the temperature is zero or only a little warmer, one should wear the same clothing as in freezing weather, plus warm-lined rubber boots that can hold a woolen sock.

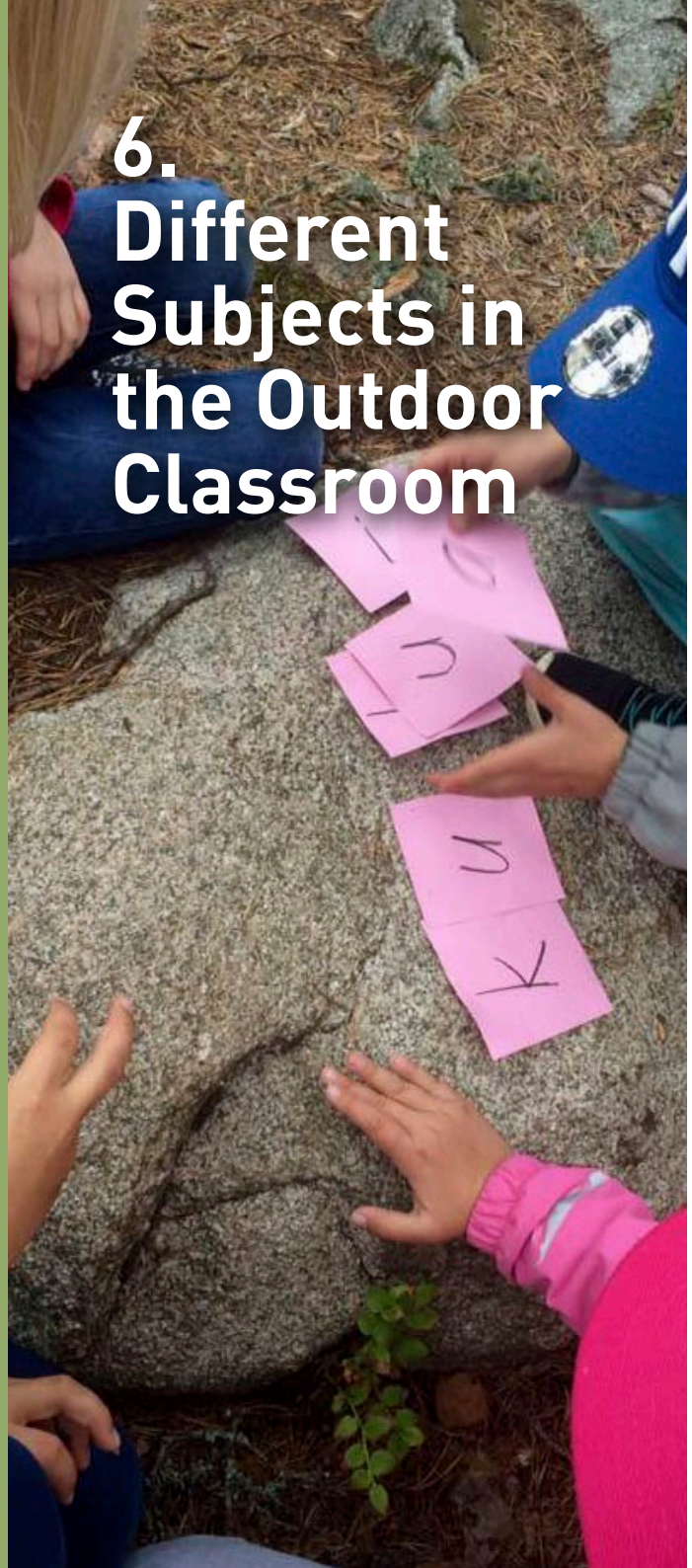
Light clothing is suitable for warm early autumn and late spring days.

When it rains, it's fun to be outdoors in waterproof rain gear.

More clothing layers are added during late autumn as the weather cools down.

Long sleeved and legged clothing in the middle layer keeps you warm. Wool is the warmest material.

A warm beanie, gloves, and shoes are essential winterwear.



6. Different Subjects in the Outdoor Classroom

When talking about outdoor teaching, the first thing that comes to mind is teaching environmental science or biology and P.E. outdoors. However, elements of many other subjects are also present in the outdoor education environment: phenomena to identify, topics for communication and drama, things to count, geometric shapes to measure, historical layers of buildings and civil engineering, physics phenomena and chemical reactions, materials and subjects for arts and crafts.

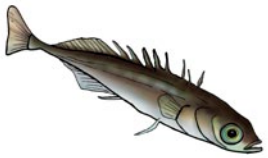
We encourage both class teachers and subject teachers at secondary schools to experiment with outdoor teaching. All subjects can be taught in the outdoor classroom, as long as the appropriate methods are chosen. The active methods first require a bit of practice, but after a few tries, teaching becomes easier.

Towards Ecological Sustainability in all Subjects by Learning Outdoors

Niina Mykrä, PhD candidate

Even though efforts are being made to develop multidisciplinary and phenomenon based learning in schools, the subject based silos in education are still setting the pace in school life and educational structures. Outdoor learning is the opposite of rote repetition, and is useful in all subjects.

The curriculum of each subject contains potential content for outdoor education. This should also be kept in mind when planning multidisciplinary modules. There is a risk that the science or biology curricula will dominate and other subjects will serve as adjunct subsidiary topics. In this case, some teachers may think that multidisciplinary activities take up valuable time from learning the actual curriculum. However, outdoor education is always, and in all subjects, also the implementation of the curriculum.



The general part of the curriculum that applies to all subjects, and the contents regarding to sustainability, offer excellent links between different subjects, as each subject has its own area of ecosocial education that is not covered by any other discipline. The general part of the curriculum also contains methodological guidelines that are particularly easy to implement with outdoor education. These include experiential and active ways of working, game-orientation, community learning, and getting out of a sedentary lifestyle.

In the following text, I will outline specific learning objectives and contents to each subject that is suitable for the outdoors. Because almost everything can be learned outdoors, the broad subject matter has been limited to include topics specifically related to sustainability, as outlined in the following excerpts from the curriculum.

> "During basic education, students reflect on the links between the past, the present and the future, as well as different options for the future. They are guided to understand the significance of their choices, lifestyles and actions, not only for themselves, but also for their communities, society, and nature. Students will be prepared to evaluate and transform their own ways of working, along with their community's and society's policies and structures, into modes that support a sustainable future."
>
> *- The National Core Curriculum for Basic Education 2016, general part, multidiciplinary learning modules.*

> "Human beings are a part of nature and completely dependent on the vitality of ecosystems. Understanding this is central to growing as a person. Basic education recognizes, acts, and guides students towards the need for sustainable development and eco-social education."
>
> *- The National Core Curriculum for Basic Education 2016, general part, valuebase for basic education.*

Native language and literature

The first language is an essential tool for verbal structuring of one's environment, but also for social participation and artistic expression. Interacting in a diverse natural environment develop into a vivid mastery of one's native language. In practicing argumentation skills, and connecting it to concrete issues such as defending a nearby forest brings depth to learning. In addition, students can use nature experiences as a source of inspiration and to follow the footsteps of writers and poets.

Teaching languages

The global world with its global challenges requires an ability to communicate and receive information in a language other than one's own, for a sustainable future to be possible. Naming and discussing things in real-world environments, such as the school surroundings, helps to learn the language and to connect meanings to reality. There are always topics for practicing inclusion and influence in the immediate environment. In addition, the play and game-orientation mentioned in the curriculum as a language teaching method are particularly well suited for learning outdoors.

The alphabet sheet is a versatile aid for teaching languages.

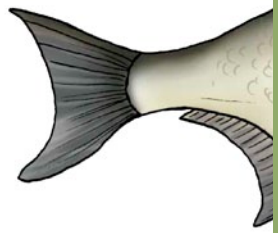
Math sheets can be made from old sheets.

Mathematics

In primary school, the concreteness of mathematics is essential. A rich natural environment provides a good setting for this. Outdoors, students develop the ability to perceive a three-dimensional environment. Maths also has an important role in conveying the dimensions and trends of nature through calculations. Nature provides examples for studying all areas of mathematics. The curriculum considers active teaching as well as educational games to be useful in maths education. Organizing them outdoors makes sense.

Environmental studies

Taking natural science education outdoors is justified, as the subject's research focus is nature itself. In addition to studying organisms and natural phenomena, the relationships between nature, culture, and the constructed environments are also contents well-suited for the outdoors. Working with maps is a good way to do this. Familiarizing with the state of one's own nearby environment and getting involved with participatory projects belong to the new societal content of the curriculum. Reflecting on the impact of different choices, nurturing the environment, and improving one's own environment, teach the principles of sustainable living.



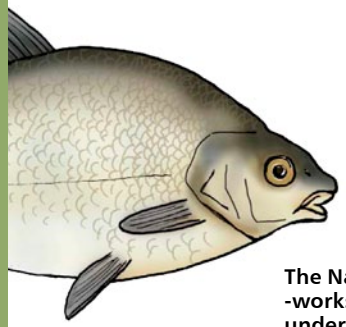
Invertebrates can be classified based on their number of legs.

Biology

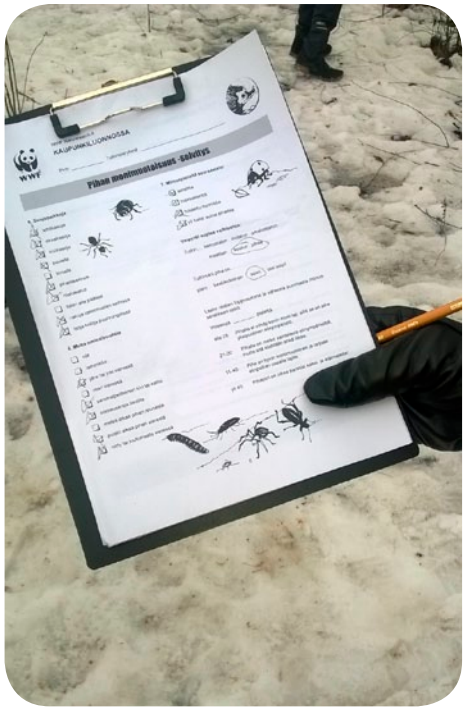
The goal of biology is to develop students' environmental awareness and their desire to nurture biodiversity. In secondary school, fieldwork is a central way of studying. A deeper interest in nature arises from adventurous nature hikes. Participating in improving nearby environment builds up student's capacity to influence and participate later in life, too. A good starting point with the students is to evaluate the changes seen in the natural environment and the effect of human impact. Natural resources and ecosystem services become more concrete when learned outdoors.

Geography

Geography deals with the interaction between nature and human activity, and its relation to the state of the environment. The basic prerequisites for life are easy to grasp by learning outdoors. The content can be made more concrete by participating in conserving the diversity of one's own immediate environment and in planning improvements for it. Fieldwork, field trips in nature and in built environments, use of local knowledge, and games are geographic methods for learning outdoors.



The Nature of Hydropower -workshop helps in understanding of the principle of hydropower.



WWF's Naturewatch forms guide you to explore nature in diverse ways.

Hydropower was studied by building a wheel at Hakeford Woods Forest School in England.

The pH of the water can be measured using litmus paper or pH strips.

Physics

Observations and studies of the environment are part of physics education. A diverse natural environment provides opportunities for observations and measurements in a real environment. Energy production and sustainable use of energy resources are central in the educational contents of physics. Experimenting with renewable energy sources such as solar, wind and hydropower is ideal for outdoor learning. The goal is to learn how to evaluate our choices, in terms of sustainability.

Chemistry

Chemistry teaches the sustainable use of natural resources and life-cycle thinking. Applying chemical knowledge and skills in nature, such as experimenting water and soil chemistry, develops understanding and mastery of its educational contents. The principles of matter and energy conservation and the dimensions of nature are easy to study outdoors. It is interesting to look at the sustainable use of household chemicals by exploring water purification processes in real environments.

Health Education

Health education looks at different health resources and environments that support well-being, one of which is nature. It is good to experience the health effects of nature in real life through the exercises done in nature. Outdoors, you can also observe environmental health risks. The curriculum defines the working methods of health education as studying health related phenomena in the most natural environment possible, in ways that are functionally active, physically active, and experiential. Outdoor learning supports these methods.

History

There are always examples of history-related educational content in nearby environments that concretize the relationship between time and place. The essence of history in secondary school is the emergence and development of the industrial society, and how the relationship between humans and nature has changed over time. Observing this change in the immediate environment helps to reflect on the effects of human activity on natural processes. Exploratory, experiential and active ways of working in history classes develop environmental literacy.

Social Studies

In social studies, we practice the skills of democratic influence. Pupils learn to understand the principles of social decision-making by participating in the development of their immediate environment. Areas for improvement can be determined by walking around the school. Contents related to sustainable consumption are also ideal for outdoor learning. Natural environment will make our choices and the need for sustainability more concrete, and the impact of societal structures on the land use also be detected.

Music

Music has three dimensions related to sustainability and outdoor education. First, nature as an educational environment helps in learning to perceive sound environments, and nature has many tools for producing sound itself. Second, many composers have used natural phenomena as inspiration for their art, which is easier to understand when you observe those phenomena for yourself. Music can also be an instrument for influence. Try influence work by singing about issues that are important to students, for example organizing an outdoor concert at school.

Religion and Ethics

Ethical thinking is at the core of religion and ethics. When considering what is meant by responsibility for the environment and nature, it makes sense to switch to learning these in a natural environment. The positive and negative consequences of actions can also be understood more concretely by observing the environment. Drama, experiential, active and communal learning are well suited to the outdoors, and are mentioned as good working methods for religion and ethics. These working methods can also be used to address difficult ethical dilemmas that cause anxiety, such as climate change.

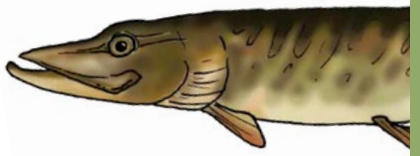
kuva Paula Kallio WWF

Demonstrations are a way of highlighting youth participation.

Outdoors, you can contemplate on responsibility for the environment.

You can learn about history by learning the ancient techniques of fire-making.

Rhythmic music can be produced with natural materials.



Visual arts

Visual arts aims to encourage students in influencing their own living environment and society. Environmental art and exploring and improving constructed environments are good exercises for this. Visual arts is also about creating art, where topics are sought from nature experiences, for example. It is easy to associate this with an art historical review of our relationship with nature over different time periods. The diversity of nature's colours and shapes is an inexhaustible source of creative experimentation and hand-eye interplay.

Craft Education

Knowledge of the surrounding material world is central to a sustainable lifestyle, and an important part of the craft education curriculum. With the help of self-collected natural materials, the students get a meaningful contact with the material. Not only materials, but also inspiration for design can be found outdoors. In addition, craft education aims to have a positive impact on the environment, whereby joint projects in the nearby environment, such as knitting graffiti or building a seating group in the schoolyard, combine the goals of eco-social education and material management.

Earth art is created from natural materials.

Physical Education

Moving in nature in all seasons and in all weather conditions requires a wide variety of skills and drills regarding the equipment, clothes and environmental literacy . The nature around the school provides an excellent environment for practicing basic motor skills such as balance. Climbing, orienteering and winter sports are good examples of this. Outdoors, students learn to take other students into consideration, as well as taking care of the teaching materials and nature itself. The safety issues associated with moving around in nature are also important.

It is nice to practice carving by the campfire site.

Home economics

Home economics is a key subject for learning about sustainable everyday practices. The use of berries and mushrooms as a raw material for food is an excellent way to discover the delicacies available to everyone in nature, for example by organizing a foraging trip. Getting to know a nearby farm concretizes the origin of food. Small-scale cultivation can also be practiced in the schoolyard. It is also good to practice composting outdoors, test the decomposition of various types of waste in nature, and even consider the impact of household chemicals on water environments.

Moving in nature increases wellbeing.

Guidance Counselling

Students are encouraged in guidance counselling to participate in matters pertaining to their local environment. They can discover places to influence by going outdoors. In guidance counselling, it is justifiable to familiarize students with future environmental management and protection tasks, for example in a real outdoor environment. For all professions, it is worth addressing issues of sustainability. While engaging in outdoor exercises that relate to sustainability, the importance of ecosystem vitality as the origin for all human activity, will be better understood.

There are many good exercises to strengthen inclusion.

Nature's gym can be found in the nearby forest.

