



Nature and Technology

Aims

In the Nature and Technology course, the students must develop science skills and dispositions and thus gain an insight into how science contributes to our understanding of the world. In Nature and Technology, students must acquire skills and knowledge about important phenomena and contexts, as well as develop thoughts, language and concepts about nature and technology that have value in everyday life. The purpose of teaching in the subject is to give students contact with and knowledge of the surrounding nature, the interaction between it and the classic professions. Additionally, the subject gets the individual student to understand both the practical challenges and the workings and functions of man-made inventions. The students' own experiences, games, investigations and experiences are prioritized. Experiences and investigations are processed and disseminated, among other things, at exhibitions and demonstrations, storytelling, reading and writing about science and technology challenges and facts. The students participate in the presentation and assessment of their own and others' work; they have the opportunity to actively investigate, model and put into perspective.

As far as possible, the students are made to be able to draw conclusions on the basis of what the class has collectively retrieved from memory and described. Such a process gives the individual student the opportunity to form concepts that have sprung from their own experience and thinking, and which are connected to the individual's inner processes: concepts that can again be tested against new phenomena and shaped further in the encounter with realities.

The students' learning is aimed at wandering from their own experience such as via sensory impressions for their own concept formation. In the awareness of the essential differences between the two activities: to observe (one's own opinions are pushed aside, external impressions are emphasized) and to think (external impressions are shut out, one's own thoughts are sharpened), the ability to have objective judgment and recognition is practiced; this is also done in relation to the student sense of self. In the first years, the pupils have to take part in archetypal images which depict the interaction between nature and man. By hand, man also stands in nature as a cultivator, but at the same time subject to the forces of the elements.

At all grade levels, the students' activities are combined with experiences, reflection, dialogue, professional knowledge and skills.

Byens Steinerskole / Waldorf International School Copenhagen

Otto Busses Vej 47, 2450 København SV
kontor@byenssteinerskole.dk +45 71 96 70 52

www.byenssteinerskole.dk



Objectives and Final Goals of the Subject

Investigation (I)

The student can carry out and design investigations on the basis of initial hypothesis formation.

Modeling (M)

The student can use and design simple models.

Perspective (P)

The student can put nature/technology into perspective for the outside world and current events.

Communication (C)

The student can describe and communicate about nature and technology.



Development of the Subject		
Content and Focus	Objectives	Final Goals
<p>Class 1-2 The classes go out to a natural area several times in all seasons. Craftsmanship is experienced, tested and experienced. Moving picture books, drawings and paintings are produced. Reference is also made to the teaching plan in horticulture.</p> <p>Class 3 Craftsmanship is experienced, tested and experienced. Various materials are examined, collected, and processed. For example, clay is dug that can be burned into small bricks. The sheep's wool is sheared, carded, spun and woven. Models are drawn and built. A small construction project is carried out. The building can, among other things, include casting work, brickwork, carpentry, clay lining and roofing. Tools and implements are put into use. Each student forges his own small knife at the blacksmith's. Crops are harvested and processed. Curing, baking and the production of, for example, jams, fruit juices, butter and cheese are central. A farm is visited and the students</p>	<p>Investigation (I), Modeling (M), Perspective (P) and Communication</p>	<p>Investigations (I) into Technology and Resources, Man, Organisms, Water, air, and Weather The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none"> • stimulate curiosity, job satisfaction, creativity and ability to explore in own experiences and investigations • participate in the organization and execution of practical work and research • carry out and have knowledge of simple investigations and how simple mechanisms in everyday life work • collect organisms in nature and have knowledge of animals, fungi and plants • examine light, water and weather in everyday life <p>Modelling (M) in Technology and Resources, Man, Organisms, Water, Air, and Weather The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none"> • describe objects from everyday life with sketches and pictures



