The Baltic Sea Project

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The BSP objectives are to:

- increase the awareness of the students of the environmental problems in the Baltic Sea area and give them an understanding of the scientific, social and cultural aspects of the interdependence between man and nature,
- develop the students' ability to conduct research on changes in the environment,
- encourage students to participate in developing a sustainable future.

The BSP works with the following means:

- building networks of schools, teachers and educational institutions in the Baltic drainage area,
- creating and developing educational approaches and joint programmes for environmental and international education,
- organising joint activities and events, publishing the BSP Newsletter and issuing other relevant information.

The basic characteristics of the BSP schools:

- active participation in looking for solutions to the environmental problems in the Baltic Sea area,
- networking,
- pilot function in promoting environmental education in the spirit of the Rio Declaration, Agenda 21 & Baltic 21 and Agenda 21 for the Baltic region.

The educational approach for the BSP is to:

- achieve balance between a holistic view and individual subject studies,
- change the role of the student from passive recipient to active constructor,
- change the role of the teacher from supervisor to guide in a learning process,
- use networks to provide participants with opportunities to learn and pass along new ideas,
- use international co-operation as an inherent element of school work.

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EDITORIAL

DENMARK

ESTONIA

FINLAND

GERMANY

LATVIA

LITHUANIA

POLAND

RUSSIA

SWEDEN

BSP PROGRAMMS

BSP COORDINATORS

2011 - A YEAR OF ACTIVE INVOLVEMENT

In 2010-2011 UNESCO is celebrating its 65th anniversary since its establishment. Baltic Sea project is one of UNESCO's flagship projects and one of the most renown school programmes within the UNESCO Associated Schools network. This is an initiative which has inspired many young people for their future learning and commitment for sustainability, many teachers for a close and truly sincere dialogue and cooperation with their students fostering mutual comfort and development as well as many other people and many other networks. Indeed the Baltic Sea Project is a proof of the relevance, importance and results of the work of and ideals UNESCO embodies.

Firstly, I believe it is the continuity and stability of this project. Commitment of all the project coordinators, belief and interest of all the students and of course a constant work and action. Secondly, it is the need to favourably act and deal with current global challenges. Challenges which do not always directly include environmental issues but challenges to which greater environmental care and respect is an answer. And thirdly, because of its contribution to the holistic, inclusive and responsive learning of youngsters – education for sustainable development in it making sense and having clear evidence of what and why it is important and how it is possible. Exactly these kind of initiatives, attitudes and engagement bring change and have an impact. It is the appreciation of the environment as a whole – including cultural, economic, social and natural aspects – which allows us at the end to feel good at the place we are, know our surroundings, know how to act and how to realise ourselves to contribute to the overall well-being and quality of life of our communities. It is the care and passion that allow us to bring progress and advance.

2011 offers the Baltic Sea Project a lot of possibilities to acknowledge its successes by participating in various global initiatives: 2011 is the International Year of Chemistry and the International Year of Forests. Both these international years are a year-long celebrations in which anyone can participate. Either by joining the Global experiment "Water: A Chemical Solution", organising a visit to nearby forests and paying special attention to biosphere reserves in your locality, initiating thematic film viewing, artistic events or discussions, playing games or engaging youth in various competitions, celebrating international days and/or sharing your ideas for sustainable management, conservation and sustainable development of all types of forests and increased public appreciation of chemistry in meeting world needs and enthusiasm for the creative future of chemistry.

Follow the updates on these international years:
http://www.chemistry2011.org/
http://www.un.org/en/events/iyof2011/!

Dagnija Baltina,
Secretary General, Latvian National Comssion for UNESCO

DEAR READER!

I want to thank all those BSP students, teachers, national and program coordinators who were involved in various activities and have contributed their success. There were national meetings and student camps, teachers training courses, excursions, networks, nature observations, school projects and participation in the BSP programs. You will find interesting reports about these activities in the following articles. More information about international training activities, which took place in Denmark, can be found on the website http://www.b-s-p.org. Also information about the BSP program work and student research, we publish on the website. There we have published only a brief overview of the phenological studies in 2010. Many BSP students, teachers and the national coordinators are also keen nature photographers. Some of their nature photos of different seasons can be seen in this edition.

I want to thank Simo Korpela from Finland for the great contribution to the Baltic Sea project. He has organized the International Environmental camps and coordinated the BSP program "Environmental measurements" for many years. Simo wishes to the project are in the section "BSP Program".

I also want to thank the Latvian National Commission for UNESCO for the support to organize BSP activities and to publish this newsletter.

In recent years, the amount of articles in newsletter about environmental pollution in the Baltic Sea region has reduced. Can we conclude that the Baltic Sea region environmental situation has improved? Maybe less of students are taking the environmental pollution studies? This year could be very interesting observing the coming of spring, as well as water quality measurements. Will the large amount of snow and coldness this winter affect the quality of the environment in the Baltic Sea region and how it is going to change this quality?

Have a success developing project ideas and cooperating internationally to promote sustainable development!

According to the economical situation the newsletter will be publish only once a year and will also be available on the website: http://www.b-s-p.org

Velga Kakse,
General Co-ordinator of the BSP within UNESCO ASPnet

EXCURSION TO POLAND – A JOINT PROJECT BETWEEN PARTNER SCHOOLS

Comenius conference October 2010

This October, we were five students and two teachers travelling to Katowice in Poland to participate in the Comenius conference on "Climate Change and Modern Lifestyle in the European Union with a special focus on food", which was a preparing conference for the final conference in Trier in April 2011.

We were asked to be creative, but it still had to be eatable.

We were more then 30 participants from all over Europe working together trying to create a twelve workshops for Trier.
The day we arrived in Katowice five different polish students opened their homes for us. We stayed there one night until the conference began on the following morning. It was fun to experience, and a great way instead of being a regular tourist and staying at a hotel. We started the conference on Monday morning with a tour of the school in Katowice and the opening in the school's hall. We are also created our own sustainable lunch, which as well was a great ice breaker.
Monday evening we left Katowice after visiting the salt mine in Wieliczka, and we stayed at a beautiful bed and breakfast in the mountains close to Zakopane.

Group photo in front of the sleeping man's head (Danes at left)

The following days we discussed what was important in a conference like this, and what the outcome should be. We discussed the positive and the negative sides using brainstorming. This day we also went on a field trip in the amazing Polish nature, where we also were told about the myth of the sleeping man, because of the mountain's appearance.
We started working on the workshops and sharing our ideas we brought from home. The outcome was twelve workshops, each concerning different environmental issues. Every student was now supposed to choose one of the twelve workshops they wanted in cooperation with the other students in order to prepare the organization of that particular workshop.
The Danish group chose to be responsible for two workshops: water and recycling. The recycling workshop is one of the workshops that are hosted by two nationalities. This means the group has to find alternative ways of communicating in the process of planning the workshop.
Hopefully the geographic distance won't be a problem and will only bring us closer and unite us.
We took the spectacular weather in the end of the conference as a sign of the positive planning period that is waiting us and a successful conference in Trier.
We had a wonderful and educational excursion to Poland, where we made international friendships and had interesting tours around the area.

International cooperation among the students and teachers

Lykke, Laura, Charlotte, Jens and
Mie,Students at Alssundgymnasiet
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www.ags.dk

The Danish group in front of the youth hostel in Burkowina, Southern

THE ECO COUNCIL AT ALSSUNDGYMNASIET SØNDERBORG

Grønt Flag Grøn Gymnasieskole

At our school, AlssundGymnasiet Sonderborg we have established an eco-council after the summer holidays. The council is mainly l led by students, but some teachers also participate. In spite of the fact that the council is newly established, it has many visions for the future concerning climate effects and a sustainable lifestyle.

Visions:

Water: We could like to collect rainwater in big tanks and use it for water in the toilets of the school. If we succeed in doing this, we could save a lot of clean drinking water.
Green roofs: Talking of clean drinking water and avoiding flooding of the sewage system, our school last year got >20 m2 "green roofs". The roof is green because of Sedum-plants, which are succulent plants so they can contain and store much water. This is a good solution because when our local area receives much rain at a time the sewage system does not have capacity enough to drain all the water. When plants delay use water for photosynthesis, they produce oxygen, reduce carbondioxid emissions and protect the drains and water treatment plants from flooding. One of the visions and hopes for the eco-council is to make the entire AGS roof green.
Nature trail: Another aim is to create a nature trail in and around the school so students and visitors can take a walk in the area of the school and learn about our plants and trees. This could be an assignment for a biology class. Indoors we have a Mediterranean climate and a greenhouse "street"to be compared with the local outdoor facilities.