7. Safety in the Outdoor Classroom

It is safe to learn in the outdoor classroom. Studies show that there are far more serious injuries indoors than outdoors in a natural environment. Regular outdoor education and routines increase safety. A sense of team spirit also develops outdoors, and working with a familiar group feels safe. Anticipating risks increases safety. Just in case, it is always worth bringing a phone and first aid kit. Safety is increased by establishing rules for the outdoor classroom, as well as agreeing on classroom boundaries with the students. It is also a good idea to make your own security plan for the outdoor activities, if the learning environment has not been taken into account in the school's security plan. In this chapter you will find instructions for safe outdoor education!

Learning Outside of School Boundaries – Safety Guide

Aulikki Laine, trainer, environmental educator

The support network of the Finnish Association of Nature and Environment Schools (LYKE) together with the Trade Union of Education in Finland (OAJ) have produced a good guide for teachers on the security & safety of outdoor teaching. Below is a summary of the instructions.

Organizing out-of-school education is well facilitated, if the school has ready-made kits that teachers can use whenever they teach outdoors. The kit may include, for e.g. a first aid kit, a mobile phone with essential phone numbers, specific to that school and area, and a security & safety plan.

The following things apply to all education outside the school building, whether it's a P.E. class on the sports field or a week long camp school.

To be considered before stepping out:

- Outdoor education is included in the school's annual plan. For e.g. for an individual lesson, it is sufficient that the annual plan shows the possibility of conducting individual lessons outside of school.
- Outdoor education, guidance, and support are well planned, risks have been assessed, and there is an agreed upon policy for anticipated risk situations, as in other teaching.
- School insurance must cover teaching outside the school area.
- The student receives the curriculum-based education, guidance, and support he or she needs, also in outdoor education.
- Everyone is made aware that school rules and penalties also apply during outdoor teaching.
- The place for teaching is safe.
- The teacher and the principal assess the characteristics of the student group to determine whether teaching, guidance, and support can be provided safely outside the school.
- The teacher and the principal decide whether more teachers, school assistants, or other adults or special arrangements are needed.
- Participants' allergies and other limitations that are relevant to out-of-school learning are known and reported to collaborators as appropriate.

Please check when leaving for the outdoor classroom:

- All participants have appropriate clothing and equipment.
- First aid kit
- Mobile phone
- Students' and guardians' phone numbers and other necessary contact information.

You can find the entire "Learning Outside of School" guide in printable form at **www.luontokoulut.fi**

Outdoor Classroom Security & Safety Plan -Model

Event: _____ School's outdoor education

Location: School address: _____, the immediate vicinity of the school

Duration: Up to one school day of outdoor education

Participants: _____ School students in the _____ grade, _____ adults.

Responsible for safety: Class teacher / subject teacher / special education teacher

Address and coordinates of school's **place of rescue**:

_____

Other outdoor classroom locations:

address: _____

description of the place: _____

coordinates:
N _____

E _____

Preventive measures:

- Accompanying adults are informed about the safety plan.
- The place for teaching is safe.
- The characteristics of the participants, allergies, and other limitations that are relevant to instruction outside the school are known.
- All participants have appropriate clothing and equipment.
- A first aid kit is available.
- A mobile phone is available.
- Students' and guardians' phone numbers and other necessary contact information are known.
- Drinking water is available if required.
- If you are out of school over lunch break, packed lunches from school are available. They will be transported in accordance with food hygiene measures or otherwise provided in a previously agreed manner.
- The teacher is responsible for the students and their safety throughout the lessons, including traveling and breaks.

Main risks and preparation for them:

1. Traffic as you move from the schoolyard across the road to the forest. Caution and instructions for crossing the road.
2. Injury from accidental falling down. First aid kit and skills.
3. _____
   _____

What to do in the event of an accident:

1. Find out what happened.
   - Take it seriously.
   - Stay calm.
2. Give first aid or call emergency 112.
3. Prevent further accidents. Calm those present.
4. The patient should not be left alone. The rest of the group has to be taken care of.
5. Report the incident to the guardians and the principal.

Important phone numbers:

- The 112 emergency number
- Municipal healthcare center: _____
- Nearest hospital: _____
- Poison Information Center: tel. 09 471 977, 24h/day
- School nurse: _____
- Principal:_____
- Office:_____

Information plan:

Immediate action will be followed by contact with the appropriate bodies: school, health center, guardians. Responsible teacher/ principal is responsible for all communication.

Prevention and First Aid Instructions in Outdoor Education

Laura Palander, class teacher, and Meri Elonheimo

The table may be included in the first aid kit.

Accident / Risk description	Preventive measures	Protocol in case of accident	First aid kit content
Bee sting	Observe the environment. Put on long-sleeved and -legged clothes. Possible allergies in students are known, and a possible allergic reaction has been prepared for.	If necessary give antihistamine and cortisone tablets. Put a cold-compress on the sting area and keep it still. Use tweezers to remove the stinger from the skin. If necessary, the patient should be promptly referred for treatment.	- cortisone tablets - tweezers - instant cold-compress pack - water bottle
Sunstroke / heat stroke	Protect the head and neck from the sun with a hat or scarf. In hot weather, wear light and loose clothing. Abundant fluid intake is essential. Heavy physical exertion should be avoided.	Symptoms may include headache, irritation, nausea, dizziness. Place the patient in the shade and provide something to drink. Cool the head and neck. Take confused patients to medical care.	- water bottle - wet wipes
Getting lost / leaving the group	Knowing the students is important. The group's area of activity is agreed upon and made known to everyone, as well as the time and place for gathering at a meeting-point. Orienteering skills are practiced. More than one adult must accompany trips further into or to unfamiliar terrain.	Arrange for a search. Arrange for responsible persons to stay at the meeting-point. Take care of the rest of the group.	- phone & contact information - whistle
Resuscitation	Identification of hazards, e.g. bodies of water, and risk of carbon monoxide poisoning.	Child resuscitation instructions are included on a separate paper.	- resuscitation instructions - resuscitation cover
Wounds	The aim is to choose a safe route, removing dangerous objects (e.g. glass shards) from the terrain. Care should be taken when handling blades and collecting trash. Practicing the correct carving position, motion and blade position.	Stop the bleeding by compression, raising the wounded part, and in the case of a large wound, use a pressure bandage. Clean the wound. Close the edges of a laceration wound with tape. Cover the wound with a bandage or dressing. Refer to treatment if necessary.	- disinfection agent & pads - bandage - wound tape - wound pads - dressings
Dental accident	Warn students of slippery rocks and roots on the path.	Place the loose tooth back in its place or a damp cloth, and go to a dentist.	- water bottle
Hypothermia	Check that students have adequate clothing, especially hats, gloves, and footwear. Be aware and teach students to be aware of the cold. Seek protection from the wind. Add movement or wear extra clothing and a hood.	Shield the slightly hypothermic patient from the cold, change to dry and warm clothing. Give a warm drink if the patient is able to drink. Wrap around a heat reflecting emergency blanket and insulate from the ground to prevent further loss of heat. Help the confused patient into the shelter. In severe hypothermia, act quickly. Warm the patient up with for e.g. your own body heat. Move them carefully and hospitalize as soon as possible.	- warm drink - heat reflecting emergency blanket
Adder bite	The environment is monitored especially in spring, on cliffs and rocky sites. Wear rubber boots.	The bite area should not be touched. Put a splint and a tight bandage on the limb, while it is held in a raised position without moving. The patient should be carried away from the bite site. Use the first aid cortisone-tablets for snake bites as directed. Do not give nonsteroidal anti-inflammatory drugs.	- cortisone tablets - stretchy dressing

Accident / Risk description	Preventive measures	Protocol in case of accident	First aid kit content
Fracture	Choose a safe route. Warn students of slippery or difficult terrain. Move calmly. Follow the rules of climbing and practice climbing according to your own skills.	The fractured area is supported or splinted as needed. Seek medical treatment. Observe for possible symptoms of shock.	- stretchy dressing - heat reflecting emergency blanket
Poisoning	Learn to identify plants and mushrooms. Prohibit students from putting anything in their mouth without the permission of the teacher.	Find out what plant, berry or mushroom the student has eaten. Contact The Poison Information Center (tel. (09) 471 977). Give activated charcoal. Don't try to induce vomiting.	- activated charcoal
Ankle sprain	see Fracture.	Cold, compression and elevation: Raise the limb, squeeze or press on the injury site, apply a cold compress for at least 20 minutes. If necessary seek medical treatment.	- instant cold-compress pack/ snow in a bag - stretchy dressing - heat reflecting emergency blanket
Frostbite	see Hypothermia. Learn to warm your fingers around your neck or under your jacket in your armpit.	You may feel tingling and numbness in the frostbite area, and discolouration may occur. Warm up the area, for e.g. with our own hands or warm water, and protect with dry clothes. Do not rub the frostbitten area. Seek medical attention if the symptoms of frostbite do not disappear within one hour after heating or if blisters develop on the skin.	- extra clothing
Fire burn injuries	Guide caution with fire.	Cool with lukewarm water, min. 15 mins. Apply clean dressing. If necessary, seek further treatment.	- cold water
Tick bite	Wear long-sleeved and -legged clothing, and check for ticks.	Remove tick with tweezers by gently pulling. Note the location of the bite and ask guardians to observe it for changes. If necessary seek treatment.	- tweezers - camera (document the bite)
Head injury	see Fracture.	The potential bump site is pressed and cooled. Symptoms of a mild concussion may include headache, nausea, dizziness, memory problems, and fatigue. Observe for changes in consciousness: Seek immediate medical attention if the patient has - difficulty in staying conscious - difficulty understanding speech - loss of some sense - general weakness - a change in how they feel.	- instant cold-compress pack - woolly blanket or cloth
Eye injury	Avoid running in dangerous terrain. Advise to guard against tree branches and twigs while walking in the forest.	Visible debris can be removed gently with clean fingers or by rinsing the eye under running water. Do not rub the eye. If the debris remains, or if there is a visible wound or bruise in the eye, seek medical attention.	- water bottle
Shock e.g. after a fracture		Symptoms of shock include: pale skin and cold sweat, weak and fast pulse, dizziness, restlessness or confusion. First Aid for Shock: - lay patient down in resting position - monitor breathing - put feet up - protect from the cold: insulate from the ground and wrap in a heat reflecting emergency blanket - calm them down by talking - don't give anything to drink - seek medical attention without delay.	- heat reflecting emergency blanket

Preparation Reduces Risks in the Outdoor Classroom

Meri Elonheimo, trainer and environmental educator

In safe outdoor education, the likely risks of activities have been assessed as acceptable. Lessons have been learned from experience, miscalculations, accidents and near misses - and based on these, we improve our preparedness and procedures.

Knowing the student group and getting to know the outdoor classroom beforehand is essential for safety. The safety of outdoor education is created by proper guidance of the group, the ability to be flexible about plans, and a clear protocol for emergencies.

Preparing for risks requires the identification of potential hazards. Hazards can be related to the activities, environment, equipment or conditions. The increased risk of one factor can be offset by increasing the safety of other factors. E.g. running games are a risk in difficult, slippery terrain or dense forests, and so, you should mainly engage in these in a safer flat terrain. Life jackets are required when on water. When traveling to the outdoor classroom, you have to be prepared for the dangers of traffic: remember traffic rules, proceed in an organized and alert manner, and use reflectors.

Climbing on fallen tree trunks, rocks or trees does not need to be prohibited as long as a safe framework and rules are in place. Check the condition of the branches, agree on a safe maximum height for climbing, and do so with suitable equipment according to the individual's experience. The use of tools is learned and guided, such as knife-carving.

For risks associated with weather conditions, prepare by checking the weather and learning how to dress for different conditions. A bottle of water is carried along during the warm season, and a warm drink is brought along in a vacuum flask in the winter. The weather in Finland is very rarely dangerous, but it is advisable to protect yourself from wet weather, cold winds and direct sunshine if you plan to spend more than a break outside. Even when it is freezing cold, you can go outdoors as long as you are properly dressed (see clothing guide), move enough and remember to protect yourself from the wind. The only reasons why you would have to go back indoors from an outdoor classroom are mainly severe storms and heavy loads of snow falling off branches.

Unexpected emergencies are more often caused by human behaviour than natural hazards. Good instructions are not always followed, for e.g. someone may leave the group because of a tantrum or for some other reason. When there are challenging children in the group, knowing the students is important. Having the help of several adults creates opportunities for flexibility and security in case of unexpected situations. Getting lost can be prevented by agreeing on the boundaries of the outdoor classroom and the meeting place or route, as well as having a 'helmsman' and checking your navigation skills.

When working in an urban environment, you should also be prepared for difficult or threatening people. It is a good idea to teach the group of students to gather in a prearranged place after a specific sign. Trash left by people in the forest, such as broken glass and needles, can also be a danger. Keep students informed about the risks, and collect rubbish from the play area before starting activities.

Species to be Handled with Caution in Finnish Nature

Aulikki Laine, trainer, environmental educator

In Finland it is very safe to move around in nature. The most significant safety risk is the transition to the outdoor classroom, i.e. the traffic on the way. However, some animals induce fear because they can be harmful to human health. Learn to face these organisms in a rational manner, and go out and enjoy nature.

Ticks

The tick is an arachnid that lives in forests and open areas in dense undergrowth, where it grasps onto passing animals. As a result of global warming, they have become significantly more widespread and have spread throughout southern Finland. Some ticks, when attached to the skin, spread diseases such as Lyme disease (borreliosis) or tick-borne encephalitis. The tick season lasts from the beginning of the growing season (over +5 C) to the onset of frost.

Prevention:

- When in the field during tick season, it is wise to wear long-sleeved and -legged clothes. Put the trouser leg into the boots or socks.
- Do a daily tick check on your skin. Teach children to do a tick check every night after the outdoor education. Ticks often bite children on the upper body. The scalp and behind the ears should be carefully examined. Ticks can migrate on the skin for several hours before latching on. The ticks that bite humans can be small nymphs (1-2 mm) or larger adults.
- Remove the tick as soon as possible to prevent borreliosis infection. The ticks are removed with a narrow-nose tweezers, pulling as slowly as possible or rotating in one direction.
- The TBE vaccine protects against tick-borne encephalitis.

Care:

- Observe the tick bite site. If necessary, you can circle the point with a pen. If a red rash c. 5 cm in diameter develops within 1-4 weeks, or a fever or headache develop, see a doctor without delay.

Adders

The adder is the only poisonous snake in Finland. Other snakes are the non-poisonous water snake and the smooth snake found in the Åland Islands. Slowworms can be mistaken for snakes, but they are harmless lizards.

Prevention:

- Wear boots in areas where adders are known to be.
- Adders generally slither away when people come near as they scare from the stomping of the ground.
- If you encounter an adder, let it move off the path. If it doesn't, avoid it by taking a different path.

Care:

- If an adder has bitten, it is advisable to carry the patient to keep the bite area as still as possible. A bite on the leg or hand should be lifted up, and a splint and bandage can be put on. Seek medical care.

Wasps, bumblebees and bees

The bumblebee is the easiest to identify from these three yellow-black-striped insects because it is rounder and has a fuzzy coat. The bee is hairier than the wasp. The wasps' wings fold longitudinally in a resting position. A bee dies when it has stung, because its stinger gets stuck in the victim's skin. Therefore, it only stings in extreme distress.

Prevention:

- Wear long-sleeved and -legged clothing, don't go barefoot.
- When encountering a wasp, bumblebee, or bee, behave calmly, do not flail about.

Care:

- Put a cold wrap on the sting site. Let it rest, do not scratch.
- A person who has been sensitized to bee stings is advised to carry along a shot of adrenaline from a doctor.

Seek medical attention if:

- you have received many wasp stings
- the wasp has stung the neck, mouth, tongue or face
- shortness of breath, fever, or severe swelling appear after the sting
- you are allergic to wasp stings.

Raft spiders and Water spiders

The raft spider and the water spider live in coastal waters. Their bite is equivalent to a wasp sting. However, they usually do not bite humans, even when handled.

Treatment is the same as for a wasp, bee or bumblebee stings.

Poisonous mushrooms

The destroying angel mushroom and deadly webcap mushroom are deadly poisonous mushrooms. You should learn to identify them, since they have caused severe symptoms of poisoning. They are dangerously toxic only when used in cooking, not when they have been merely tasted. Many less poisonous mushrooms can also be found in Finland, such as the fly agaric.