<p>harvest depending on the season and process the raw materials for a meal for the whole school.</p>		<ul style="list-style-type: none"> ● have knowledge of seasons and weather conditions and can illustrate these <p>Perspective in Technology and Resources, Man, Organisms, Water, Air, and Weather</p> <p>The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none"> ● have knowledge of nature/technology in the local area and can relate to this ● have knowledge of simple advice about health and can talk about it in relation to your everyday life ● tell about changes in nature in relation to the seasons ● talk about the connection between the sun, the day and the seasons and give perspective to Denmark <p>Communication (C) in Vocabulary, Professional Reading and Writing</p> <p>The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none"> ● enter into collaboration and to communicate about practical activities ● talk about own results and experiences ● use simple technical terms and concepts ● orient oneself in simple science texts



<p>Class 4 Here the subject is material knowledge, both in origin and in processing. The class carries out, for example, forging nails, making shields, tin casting, willow braiding, raku firing of clay beads, and rope making. In Class 4, the students are taken on a two-day overnight stay at an experience center with relevance to the students' work with life in the Viking Age. Emphasis is on the Viking period through the resources and scenarios that are made available. Students also gain experience with independence, group dynamics and cooperation outside the classroom.</p> <p>Zoology is introduced, (see curriculum for Horticulture and Biology). Denmark's geography is introduced, (see Geography curriculum).</p> <p>Class 5 A tree's life is followed through several seasons. A log book is drawn up with observations and drawings. Excursions to various natural areas are prioritized. Plant communities are discovered. Plants' dependence on surroundings is assessed. Impressions and experiences are conveyed through paintings and poems.</p> <p>See Horticulture, Biology and Geography curricula.</p>	<p>Investigation (I), Modeling (M), Perspective (P) and Communication</p>	<p>Investigations (I) are practiced here: The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none">• participate constructively in a community around outdoor activities• use map and compass to carry out field tasks - examine and use general equipment for longer stays and activities in the outdoors• practically prepare and carry out outdoor activities• orientate themselves in the application possibilities of field equipment• design and conduct simple surveys• identify and have knowledge of substances, materials, their circulation• have knowledge of diet, exercise, hygiene and use that knowledge in relation to putting together a healthy meal• carry out investigations using simple measuring equipment.• have knowledge of food chains and the interaction of organisms in nature• have knowledge of and relate initially to the water cycle• have knowledge of simple principles in plate tectonics, volcanoes and earthquakes and models for relationships• use map material and talk about simple topics related to this
---	---	--



<p>Class 6</p> <p>In biology, the life cycle of insects is followed through the collection of small animals from lakes and marshes.</p> <p>Surveys and counts of small animals are used to assess the animals' way of life and behaviour. In geology, different rock types are collected and sorted. The students make systematic investigations. Soil is examined and mock tests are set up. Soil layers are found and measured. In geography, sundials are made and compass directions are found. A trip to Bornholm forms the framework for a week's stay with a focus on geology and shared experiences in the outdoors. Reference is made to the curricula plans for the respective Horticulture, Biology, Geography and Physics.</p>		<p>Modelling (M) in Technology and Resources, Man, Nature and Environment, Water, Air, Weather, Matter, Energy, and Earth's changes</p> <p>The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none">● have knowledge of simple principles for sustainability and describe nature and technology in this perspective● have knowledge of simple environmental assessments of products and dependency as well as impact on the natural environment● have knowledge and be able to distinguish between lifestyle factors and living conditions <p>Perspective (P) in Technology and Resources, Man, Nature and Environment, Water, Air, Weather, Matter and Energy, and Earth's changes</p> <p>The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none">● participate physically well prepared in field excursions and one-day trips● reflect on one's own efforts and benefit from an outdoor course.● take into account their own effort and ability in joint tasks● reflect on one's own efforts and benefit from an outdoor course
---	--	---



		<ul style="list-style-type: none">• have knowledge of and be able to discuss energy sources and energy utilization, including from a sustainability perspective• have perspective on natural conditions for living conditions• have knowledge of and perspective on wind, weather and landscape formation in Denmark <p>Communication (C) with Vocabulary, Professional Reading and Writing</p> <p>The teaching gives the student the opportunity to:</p> <ul style="list-style-type: none">• prepare and convey preparation, experiences and reflections from short and longer professional courses in the outdoor space• argue for simple scientific matters• have knowledge of simple science and technology concepts and terms• write simple science texts
--	--	---