The eco-council: Bitten Poseelt Langhede (teacher) and studnets Stine, Lykke, Laura, Mie – and in the front Lykke and Charlotte

In the eco-council we know that everything we decide among ourselves has to be taught in the classrooms, to ensure that not only the students of the council gain this knowledge but that as many students as possible get knowledge and become a part of the climate solutions and help feeding in new ideas.
Heating system: Beneath the school's sports field we have an old heating device from 19777 consisting of 14 km of pipes that extract the heat from the ground. It was, however, abandoned in 2000 because the liquid used (Freon) had to be phased out. Now the eco-council hopes to start the heating device again with an environmentally friendly liquid, so we can save much energy in heating up our school.

Our main aim is to get the Green Eco-School Flag. A Green Flag is a proof of education for sustainable development. The eco-council thinks it would be a great honor to achieve this flag, so for us it is worthwhile working for.

International Teachers' Training & Telling Others about Your Work

Our eco-council had the opportunity to share and tell others about our work when our school hosted teachers from the UNESCO Baltic Sea Project in October 2010. The teachers from Japan and the nine riparian countries around the Baltic Sea visited Sønderborg as participants in the international teacher training Course on "Urban Ecology " . Study visits to schools and institutions were made to learn from local initiatives on energy saving methods Students at our school informed the participants about our usage of rain water, about the rootzone filtration system, and they demonstrated their experimental work on measurements made on the green roof succulent plants that delay drainage water. Unfortunately workers renewing the greenhouse roof above the "street" had walked so much on the Sedum plants during the entire summer that we were afraid to show participants

Laura, Stine and Lykke inform the international group of teachers about ther visions

a brown rather than a green roof. Fortunately Sedum plants are extremely tolerant and quickly sprout again.
During the months from May till October 2010 the former greenhouse roof (from 1977 when our school was constructed – and not waterproof) has been renewed with energy glass. The aim is to reduce loss of heat from the "street" so that the Mediterranean climate will make the indoor climate warm and pleasant. The olive tree growing inside carries olive fruits for the first time, so maybe the effect is already to be seen.

Liane Dupont, grade a11presenting her poster and results to the participants about measurements made on the green roof.

Recovering from many footsteps, the green roof of Sedum plants here covers app. 20 m^2

Liane Dupont, grade a11presenting her poster and results to the participants about measurements made on the green roof.

Written by the eco-council at Akssundgymnasiet Sønderborg
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BALTIC SEA PROJECT CAMP 2011

When? September 12 - 16, 2011

Who? Students age 14-18 and teachers, up to a total of 350 participants of the BSP-school network from Germany, Poland, Lithuania, Latvia, Estonia, Finland, Russia, Sweden and Denmark.

Where? National Park Mols Bjerge in Denmark, right at the shores of Jutland.
Through the camp the students can work with the impacts and prospects of climate change consequences in the Baltic Sea. The focus will be on sea level rising, dramatic floods of shallow shores, the change of coastline and wetland areas, as well as the urge for political and personal action. What can citizens do, and what can be done by the political system?

During the week
The groups will meet different workshops. An example of the activities:

- Measurements of sea level rise in the area of Mols
- Geologic investigation of the change of the coastline
- Biological diversity in a fresh water marsh – and the future challenge
- Costal marine environment explored by scuba diving
- The democratic process behind dealing with climate change
- Coast watch investigations
- A competition, which group produce the most educational pocket film
- A media group, which produce a daily newsletter and a TV-documentary about the week

Every evening a discussion forum including a presentation of national climate change issues will take place, so the participants get insight in areas of interest in the whole Baltic Sea area.

Updates on registration
Please, all contact teachers and other participants, sign up using the on-line registration form by following this link and answer all the questions in the form before April 1st:
If you have trouble viewing this form, you can fill it out online by copy and paste the whole link:
https://spreadsheets.google.com/viewform?formkey=dFRYNDU3M0tfeDk4LTlBR012dGhPZVE6MQ

Any questions or problems regarding the on-line registration, write to Mrs Birgitte Petersen, bbbp@mail.dk
After completion of the registration you can expect a letter of confirmation.
Danish national BSP-coordinator Mr Soren Levring: slev@sonderborg.dk
www.b-s-p.org
www.unesco-asp.dk

http://www.modkraft.dk/IMG/jpg/orkan.jpg

REAL LIFE WITHOUT SCHOOL STRESS AT PALUPÕHJA NATURE SCHOOL

Our class at Palupõhja Nature School

The 7th B class at Põlva Ühisgümnaasium (Põlva Coeducational Gymnasium) is a nature class. Our greatest undertaking late last year was a three-day camp at Palupõhja Nature School, which is situated in sparsely populated and wild Alam-Pedja Nature Reserve.

The house of Palupõhja Nature School is very cosy. The ground floor is designed for learning and other activities. There is also a kitchen where we prepared our food – which we were good at –, using water sparingly and sorting our trash. On the first floor of the Nature School there is a sleeping room, its walls covered with painted pictures of natural communities at Palupõhja.

The boys stoked the furnace and the stove, so the rooms of the school house were cosy and warm. At the same time, a snow storm called Monika was raging outside! Monika kept clogging the paths we had dug in the snow. We had to clear the path with a snow shovel even when we wanted to go to the latrine. We learned what it feels like using latrine in winter… The snow shovel was also suitable for snow fight, but mostly we used it to clear pathways. At home, clearing paths is hard work, but here it was fun, because we did it together.

In order to make a fire, we had to go to a tepee, because it was too windy outside. When the electricity was cut off, we had to use lanterns and candles to get light. Without electricity it was like real rural life. What an interesting experience!

The sauna house was about 300 metres away from the school house, and it took Otto two hours to dig a path between them. In Otto's opinion it was good physical exercise. Heating and taking a sauna was very fun. As it was very hot in the sauna, we frequently jumped into the snow.

Alam-Pedja Nature Reserve is a home for many wild animals, e.g. bears, lynxes, and wolves. The animal on the Alam-Pedja Nature Reserve's coat of arms is the wolf. We learned a lot about wolves. In the past, wolves sometimes killed people, especially women. Nowadays wolves do not kill people anymore. Wolves live in packs and when they move, they step into each other's footprints. We also walked in the snow as a wolf pack. Wolves are predators who can kill a moose together, and who gather meat reserves for rainy days. During the mating season, wolves can also mate with dogs. Later we used clay to make wolves as well as other animals and necklaces.

Together we read an essay "Thinking Like a Mountain" by Aldo Leopold. The main point of the essay is that wolves are very useful. If people killed all the wolves, roe deer and deer would destroy vegetation and it would cause many problems. The relationship between wolves and mountains is quite mysterious. When a wolf dies, a mountain is hurt. People should also think like mountains.

Some wild boars had rooted for food under the apple trees. We followed their trail to a spruce forest and saw how they ran off. Wild boars are big and very intelligent; they can make a comfortable nest under spruces. We found one of the nests and smelt the stench of wild boars.

Vahur Sepp, a very wise woodsman, came to talk about animals. He was a very interesting man who knew everything about animals and he shared this wisdom with us. He showed us the skins, tracks, skulls and excrements of wild animals. It was very exciting to touch the fur of different animals. The excrements of carnivorous and omnivorous animals cannot be touched by any means! Eventually, the woodsman gave us a quiz and Laura knew the most about forest and its inhabitants.

In a lesson about fish we used a binocular microscope to examine the scales. You can tell the age of a fish by its scales. We were also shown fishing gear and then we used an identifier to identify various fish. The identification process takes a lot of time and it has to be done step by step. After that, Silver cleaned a carp and we could all roast it. The fish was very tasty.

Near Palupõhja Nature School there flows the River Emajõgi (also known as the Great Emajõgi) which is really wide.