Prevention:

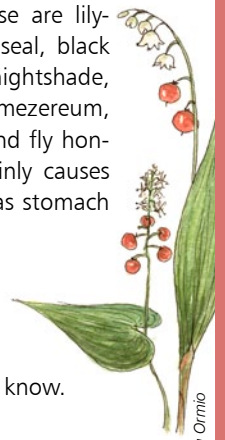
- Learn to identify mushrooms, including the poisonous ones.
- Eat only the edible mushrooms you know, properly treated.
- Wash your hands if you have touched a poisonous mushroom.

Care:

- A person who has consumed poisonous mushrooms must be taken to a doctor.

Poisonous plants

Poisoning due to plants is extremely rare in Finland. There are many edible and delicious berries in Finland. However, the berries of some plants are poisonous. These are lily-of-the-valley, angular Solomon's seal, black and red baneberries, bittersweet nightshade, false lily-of-the-valley, herb-paris, mezereum, red elderberry, alder buckthorn and fly honeysuckle. Eating their berries mainly causes only unpleasant symptoms such as stomach pain and diarrhea.



Villa Elfvik / Vappu Ormio

Prevention:

- Learn to identify plants.
- Eat only the edible berries you know.

Care:

- If a child eats more than a few poison berries, activated charcoal is given.

Deaths caused by animals

Source: Statistics Finland, Statistics on Causes of Death 1998-2015

Elk, in road accidents (101)
Horse (41)
Wasp (23)
Dog (21)
Cattle, cow, bull (12)
Deer, reindeer, dogs, horses in road accidents (10)
Cat (3)
Bear (1)
Adder (1)
Bee (1)
Ram (1)

During the same period, 6119 people died in road accidents.

8. Different Types of Learners in the Outdoor Classroom

The outdoor classroom has plenty of space that activates and inspires different kinds of learners to learn. Moving in nature often calms even the liveliest learners. Outdoors, it is easier for the teacher to spot student interactions and problem solving skills. Outdoor education is also very suitable for immigrants. Outdoors, language skills accumulate by looking at pictures and exploring nature. At the same time, a relationship with Finnish nature is created. In nature, diversity is a richness!

Active Learning Suits Many

Kai Nihti, special education teacher
Photos by the author.

Should I go outdoors to learn with a student who has special needs? I did!

Since 2015, Jukola School in Hämeenlinna has been studying outdoors with special education classes. Mostly, school weeks start on Mondays with a walk in the nature nearby, when everyone shares their news and how they are doing. This helps to calm the mind and bring the focus into the school week ahead. We start with an active class of Finnish, maths, foreign languages or environmental studies. The idea is to get actively get acquainted with the week's new topics, or to revise the lessons of the previous week with group exercises.

In my own work, I discovered that starting the week in nature is a soothing rite of passage from the weekend to the process of studying. At the same time, the forest enables different kinds of pupils to experience a sense of accomplishment, without the attention of other students being drawn to failures at single tasks. Often, the challenges and difficulties of different kinds of students are evened out in nature. Nature gives room to escape negative emotions in a different way than the traditional classroom. A nervous student at the base of a spruce tree does not attract the same attention from others as a student in the hallway or a small space. The acoustics of nature evens out the stimulus levels of different students and allow everyone to take part in learning. For these reasons, we use our nearby environment for educational purposes in all subjects. The most recent subject to be taken outdoors was technical work, because the school's facilities are being renovated.

Outdoor education with a special needs class is not much different from doing so with a mainstream education group. Differences may arise from identifying the special needs of the students. The teacher has to be able to recognize the changes in each student's emotional states, and this poses challenges for managing the group. That's the reason why it's a special education class. As a practical example, there have been situations when an impulsive student has become agitated, left the activities, and wandered off quite far from the rest of the group. In these situations, the calming effect of nature along with knowing the student's needs, has helped him to return to the group before long. Then, he hasn't necessarily felt anxious that leaving the group would result in negative feedback or experiencing the situation as a punishment.

The starting point in outdoor education is in the student's relationship with nature. One year, we had a special needs group that wasn't familiar with the surrounding nature, and that prevented them from learning there. Focusing or listening to instructions in the forest was impossible. The teacher needs to assess if the group is ready to learn outdoors. If not, the teacher should start by introducing the group to nature and making it safe place for the whole group. In fact, I found out that what works with our group is to take them to a nearby nature spot, and doing a few easy games and educational tasks, e.g. a game of regular tag, plant species tag, or running to a given species.

Special needs students generally enjoy active and demonstrative education. Outdoors, students have the opportunity to learn in an insightful and concrete way. The teacher is able to observe the students' problem solving and collaboration abilities more closely. The teacher must throw himself into teaching and be brave, as there aren't ready-made answers for everything in outdoor education. What there is, is an opportunity for deeper learning with the students. The greatest skill a teacher can have is inspiring students to learn. The teacher enables optimal learning for each particular group of students. When there are learning challenges in a special needs group, using concrete examples of the subject matter being taught, learning through play and action, having the pupils verbalize the lesson themselves, and sharing experiences, will strengthen each learner as an individual and as a member of the group. Learning must be based on the learner's own, genuine insight. It happens most readily outdoors.

An example of studying geometry:

The aim is to learn geometric shapes and angles. However, the teacher does not reveal this at first. Outdoors, we start out playfully in groups and collect as many sticks as possible. From these, each group chooses the best two sticks, and are instructed to make a pattern. They quickly realize that the sticks form an angle; an obtuse, acute or right angle. The role of the teacher is not to name the angles, but to give the students a chance to think of names they could be identified with or modeled. The teacher helps students to think what kinds of slopes are found in different shapes. Are they steep or gently sloping?

Three sticks are selected from the pile and a pattern is constructed from these. It is noted that these give rise to an obtuse triangle, acute triangle, or right triangle. Again, it is up to the students to give a name for the pattern. Students are then asked to compare the triangle with the angle of the two sticks. This leads to a consideration of the link between the angles and the triangles. The task continues accordingly with four sticks. The patterns built from four sticks are examined; parallelogram, square, rectangle, etc.

The added bonus for doing outdoor education with a special needs class is the smaller size of the group and the help of a co-worker, a school assistant. Special needs learners should be given time to understand concepts, as well as allowing time for observations and sensations. Outdoor education allows for layered learning and exploration of phenomena. Then, new things are not merely learned from books, but each topic is introduced in a concrete way first-hand, and then theoretically approached with the help of books.

Mathematical calculations and technical work are practiced outdoors.

An example of studying friction:

The group rolls different objects down different terrains. We make hypotheses about which ones roll the farthest, and reflec the reasons for the results. Finally, we study the concept of friction from textbooks, and review the observations made outdoors.

The challenge of outdoor education at school, is the inappropriate dressing at different times of the year, which sometimes makes it difficult to proceed with planned activities. Sometimes a teacher has to be able to make quick changes to plans. Good everyday clothing fortunately doesn't cost much for families. As an idea and an integrative learning element, we have knitted mittens in crafts class, so that everyone has at least one spare pair at school in the winter.

I've used the outdoor education throughout my entire 20-year teaching career. As a classroom teacher in mainstream education, I had quite significant experiential and memorable lessons with the students. For example, with one class we visited the Parola Armoured Brigade training area in Ilveskallio and spent the night in squadron tents. During that trip we learned about nature in the winter through exercises, and got acquainted with the activities of the brigade in its various areas.

Active Exercises I Use Regularly

ANIMAL CARD GAME
(dividing the students into groups)

Materials: Species Cards (animals) and clothespegs

Participants gather around the #Outdoorclassroom Species Cards spread on the ground. We examine what different animals are present. The instructor then puts a card on everyone's back with a clothespeg. Pupils walk around and ask each other questions like "Do I have two feet?", that can only be answered with a 'yes' or 'no' answer. Once the pupil has found out her own animal, she gets out of the game. At the end, the groups have been discovered: no legs (reptiles, molluscs), two feet (birds), four feet (mammals), six feet (insects), and eight feet (spiders).

ANIMAL BINGO
(building cohesion)

Materials: Species Cards (animals) and animal card game board

Each group from the five that were formed in the previous game are dealt an animal card board (3x3 animals). Animal cards, with the same animals as on the boards, are spread face up on the ground. The first in line from each group runs to pick one card from the playing area. The goal is to remember to pick a card with a picture that matches one on the board. When the group has received three in a line, they call out 'Bingo!' and get one point. The game continues until all groups have achieved a bingo.

Practising Parts of Speech - KIMBLE

Materials: different coloured cones, beanbags, plastic boxes and word cards

The teacher makes a circular game area out of the cones. A word card is placed in each cone. The players are split into four teams. All teams play on the same game board simultaneously. Each team stand next to their own starting cone. The students stand behind the line, and the first person in line throws a beanbag into a small plastic box in front. If the beanbag falls into the box, plus the team or player knows which part of speech the word in the next cone presents (e.g. cellphone -> noun + common noun) - then the player can move the team's piece (a rock or another beanbag etc.) forward by one cone.

The player then runs the entire game area clockwise and joins his team, stepping last in line. Then the first person in line can throw the beanbag into the box. If the throw is a miss, the piece is not moved forward, the player just runs around the game circuit. When the pieces of two teams land on the same cone, the first one there is allowed to move the other team's piece one step back. The game ends when an entire team has returned to its starting cone.

Kai has adapted the Kimble yard game designed by the Outdoor Association of Finland for educational use.

MATHS WITH CARDS

Materials: two-digit number cards

The teacher divides the students into groups of three. At the beginning of the game, two-digit number cards are evenly distributed over a sufficiently large area, numbers facing up.

The first in line runs to grab a card from the ground and brings it to the group. The next player searches for the second card with the goal of getting the exact sum of 100 by adding the two numbers together. The group adds the numbers on the cards together, and if the score is not 100, the third player in the team goes to change one of the cards. The first team to get to the exact sum of 100, gets a point.

At the end of the game, each group presents their results to the others and explains how the addition was made. If necessary, the teacher can encourage one member of the group to act as a 'carry number' when adding up the numbers.

Guiding a friend whose eyes are closed.

A power place can be found in the forest.

Immigrants in the outdoor classroom

Milla Tuormaa, nature school teacher

The dark-skinned boy takes a magnifying glass into his hands suspiciously. The eyes are searching and a little uncertain. A common language is still to be found in the group of immigrants. I direct him to look at the trees with the magnifying glass, and as I touch the tree I mention an adjective and the species: "The birch is smooth". I stroke the birchbark. The students try after me, and the word is committed to sensory memory.

I have organized nature tours for immigrant groups at my Roving Nature School Naakka ('naakka' means jackdaw). The purpose of the excursions has been to strengthen the immigrants' relationship with the surrounding nature and to enrich their Finnish language skills. The language skills in the groups are varied, and the exercises have had to be clearly demonstrated. Many times, after a little suspicion, the group goes on an enthusiastic exploration of nature and everyone's interest turns into joy. Complaints are rare, except for maybe about the cold, since having to dressing for cold winds is new to many.

Language learning in nature

Outdoors, language skills accumulate by looking at pictures, touching natural objects and exploring. Brisk games and even guiding a partner with closed eyes creates trust within the group. Some immigrants may be overactive students, but that's a useful trait outdoors.

The example the teacher sets by exploring and walking in nature is significant. When I jump over a ditch, as one does, the students first laugh at my bouncing about. Soon, however, the students themselves start to boldly explore their surroundings and dare to step off the path. A spider makes the girls scream. I go next to them to study the spider, and gradually the girls join me.

Some investigate enthusiastically and repeat my words, some don't say anything and only agree to touch the things in nature after a few times. They may have become tongue-tied with the wealth of new things to learn. Getting to know the language starting from the letters is laborious. Towards the end of the excursion, even the most reserved students seem present. I consider it a victory when I get the young people to listen and to enjoy just sitting on a rock.

A power place in nature

Immigrants may be accustomed to having dangerous and poisonous animals in the forest. It is reassuring for them to know that Finnish nature is quite safe. The experience of hiking in the nature becomes a happy memory, when you can relax and explore the theme of the trip and spend time with friends.

"Are there any crocodiles in the river?" a boy asked me on a trip. I assured him there weren't, but he was still skeptical. We took photos by the river and the kids ventured to the water's edge. The boy seemed to calm down, but on the following trip to some small streams he asked again if there were any crocodiles. At the campfire, the boy opened up and said that in his home country, he wasn't allowed to go to the jungle, because there were dangerous crocodiles and snakes everywhere. At the end of the excursion, the boy sat peacefully on a rock and played his bird whistle.

At the end of each trip, there is always a listening exercise to focus on your own thoughts in a place you like. Hopefully, listening will leave you feeling empowered. Gradually, the power place found in the woods or on a hill may becomes a place the immigrant wants to return to. In this way, new citizens learn to appreciate, enjoy, and care about their surroundings.

A frame can be used to outline a nature painting.

Illustrated trip – diversity is a richness in nature

Milla Tuormaa, nature school teacher
Photos by the author.

The boy compares an image of a spruce tree to a real tree, rubbing his cheek against the bark with his eyes closed. He doesn't speak, except for echolalia and single words, but I guide him with illustrations to examine nature and sense the forest. These are touching moments I have experienced with special children on our nature trips.

Support from illustrations on nature excursions

For trips with special needs groups, I use exercises that I explain with illustrations, including species pictures. The image helps the student focus and understand the instructions. The picture can also be used to review the instructions, and to show details for deeper understanding. The image arouses interest and halts a student who is unable to listen to verbal instruction.

In classrooms, pictures are commonly used to instruct students, and especially for anticipating challenging situations. Students can have their own picture folder, with which they can spark discussion. During nature walks, I noticed how the students made astute observations from the diverse landscape illustrations, and then were excited to find the same details in nature. I showed them pictures with a mouse, plants under a tree, and lichen and a polypore on a tree. I instructed the students to look for picture cards under the trees. They went excitedly looking for pictures of animals and plants. With the support of the Food Chain image, we continue to practice and make cards together to create food chains. Students begin to understand the relationships between animals more deeply.

There's still no speech, but a twinkle in his eyes and laughter ringing in birdsong. We climb up to the bird tower and the boy peers through the binoculars at the herons. At the end of the trip we are talking about the sea with signing gestures. We ourselves have become a picture and a part of the landscape.

The power of the senses

In nature, pupils who are lively calm down, those who have disturbed the classroom quiet down. Often, pupils who have been deemed with special needs, surprise their teachers in nature. The scents, sensory silence of the forest, and the opportunity to move, soothes the student and helps him concentrate. Nature exercises are often sensory, adventurous, and exercise-oriented, and are therefore suitable for special children who cannot parse sensory stimuli.

Many times I have been touched by how special children burst into the arms of nature without restraint. They press their heads against tree trunks, stare at mushrooms in wonder with magnifying glasses, and fall asleep blissfully among the bilberries as they listen to the hum of the trees. From somewhere within, a passion and interest for nature bubbles up, and the experiential exercises inspire even a suspicious student.

Initially there may be resistance, but with your own enthusiasm, the instructor can make a defensive child excited and interested in exploring nature. It can, however, take time and require focus, as well as setting rules for the group. It is advisable for the same instructor to go on several nature trips with the same special needs group. My aim has been that at least some of the groups can do 2-3 trips in different environments. I also give materials to all the teachers, so the idea of combining images and senses with the nature experience spreads.

Students usually enjoy moving about in nature. Experiential exercises inspire them to experience, and in nature, the student may understand something that he or she found difficult in school. What matters most, however, is a positive experience of nature and ourselves as part of it.

During the spring excursion, the students capture aquatic insects with a net, and the boy looks through the frame to the river. Then he hangs the frame on a tree branch and notices a delicate green bud. Another boy sits on the grass and arranges the aquatic insects according to the identification chart. The girl counts the legs and wings. We have combined a variety of lessons into one nature experience trip.

A food chain has been arranged from the species cards.

The species cards are used to explain the Tree Friend and the Treasures of the Forest exercises.

9. Nearby Nature as an Outdoor Class

Free outdoor classrooms can be parks, forests, beaches or even a fallow field, if located close to school. The easiest thing to do is to use the schoolyard as an outdoor classroom. You can do a variety of tasks on the asphalt. The nature around schools may vary, but there is hardly any school in Finland where it would be impossible to learn outdoors. Various shelters, such as lean-to shelters and tipi-like huts, allow for year-round outdoor education activities outside of the school environment.