It looked more like a lake than a river. It was surprising that there was no ice on the river. There are flood plains on either side of the River Emajõgi, but now they are covered with thick snow. If the flood plains overgrew, many species would lose their habitat.
When hiking in nature, we smelled the fresh air and enjoyed the snow. The snow was very thick and this silence on the edge of the forest…
At the camp we got to know each other better. We realised that we like to spend time and do activities together. It turned out that in real life, without school stress, our pupils are much nicer than at school.
At the end of the camp, when we received our certificates, we were proud and happy that we had learned so much. We felt that we did not want to leave Palupõhja. We definitely want to go back to Palupõhja in spring when everything is in bloom, animals are on the move, and there is high water in the River Emajõgi. We could go back in winter as well, because there is much to do in Palupõhja!
Our nature camp took place thanks to the Environmental Investment Centre, the Estonian Fund For Nature, and Tartu Environmental Education Centre.

7th B class students
Urve Lehestik
Teacher
Põlva Ühisgümnaasium
Kesk 25, 63308 Põlva, Estonia
Photos: Urve Lehestik

THE BSP MARINE DAYS IN THE LAHEMAA NATIONAL PARK IN ESTONIA

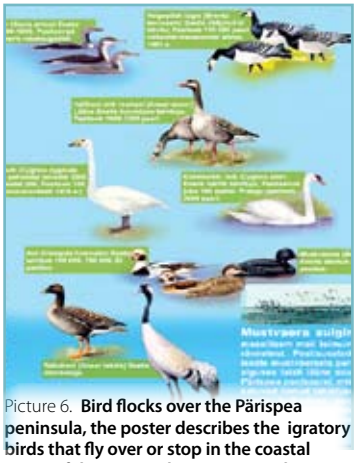
Linda Metsaorg, coordinator of BSP Marine Days in Estonia,
Eru Bay Society of Coastal Villages

There are 5 national parks in Estonia (Lahemaa, Karula, Vilsandi, Matsalu, Soomaa). The oldest of them is Lahemaa, founded 40 years ago. The park is situated on the coast of the Gulf of Finland at the distance of 40 km east of Tallinn (picture 1). The coastline is indented by peninsulas. One of them is the peninsula Pärispea. This is our Marine Days area. Three nature trails have been established on the Pärispea peninsula by the Eru Bay Society of Coastal Villages and are now in full operation (picture 2; 3). These trails not only introduce the nature values of the coast of the Bays of Eru and Hara, but also guide how to participate in the BSP programmes, such as the coast watch, water quality, bird ecology, environmental measurements and environmental history (picture 4; 5; 6).
There is a possibility to use rooms for the study activities in the Viinistu Cultural Centre located on the coast of the Eru Bay (picture 7). There is an Island of Mohni (picture 8) not far from the Viinistu village across the sea (4,5 km). The island is rich in different types of landscapes. An old lighthouse (built in 1806) has become a symbol for the Eru Bay Society of 7 coastal villages. We find the location of Viinistu a central point for establishing a Marine Study Centre for young people to study the ecosystem and the management of the Baltic Sea, including the implementation of the BSP programmes. The foundation of the Marine Study Centre is also listed in the Tallinn Environmental Education Development Plan for 2008-2014.
The Marine Days for BSP schools are financially supported by the Estonian Environmental Investment Centre. The first study courses were held in Viinistu in spring 2009 and in summer 2010. By now, the The Marine Days based on BSP programmes have been organised two years for teachers (picture 9) and pupils of the BSP schools. There were 302 partitsipants in 2009 and 344 in 2010 from 14 schools.

Picture 1. **The Lahemaa National Park**

Our society could give practical help to schools to carry out BSP marine programmes as the main goals of the BSP. „Schools can make a real contribution to saving the Baltic", wrote Kaj Bärlund the Minister of the Environment of Finland when the BSP general coordination started in 1990 (Newsletter nr.2/1990).
Eru Bay Society of Coastal Villages will be reporting the results of implementation of the BSP marine programme to the BSP programme coordinator for Estonia.
You are most welcome to see yourself the beauty of the Pärispea peninsula and the sea coasts, as well as other place of interests in Lahemaa National Park!

Picture 5. **Birdwatching**



Picture 6. **Bird flocks over the Pärispea peninsula, the poster describes the igratory birds that fly over or stop in the coastal water of the peninsula in spring and autumn**

Picture 2. **Ms Linda Metsaorg, the guide of the nature trail**

Picture 7. **The Viinistu Cultural Centre, the focal point of the marine ecology programme**

Picture 3. **Sand banks with permanent vegatation, a highly valued habitat in Europe**

Picture 8. I**sland of Mohni**

Picture 4. **The marine scientist Dr Jonne Kotta of the Estonian Marine Institute is carrying out marine ecology fieldwork**

Picture 9. **teachers at fieldwork**

PINE NEEDLES AND "HAUS DES LERNENS" - OUR VISIT TO BISMARCKSCHULE IN HANNOVER

In autumn 2010 we in Meri-Pori Upper Secondary found a new contact: a German BSP school Bismarckschule. After some e-mails and discussions with our industry partner Sachtleben Pigments (earlier Kemira Pigments) it was possible to ask a new partner to join BSP Pine Needle net. There are of course limits how many pine needle samples can be measured in the plant's laboratory. Bismarckschule decided to join also the Chemical Water Analysis net, too.
Our BSP teacher Simo Korpela has most actively been involved in many BSP projects during these past twenty years, so it was time to organize some BSP happening also during the last school days before his retirement. We quite spontaneously, with a two week notice, decided to visit our new friendship school. I think our new friends were quite surprised but after initial shock they in a very friendly way welcomed us and organized a very good program for us. Our group consisted of teachers Simo Korpela, Anja Hokajärvi and Jarmo Perttula and seven students. Students were also very interested in a future trip and wanted to be actively involved in planning freetime activities.

We started our journey to Germany very early on Friday, November 19th. We, the teachers Simo, Jarmo and Anja, picked up seven eager students Anna-Sofia, Eveliina, Maria, Markus K, Markus R, Toni and Ville from dark and snowy streets of Meri-Pori. We drove with two cars the 100 kilometers to Pirkkala airport and flew with Ryanair to Bremen. With two rented cars we drove to Hannover and found out goal: Bismarckschule. The help of GPS was needed but because of different programs the drivers got different instructions and the other car found nice peaceful roads to avoid the constructions on the motorway. But we were in Hannover precisely at the same time and found Bismarckschule and the biology teacher Hilke Heinks and the deputy headmaster Karin Schiebel who with their students were already waiting for us.
We had a really nice afternoon and evening together: first coffee and sandwiches, then presentations from both schools' activities, from Pine Needle Study and Chemical Water Analysis and from the Baltic Sea Science camp 2010 on board of the sailing ship. I got a water sample from the river Leine from German students. Then we had a short workshop outside: Simo and Jarmo showed us how to take a pine needle sample high up from a pine tree. Well, the only pine tree on the schoolyard was not very high but in forest they usually are higher. The equipment consists of a weight, a narrow rope, a cutting chain of motor saw and a thicker rope. First I with tweezers took two needles, whose airholes will be shot with the scanning electronic microscope in the laborary. Students could practice how to collect second-year needles from branches. Karin and Hilke introduced the buildings of their 100-year-old school which were partly under renovation. Then we had dinner together in the nice restaurant bell'Arte. In the evening we found our hotel and had also time to walk in the city centre and admire beautiful Hannover.

On Saturday morning our meeting point was Market Church and we had an interesting guided tour in the old town before noon. We saw e.g. the ruin of the Aegidien Church which is now a monument to the victims of war and violence and visited inside the New Town Hall (Neues Rathaus) and our guide told about the history of Hannover with the help of four scale models of the town. We had dinner in restaurant Mikado in the Old Town Hall. Then we must say farewell to Hilke and her students – we have had a nice time together. Students exchanged addresses – the friendship will continue at least in Facebook.
Because of Markus K's interest in football we knew that there would be a fooball match between Hannover 96 and Hamburg HSV on Saturday evening and Hilke had organized us tickets. Hannover 96 (nickname Die Roten or 'The Reds') is the local football team that plays in the Bundesliga top division. So it was easy to find the way from city centre to the AWD-Arena following noisy and yelling fans with red and blue clothes. The security check was quite accurate and because Hilke had given me a bottle full of water from Maschsee, another sample for BSP water analysis, I must explain to the strict security guards why I had such bottle in my bag. "It is pure water, not beer!" Some of us bought also scarfs of Hannover to show our support. We found our sitting places –from the middle of the fans of BerlinHSV! The match was full of exciting situations, we (especially Simo) yelled and clapped and yelled ant tried to manage with our Berliner neighbours! The result of match was 3-2, so we fans of Hannover96 could leave the AWD-Arena very satisfied, unlike the disappointed fans of Berlin HSV. In the evening we had still time for shopping and a very short night sleep. On Sunday morning, at 2.00! we started our way back to Bremen and from there to Pirkkala. We were back in Pori at noon, tired but happy from new experiences.
We hope that our co-operation with Bismarckschule will continue and in future we will meet our new friends in Pori!

Anja Hokajärvi
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AGENDA 21 NOW!

Human Diversity - Challenges and Chances

Discussing issues of cultural, political and religious diversity on various levels

An invitation for teachers and students

to the twelfth International Internet Conference for students

http://www.agenda21now.org

14 April 2011

00:00-24:00 UTC

(check what this is in your local time on our website!)

Take part in the next conference! The conference is exclusively open for registered participants. For registration, just visit our website http://www.agenda21now.org and fill in the "Join" form. It's easy! You'll receive your conference ticket within 24 hours. Join now!

Again in 2011: The participants work out a resolution. Our conference has great discussions and ends with the adoption of a resolution. Work with "Human Diversity - Challenges and Chances", be prepared when the conference starts and take part in the decision making. The Agenda 21 NOW! Resolution will be presented to UNESCO and in public soon after the conference.

Ready for you now: Interactive Pages. We like good preparation. Prepare for the conference with our Interactive Pages! As a registered participant you may also edit these pages, even create new pages. Add your own knowledge to our website and take part in making our conference even better!

Further information: Please visit our website http://www.agenda21now.org. And in case you have questions or problems, please write to us. To distribute our invitation at your school you are welcome to download and print our poster at http://www.agenda21now.org/2011poster.pdf.

Agenda 21 NOW! is a pilot project of the German UNESCO Associated Schools and the UNESCO Baltic Sea Project.
http://www.ups-schulen.de
http://www.b-s-p.org

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LICHENS WORKSHOP AND SONG AND DANCE FESTIVAL

Photo: Daiga Martinsone

Latvians have a tradition to organise Song and Dance festival for students and for adults. This summer we had the 10th Song and Dance festival in Riga, but also different workshps related to nature and nature observation took place . The Baltic Sea Project presented air quality programme and it was possible to obtain air quality in Riga park, to recognise lichens, to get information about BSP programmes.

The BSP group participated in the Song and Dance festival parade for the first time. Our motto was „Green code".

At the parade we were holding braids,woven of grass and flowers, connecting und uniting all of us . That was meant to be our symbol.As we had to make the braids ourselves, they were all very different and unique and therefore really beautiful. It was a great pleasure to participate in the parade as everybody could see us, we were shown on TV, and it was a wonderful feeling to be side by side with the singers and dancers taking part at the Song and Dance festival.

Next day we organised BSP workshops in Vermane park in Riga. Our task was to inform the interested what lichens are, how to work with determiners, how to observe them with a microscope or a magnifier. Then pupils recieved some samples of lichen species and recognise them with the determiner.

All in all, I really enjoyed everything as it was a very interesting experience. Hopefully, there will be a tradition of events and activities like these every year even though there will not be Song and Dance festival each time just because the most essential thing is pleasure and fun for everyone.

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Photo: Daiga Martinsone

Photo: Ingrida Tamane

Photo: Ingrida Tamane

THE BALTIC SEA PROJECT SUMMER CAMP IN LITHUANIA

This year in August we, Alytus Dainava basic school students and our chemistry teacher Virginija Kereviciene, were participated in the Baltic Sea Project (BSP) five-day summer camp in Grazute Regional Park, Salakas, Zarasai district. The camp was attended by 40 BSP students and teachers from different town and district schools of the country.

To start with, we have been in such a camp for the first time, therefore we were timid, did not know what to expect. Firstly, we built a tent, lit the fire and had dinner. Then the camp managers (Migle Simanaviciene, Vytautas Eidejus and Aurelija Pempyte) presented us the camp program and rules. Later we visited the visitors' center of Directorate of Grazute Regional Park. There our lecturer Vytautas Eidejus, international BSP phenological observation program coordinator, introduced us to Salakas and surrounding areas. Also we visited the Maritime Museum, a lecturer - the teacher/collector Vida Zilinskiene presented us to her collection and told many interesting things about it. Also we watched a documentary film about cranes. When we returned to the camp we were sitting around the campfire and became acquainted with other campers. Everybody was very friendly and sociable.

As it was raining our previous plans were changed on the second day: the bike ride to the Grazute Regional Park was replaced by a trip to the visitors' center of Directorate of Grazute Regional Park. We visited the church of Salakas and other important places and we learned a lot about the history of the town from the manager Vytautas Eidejus along the way .We were not bored because of skillful leaders who organized funny activities. We played games and drew comics related to Salakas history. When we returned to the camp we had a delicious lunch. We had an opportunity to watch performances. After dinner we went on the night trip. Firstly, we listened to the lectures about the nightlife nature in visitors' center, then we watched the catching of night butterflies, and went into the forest where we hoped to hear owls, but never-ending rain, probably, scared all the owls, because we did not find anything. However, the night trip was funny, even a little frightening and really memorable. When we returned to the camp we were talking around the campfire and drinking hot tea. Waiting for the new day with impatience, we went to sleep.

The third day started with a delicious, warm breakfast. Everyone was very happy, because the rain stopped and the sun began to shine. After breakfast we went on a trip to Shavasa natural trail, where we saw an untouched natural beauty of nature. The trip was very thrilling, because there were many hills and other obstacles. The bravest even moved along the broken bridge or waded in a flowing Shavasa stream. When we were going back, we visited the Sveicarka source, which, according to the locals, treats diseases. The day was warm, so when we got back to the camp for lunch we had an opportunity to take a swim in a very clean and clear lake of Luodis, which was near our camp. Later we had to perform a task- to investigate the water quality, according to the plants and animals found there. We were divided into five groups, got a map and each team reached its destination. When we got back we discussed about our research and got a more creative task - each group had to prepare a poster about its water reservoir. The best work was chosen. Later we relaxed sitting around the fire or joining funny games.

The fourth day also did not disappoint us. After breakfast we left for sightseeing tour with raised wetland ecosystems. We walked through the forest, through the undergrowth, picking up mushrooms and berries. When we reached a wetland, everybody peeled off shoes, tucked up pants and prepared to hike through the wetland. Walking through the wetland was very exciting and everyone had new and extraordinary experiences, we learned a lot of interesting and useful things. Also we visited the oldest and highest Salakas pine. When we came back to the camp we were introduced to another creative task - land art lesson (it is BSP Oicosophy program - a new relationship between man and nature understanding, dialogue between a human and nature expression of various art forms): from the various materials found in nature, using only the thread to create an animal, throwing a shadow. This time we were divided into groups again and started our work. The campers were very creative and the camp was decorated with lots of unusual animals. After dinner we checked our knowledge, each school group worked on some questions about water and forest animals. Then we exchanged questions and answered them. The school whose students' answers were the best won a prize- the Lithuanian Red Book. After that the coolest teacher's and student's elections were held. So each school prepared a presentation for the fun in the evening. Later we were playing games and sitting by the campfire for a long time.

After breakfast the last morning we began to load items. It was very difficult to leave the camp and say goodbye to the new friends, as we wanted to stay for a longer time.

To conclude, this camp gave a lot of knowledge, was the self-test and of course, the ability to make new friends. People who participated in the camp were very funny, friendly and sincere. The time spent with them was unique. We returned home with luggage full of fun, unforgettable moments and new knowledge.