The outdoor classroom is a great place to learn about environmental responsibility. You can make use of the surrounding nature as stated in everyman's rights, as long as you remember that moving in a large group can leave undesired marks in nature.

The accessibility of diverse learning environments in the immediate vicinity of schools is not to be taken for granted. Schools should be active in urban planning. Contacting land-use authorities raises awareness of the importance of outdoor learning environments and, at best, enables the creation of permanent outdoor classrooms. The pupils' participation in urban planning creates a better environment for all, and the students grow into skilled environmental citizens.

Many municipalities offer opportunities for schools to use public transport to nearby nature sites. Cycling is also a good option when traveling further. A trip to the nearest national park requires more arrangements, but is a recommended experience for every student in Finland. The National Parks have pristine natural gems, as well as structures and services that support excursions of all sorts.

Everyman's rights in the outdoor classroom

When teaching in nature, one should remember everyman's rights. In Finland, everyman's rights are very extensive and allow everyone to move around in nature. In teaching, you are also allowed to use local nature and natural materials, free of charge and without asking for permission, within the limits of everyman's rights. Everyman's rights are best learned in practice, so it is a good idea to consistently take them into consideration in the outdoor classroom and learn to operate in such a way that you leave as little or no traces in nature.

Everyman's rights mean that everyone has the right to use nature, even if they do not own the land. However, the landowner and nature should not suffer any detriment. Everyman's rights include the idea that there should be no permanent trace left in nature after it has been visited. In the outdoor classroom, you must be cautious not to erode the terrain: When traveling with large groups, try to use ready-made trails and do not unnecessarily move around in sensitive areas such as dry lichen or steep slopes. A permanent outdoor classroom is established in agreement with the landowner. For gathering and playing, it makes sense to choose a particular area, rather than wear out the forest floor over a large area. In nature conservation areas, you must take into account restrictions on the use of the areas, and that outdoor activities do not jeopardize the site's conservation objectives. One should not play games that involve running in the undergrowth in a protected area.

For outdoor classroom activities, one key issue about everyman's rights is that everyone is allowed to collect loose natural objects such as twigs, pinecones, and other parts of plants and, to a lesser extent, rocks. Samples of growing plants may be taken as long as the sample is small in relation to the growth of the plant. Everyman's rights do not justify cutting branches off growing trees. Moss and lichen must not be collected without the permission of the landowner, but small samples are permissible.

Everyman's rights allow you to:

- walk, ski and cycle in nature such as forests, natural meadows and bodies of water
- stay and temporarily spend the night in areas where movement is permitted
- pick wild berries, mushrooms and un-endangered plants
- boat, swim and go on ice
- angling and ice fishing in most bodies of water.

Everyman's rights do not allow you to:

- travel through yards, plantings, or farm fields
- fell or damage growing trees, i.e. do not bend branches
- take dried wood or a fallen tree
- take moss or lichen
- make open fire on another's land
- disturb the peace, for e.g. by camping too close to homes or by making noise
- litter the environment
- drive a motor vehicle off-road
- disturb or damage bird nests and chicks
- disturb animals
- fish and hunt without appropriate permits
- keep a dog loose in an urban area, on a fitness trail, or on another's land, or in general between 1.3. - 19.8.

Everyman's Rights with Pantomime

Stand in a circle. Explain or review everyman's rights. The instructor gives each participant one everyman's rights card at a time, which must be presented as a pantomime without words. If it is a forbidden activity, an X is first made with the hands. Others guess which everyman's right is in question. Then, discuss the everyman's right together with the group.

Urban Planning, Schools and Nearby Forests

Iida-Maria Koskela & Sampo Vesanen

An increasing number of schools are built in constructed city environments. Schools should ideally be located close to green areas in order to make regular use of local nature as part of their teaching. The Ministry of the Environment recommends that the distance from green areas should not exceed 300 metres. In addition to the learning opportunities offered by the natural environment, being in nature is important for people's health and wellbeing. Contact with nature diversifies the microbial fauna and strengthen the immune system. These protect people from inflammatory diseases such as asthma, allergies, and intestinal diseases. It is particularly important that children and adolescents come into contact with nature. (Paloniemi et al., 2017.)

The Finnish Environment Institute (SYKE) has studied the immediate surroundings of schools and their distance from green areas in the urban areas of Helsinki, Tampere, and Turku. Diverse forests are the best environments for health and wellbeing. Therefore, the analysis looked at the distance of schools to forests. In each of these urban areas, approximately 40% of comprehensive schools are located more than 300 metres from the forest. Primary schools are more often located near a forest than secondary schools, especially in the Tampere and Turku regions. (Finnish Environment Institute, 2018.)

The environment and green areas vary in different urban zones. In pedestrian zones, most of the land is built up. Forests account for only a very small proportion of the environments close to schools in the pedestrian zones of Helsinki, Tampere, and Turku. The proportion of forests and other green areas in school environments increases as we move into the public transport zone. Most of the forests in urban areas are in the car zones. In the regions of Helsinki, Tampere, and Turku, 20-30% of the environments next to comprehensive schools in car zones are forests. Green areas are, however, complemented by parks and courtyards. Of all the schools analyzed, 12 in the regions of Helsinki, Tampere and Turku are not located near a forest or park.

Different urban zones offer different opportunities for outdoor education. If there is no local nature that is suitable for learning outdoors in the school environment, nature can also be brought to schools with nurseries, school gardens, and composting. They allow pupils to become familiar with the cycle of nature and the principles of circular economy, and to practice taking responsibility. At the same time, they are exposed to natural microbes that promote health (Paloniemi et al., 2017).

Although SYKE's analysis has been carried out in the largest urban areas in Finland, the proportion of built environment in cities is constantly increasing all over Finland. A good dialogue between teachers and urban planners is useful for effective urban planning. The health benefits of local nature and involvement in planning local environments are still new topics in Finland and at the European level. However, in order to make the school environment as practical as possible in terms of organizing lessons and to support students' health, wellbeing, and education, it is worth engaging in such cooperation. For eg. discussion on land use, transport, and services could be held with planners. The ideas of parents, hobby instructors, and other people who use the nearby nature areas should also be heard in urban planning (Paloniemi, 2017).

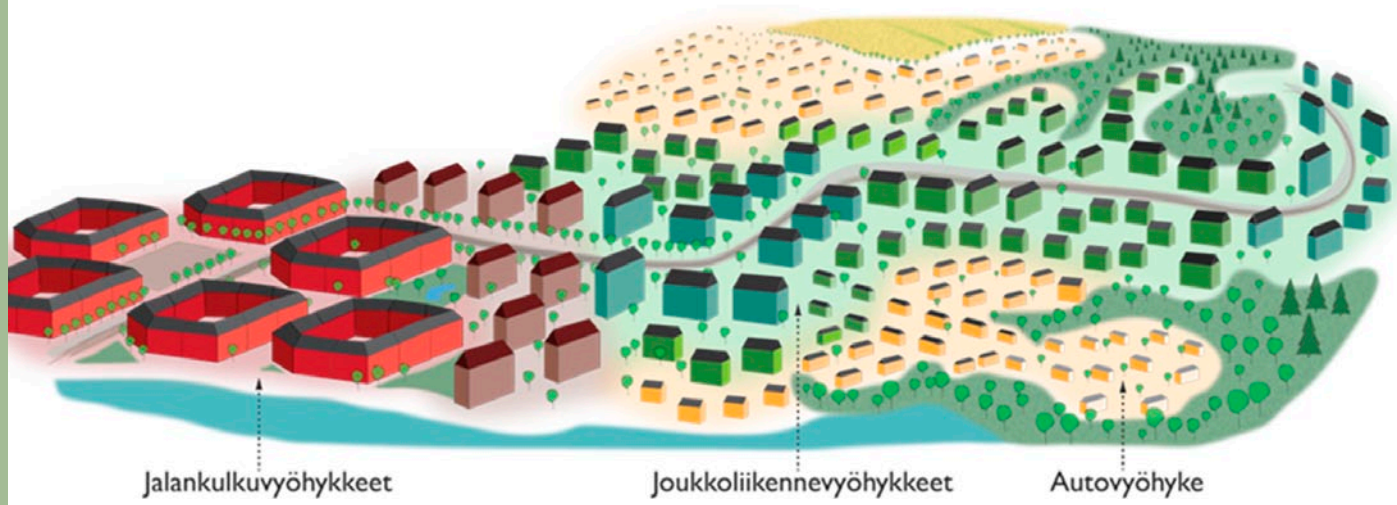
Recommendations for school teachers in growing urban areas

- Engage in dialogue with urban planners.
- Recognize the differences between different parts of the city, and take them into consideration when planning teaching and community development. In the inner city, nature and its utilization are different than in the suburbs.
- The health benefits of local nature and contributing to the design of the surrounding environment are still new topics. Provide key players with enough information about the benefits of nearby nature for health and learning.
- Involving pupils in community planning can be a meaningful learning module and is in line with the curriculum.
- Launch local and regional experiments to find new solutions.

Involve Students in Urban Planning

Teachers can participate in urban planning with students. The national curriculum supports work with agencies outside of school. Pupils should gain experience in democratic participation, societal influence, and decision-making. Participation in urban planning supports the development of students' problem solving and collaboration skills and strengthens their agency. The experience also allows students to practice their expression and argumentation skills and to reflect critically on the many factors and values that influence urban planning. These are the very key skills needed to become an active member of society and to build a sustainable future. (Finnish National Agency for Education, 2014; UNESCO, 2017.)

For the success of a project that students are involved with, it is important that they are genuinely listened to, and that their thoughts are taken into account in the design process and in the outcome. The teachers should trust in the abilities of their students to exert influence and succeed in the project. Otherwise, the experience can make the students passive and feel that their involvement is irrelevant. In addition, it is important for students to be genuinely interested and enthusiastic about the opportunity to participate, as their own enthusiasm motivates them to invest in the project. It is therefore a good idea for teachers to think about how the decision-making process is made interesting for the students. It is also helpful to emphasize the knowledge and skills the students will learn during the project so that they can make the experience a valuable one, despite the fact that making a societal impact can be complex and challenging. (Chawla & Cushing, 2007; Hofman, 2015; Katsenou, Flogaitis & Liarakou, 2013.)



The city can be seen to consist of different zones.
- Pedestrian zone
- Public traffic zone
- Car zone
Due to the structure of the city, these are different in terms of daily movement and exposure to nature.

Securing a School's Forest

Virpi Sahi, Environmental Director

It is a good idea for the school community to invest in ensuring that the forest in their immediate vicinity stays in their use, and to be active in the land use planning of the surrounding land. A good starting point is the School Forest Guide's initial mapping which can be used to bring together ideas about important outdoor education environments and ideas, wishes, or concerns about their future. At the same time, one could identify who uses each area, how often, and think about how their use could be increased. It is advisable to know who owns the forest that is being used as an outdoor classroom, and the layout of the area. It is important that the principal is also involved in securing the sustainability of the school forest, as this is an issue that concerns the whole school.

It is a good idea to complement the teachers' initial mapping with the children's perspective via the forest-based lessons found in the School Forest Guide ('Koulumetsäopas'*). Once the school community has an understanding of the importance of the nearby forest, it is time to contact the landowner. The message might be, for eg., that the forest is used by so many students as an outdoor classrooms that our school hopes to work together to protect the area and its nature for educational and excursion purposes.

Typically, a forest in the vicinity of a school is owned by the municipality or city. In any case, the municipality is aware of any plans that are in place for the forest area, since the municipality is responsible for planning the land use. It is advisable to ask the planning authority what kind of plans are in place and whether a new project is in progress. Details are outlined in the School Forest Guide ('Koulumetsäopas'*).

To protect the school's forest, is important for the school to be involved in the planning of the area. Even if the planning process is not under way, it is a good idea for the land use planning authority to know about the nature sites that are being used by the school. The school may propose to preserve the forest at least as a green area, or even a high value forest area. Conservation is also possible if the forest meets the criteria of the Forest Biodiversity Programme for Southern Finland (METSO), or has some other nature-related value. In this case, it is also important to make sure that outdoor classroom use does not reduce this value.

Schools and kindergartens appreciate having real wildlife nearby. According to a study in Espoo, 65% of teachers and educators were satisfied with the current state of their nearby forest, 19% did not comment, and 16% wanted some forest management activities. The school forest management they desired was, above all, trash collecting. In addition, they listed felling of hazardously tilted trees, the maintenance of paths and gathering areas, for fallen trees to be left in place, and that invasive species would be removed. There were no inquiries for heavy forestry work.

Even if the municipality does not have other land use plans for the outdoor classroom area, saving the school's nearby forest is not to be taken for granted. It is not unheard of for a forestry machine to suddenly enter a nearby forest and start clearing, thinning or even clearcutting the area.

It is therefore prudent to be actively involved with the landowner about the school's outdoor classroom activities. In matters of managing the forest, it would be ideal to take into account the perspectives of the children and adolescents, and biodiversity conservation as well as preserving features unique to the area. Bushes and old fallen trees are worthless for the forest industry, but are significant for biodiversity and for pupils as special places to play hide-and-seek or gather. Many recreational forests do not even aim for wood production. By working together we can plan better to avoid conventional forest management, which is often executed out of mere habit, and degrades the usability of an area.

It would be best if the school could get on the same page with the municipal forest planning. That is, to show them on a map the areas they wish to be left as is, and places where, for eg. a specific tree needs to be felled. At its best, cooperation with the municipality can evolve into joint developments in the nearby forests, such as nature trails or a lean-to shelter for the outdoor classroom.

Many private landowners also understand the importance of a child's relationship with nature. An agreement can be made with the landowner to use the area for teaching, and possibly make wishes for its management.

* *Currently only available in Finnish.*

Finnish Association for Nature Conservation The School Forest guide

The Finnish Association for Nature Conservation charted the use and protection of important forests for schools and daycare centres in the Value the School Forests ('Koulumetsät arvoonsa'*) project. The project developed the school forest concept in a multidisciplinary way.

The school forest is a permanent forest habitat close to the school or daycare centre and is suitable for education, child-rearing, and recreation. Important purposes for the school forest are outdoor education, regardless of subject or topic, and the conservation of its biodiversity.

The project resulted in the School Forest Guide ('Koulumetsäopas'*), where tasks mentioned in this article can be found. The School Forest Guide* can be downloaded electronically from the Finnish Association for Nature Conservation's website www.sll.fi, and can be purchased as a book from the Luontokauppa-shop.

* *Currently only available in Finnish.*

Schoolchildren from Turenki are heading to their nearby forest.

Photo: SLL Koulumetsäopas/Jetro Staven

Taking Cover in the Outdoor Classroom

Ulla Myllyniemi, class teacher, environmental educator

Removable covers, tarpaulin or tarp

Teaching can be taken outdoors even when constructed shelters are not available. You can go out in almost any weather, as long as the equipment is suitable - both clothing and learning materials. If needed, you can stretch out a tarpaulin or tent cloth, or several of them, so that each activity site has its own. It gives you more opportunities to use the outdoor classroom even in wet conditions.

The advantage of bringing your own tarpaulins and tent cloth is that the outdoor class can always be moved to a suitable environment. If possible, it is a good idea to have a look at the area beforehand and plan where the tarps could be attached and what activities the space allows for. The tarpaulin can also easily be thrown on the ground to sit on, study on, or attached to trees for wind protection.

'Laavu'-lean-to shelter

In a permanent outdoor class, it is nice to have a fixed protective structure, such as a 'laavu'-lean-to or 'kota'-hut. The lean-to is a multi-purpose outdoor base that is easier and less expensive to build, but also open to vandalism. You can build benches on the edges of the lean-to, which can be used as an activity point. The lean-to benches are like seating in the classroom: a good way to gather students together in the outdoor classroom when they arrive and for giving instructions. In rough weather, you use the shelter of the lean-to as an activity point, and protect supplies and the whole class from the rain and wind. The lean-to is also a good gathering place when activity points are widely dispersed. If a fire pit is constructed in front of the lean-to, then benches should also be built around it. The built assembly area expands and becomes more usable, and such a lean-to easily accommodates even more people.

The tarpaulin has been made into a tipi at the forest recess area.

Otalampi nature pre-schoolers roast sausage in the 'kota'-hut.

Outdoor classroom structures can be simple to make, like this handy backpack stand.

'Kota'-hut

The 'kota'-hut provides better protection from the rain than cold than a 'laavu'-lean-to, and is lockable. Inside the hut there is a fireplace that provides warmth, light, and the opportunity to cook food. It is advisable to build surfaces around the fireplace and a movable grill on the fireplace where you can easily roast and cook in larger quantities. Fixed benches are built on the walls of the hut, with shelves around the top to store items. You can leave outdoor classroom teaching materials inside the hut as, so you don't have to carry them every time you leave school. It is worth building benches or a group of tables in front of the hut that can seat the whole class. Benches can be used not only as seating but also as tables and crafting platforms.

Preparation

It is good practice to place hooks or hanging points inside and outside the lean-to or hut. These can be used to hang backpacks and other consumables. There is also a need for a dry toilet and firewood storage at a permanent outdoor classroom. You could teach outdoor classrooms full-time in a well-equipped hut. A good example of this are the outdoor kindergartens or nature daycare centres that are already operating in Finland. In very bad weather it is nice to stay in the hearth of the hut, at least temporarily, since the small size limits the number of users. If you stay at the hut for a long time, hygiene issues have to be planned for, such as washing hands, going to the toilet, and eating. Milk carts are handy for transporting water canisters, food, cutlery or other heavy objects.

The campfire provides warmth on cold days and creates a rustic ambience in the outdoor classroom. At the same time, students learn traditional living skills, such as lighting a campfire, chopping trees, or preparing camp food. Sitting around the fire, you can have educational conversations - or just enjoy.

Outdoor education is not dependent on equipment. It is a good idea for every outdoor teacher to look at their own teaching environment and consider the possibilities for that particular place. You can head outdoors even if a shelter had not been prepared. If it rains, go under a tree if necessary. After all, the outdoor classroom is a way of teaching, and there are thousands of them.

Thin or thick tarpaulin?

Tarpaulin is a weatherproof material that can be found in thinner or thicker forms. The thinner tarpaulin can be purchased from large supermarkets or hardware stores, and has hoops on the edges that facilitate using it as a cover.

The thicker tarpaulin or lean-to fabric has a higher quality and can be purchased at outdoor equipment stores. It offers a more versatile shelter, as it often has attachment points not only at the edges, but also in the middle of the fabric, allowing it to be hung in a number of different ways and shaped more easily. You might not want to use this more costly tarpaulin as underlay for activities.

A 'laavu'-lean-to or 'kota'-hut?

A 'laavu'-lean-to will do very well as an outdoor classroom base for a couple of hours at a time, even in bad weather, and of course in good weather, all day long. The benefits of the 'kota'-hut are noticed when you want to teach outdoors continuously, for a longer time, and in any weather. Regardless of the type of shelter, you can assemble the same standard of educational environment around each, and equip them to suit your needs.

The Otalampi 'laavu'-lean-to and 'kota'-hut are also used by the school.

The string designates an important spot in the forest.

The art exhibition is hung in the forest by the 'kota'-hut.

An Adventure Beginning in the Backyard!

Milla Tuormaa, nature school teacher

There is some primal wonder in the way a child looks at nature. With children, an adult will crouch under a tree. And together, build and explore connections between animals and plants, reflects on what belongs where and depends on what. Environmental education is weaving connections between those who exist, and realizing that we are all interdependent.

Fairies and animal stories

In my storybook "An Adventure Beginning in the Backyard" ("Takapihalta alkaa seikkailu"*), the idea is to tell children animal stories during the trip, and for them to experience what it feels like to be the animals in the story through small sensory and adventurous games. The children might explore with a magnifying glass, or collect food for themselves: spruce- and pinecones, leaves, bark, and berries. In the games, the bark can be transformed into flesh and stones into fruit. As the story carries on in the woods, we make huts for small stick doll animals and collect food for them, ie. a spread of insect, plant, berry and mushroom cards.

In addition to animal stories, I've used nature myths to enliven environmental education trips. Just as signs of insect life, you can look for traces of fairies and elves in tree holes. According to old beliefs, the forest was inhabited by forest folk, such as the forest god Tapio, the goddess Mielikki and their children Tuulikki and Tyytikki. There was also Hiisi, a forest troll, who was wicked but easily appeased. In the old times, people would go to the woods to talk to the elves and ask for animals, like squirrels from Tuulikki, or foxes from Kääriäinen, the god of foxes. Tapio provided game and shelter from bears, and Mielikki would reveal the best berry-picking spots.

The nature myths encourage children to become interested in poems and stories. Nature trips can indeed be continued in the library and school.

** Currently only available in Finnish.*

Gratitude for the surroundings

Through stories, the forest embraces you, and a small urban forest turns into a fairy tale forest when the touch of trees and mosses is experienced. For children, even the smallest patch of forest is still a forest, if they are free to go exploring. A couple of trees and bushes to build huts in may be sufficient for a child. You can learn about animal behaviour from stories told in a nearby forest. You can learn respect and gratitude from the nature myths, like giving a gift to a sacred tree and whispering secrets to the forest people.

At the end of the excursion, everyone chooses his or her own tree and quietens under it. I tell a story about the life of a tree and its creatures. We observe the creatures on different levels of the tree, and listen to and feel the tree. We close our eyes and listen to the birds singing on the branches. A boy later says he also heard the rain.

The skill of observing is disappearing as we hurry without stopping, hearing nothing with headphones on, and eyes glued to a screen. Someone might even warn you not to get off the path or step into the woods, or else you might get lost and fall. Would that be so dangerous? What if that is how you found peace, and a miracle? It would be good for us all to learn to look and touch the forest again in a new way, from a new perspective: to imagine flying, and branches as elk horns, and to frame a patch of moss as a piece of art. Then a secret could be found from the forest nearby, wonder and daily peace.

It is important to save enough green space near school's and daycare centres. The forest enriches the imagination and vocabulary and provides a solid ground for the educational path of the little ones. When one often visits a nearby forest, the trees can become like friends who you want to come back to again.

The important school forest

Helsinki Central Park is an important outdoor classroom for many schools and kindergartens in the Helsinki area. There, they go orienteering, on 'Metsämörri' forest troll excursions and environmental lessons. In addition to schoolchildren, more people use Helsinki Central Park than national parks. The nearby forests and parks are an important place for many urban dwellers to refresh and relax.

Civic activity and the courage to voice opinions are needed to defend urban forests. It can also be done creatively through artwork and festivals. My Roving Nature School Naakka has been actively involved in defending Helsinki Central Park. The situation is still tentative, but the time may come when Helsinki Central Park is designated as a part of Helsinki's National City Park.

A group of pre-schoolers make a trip to Helsinki Central Park. Ten boys run wild and balance on a tree. Some have motor and concentration difficulties, but there is plenty of room for playing in the woods. The boys come from six different nationalities. We form a chain along the path holding each other's hands. We defend Helsinki Central Park with a human chain. We have searched for beautiful spots in the forest with my students and marked them with ribbons.

In the middle of a story tour in Helsinki Central Park.

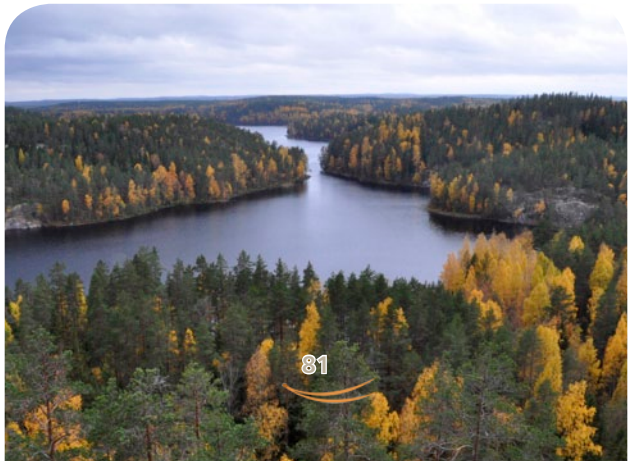


Photo: Pertti Heinonen

Learn in national parks!

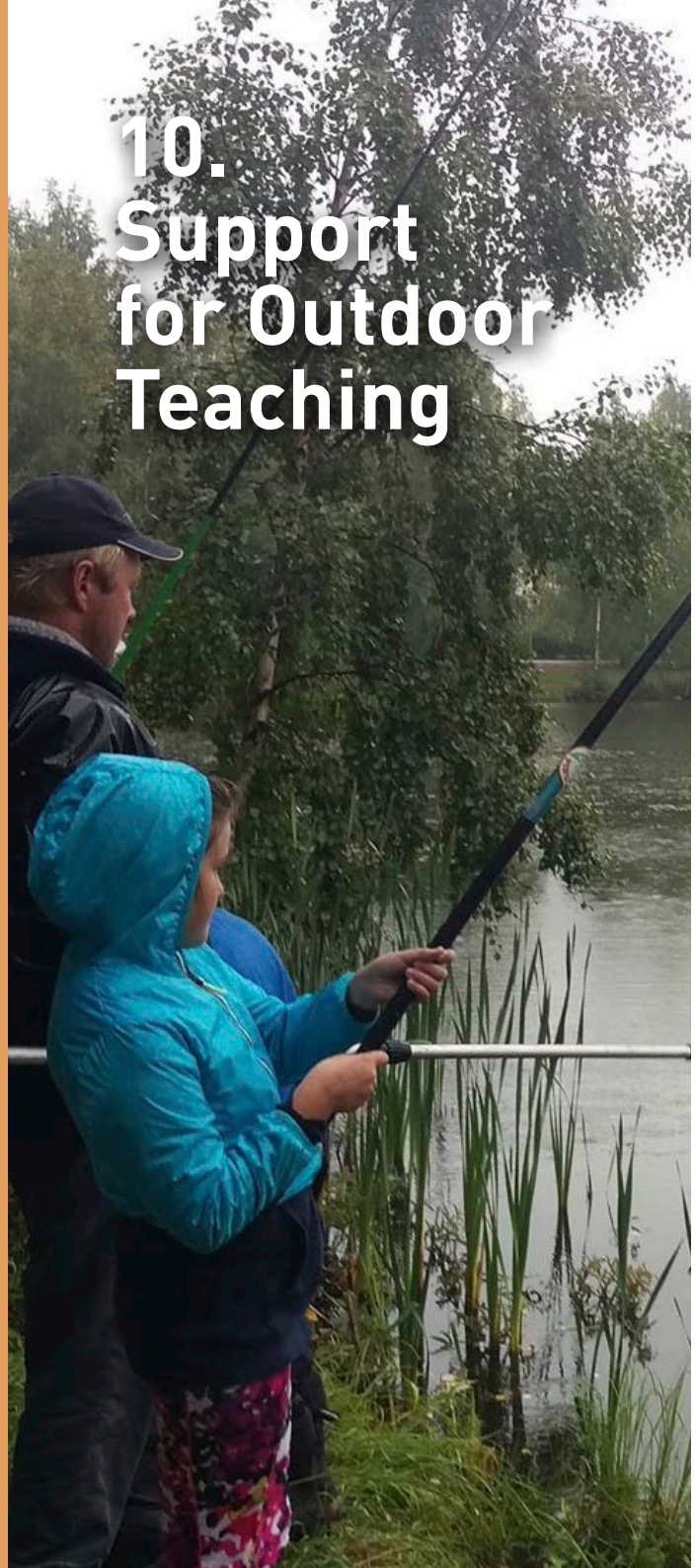
Elina Pilke, Nature Interpretation Manager
The Finnish Nature Centre Haltia

The gems of Finnish nature are protected as national parks. National parks are large nature reserves open to all. Their purpose is to protect biodiversity, ie. the variety of life forms; intra-species genetic variation, abundance of species, and the diversity of their habitats. National parks are also for the people, that is, for us - national parks provide an opportunity to enjoy and relax in nature. National parks have marked trails, nature trails and campfire sites. You can spend the night in national parks, as they have camping areas or huts for overnight visits.

Just as we consider it general education to visit cultural history or art museums, a tour of a national park should also be held in the same esteem. Every school-aged child should experience a visit to a national park, where the human imprint is smaller than in the rest of our environment. The nature close to schools is an important everyday learning environment. Often, however, that nearby nature is a managed commercial forest or park. National parks give you a memorable experience of what old forests, pristine marshes or unbuilt beaches look like. There are 40 national parks located in different parts of the country.

Everyman's right have been restricted in national parks for nature protection purposes, for eg., the collection of plant samples is prohibited. Picking berries and mushrooms is generally allowed. Some areas are restricted to marked paths, while in others you are free to choose your route. For assistance in planning national park tours, visit the Nationalparks.fi and Metsähallitus Visitor Centres. In the Helsinki Metropolitan Area, Nuuksio National Park is accessible by public transport.

Every school-aged child should experience a visit to a national park.



10. Support for Outdoor Teaching

There is a wide range of support available for teachers to teach outdoors. Your class can attend ready-made outdoor lessons by the the Finnish Association of Nature and Environment Schools (LYKE) taught by one of their nature school teachers, or invite a trained club member from the Finnish Federation for Recreational Fishing to your school. The global Outdoor Classroom Day campaign challenges all classes to go outdoors to learn in May, and you can bike there according to the Finnish Cyclists' Federation guidelines. If you have no idea what to do, the Eco-Schools website and MAPPA-material database* are full of different materials for outdoor classroom use. The materials of the Scouts, the Finnish Nature League, or Finnish Forest AssociationSMY guide you to forest activities. Excellent materials for outdoor education are also available at WWF, Finnish Association for Nature Conservation (FANC), 4H, and Suomen Latu the Outdoor Association of Finland. It is advisable for outdoor teachers to be trained as environmental educators at SYKLI, and join the Ulko-opet ry.-association for peer support.

Leap into the Outdoor Classroom via Training

Anna Kettunen ja Aulikki Laine,
SYKLI Environmental School of Finland

SYKLI Environmental School of Finland trains teachers in outdoor education all around Finland. SYKLI training programmes are inspiring and engaging. During the training, teachers will gain new insights as well as concrete tools for diverse ways of using local environments to fulfil the curriculum of pre-primary and basic education. Sustainable development and the study of natural phenomena also provide good topics for addressing multidisciplinary modules. Teachers get to experiment with various active methods and develop their own work with colleagues.

In training, we are active outdoors and work together.

Hire SYKLI trainers for your school

SYKLI offers active workshops on nature and environmental education and sustainable development themes for your school or municipality.

Leap into the outdoor classroom

Project funding also provides teachers with free, short-term training and outdoor education materials on various topics, funded by the Finnish National Agency for Education. The Outdoor Classroom project and its website have moved schoolchildren all over Finland. SYKLI's alternating series of short training courses offer a variety of outdoor education methods such as games, research, drama and adventure education, as well as examples of how to deal with sustainable development themes outdoors.

Become an environmental educator

At SYKLI, you can complete an environmental specialist vocational qualification as a competence-based qualification and become an environmental educator with an emphasis on outdoor education. Studying is not based on book exams, but on active exercises and promoting environmental education at your own school. The training provides peer support, a variety of methods and tools for outdoor education, environmental education, and sustainable development. As part of the training, an environmental education plan is developed, for eg., on how to use the nearby forest in teaching, and many teachers have been inspired to produce ready-made material for their school to support their outdoor education. According to an environmental educator, "The best thing about this training has been my own growth as an outdoor education teacher!"

sykli.fi/sykli-creating-environmental-experts/

LYKE-Network's Nature Schools – Making It Easy to Learn Outdoors

Kati Vähä-Jaakkola, LYKE-network

There are over 50 nature and environmental education agencies in Finland, and these form the LYKE-network. The nature and environmental education activities are aimed at schools and early childhood education groups, for which the LYKE-network agencies offer programmes of different lengths. In addition to individual programmes, many agencies also offer sponsorship activities, with the same group participating several times a year. Some agencies travel from school to school with the educational materials.

The nature school day also serves as an excellent in-service training for a classroom teacher who receives models and tips for active teaching throughout the day. LYKE-agencies are staffed with environmental education professionals, who can be consulted even after the visit. You should also inquire about the possibility of borrowing materials.

The LYKE-network agencies also provide training for teachers and educators on topics such as outdoor learning, nature and environmental education, and sustainable development.