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THE BALTIC SEA PROJECT CONFERENCE - ENVIRONMENTAL DEVELOPMENT

On 10th and 11th December 2010, in Vilniaus Žemyna Gymnasium and the Lithuanian Young Naturalist's Centre a national Baltic Sea Project conference "Environmental Development" was held.
We are very glad that a number of Baltic Sea Project schools in Lithuania is growing every year and this year there were 60 students and teachers from all over Lithuania.
The first day of the conference took place in Vilniaus Žemyna Gymnasium, where students presented their environmental researches. There were many comprehensive and interesting presentations of the following Baltic Sea Project programme: "Air Quality", "Phenological Studies", "Water Quality", "Bird Ecology" and "Environmental History".
On the second day of the conference we were in the Lithuanian Young Naturalist's Centre, where we had a useful and interesting workshop with Vytautas Eidėjus (Phenological Studies programme coordinator). We participated in the workshop "Clock Of Nature", where we created nice "Season Calendars" and learnt more about phenological events.
Many thanks to all the participants! We hope to see you next year with new investigations and observations results. We also kindly invite students from all over Lithuania and other countries to attend this conference next year.

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SUMMER SCIENCE CAMP 2010

On September 11 - 20, 2010, I took part in the Baltic Sea Summer Science Camp in Germany, thanks to National BSP coordinator Migle Simanavičiene.

Participants:
4 students and a teacher from 5 different countries – Germany, Poland, Lithuania, Denmark, Sweden and scientists from Germany, Poland and Lithuania.
All the participants had to fill in the application forms until July 15.
What we were doing there:
We explored how marine scientists traced harmful substances in the sea! Learned how oceanographers could find the North Sea waters even in the middle of the Baltic Sea, and designed a research strategy for answering open questions in marine science!
We experienced what it feels to work on the sea in an international team, took samples and analysed them, and tried to find answers to relevant questions.
We spend 7 unforgettable, interesting and lovely days on the LOVIS ship, where we lived in small cabins, prepared a meal for about 30 people, took samples and carried out experiments.
Another 3 days we spent on land:

- We visited the Ocean museum in Stralsund where students got a special room for preparing there presentations, which they gave at the final conference "Science meet school" in Warnemünde.
  The Ozeaneum in Stralsund is one of the biggest in Europe and it was picked out the European museum of 2010. It specializes in coldwater species that live in the Baltic Sea and the northern parts of the Atlantic Ocean. Students were happy to see penguins, starfish, shark, cod, salmon, crabs and a lot of other interesting species.
- Next day we were in Rostock. There we visited the seal station, observed the seals and got a presentation on how they can orientate themselves in the water.
  On the last day we had a conference where students presented their results of the Baltic Sea researches.

I am a very happy person, because I had an opportunity to take part in this useful and exciting Science Camp. I recommend everybody, who is interested in Natural Science to go there. This year it will be held in Poland, next year in Lithuania. Just follow the information on the website http://www.southbalticweblab.eu and try to get there!!!

Many thanks to all the participants and organizers, especially to Marija Kataržyte, Sven Hille and Lena Fassnacht.

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MACROINVERTEBRATES IN KAMIENICA RIVER

Biology has always been my passion. I have always been interested in invertebrates and environmentalism. I decided to combine these two interests and do some research concerning the condition of the Kamienica River on the basis of the macroinvertebrates living there. I wanted to gain some information about fauna density and its diversity at the researched sites of the Kamienica Nowajorska River. The aim of my work was an attempt to describe the effect of a sewage treatment plant in Maciejowa on the biological structure of the bottom macrofauna and to find out if there are any visible changes in the quality and quantity composition of the taxa identified at the chosen sites.

In order to do my research, I chose three sites which I compared in terms of the quality, the number and the kind of the found taxa. The first site was located on the river above the sewage treatment plant, the second one was situated right below it and the third one - 300 m below the second one. The water quality assessment was carried out on the basis of two criteria: the BMWP-PL index and the biodiversity index. I also measured the temperature, the pH and the oxygenation level of the water using the pH, conduction and oxygen meters.

On the basis of my research, I classified the Kamienica River as class I as far as water quality is concerned, because all measurements carried out at the three sites resulted in exactly the same parameters. According to my research, the activity of the sewage treatment plant has a significant effect on the biological structure of the river. I identified 27 taxa at site II, while both at sites I and III there were 33. Diversity changes at site I may be caused by the changes in physical parameters or the changed chemical composition of water.

However, it is noticeable that the number of taxa at sites I and III is the same (which does not mean that the taxa are the same). Using the data, we can conclude that the river is capable of self-purification. The highest density of organisms was found at site I. At sites II and III the density differed by 1 organism per m^2. There is a significant drop in the number of organisms at sites II and III.

	Site I	Site II	Site III
BMWP-PL	184	149	191
BMWP-PL class	Class I	Class I	Class I
Number of taxa s	33	27	33
Fauna density N	10539,50	6338,50	6337,25
Log N	4	3,8	3,8
Biodiversity indicator (d)	8,25	6,8	8,7
Class (d)	Class I	Class I	Class I
Water quality indicated on the basis of macroinvertebrates	Class I water quality	Class I water quality	Class I water quality

One of the most numerous and the most characteristic taxa at all the sites was the mayfly (Ephemeroptera), or rather its larvae. The most important environmental factors effecting its distribution is the temperature of water, oxygen concentration, the speed of water flow and the kind of bedrock.

Mayflies like lower temperatures, temperature rise can cause the death of their larvae, which can also be related to the drop in the oxygen concentration caused by higher temperature. During my research I observed a drop in their density and quality at site II. The situation improves at site III, which can imply the river's ability to self-purify and regulate the temperature of water. The cause of the drop in the number or just lack of more vulnerable families (e.g. Heptageniidae Rhitrogena) may be the higher temperature (19,1°), while at site I the temperature was 17,6°. This situation can be caused by purified sewage flowing into the river. The temperature of the purified sewage is higher that the temperature of the water in the river. Another cause could be the changed pH because of the highly acidic sewage.

Another order which is characteristic of mountain rivers is Plecoptera (Plecoptera). Their larvae live in cold and highly oxygenated water. The Plecoptera order can be used as an example of diversity and abundance changes. The largest drop in diversity was found at site II. Only two families were identified there, while at site III there were 5. Plecoptera are stenothermic organisms, so the changes are probably caused by the higher temperature of water, which is the consequence of the sewage treatment plant activity.

Despite the fact that all the parameters of water which were measured during the research are classified as typical of class I water quality, it is clear that the sewage treatment plant activity has a significant effect on the biodiversity of macroinvertebrates living in the river.

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MY INTEREST IN BIOLOGY...

Magda in a meadow at the Slepiotka River Photo: Jolanta Mol

My interest in Biology started in high school, when I found Biology lessons the most interesting and enjoyable. Nowadays I am still as fond of learning this subject as I was at the beginning . When my school principal suggested that I should improve my knowledge, I thought that it could be a magnificent opportunity to realise my passion in a different way – writing a dissertation about a beautiful place in Katowice.

The topic of my work was the participation of utilitarian plants in three areas near the Ślepiotka River: a forest, a meadow and a wasteland. I gathered plants for my research near my house from August to October. All of them grow near the centre of a big, industrial town, Katowice. Subsequently, I divided them into groups on the ground of different problems, for example families, life forms and ecological adhesion.

The material I collected (47 classes of plants altogether) gave me a possibility to draw interesting conclusions. I observed the largest variety of plants in the meadow although I had expected to find more than 30 species at that site. This could be caused by pollution and human activity.

Another intriguing discovery was the fact that the wasteland was richer in utilitarian species than the forest. These findings are a brilliant argument that plants which are useful for people are able to survive in an environment which is hostile to them because of human activity. Today, in the age of huge expansion of science, technology and industry, nobody realises it.

Taraxacum officinale, the Common Dandelion, is a plant which is perfectly adapted to life in an industrial environment and is a perfect example of the phenomenon described above. There are not many people who know that its leaves are used for making salads in Mediterranean countries. Dandelion roots include inulin, which is a sugar that does not elicit the rapid production of insulin; dandelion flowers add colour and unusual bittersweet flavour to salads and other dishes.

I think that it is amazing that so many plants growing near our houses have such amazing properties and can be useful for us. They are not only plants grown by people, but also common weeds. When we walk in the street, we should sometimes stop for a moment, look around and appreciate what Mother Nature gives us.

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RESTORED COMMUNITY LANDFILL IN KATOWICE – A WILD GARDEN OR A DESERT?