The nature and environmental school activities are based on national early childhood and basic education curricula, and support the sustainability goals set out in them. Learning is multidisciplinary, experiential, and exploratory. The learning environment is nature or another one that enables active learning, such as a museum or nature centre. The purpose is to support basic and early childhood education in outdoor and sustainable development education.

The operation of the LYKE-network is certified, that is, each site must meet the criteria for nature and environmental school activities. The quality is ensured by peer audits. The agencies also collect feedback on their activities, based on which they further develop their programmes and activities.

The LYKE-network is coordinated and developed by the Finnish Association for Nature and Environment Schools, which is a national youth-service organization. In addition to nature and environmental schools, the network includes Metsähallitus nature centres, youth centres, camp school centres and some other organizations offering similar activities.

For network locations and more information:
www.luontokoulut.fi/?lang=en

MAPPA.fi –Material Database to Support Teaching

Kati Vähä-Jaakkola and
Maija Ihantola, LYKE-network

MAPPA.fi* provides a wealth of material for outdoor learning, and environmental and sustainable development education. The service provides easy access to over a thousand materials from over two hundred different agencies.

You can search for materials by different target groups and uses, browse by topic or search by keyword. You can narrow your search as you wish. The most popular searches can be found on the front-page word cloud.

Materials and tips for activities can be found for all subjects as well as for multidisciplinary modules. Teachers can also add their own materials to MAPPA. Instructions and tips for using MAPPA and adding materials can be found on MAPPA.fi.

The material database can be found here: **www.mappa.fi**

** Currently only available in Finnish. Some materials In English.*

MAPPA is maintained by the Finnish Association of Nature and Environment Schools.

The Outdoor Classroom Day

Sinikka Kunttu and Pihla Salminen, FEE Finland
Photos: Outdoor Classroom Day – community

Outdoor Classroom Day is a global campaign aimed at promoting outdoor education and games in schools and kindergartens. The campaign event day is held annually in late May.

The purpose of the outdoor classroom day is to highlight the benefits and fun of learning and playing outdoors. The campaign, which originated in Britain, has spread around the world, and has the same purpose everywhere: to increase the amount of time spent outdoors by children and adolescents, both for their wellbeing and for their educational benefits.

Outdoor Classroom Day is a great support especially for those who are just starting out or just want to try out outdoor learning and teaching. The end of May is an opportune time for the event, as the weather is very likely to be warm and beautiful. Enrollment for the Outdoor Classroom Day is done through the website. By filling out the registration form and becoming visible on the participant map, the teachers will have no excuse not to head outdoors with their class on the day of the event.

The Outdoor Classroom Day does not take a stand on where to go on the day of the event. Just go out! Outdoor teaching can be done in the schoolyard or in the immediate surroundings. In many countries, learning and playing outdoors is much less common than in Finland, where we are used to recesses outside. In many countries, Outdoor Classroom Day represents something totally novel: going out in the middle of a school day!

The Outdoor Classroom Day website has materials and tips to support learning and teaching outdoors, as well as inspirational examples of what other schools and kindergartens do on the day of the event.

A special feature of the campaign is its international character. The campaign site map shows where everyone is participating on the day of the event. Posting pictures, greetings, and tips on social media is part of the day's fun. For example, the campaign pages give you a glimpse of what it is like to learn outdoors on the same day all over the world.

In Finland, the event is coordinated by the Foundation for Environmental Education FEE Finland and has a large cooperation network.

Outdoor Classroom Day website:
https://outdoorclassroomday.com/

Outdoor Teachers Who Teach Outdoors

Sanna Jahkola,
Outdoor Teachers Society

When you want outdoor education, you need outdoor teachers! This is how we saw it, and decided to establish Ulko-opet ry (Outdoor Teachers Society), a national society of Suomen Latu - the Outdoor Association of Finland. At first, it can be quite nerve-racking to go outdoors and into a forest to teach. It would be nice to have others along on the trip for support. Or if someone has been doing the same teaching routine for a long time, albeit with a working formula, you may want new ideas for your teaching. The Outdoor Teachers Society was created to help all outdoor teachers find each other, learn new things, and do more - higher quality and quantity of outdoor education.

You can be a member regardless of whether you are a teacher or educator taking students into the woods for the first time or whether you already have an established daily routine. Everyone is warmly welcome to join. Outdoors, you can teach toddlers bouncing in puddles, adventurous children in the woods, young people looking for their path in life, or adult learners of all kinds. The sky is the limit in the Outdoor Teacher Society!

The society offers you pedagogical hiking trips, yard games, and the the latest buzz on outdoor teaching materials and research. Support or inspiration can be found online, at a seminar, or an evening campfire. Or would you like to organize something else yourself? Although we outdoor teachers are usually busting around our own forests and parks, we can be found all over Finland. We just need to find each other and make outdoor education more visible. Together, it is inspiring to learn of lessons and ideas from abroad, and to think about how to apply them to our own outdoor teaching.

Come join our happy and enthusiastic group!

Moomins Camping Schools – Leading the Way with Stories

Tiia Eskelinen and Sanna Jahkola,
Suomen Latu - the Outdoor Association of Finland

At the Moomins' Outdoor Schools of Suomen Latu, children enjoy a wide range of outdoor activities in all seasons. The activities are child-oriented with adventurous games in nature that teach movement and camping skills. In addition to social and club activities, outdoor schools work well in schools and early childhood education as part of their teaching. Outdoor schools are also well suited for adolescents or children with special needs.

Storytelling is a great strength of the Moomins' Outdoor School, which helps teachers and students alike to throw themselves into action and learn something new. Many teachers have been inspired to use the Moomins' Outdoor Schools as part of their teaching. In the autumn and spring, you can benefit from the Moomins' camping lessons, and in the winter, their skiing and snowshoeing exercises. It is easy to introduce the topic already in the classroom or to deepen it after the outdoor class.

Practice has shown that children of all ages are enthusiastic about the Moomins. For eg., Little My, the Groke, and Stinky appeal to people of very many ages. The Moomins have been used in many subjects at school and as modules, combining, for eg., Finnish and literature, environmental science and physical education. The Moomins have taught friendship skills and we have been on forest trips with them.

Suomen Latu organizes trainings for those who want to be instructors of the Moomins' ski school, snowshoe school or camping school. In practice, this involves year-round hikes in nearby nature and weather permitting this can include instruction in skiing and snowshoeing, in addition to learning camping skills. Other types of classes and teaching can be carried out according to the wishes of the instructor and the group. During the one-day instructor courses, you will experience what it is like to be in nature with the Moomins and get a folder of clear and praised exercises. https://www.suomenlatu.fi/en

The Moomins' attitude of respect for nature its diversity is more than well suited to encourage people to enjoy the nearby nature and outdoor sports there.

Example exercises in camping skills "Moving in the wild" and "Group activity and Friendship":

The King's Ruby

Thingumy and Bob want to show their hidden ruby to the Moomintroll. Divide into groups of three and agree on who is the Moomintroll first, and Thingumy and Bob. The place is secret, so the Moomintroll closes his eyes as Thingumy and Bob guide him to a special nature spot, such as a rock, flower, tree, view etc. A new nature spot is chosen on the sly as you proceed. While the Moomintroll is being guided, Thingumy and Bob ensure his safety. At the treasure, the Moomintroll opens his eyes and admires the treasure with his friends. Swap parts so that everyone in turn can be the Moomintroll.

Subject applications:

The task can also be done in the winter with snowshoes and even on one ski. You can also easily add subjects to this, eg.:

Languages: Write words or a story based on discovered treasures.

Maths: Invent calculations based on treasures or on a trip to them.

Environmental studies: Draw a map to the treasure or do a study on what you find

Art: Make a natural work of art that represents the treasure.

Languages + Music + P.E.: Prepare a ruby rap with lyrics, choreography, sound.

Frolicking into the forest with stories at the Moomins' Outdoor School.

Photo: Suomen latu, Sampsa Sulonen

WWF teaching materials open the eyes to biodiversity

Essi Aarnio-Linnanvuori, WWF Finland

WWF provides a variety of environmental education materials and other support for schools. The outdoor classroom changes from an active operating environment to one that is observed when the topic is biodiversity.

Waterfront mobile device: The Great Beach Adventure and the Water Mystery

Mobile learning materials guide students to explore the diversity of beach nature and human impact on bodies of water. The Great Beach Adventure is aimed at primary schools and the Water Mystery for secondary schools. The mobile device is used during the excursion as a guide and to record observations. The primary school teaching materials require the pupil to be literate, but are easily operated for eg. working together with an older student. The materials are compiled on the Seppo-platform and can be downloaded free of charge by the school. Instructions for downloading the material can be found on the WWF website.

The Great Beach Adventure and the Water Mystery lead you to explore the diversity of beach nature and human impact on water.

Kuva: WWF, Essi Aarnio-Linnanvuori

Explore different habitats - and your own school

WWF's educational resources database contains an extensive collection of environmental educational materials, many of which are specifically designed for outdoor learning. For example, Naturewatch research forms allow you to explore five different habitats: lakes, the Baltic Sea, forests, marshes or urban nature. In addition, there is a separate study form for winter nature. You can access sustainable lifestyles through new Exploration at School materials or Naturewatch shopping research forms. The materials can be downloaded free of charge from the WWF website.

The WWF School Programmes network provides peer support for active environmental work at school. The website and social media channels provide a place to share and seek ideas for working on an environmental engagement group or project. The website offers a wealth of ready-made design templates as well as ideas for environmental group activities. It is a good idea to refine the findings of your expeditions into a report or even a rap presentation and share it with the rest of the community. The WWF encourages students and teachers to act as environmental agents both inside and outside schools.

Enthusiasm and joy for teaching from training programmes

WWF offers free training sessions for teachers on various topics. Active and hands-on training afternoons give teachers an opportunity to experiment with new methods and materials and to discuss how to incorporate sustainable development themes into different subjects. You can check the current trainings on offer at the WWF website or suggest new trainings yourself.

For more info
https://wwf.fi/en/

Kuva: WWF, Sanna Koskinen

Earth Hour inspires students at Käpylä Comprehensive School.

Eco-School brings content into the outdoor classroom

Iitu Kiminki

Vihreä lippu, ie. the Eco-School is a sustainable development programme and an environmental certificate for the education sector, run by FEE Finland. It guides to productive and inspiring activities that implement different aspects of sustainable development. It is also part of the international Eco-Schools programme the world's largest network of schools for sustainable development.

Long-term and goal-oriented education

Unlike individual short-term programmes, the Eco-School brings long-term and goal-oriented activities to sustainable development education. The activities are carried out in projects lasting about a year, which focus on and delve into one selected environmental theme at a time. The themes are covered in events and activities organized by the school community and the pupils' environmental panel, as well as in the course contents of different subjects. Through these integrative projects, sustainable development education does not remain the responsibility of just one or a few subjects, but expands to be part of the activities of the whole school. In practice, Eco-School projects turn into multidisciplinary modules. Its activities and outdoor education work hand in hand, complementing each other. Eco-School themes provide seminal content for outdoor environmental education and sustainable development lessons. The projects teach about the environment, in the environment, and work for the environment. Outdoor education is suitable for all Eco-School themes - only the sky is the limit when it comes to putting them into practice!

Contributing and influencing in the Local Environment theme

The Eco-School's Local Environment theme supports outdoor education the best. The project built around the theme allows students to explore their own local environment, its significance, as well as awakens environmental sensitivity and strengths their relationship with nature. The theme can be implemented in a wide variety of ways, from field trips to establishing a vegetable garden and a road safety campaign. Even if the approach is simply to increase awareness of the surrounding environment and increase the sensitivity to nature, the range of activities involved can be very diverse as we begin to explore and reflect on the various dimensions of the neighbourhood (social, ecological, and cultural).

For more info **www.ecoschools.global**
and in Finnish **www.vihrealippu.fi**

The Finnish Nature League – Luonto-Liitto – offers support and materials for outdoor learning

Malva Green, The Finnish Nature League

The Finnish Nature League is an organization for children and young people. It provides information on nature and different species through adventure trips, nature exploration and citizen observation.

Information and experiences during school visits

The Finnish Nature League provides schools with lessons on different topics and adventurous forest trips to support student wellbeing. Guided tours of the nearby forests focus on memorable experiences, biodiversity and supporting group activities. The Finvasive LIFE-project conducts citizen observations of invasive species and teaches about their impact on biodiversity. For more information:
http://www.luontoliitto.fi/en

Spring monitoring and winter monitoring encourage citizen observation

In spring monitoring we examine the progress of spring in animal and plant species. Visit www.kevatseuranta.fi for more information and order or print suitable spring cards for pre-primary and primary school students. (Material only in Finnish)

Winter monitoring invites you to follow the progress of winter, observe changes in snow and ice, and wintering species. The findings are collected in the Syke and Luomus databases, where they are available to researchers. By participating in winter monitoring with your students you can help, among other things, study the impact of climate change on northern winters. For more information: **www.talviseuranta.fi**

The instructor for the Children's Bird Week - birding trip doesn't have to be an expert on species.

Even if you do can't tell the hooded crow and magpie apart, you and your class can go on a Bird Week excursion to do easy observation exercises. Are there signs of breeding, such as a bird carrying nesting material or food for chicks? Children's Bird Week is organized annually by BirdLife Finland and the Finnish Nature League. More information:
https://www.birdlife.fi/in-english/

'Pihka-luonnonharrastusmerkki', the nature task track

Pihka is a versatile package of nature activities that you can use as part of your teaching. Explore the fascinating world of nature hiking with this activity pack. You can find it on
http://www.luontoliitto.fi/pihka in Finnish.

Nature Club - information about nature through play

Nature clubs provide a refreshing counterweight to schoolwork. At the Nature club, we play games in nature and have fun while getting to know the nature nearby. The experiences gained at the Nature club create a basis for nature appreciation and later also for environmentally responsible choices.

Photo: Laura Blomqvist Suomen luonnonsuojeluliitto

Studying mushrooms at a nature class.

The Finnish Association for Nature Conservation's classes and teaching materials

Laura Blomqvist, The Finnish Association for Nature Conservation

Environmental Education Materials

The Finnish Association for Nature Conservation has a wealth of material to support environmental education, such as educational packages on marshes, sustainable development in chemistry education, and guidelines for nature trails. Inspired by the Tale of a Forest movie, this package has games and exercises related to many different species and can be used in outdoor instruction. The materials can be found on the website of the Finnish Association for Nature Conservation. Some of the materials are available for order and some can be downloaded directly online in Finnish.

Environmental education and cooperation with schools in South Karelia

The main activity is 45-90 min. nature lessons for primary and secondary school students. The lessons are about nature and its phenomena and instruction happens almost always outdoors. The teaching method is very hands-on, and nature classes include a lot of playing, games, experimenting, and exploring. The content of the nature lessons and the methods used during these lessons correspond to the objectives of the curriculum. During nature lessons, teachers can pick out suitable exercises and games to use in their own work.

The methods are versatile and functional, and are easily adapted to subjects other than biology. The aim is to facilitate teachers to make a habit of transferring teaching out of the classroom into the outdoors. The aim is also to support the development the children's relationship with nature, making it easier for them to embrace sustainable development, climate change and other topical environmental issues.

Based on the feedback and wishes, South Karelia is also planning practical training where teachers will receive not only nature lessons, but also a practical tip session and a multi-use material package for outdoor education.

In 4H we learn by doing in real environments

Sampo Juhajoki, 4H

The forestry activities of the 4H organization aim to promote forest and nature awareness among children and youngsters, and to provide opportunities for hobbies and work. We want to support the development of a multifaceted relationship with forests. Forest and nature education is carried out at 4H in close cooperation with other agencies in the field.

Club activities

Local 4H associations organize forestry and nature clubs for comprehensive school-aged children. In the clubs we go on adventures, play games, and do crafts. Children learn about plants, everyman's rights, woodlore skills and fishing. The economic use of forests also becomes familiar.

You learn best by doing

The 4H TOP-Tasks website has lots of useful and fun tasks related to forests and nature in Finnish. The assignments can be used as part of teaching. For eg., you can start birding, prepare for a hiking trip, have a fruitful fishing trip, or explore how the forest grows.

Forest Days for Schoolchildren

On the 4H Forest Day, we take schoolchildren to the forest where they do an educational activity point track. During the day, children and adolescents learn new things, how to navigate in the forest, and observe wildlife. Each year, more than 30,000 children and youngsters from comprehensive and upper secondary schools participate in the Forest Days, which are organised in partnership with the schools. The Finnish Forest Foundation finances the transportation costs on Forest Days.