My adventure with the Baltic Sea Project in Konopnicka Upper Secondary School in Katowice have given me not only a fun, I have got a knowledge thanks which I have done the research for taking a part in the Biology Olympiad. Since I have been fascinated by flora and fauna for many years, I wrote a dissertation entitled 'The Species Composition of Vascular Plants in a Restored Community Landfill in Katowice'.

Each household produces a large amount of rubbish that is not sorted, which is the reason why it must be stored in landfills. Community landfills are not associated with beautiful views and not many of us imagine that they might be places to live for many species of plants and animals.

I did my research at the border between two industrial towns – Katowice and Siemianowice Śląskie. This is where you can find a community landfill situated near a park, a few office buildings and allotment gardens. The landfill closed down a few years ago and it was later restored. The area underwent levelling, some gas collection wells were drilled, biogas processing was initiated, the processes of fertilising the soil and grassing the landfill took place there.

Photo: Jolanta Mol

While doing my research at the site, I found 51 species of vascular plants, which I analysed in various aspects (biological systematic, geographical and historical groups, plant life-forms, seed dispersal). I carried out my research in three locations the size of 100m^2 each. I noticed differences in the species composition in these locations, which depend on many factors, e.g. the surroundings and the position of a given site. While working on my dissertation, I used a guide to the classification of plants and I took numerous photographs of interesting specimen. I carried out my research from July to September, 2010.

The choice of both the topic and the place where the research was done proves that it is possible to find valuable sources of biological research even in industrial towns. I think that discovering 'a different world' where we can observe biodiversity is a wonderful experience. Everyone can make such discoveries, the only thing you have to do is to go out.

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RECLAIMED MOUNDS – A SEEMINGLY UNFRIENDLY AREA.

I am student of Konopnicka Upper Secondary School in Katowice. I attend the third grade of a biology - chemistry class. The Baltic Sea Project helped me to observe the beautiful nature in Kościuszko Park which you can find in the meddle of our town and Murckowski Nature Forrest. Thanks my biology teachers I got the ecological knowledge about the industrial area.

I have been living in a town located close to Katowice in the Upper Silesian Industrial Region since I was a child. Taking into account the amount of industrial waste produced in this area, we can call my town, Łaziska Górne, 'a city of coal mine mounds'. For many years I have been watching the process of changing those volcano-like heaps giving off toxic fumes into green hills. Some coal mine mounds have been 'extinguished', which means that they have been covered with a layer of earth and some plants have been sowed there. Other mounds have not been reclaimed in any way. But even on the latter some plants have appeared despite the lack of soil and shortage of water.

The process of primary succession taking place on coal mine mounds fascinated me so much that I decided to devote my dissertation to the problem of the species composition of plants on the northern and the southern slope of an ash mound. I chose to do my research on a forty-year-old mound which has never been reclaimed and on whose southern slope work was finished only 20 years ago. The sites which I chose varied in age and the level of exposition to sunlight. During summer holidays I identified 64 plant species at both sites using the plant identification key. I would like to present my conclusions:

1. The primary succession is a very slow process, while the mound I examined had been overgrown with a variety of plant species for 20-40 years. The explanation is that the surface layer of waste is comminuted. Compact rock is an obstacle for organisms trying to explore barren areas.
2. The primary ecological succession on mounds is a process that takes place according to a certain scheme; the result of this process is the creation of a forest community.
3. The conditions in a given habitat, such as exposure to sunlight and humidity, have an influence on the species composition of the plants at particular sites.
4. A route situated on the southern slope has some influence on the composition of the phytocoenosis, namely the accidental introduction of domesticated plants, such as Mahonia aquifolium (hollyleaved burberry) or Symphoricarpos albus (common snowberry).
5. On the mound used for my research, I found one of 19 species of plants which are conservation dependent in Poland, which is Viburnum opulus (guelder rose).

The results of my research prove that reclaimed coal mine mounds do not have to spoil the landscape – just vice versa! What is more, the ones which have undergone ecological succession could become a research source or a destination of field trips organised by schools situated nearby.

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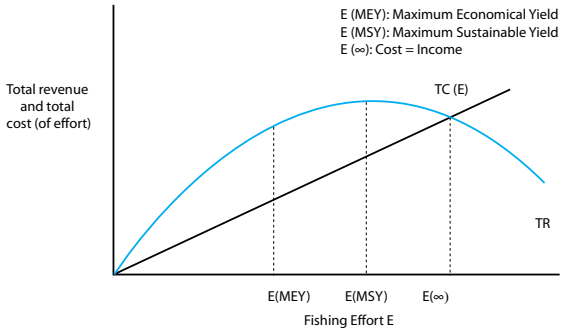
THE OVERFISHING OF COD IN THE BALTIC SEA

The aim of this study is to explain the economic elements of commercial fishing in the Baltic Sea and how these may lead to overfishing and possibly extinction of the cod stock. When someone starts fishing an unexploited stock, the number of fish is high. Therefore it isn't hard to harvest a big and profitable catch. When other fishermen see the success they also want to be a part of it, and the business attracts more and more fishermen and boats. As the catches grow the stock decreases and in order to gather as much fish as before, the fishermen need to increase their fishing effort and spend more time at sea. This leads to increasing costs, and to a lower profit. When the stock is so low that you can't make a profit out of it, new boats stop entering the fishery. Boats that stay struggle to make a profit and their continued fishing at high effort levels usually prevent the fish stock from recovering.
I order to make the explanation of this economical process more instructive there is a model called the "Gordon-Schaefer model". The model shows how the fishermen's economic opportunities affect the cod stock.



The model is basically built on the relation between the concept of an equilibrium fish stock, income and cost and the fishing effort. The model describes the economic consequences of exploiting a biological resource and what happens under different access situations (controlled or open/free). It is important to understand these aspects if you want to understand the whole picture. Therefore, we are going to explain them to you.
The total cost (TC) is shown as a curve that is increasing due to the investments in boats, gear, labour etc., in order increase the catch and to compete with other fishermen. The total income or revenue (TR) is reflected by a equilibrium curve that increases as long as fish are reproducing faster than they are being caught on annul basis and decreases when the stock becomes so low that reproduction is affected, because the competition and the effective fishing leads to overexploitation of the fish stock and smaller catches. As you can see, there is a point where TC and TR are crossing each other. When that happens we end up in a situation where the cost and the income are equal and no profit is made. We call this E (∞). After this point you will start to lose money.
The ultimate solution for a maximum economical yield is to fish at the point E (MEY) called the maximum economic yield. The revenue at E (MEY) isn't maximal, but the costs are still relatively low, so you make the largest profit or resource rent. The explanation for this is that there is such an abundance of cod and hence good chances to catch a lot that the fishing effort can remain low.
However, most of the fishermen want to catch more cod and the revenue curve is still increasing up to the point E (MSY). Up to this point there is still plenty of fish, but few enough to secure food and space for all. The growth, reproduction and recruitment of the fish stock is optimized and at its maximum reproduction rate. At this point (the maximum sustainable yield) the catches can be the biggest and yet the stock will recover after each year of fishing. The catch is not bigger than the reproduction. Still, fishermen need to put in more effort to harvest such a big catch and this costs more than the additional catch is worth. The gap between income and cost is smaller and the profit lower than at E (MEY).
In order to increase profit and safe their business each fisher tries to take a bigger part of the total yearly catch and when all fishermen do the same the total yearly catch will be bigger than the yearly regrowth of the fish stock and there will be less and less fish to catch for each year. The fishermen have to increase their fishing effort in order to keep up the size of the catches, which leads to higher costs and an even more depleted cod stock. The total catches are bound to decrease and so is the total revenue. The fishing effort and costs increases accordingly. The fishermen are said to "race to fish" and this competition accelerates the development to the point where income and cost is equal and no profit is possible E(∞). And even more tragic, to the point of extinction of the cod in the Baltic Sea, as well as of the livelihood and business for the fishermen and the access of nutritious fish food for people in the surrounding countries. The fishing business may survive with subsides that will lower the costs for the fishermen, making a profit still possible, but the "race to fish" and the overfishing will continue until there is no viable cod stock in the Baltic Sea.
This is a model and it is hard to know exactly where we are located in the graph, partly because it is not the same in all the countries around the Baltic Sea and partly because the statistics are based on information from different sources. It is hard to actually find figures that shows the costs and effort the companies put into the fishing industry. Most ships do not just fish cod, they fish all sorts of fish depending on the season. Furthermore they do not fish in just one zone over the whole year. For example, a ship that fishes in the Baltic Sea can also fish in the North Sea or outside the cost of Africa. The only thing we are really sure of is that the fishing in the Baltic Sea approaches the point E (∞).
If we go back in time to the 1970's, the catches of cod were rather low. However the fishermen started to invest in better boats and methods, and around 1985 the catches had its peak. This year the fishermen were able to land 400 thousand tons of cod. You can then compare this to 2005 when they caught as little as 40 thousand ton. During the same period fishing investments increased and the number of fishermen decreased even more. More and more subsides were directed to the cod fishing sector in order to grantee the livelihoods. There is no doubt that the model is useful when we analyze the status of the cod in the Baltic Sea