Work from the woods and your own 4H company

In Forestry workshops organized by 4H associations, young people learn various practical tasks related to forestry, including planting trees and using a clearing saw. Through the 4H association you can get employed in various forestry jobs. Forestry expertise also helps in setting up your own 4H company, which can be done already at the age of 13.

Photo: Jyri Haapanen, Suomen 4H-liitto

The age of the tree is calculated from its rings.

Photo: Suomen Metsäyhdistys, Vilma Issakainen

Pupils planting seedlings.

Teach & learn in the forest with the Finnish Forest Association

Sirpa Kärkkäinen, Finnish Forest Association

Foresty educational materials

The latest educational material In Finnish 'From Betula to Pinus - activity cards'* tells about trees and their growth. The activities can be used in the school's nearby forest, on a small forest island or in a larger forest area. An example of the material that is suitable for multidisciplinary studies is the 'Havina' (Swish) time travel to the Finnish forest bioeconomy. It carries its players from the post-ice age to the future. The common thread is the forest and its use in a society where people's needs and values are changing.

Forest courses for teachers

The Forest Association organizes forest courses for teachers in different parts of Finland on topical forest topics. The courses involve trips to the woods with experts, and visits to companies. Even though the emphasis of the courses is on information, a wealth of experiences is also had, and you get plenty of elements for your own teaching and development. The Forest Association also offers method courses. Phenomenon-based learning in the forest with design-oriented pedagogy (Case Forest) -courses have been organized for teachers already over several years.

Forest events and lessons

In the Helsinki Metropolitan Area, the Forest Association provides schoolchildren with forest events and lessons. For eg., the Schoolchildren's Forest Week, which takes place alternately in Vantaa, Helsinki and Espoo, has been organized with several partners for nearly twenty years already.

In My Tree project, thousands of children get to grow their own seedlings from seed. Nearly 30,000 secondary school students qualify for the Forest quiz final 50. In the final, their knowledge and skills will be measured in the field. The finals programme also serves as training for teachers.

Forest Learning Path

The Forest Association is the convenor of the nationwide Forest Learning Path cooperation network. The network aims to strengthen the forest-related knowledge and skills of Finnish children and youngsters and their relationship with the forest. An e-newsletter, News from the Forest Learning Path of current forest events, campaigns, and materials for teachers is compiled from the network's agencies and published three times a year. Together, we host a Forest Education forum and big outdoor educational event called 'Ulos-Ut-Out'. Plenty of experts can be found for school's forest-related events in the Forestry Association's extensive network. International partners are provided by the Learning about Forests (LEAF) network.

"Keep in touch. The forest is a great teaching and learning environment! More information, missions, and materials can be found on the Forest Association's website in Finnish **https://smy.fi/en/** teach and learn section."

Photo: Suomen Metsäyhdistys, Vilma Issakainen

The students are learning from the forester.

The adventure education network in support of outdoor education

Heli Eischer,
Adventure Education Network

Adventure education is activities that support the holistic growth of human beings. It is used as a method in youth work, social work, rehabilitation, and therapy, in addition to educational institutions. In adventure education, participants are encouraged to participate in setting goals and activities, and to take responsibility for their own and joint activities.

Adventure educational activities

One of the strengths of adventure education is that learning is linked to the holistic experiences that the participants have. Nature and other real environments are used as operating environments that challenge and provide natural consequences for the activity. Adventure education activities provide group activities and create community spirit. The challenge and advantage of adventure education is that it is not confined to any single subject. Multidisciplinarity and freedom from strictly defined frameworks and traditions create a fertile ground and also a need for new perspectives to be found and made to flourish.

Adventure Education Days, Resource databanks and Newsletter

Adventure education is supported through annual Adventure Education Days, which provide inspiring workshops to explore adventure education as a method. Seikkailukasvatus.fi has an adventure education resource database, which contains information on adventure education training, links to adventure education theses, youth information library and research in the field. In the Allianssi Youth Research Library, you can find a collection of adventure education resources online. You can also subscribe to the adventure education newsletter at www.snk.fi. More information on adventure education can be found at
www.snk.fi/finnish-youth-centre-network

Regional networks

Adventure educators are extensively networked throughout Finland, regionally, and internationally. Regional networks organize open meetings, training, and visits based on the ideas and needs that have emerged from the network. Those interested in adventure education can attend any of the regional network meetings.

The weather is always right for a Scout trip

Mikko Jalo,
The Guides and Scouts of Finland

For Scouts, nature is an operating environment where time is spent around the clock. There are 65,000 Scouts in Finland, and their materials could be of benefit for schools and clubs too. Would you like to learn how to build a 'laavu'-lean-to or play climate change tag?

Scouting can provide ideas for schools and clubs. The Scouting programme, which is available to all, offers plenty of tips for outdoor education. Nature is a Scouting environment where everything from sleeping to cooking is done on hiking and camping trips. The activities offered by the Scouting Programme are organized into a number of thematic modules by the participants' age, such as "Environmentalist", "Media" and "Moving in the Wilderness". Implementation tips are listed for each activity, ie. ways in which the activity can be done. For eg., 10-12-year old Scouts can get to know everyman's rights on an orienteering activity track, where each activity point has a situation related to the rights and tests how to act lawfully.

Outdoors in diverse ways

The Scouting programme involves learning the skills of moving around in nature. Scouts also learn how to equip themselves for bad weather, overnighting in different lodgings, and cooking on a campfire and camping stove. The Scouting system ensures that no one is subjected to conditions that are too demanding for their age.

Because nature is an environment for Scouts to learn all kinds of things, they also learn more than recognizing species and woodlore skills. A Scout camp can have a camp parliament, for eg., which teaches Scouts the art of influencing. Outdoors, you can build things, watch outdoor movies, practice first aid skills or just hang out with friends.

One of the Scout's programme priorities was Together to the Woods. New forest-related content was created In Finnish, such as the Forests and Climate Change activity package, and tips for organizing forest tours and getting to know forest-based industries. The Together to the Woods materials can be found under the Finnish name of the programme online, 'Yhdessä metsään'. The Scouting programme is constantly evolving to best support the growth and development of children and adolescents in Scouting.

Facts about Scouting

- Finnish Scouts is the largest youth organization in Finland
- There are 65,000 Scouts in Finland. One in four Finns is or has been in the Scouts
- Scouts work in nature all year round
- Scouts spend about 150,000 days camping every year
- The Scouting programme can be found at partio-ohjelma.fi
- More information: **https://scouts.fi/join/**

Photo: Hanna Kimmonen

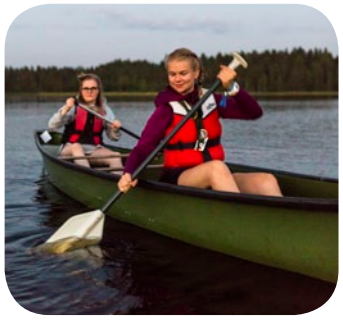


Photo: Susanna Mikander

At Scouting, nature is an operating environment where we hike and camp from breakfast to bedtime.

The Scout learns to move around in nature and to be properly prepared for different excursions.

Familiarize yourself with fish and fishing with the Finnish Federation for Recreational Fishing

Janne Antila,
Finnish Federation for Recreational Fishing

Fishing specialists and trained club members

The Finnish Federation for Recreational Fishing has hired fishing instructors for children and young people all over Finland. Fishing instructors and trained club members familiarize children, young people, and families with fishing in many ways. Their job responsibilities include organizing events, setting up and running fishing clubs, and working with school groups. While working in schools, instructors and club members can give direct instruction on fishing and its various techniques, but also on fish anatomy and biology, bodies of water, making fishing gear, and even preparing and cooking fish.

Photo: Jyri Haapanen

This is our catch!

Fishing Days

The most popular activity in schools has been the day when pupils get to go fishing, usually angling. During winters, ice-fishing trips with instructors and club members have been memorable experiences for school classes. For smaller groups, the instructor can also teach casting, fly fishing, or other more challenging forms of fishing.

The fishing instructor can also go to schools with club members in advance to teach fishing. Pre-arranged lessons enhance the fishing experience, as students will know how to handle gear and fish. For the same reason, equipment losses will be reduced and everyone is able to concentrate more on fishing and less on untying fishing lines.

For angling, the appropriate number of students is one class at a time. There is plenty of fishing arsenal and bait available for fishing groups, so you don't need your own fishing rods at these events. Practice has shown that a suitable and workable time for fishing is about 1.5-2 hours.

If necessary, the instruction is free of charge for schools. However, there is a small voluntary contribution to support youth work. The contact information for your area's fishing instructor can be found at

https://www.vapaa-ajankalastaja.fi/finnish-federation-for-recreational-fishing/

Photo: Jyri Haapanen

Students angling with a fishing instructor.

Bicycling to the outdoor classroom

PYÖRÄILYKUNTIEN VERKOSTO

Sanna Ojajärvi,
Bicycling Municipalities Network

PYÖRÄLIITTO

From bike games to bike skills

There are many ways to practice bicycling. One of the most fun ways is to play bicycle games. The games train balance, perception of space and direction, situational awareness, and biking on different surfaces, on asphalt and sand. The purpose of the games is to make the bike feel like an extension of one's body, to dissipate the need to pay special attention to controlling the bike. Students who are accustomed to and familiar with their bikes can concentrate on traffic rules, traffic lights and other road users.

Bicycle tours

Bicycle tours can be organized with students of all ages - the ability to steer and brake is the only requirement. The path must be familiar to the teacher and should be tested the day before for any roadwork or other exceptional traffic arrangements. Especially with the youngest children, it is a good idea to make sure there are suitable stopping points along the way. Inspection card instructions for bike maintenance can be found on the Finnish Cyclists' Federation website in Finnish.

Photo: Erika Weckström

Tips for organizing a bike tour

- Check all wheels before the tour and bring a pump.
- Instruct children before departure: biking one after another, bypass rules.
- Make sure to bike the whole route yourself before the tour: note intersections that require special attention, steep downhill and uphill slopes.
- Instruct and encouragement especially for the youngest children: remind them about steering, braking, upcoming breaks.
- Be flexible.
- Enjoy biking with children.

Burst the bubbles

The teacher blows soap bubbles around the playfield. The task of the students to strike as many soap bubbles as they can with their hands, feet, or bicycles.

Return of the balls

The teacher is the "Prince of Balls". He throws balls around the area, and students cycle to find them. The balls are carried to the adult, by hand, in pockets, or inside the shirt. Versions: Each one fetches three different coloured balls. One group searches for red balls and one for yellow balls.

Cycle snake

Half of the students play monkeys and tigers and stand in circles without their bikes. The teacher and the rest of the students bike in a long line. The teacher is the head of the snake and the students are the body. The snake slithers in every direction between the jungle animals, who have their paws reached out. When a cyclist passes an animal, she tries to slap a paw. If she manages the slap, the animal comes to life and makes a sound characteristic to it, but remains in a circle. Cyclists and animals swap roles midway through the game.

Biking Heroes – track building instructions for the school environment

Miikka Mäkelä,
Finnish School Sport Federation
Photos by the author.

Inspire students with the possibilities of cycling and encourage them to practice. The rally-inspired track offers children new challenges and the joy of cycling. At the same time, they learn essential cycling skills.

Building materials

The most important tools in building a track are a rake, shovel and billhook. Other materials include a marking tape, pimple gloves, and of course, patience and caution.

Area and responsibilities

Place the track in an area with no other activities or possible traffic. If the track is to be built outside the schoolyard, consult with the landowner if necessary. Everyman's rights allow to bike on paths, but the construction of a track on pathless forest ground is prohibited.

Terrain and ground

The best ground for building a bike track is an area with slight differences in height. It is good to have trees, rocks, roots and small mounds along the route that force you to think about the biking path. Well-trodden ground makes for a smoother ride, and less bumpy surprises in the undergrowth.

Route

The route should not be too long, so that students can ride at a "good heart rate" and will be motivated to ride the track many times. What helps keep up motivation is having the starting line at a higher elevation than the finish line. One should be able to see the finish line from the starting line, to help with pacing, timing, and safety. The best way to finish the track is to put a "speed off" curve just before the end.

Route markup

Record the route when it has been found to be functional in terms of speed, ridability and safety. It is advisable to mark the route on both sides of the track. Use rocks or snow plough markers made of plastic - not wood - in addition to trees. Remember when positioning the markers: They must be outwards from the track and in the direction of travel, so they do not pose a risk if someone falls.

Further information: **https://www.kll.fi/in-english**

EXAMPLE OF TRACK OPERATING INSTRUCTIONS

- Always check the condition of your bike, tires, brakes, bolts, etc. before entering the track.
- Familiarize yourself with the route with patience and remember the most challenging points on the course.
- Pay attention to the other users of the track and let everyone drive it as they please.
- Stopping on the route is forbidden.
- Helmets are mandatory. Other protection is recommended, ie. gloves, knee pads etc.
- If the webbing breaks, repair it immediately. A broken track is a safety hazard.

The Biking Heroes' cross country track is on the edge of the schoolyard.

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9. Nearby nature as an outdoor classroom

Everyman's rights: https://www.nationalparks.fi/hikinginfinland/rightsandregulations

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12. The authors and their backgrounds

Editors

Aulikki Laine

Aulikki Laine, M.Sc., is a biology and geography teacher, and environmental educator. Laine is also a textbook writer specializing in outdoor education and active methods. Laine has designed, among other things, the teaching materials for 'Outdoor mathematics in nature' and Ecovan, the mobile nature school. Laine has been training outdoor teachers in SYKLI since 2012.

Meri Elonheimo

Meri Elonheimo, M.Sc. Agriculture and Forestry, is a trainer and environmental educator who has developed outdoor teaching support as a roving environmental educator, and has compiled the outdoor education forest and yard backpacks in the 'Out to learn' ('Ulos oppimaan') project in Kuopio. According to Elonheimo, nearby forests and old trees are the some of the most important welfare services in cities, and children should be guided to use and nurture them from a young age.

Anna Kettunen

Anna Kettunen, M.Sc. Agriculture and Forestry, is SYKLI Environmental School's Nature and Environmental Education Department's training manager and educator, specializing in adventure education, active methods and outdoor teaching. Kettunen has been in charge of SYKLI's Environmental Education training programme since 2011. More than 250 environmental educators have already graduated from SYKLI and now it is possible to complete the training programme with with a focus on outdoor education.

SYKLI Environmental School of Finland

SYKLI is a nationwide educator and developer. We offer degree preparation courses, short training courses, consultation, and other expert services. Our core mission is to strengthen environmental expertise and improve our customers' operations in accordance with sustainable development goals. This publication was produced by SYKLI's '#OUTDOORCLASSROOM - physical activity and learning in nearby nature' (#ULKOLUOKKA – liikuntaa ja oppimista lähiluonnossa) project, which was part of the Finnish Schools on the Move programme network. The #OUTDOORCLASSROOM project was funded by the Ministry of Education and Culture. More than 100 teachers from 50 schools from 10 municipalities across Finland participated in the project in 2016-2018.

Authors

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Jenni Hämäläinen, M.Sc.Ed., is an early childhood teacher, class teacher, environmental educator, and mother of two from Rovaniemi. She has worked as a kindergarten teacher in the private and municipal sectors in Oulu and Rovaniemi - as an active kindergarten teacher in Rovaniemi and as an environmental educator at Alaköoki in Oulu. She did her Master's thesis in outdoor education and teaching at the University of Jyväskylä as part of the initial surveys of the 2018 Outdoor Classroom project. She is an avid outdoor mover and dweller.

Seppo J.A. Karppinen

Seppo Karppinen, Ph.D., specializes in adventure education, which was also the topic of his dissertation and three textbooks - 'Seikkaillen elämyksiä', parts 1-3. Seppo Karppinen has worked as a class teacher, special education teacher, lecturer in special education at the University of Oulu, and since 2009 he has lead a research group belonging to the Finnish Adventure Education network, part of the Youth Centre network. For the last few years he has worked as a special education teacher at the Psychiatry unit of Oulu University Hospital (OYS).