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URBAN ECOLOGY - THE LINK BETWEEN NATURE AND HEALTH

The human population on earth is increasing all the time, according to the UN the world's population will be 9 billion in 2050, compared to today's 6.5 billion. The book "The endless city" claims that in year 2050, 75% of the human population will live in cities, instead to today's 50 %. Cities are often associated with concrete, asphalt and glass but also with constant traffic and stress. For many people stress and city life go hand in hand and the constant stress that is part of their ever day life may become a health problem. On the other hand, it's common to consider the nature to be an oasis where to relax and calm down. As people move in to the cities, they go further and further away from the nature. The parks between the houses may be the only nature in the city and the question is how important these green oases are for the city people.

We have made a study about how the teenagers in Nacka Gymnasium think about the nature, how it affects them and how much time they spend in it. We asked friends from school, both girls and boys in the age of 16 to 19 years. The results showed that 82 percent thinks that they become less stressed and feel better physically when they spent time in the nature. Some also believe that the nature made them happier. 52 percent of the students would like to spend more time in the nature than they do today, because they believe that it is important and that it also reduces their stress level.

However, in today's society you don't always have the time to do everything you would like to do; this also includes spending time in the nature even though that might be exactly what you should do. Humans have been living close to the nature for thousands of years. Today a large part of the population is living in cities and their lifestyle is far from how the humans lived in the beginning. It is a huge difference between the environment humans once lived in and the one in the cities today.

Matilda Annersteph, doctor and scientist from Sweden, has studied the relation between nature and health. The result showed that if you spend time in the nature you feel less stressed. The result also showed that this affect only was seen while the test persons spent time in leaf forests. According to Matilda, this depends on the larger diversity of species, compared to a coniferous forest, which makes the brain fascinated making it easier to let go of thoughts.

Today one of the world's most common wealth fare diseases are high blood pressure and more and more of us get worn-out by the stress we handle every day. More time in the nature could reduce these problems and reduce the use of medicine. In fact, some patients must try many different medicines before they find one what helps them against their high blood pressure. Imagine how much better it would be to spend more time in the nature instead of trying out several medicines that affects your body not only in positive ways. As spending time in the nature also reduces the amount of stress hormones in our bodies, it is a good way of preventing people to get stress-diseases.

Another study, made by Dr. Jolanda Maas and her Dutch team also showed the strong relation connection between green areas and health. In their study they used information from over 300 000 hospital journals. They examined the connection between health and the distance between home and green areas and found that people who lived near green spaces tended to have lower rates of 15 different dangerous health conditions. The strongest relation between green areas and health was seen among depression and anxiety. The percent of persons diagnosed with these conditions were significant lower among persons who lived in areas with 90 percent greenery compared to those who lived in areas with 10 percent greenery.

In Sweden there are several examples from residences where the elderly spends much time in nature showing that elderly connected to green surroundings manage much more on their own then is generally the case. They do not need as much help with their daily chores, they get exercise and they use their bodies which prevent them from being stuck in a bed or a chair all day long. Dementia problems can also get better by spending time in the nature as it has a calming effect on our minds and many elderly also feels like home in the nature as they relate it to their memories. This makes the elderly care more efficient but also improves the life qualities of the older generation.

Children develop differently depending on how much time they spend in a green environment. If they spend much time in the nature they get stronger, better at concentrating and are more empathic then other children. This is shown by a study made by Patrick Grahn, professor and scientist at SLU in Sweden. People who live close to a park or the forest (0-100 meters) spend much more time there then people who live far away from it. This could be one of the reasons why people who live close to the nature often are healthier than people who do not live as close. This is also an argument for families with children to live in a suburb instead of in the middle of the city. It makes it possible for the children to play and develop in several natural ways.

By going through these facts we can see that the nature has a great impact on us. Even though green areas take a lot of space, it is not always possible to rebuilt cities just because of this reason but it is a good thing to consider while the cities are expanding. Several countries have now started projects about ecological cities. One of the best examples of this is Masdar City in Abu Dhabi. Masdar City is built from scratch to be ecological and self sufficient in energy. The greenery is remarkable as the walls of the buildings are covered with plants, both on the inside and on the outside. This is a good example of that we are now using our knowledge of the nature's impact on us. The ecological cities enable their residents to live a good quality of life while using minimal natural resources. It is also important not to forget that we do not always need a big forest to walk in, but to just take a stroll in the park, work with the garden or just plant some flowers in your window could help you to relax.

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GREEN OASES IN THE CITIES

Today more than half of the worlds' population lives in city areas and people keep moving in. This makes it necessary for the cities to expand – a process already taking place all over the world. The cities grow denser and larger, often into the suburbs. The problem is there is not much available space for this expansion. The easiest option is often to build on open areas such as parks and small patches of green that are not frequently used. However the easiest solution is not always the best one. The question is how one should solve this problem. People want to have parks in the cities but they also want to live and work there.

The green structures in cities have not been considered as important as they are today. When Stockholm was growing into a modern industrial city in the first half of the 20th century many public areas such as squares and parks were removed to give place for modern infrastructure and big paved roads. Also in Moscow, where Irina grew up, big green areas were sacrificed in favor to the motorways. There the "parks" were specifically constructed to be easily converted into infrastructure. Similar adaptations to a more modern society were made all over Europe.

Today the focus on sustainable development is much higher than it was only 30 years ago. We have talked to Magnus Rothman and Ann-Kristin Kaplan, city planners in our home municipality Nacka. They told us a little bit about building and structure plans. Such plans state how the grounds should be used, for example where you can build apartments or lay out parks. The purpose of these plans is to create a coherent image of how the area is to be used. While making the structure plans, they value the ground from economical, cultural and ecological viewpoints and decide how long the plans should be valid. It could be everything from five years up to fifty years.

From the city planners we also learned that many green areas are not always marked as parks in the structure plans. Instead those green areas could be reserved to give place for a new car park or perhaps more buildings. As a result they are very easily removed. This is a part of the problem as these areas could be important to the people who live or work there. In some cases, these small green areas are they only ones close by and when removed the people are deprived of the nature around them. However there are guidelines that recommend no more than a distance of 500 meters between the parks and the place where people are living. The small green patches are also important for the ecological diversity. As Magnus Rothman said: "Nature for our sake and nature for the natures sake".

As you can see planning a city or a suburb can be a rather complicated matter. Even though the nature is considered to be important there is a great need of expansion, which leads us to the actual conflict. We want to keep nature around us but it is not always possible or relevant to do so. Planning a city is all about priorities and compromises. If you look at it from one side, society must put the people in first hand and take care of its citizens. When the urban population is growing, the city has to keep up with the growing need of facilities, especially now in modern times.

On the other side, a city without green areas would be unattractive and it would not be a good environment to live in. There many examples of parks in bigger cities that contributes to the image of those cities. For example Central Park in New York, Hyde Park in London and Tiergarten in Berlin are parks that have a high cultural value and are frequently used both

by the citizens and tourists. These are examples of very big parks, but also smaller patches of green are important to a city. They do not only contribute to a more beautiful city, they also make the city a healthier environment to live in. Trees can help to bind air pollution and lower the city temperature in the summers. After talking to the other students at the Baltic Sea Project Conference 2009 in Vilnius, we got the picture that they preferred a green city, especially with easily accessible parks. This is also the picture we perceived when talking to the city planners. Many people don't have time or means to travel long distances just for a walk with the dog or find a place for the children to play.