Iida-Maria Koskela

Iida-Maria Koskela works at the Finnish Environment Institute's Environmental Policy Centre. She is interested in how education and upbringing can support the formation of a more sustainable society. She is currently involved in the 'Luontoaskel hyvinvointiin' ('Step into natural wellbeing') project, which is developing an approach for kindergartens that promotes the wellbeing and education of preschoolers, and is in line with sustainable development goals.

Niina Mykrä

Niina Mykrä is the executive director of the Finnish Association of Nature and Environment Schools, and is conducting research for a doctoral dissertation on ecological sustainability in school culture. As part of the research, she has analyzed the contents of the basic curriculum that came into effect in 2016. Ten years as a secondary school arts teacher gave her a good insight into the everyday life of basic education.

Elina Pilke

Elina Pilke works as a nature interpretation manager at the Finnish Nature Centre Haltia. Pilke has been working in nature education in protected areas and nature centres since 2000.

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Maria Aroluoma works as a nature educator at the Finnish Nature Centre Haltia.

The Finnish Nature Centre Haltia is located on the edge of Nuuksio National Park in Espoo and is owned by the state-owned enterprise Metsähallitus. Through exhibitions and events, Haltia showcases Finnish nature and protected areas. Haltia's nature school is active throughout the year. Haltia's goal is to strengthen our relationship with nature and inspire us to go out and explore it. www.haltia.com

Riikka Puhakka

Riikka Puhakka, adjunct professor, Ph.D., works as a post-doctoral researcher at the University of Helsinki, Faculty of Biological and Environmental Sciences, in the Ecosystems and Environment research programme. Puhakka works at Lahti University Campus on the projects 'ADELE - Immune Defense and Living Environment', and 'Towards Healthy Adulthood (KOTA)', which studies the effect of kindergartens' green areas on the children's wellbeing.

Susanna Takalo, Niina Loukola and Noora Moilanen

Susanna Takalo and Niina Loukola are experts in physical education at the University of Oulu. Susanna Takalo is a lecturer in Physical Education at the University of Oulu. Niina Loukkola is a teacher at the University of Oulu. Noora Moilanen is communications coordinator for the Mobile School programme.

Milla Tuormaa

Milla Tuormaa runs the Roving Nature School Naakka in the Helsinki Metropolitan Area. Naakka offers nature school tours and experiences for schools and kindergartens for free with project funding or at a decent price. Tuormaa also runs excursions in cooperation with nature organizations, community college, Visio Educational Centre, and Haltia Nature Centre. Trips with immigrant trips and special children are her specialties. Milla makes environmental education material and trains educators.

Comprehensive and upper secondary school teachers - Experts in the experience of outdoor education

Elinamarika Johansson

Elinamarika Johansson is the flexible basic education (JOPO) teacher of Lempäälä municipality at Hakkari School, and a special education teacher. She has completed a Specialist Qualification in Environmental Education with a focus on outdoor learning, and has developed outdoor teaching methods at Hakkari School.

Anniina Hakkarainen

Anniina Hakkarainen is a class teacher working in Espoo, who also enjoys spending time outdoors for sports and with her dogs. She works as a safari guide in her home town during school holidays, which has brought an assurance about taking her students to the woods too. She runs the blog 'OpenIdeat' ('Teacher's Ideas') where she writes about projects she has done with students.

Ulla Myllyniemi

Ulla Myllyniemi is a class teacher from Otalampi School in Vihti, who regularly teaches outdoors. Ulla is a founding member and the vice-chairperson of 'Ulko-opet ry.' ('The Outdoor Teachers Society'), which is part of Suomen Latu - The Outdoor Association of Finland. She has also trained as a special education teacher and has worked as a special class teacher in different schools for over ten years. She has worked as a class teacher for as long too. She had used outdoor teaching for years, but developing asthma from her previous school's indoor air problems gave her the final impetus to become an outdoor educator. During her one-year study leave, she trained as a nature and wilderness guide. In addition to working as a class teacher, she also trained as an environmental educator at SYKLI Environmental School of Finland and participated in Suomen Latu's 'Luokasta Luontoon' ('From the Classroom to Nature') project as a pilot class and member of the steering group. Ulla currently trains new teachers as outdoor educators.

Satu Mälkiä

Satu Mälkiä, M.Sc.Ed., is a class teacher from Jalkaranta School in Lahti who is enchanted by nature and loves teaching. She has been the coordinator of sustainable development in Lahti's basic education for many years, developing the city's environmental education. In 2018 she completed her Specialist Qualification in Environmental Education at SYKLI with a focus on outdoor education. Scouting is a lifestyle for Mälkiä, to whom the forest has always been a home and one of the sources of her enthusiasm.

Kai Nihti

Kai worked as a 5-6th grade special education teacher at Jukola School in Hämeenlinna over the 2018-2019 school year. According to his experience, all subjects can be taken outdoors even with a special education class. They actively studied outdoors every week in the school's nearby forest and yard. Nihti has been a teacher for 20 years, and by training, he is a class- and special education teacher. He has used local nature as a learning environment throughout his teaching career. Berry- and mushroom picking and fishing in various forms are part of the annual seasonal education. The goal has been for students to develop a strong relationship with nature. Local nature acts as a cohesive element for learning and social relationships, including increasing physical activity, as is the current trend.

Kati Paakkanen

Kati, M.Sc.Ed., is a class teacher from Kotka. She works at Ruonala School, a primary school of about 200 students from grades 1-5. During her studies, she minored in physical education, visual arts and primary education. Active education, nurturing and reinforcing the children's relationship with nature, and creating a sense of community by engaging students are all topics that are dear to her heart.

Laura Palander

Laura Palander is a class teacher who enjoys the greener pastures. She teaches fifteen sixth grade students at Vilppula School in Mänttä-Vilppula. They study outdoors every Friday from their newly constructed 'kota'-hut by Vilppulankoski Rapids.

Johanna Sahila

Sahila is a class teacher in Janakkala. She was involved in the School Forest Appreciation ('Koulumetsät arvoonsa') project at the Turenki School. She develops environmental education in Janakkala municipality. She likes to work outdoors with children and believes that all teaching can be moved there.

Kerttu Sirviö

Kerttu Sirviö is a class teacher and a French teacher. She teaches 3rd grade, as well as A1 and A2 French at the Pasila Comprehensive School in Helsinki, and is very excited about early language learning and outdoor education. Theses interests complement each other well, since many languages are spoken... outside! The school almost touches Helsinki Central Park, so the children in her class are used to going out to learn without prior announcements and preparations.

Jussi Tomberg

Tomberg teaches biology and geography to secondary and upper secondary students at Laanila School, and two days a week he develops Oulu City as an advisor teacher. The Laanila School is a sustainable Green Flag Eco-School for about 700 students, and is strongly focused on internationality, sustainable development values, inclusiveness, and the spirit of a mobile school. Upper secondary students call their school "Laanila Love", where humanity and the student always go first.

Maija Ylevä, Taina Ek and Hannele Tallqvist

Maija Ylevä, Taina Ek and Hannele Tallqvist are co-teachers in Kalajärvi School, Espoo. The team includes class teacher Maija Ylevä, and special education class teachers Taina Ek and Hannele Tallqvist. They have been teaching outdoors together for three years since first grade. The goal has been to be outside at least 3-5 hours a week in addition to P.E. classes. The target has usually been achieved and even exceeded. Kalajärvi School is a single-structure school with 415 pupils and is located in northern Espoo near Nuuksio National Park. In the immediate vicinity of the school there is the Tremanskärr Nature Reserve and Luukki recreation area. The schoolyard has beautiful woods and crags, and the Kalajärvi fitness track is just a hop, skip, and a jump away.

Outdoor Classroom project steering group

Heli Eischer

Heli Eischer, M.Soc.Sc., M.Sc.Ed., works as an expert advisor in youth work at the Finnish Youth Centre Network. Her tasks include developing adventure education and youth work at nationwide centres.

The purpose of the Adventure Education Network ('Seikkailukasvatusverkosto') is to strengthen the role of adventure education in society as an educational method that increases wellbeing and health. The national Adventure Education Network is developed and coordinated with the support of the Ministry of Education and Culture by the Finnish Youth Centre Association, which has a part-time coordinator.

Meri Elonheimo

See above.

Sanna Jahkola

Sanna Jahkola is a class and biology teacher who is a founding member and chairperson of Ulko-opet ry (Outdoor Teachers Association). She is interested in outdoor activities with children and families, and trains the Moomins' Outdoor and Skiing Schools in Suomen Latu - The Outdoor Association of Finland. She has been collecting research material from the Outdoor Classroom project with the aim of collating a scientific study on outdoor teaching.

Anna Kettunen

See above.

Sinikka Kunttu

Sinikka Kunttu is the executive director of FEE Finland. FEE Finland promotes sustainable living through environmental education, including maintaining the Green Flag environmental programme and coordinating the Outdoor Classroom Day in Finland. FEE Finland works as part of the global Foundation for Environmental Education network, promotes environmental education cooperation and knowledge, and seeks to influence the role of environmental education. Anyone interested in environmental education can join.

Aulikki Laine

See above.

Katri Luukkonen

Katri Luukkonen, M.Sc., is coordinator at Nature House Villa Elfvik, the nature information centre of the City of Espoo. In 2013, Espoo mapped the forests used by schools and kindergartens as part of the nationwide School Forest Appreciation ('Koulumetsät arvoonsa') project. She co-ordinated the survey and has since promoted the use of local forests by schools and kindergartens, as well as taking them into account in forest management and land use schemes.

Ulla Myllyniemi

See above.

Kirsi Naukkarinen

Kirsi Naukkarinen is the communications manager of the Finnish Schools on the Move programme, which aims to make school days more active and enjoyable. It is one of the key projects in the Government Programme for knowledge and education, and aims for every school-aged child to be physically active for one hour a day. Each school implements their own individual plans to increase physical activity during the school day.

Nina Räike

Nina Räike is head of education at Suomen Latu - The Outdoor Association of Finland. She is responsible for children's and family activities, educational activities, and the At Home in Nature ('Luonnossa kotonaan') activities, and is the training manager of Team Outdoors (Ulkoile-tiimi). Suomen Latu is an organization that advocates physical activity and outdoor activities, with more than 86,000 members in 190 associations. The goal of the organization is for everyone to find an active and enjoyable way of being outdoors and in nature. Children's activities include Metsämörri forest troll courses, Moomins' Outdoor Schools, and At Home in Nature kindergartens, daycare and afternoon clubs. The member association Ulko-opet ry (Outdoor Teachers) promotes outdoor education at every phase of school.

Milla Tuormaa

See above.

Kati Vähä-Jaakkola

Kati Vähä-Jaakkola, M.Sc. Agriculture and Forestry, serves as executive director of the Finnish Association of Nature and Environment Schools. She has extensive experience in developing nationwide environmental education. The Finnish Association for Nature and Environment Schools coordinates and develops the national LYKE-network of more than 50 centres that provide nature and environmental school days for groups of children and youth, and training for educators. It also maintains and develops the Mappa.fi database and other environmental education support services for teachers and educators.

Virpi Sahi

Virpi Sahi, M.Sc. Agriculture and Forestry, is an environmental educator who has also specialized in biodiversity issues. She has written the School Forest Guide ('Koulumetsäopas'), which summarizes the experiences, examples and tasks of the Finnish Association for Nature Conservation's School Forest Appreciation ('Koulumetsät arvoonsa') project. Previously, Sahi has worked at the University of Helsinki, WWF and Metsähallitus Nature Services, among others. Currently she is the director of development of EKOenergy at the Finnish Association for Nature Conservation.

Other Associations

Essi Aarnio-Linnanvuori

Essi Aarnio-Linnanvuori works for WWF as a senior education officer. She has a Ph.D. in environmental change and politics and specializes in multidisciplinary environmental education and climate education.

WWF is the world's largest environmental organization whose goal is to protect biodiversity and halt the growth of humanity's ecological footprint. WWF operates in over 100 countries. WWF Finland has five conservation programmes, one of which is environmental education. WWF provides schools with study materials, school visits, events and training.

Janne Antila

Janne Antila is a fisheries expert.

The Finnish Federation for Recreational Fishing is the largest recreational fishing organization in Finland, which promotes fishing opportunities, advises on sustainable fishing, and guides youth fishing hobbies. The federation's 13 recreational fishing circles have a total of 513 members, and some 40,000 fishing enthusiasts. They also promote recreational fishing in fisheries management and other decision-making.

Laura Blomqvist

Laura Blomqvist, M.Sc., works at the Finnish Association for Nature Conservation as project manager, and as a nature teacher in schools in South Karelia.

Finnish Association for Nature Conservation (FANC), see above.

Tiia Eskelinen

Tiia Eskelinen is a child activity planner for Suomen Latu - The Outdoor Association of Finland, who trains educators in activities such as the Metsämörri forest troll course and the Moomins' Outdoor School.

Malva Green

Malva Green, M.Sc. Agriculture and Forestry, is head of environmental education at the Finnish Nature League - Luonto Liitto. The Nature League is the children's and youth's own environmental organization that promotes relationships with nature and a society that values biodiversity and nature's intrinsic value. In addition to activities for children and young people via clubs and environmental education, the Nature League publishes two nature magazines.

Maija Ihantola

Maija Ihantola, M.Sc., teacher of biology and mathematics, is a coordinator at the Finnish Association of Nature and Environment Schools (LYKE). She is responsible for the development of the environmental education MAPPA material database, internal audits of the LYKE network, and coordinates the Ulos-Ut-Out outdoor learning event.

Mikko Jalo

Mikko Jalo is chairman of the forest group of the Guides and Scouts of Finland. The forest group is responsible for the Scouts' forest-related communications and develops activities.

The Guides and Scouts of Finland is the largest youth organization in Finland, whose goal is to support the individual growth of children and young people as active citizens. Scouting is a multifaceted hobby that revolves around being active in nature.

Iitu Kiiminki

Iitu Kiiminki is the Green Flag programme manager for FEE Foundation for Environmental Education in Finland.

The Green Flag is a programme for the sustainable development of kindergartens, schools, educational establishments, leisure activities of children and young people, and an international eco-label for education.

Sirpa Kärkkäinen

Sirpa Kärkkäinen is the chief specialist in youth communications for the Finnish Forest Association. Founded in 1877, the Finnish Forest Association is a forestry cooperation organization. It is made up of nearly 50 forest-related agencies; organizations and businesses, both professional and for leisure. www.smy.fi

Miikka Mäkelä

Miikka Mäkelä, M.Sc. Sport and Health Sciences, M.A., is a Finnish championship series-level mountain biker, bike trainer, teacher and performing artist who is better known through his character ". Biking Heroes is a project of the Finnish School Sport Federation, Network of Finnish Cycling Municipalities, and Finnish Cyclists' Federation, which aims to provide ideas for promoting cycling in everyday school life and increase the physical activity of schoolchildren and teachers during the school day.

The Finnish Cyclists' Federation is a national advocate for cycling. Their aim is to increase the proportion of cycling in travel and to improve the conditions for cycling. They promote cycling opportunities for people of all ages. More information can be found on their website, Facebook and Twitter.

Sanna Ojajärvi

Sanna Ojajärvi is the development manager for the Network of Finnish Cycling Municipalities, a cooperation network between municipalities, government, businesses, and organizations that promotes cycling education. The network encourages cycling at school through social innovations like the School Mileage Race Bike to School Days and Cycling and Walking School Buses.The network's materials include, cycling games, a cycling badge, and a bicycle inspection card and manual.

Sampo Juhajoki

Sampo Juhajoki develops the forest activities of 4H. Sampo is readily inspired and inspires readily, and does so as a forest expert for the Finnish 4H organization in Tampere.

4H is a nationwide, non-partisan youth organization supporting children's life management skills and entrepreneurship. Their basic values are reflected in the 4 H's, which support the holistic development of children and adolescents: Head (reflection), Hands (skills), Heart (respect), Health (wellbeing). 4H youth work is carried out by over 200 local associations all over Finland.

Pihla Salminen

worked as the Outdoor Classroom campaign coordinator for FEE Finland in 2018.

#OUTDOORCLASSROOM

"Leap into the Outdoor Classroom"
is a guide for teachers, who want to teach outdoors.
It is for those interested in outdoor teaching.
And serves as confirmation for those who already
found the joy of teaching outdoors.

A wonderful group of professionals has been involved
in writing this publication. Contributors include
teachers, researchers, educators, and organizations
supporting outdoor learning.

Outdoor teaching Inspires.

Leap into the Outdoor Classroom!