When planning for an expansion, there are different solutions depending on where you want to make the changes, whether it is in the city center or the suburbs. In the city the most of the ground is already used and when you make changes, you have to be considerate. An easy way to create a greener atmosphere is to use places that we often forget, such as roofs and walls. Sedum is a type of plant that fits this purpose perfectly since it is resistant against draught and flooding. These plants also isolate the buildings, which makes the need of air conditioning or heating lower and decreases the use of energy. It is also possible to have trees on roofs, although it is not very common.

In the suburbs the change can sometimes be easier to achieve since they are less strictly planned and still have potential for expanding. Here the possibilities are many which gives the politicians a great responsibility. Depending on how they choose to act while expanding the suburb, it will be important in the future. After all, in many cases, the suburbs are the future cities. If the planning is done with great care it will save a lot of time and money in the future. With the knowledge we have today it is possible to plan for a greener and more environmental city. Thereby we can avoid many of the problems that exist in modern cities and make sure that the green areas are not forgotten, and achieve a good balance between buildings and parks.

To sum it all up; Cities today are expanding and that does not necessarily have to be a bad thing. By learning from our mistakes, we can make the future cities more environmental and green. More and more people will live in cities and for our own sake, and for natures sake, city planning is important.

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ECOLOGICAL FOOTPRINTS AND SUSTAINABLE DEVELOPMENT

During the last hundred years, humanity has developed new advanced technology. An increasing number of countries are today industrialized and the world has become smaller due to the globalization. As a consequence of our enormous technological breakthroughs, the environment has taken a lot of damage. However, during the last years many people have begun to understand the problems and started to realize that we have to do something about it. The first step to make a change is to measure how people´s way of living affects the environment. After this, it is possible to conclude what changes need to be done. But how is it possible to measure how much people as individuals and as whole countries affect the environment by their lifestyle? One way to calculate this is to use an instrument called "Ecological footprints".

What are Ecological footprints? Ecological footprint is a way to measure how much we as individuals consume of the earth's resources compared to the time it takes to regenerate them back. In other words, it is a way of measuring how much productive area is needed to support our way of living. The biological productive area is the area required to provide us with food, wood and other energy resources. It should also provide space for infrastructure and third absorb the wastes that result from human activity such as carbon dioxide. The Ecological footprint measurement makes it possible to find out how much productive area we would need if everyone on the planet lived like you, or if everyone lived like the people of a specific country.

When we measure ecological footprints we use the word biocapacity. Biocapacity is measured in global hectares and describes the amount of biologically productive land and sea area needed to regenerate the resources the humanity consumes. According to the world wildlife fund the earth's biocapacity is 13.6 billion hectares. This means that if we use more than 13.6 billion hectares of the earth's productive area we consume more than the earth manage to regenerate. If we divide the total biocapacity with the number of people on this planet, we get the number 2.1. This means that each and every one of us has the right to 2.1 hectares of productive land and sea. If everyone would use less or exactly 2.1 hectares of our planet's productive area there shouldn't be any problem. In the reality, some consume less than this, but some people consume much more. In the US (2005) for example, the average person consumes 9.4 hectares productive area (7.3 hectares too much).

Today humanity consumes 50 % more than the earth manages to regenerate back. In other words, we use one and a half planet to support our way of living. It might be hard to understand how it is possible to consume more than the recourses allows. To get it explained it can be compared with capital. Let us say that we have a fortune of 1.000.000 dollars. Every year we have an income of 10.000 dollars. Well if we want to behold our fortune at the same, we can only consume for an amount of 10.000 dollars per year. If we consume more, we will every year loose a little bit of our capital. We will not lose the whole fortune directly since 1.000.000 dollars is a big amount of money, but in a long term, if we continue to consume more than our incomes regenerates, the fortune will get lost. The same goes for the earth. It is possible for us to consume more than the planet regenerate in a short term, since we got a big back-up capital of nature. Nevertheless, since we consume 50 % too much, one day, our fortune will get lost and all our resources will be gone.

The figure to the right shows how large productive area the cities around the Baltic Sea need in order to support their demands as calculated by researchers at Stockholm Resilience Centre. The circles represent the size of the cities total ecological footprint. As you can see the footprints are enormous in comparison to the area of the city. To understand why, we have to remember that a city, not only needs space for buildings and infrastructure, but also resources taken from outside the city borders, such as water and food. The city also needs space to provide with clean air and to process waste. A city in the Baltic Sea Region which has an area of 1 km^2 needs approximately 201 km^2 of productive land and sea area to support its demands and as much as 443-1023 km^2 to absorb all the carbon dioxide and other wastes!

Eventually, Ecological Footprint is a great tool to use to get an overview of the earth's capacity to regenerate its recourses. It gives a good picture of how much humanity can consume and still keep within the limits of a sustainable development. When we know how much of the recourses that are consumable, it is possible to adjust our lifestyle after this model.

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ECOLOGICAL FOOTPRINTS AND LIFESTYLES

Everything you do in your life affects the environment in different ways. Every day you make decisions such as taking the car to work instead of the bicycle, or cooking your own food instead of eating at a restaurant. No matter what decisions you make there will be consequences for the sustainability of the earth, which can be measured as ecological footprints. You will always make an ecological footprint, but it is up to you how big it will be.

The ecological footprint is defined as the amount of productive area needed to provide us with all the resources we need. It also represents the space needed to regenerate the resources that we consume and to absorb the wastes we let out.

Redefining progress is an American organization that by innovative tools has made a test that can help individuals and populations to measure their ecological footprints and impact on the environment. Redefining Progress tries to illustrate what may guarantee a sustainable world for our future generations.

The test that they provide measures how you affect the earth (the test is based on national consumption averages and is meant to give us an idea of how many hectares, of

different areas (see fig. 1), we would need to support our way of living). The main factors that are regarded in the test are the use of carbon, food, and house/services.
We filled in the test and tried three different alternatives. The first time, we filled in the blanks pretending to be a person, with a way of living representative for most Swedish inhabitants living in an older suburb, eating meat every day and going quite much by car. The second time we did the test in the exact same way, but we added one trip to Thailand a year. The last time we made it the same way as the first time, but changed the diet from meat to vegetarian. These were the test results:

First test (normal Swedish person):	32,64 hectares (2,08 earths)
Second test (same as first + trip to Thailand):	37.20 hectares (2,37 earths)
Third test (same as first but vegetarian):	24,69 hectares (1,57 earths)

The results imply how big impact both our transportation- and food habits have on the footprint. One vacation in Thailand a year increases the footprint with 0,29 earths, which is 14 %.
The reason for this increase is mainly the huge amount of carbon dioxide waste that is emitted by aero planes. The carbon dioxide contributes to global warming, which will be a big problem in the future. The vegetarian diet decreased the footprint with 0,51 hectares, or 25 %.

Changes like these can be detected while making the test. In the right margin of the test, there is a box showing how your footprint changes depending on what choices you make. With this tool you can, for example, compare how much your footprint decrease if you take the bicycle to work instead of the car.
What we eat, or how much we travel, evidently has a great impact on our environment. The solution to our problem is probably not that the whole population becomes vegetarians, or that everyone stops traveling. We have to take small steps in the right direction in order to make a difference. We have to keep in mind how we affect the environment all the time, whatever we do. Small actions such as turning the lights off when leaving rooms, taking the bicycle instead of the car when traveling short distances, or choosing a less toxic detergents, could make a difference for our future well-being if everyone thought about them continuously. It is not every little decision itself that makes a big difference, but if a greater amount of the earth's population becomes more aware of how they can make a smaller footprint, there will be a difference. In the future we will hopefully develop better energy resources that will be sufficient for the whole world's population, but until then we have to think about how we can maintain the resources that we have today.

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Photo: Anda Deksne

MATH TEACHER AND BSP

Simo Korpela Photo: Stanislav Babitch

Don't ruin your life! That is not meant for you.
You are interested in Nature – you should be a biologist or research worker, never a dull math teacher!
This is what my guiding teacher told me, when I was preparing to start my university studies after upper secondary. He thought that the decision, what I had made as a ten year old boy: teach math in wintertime and collect butterflies in summertime, was somewhat childish, and didn't have anything to do with reality.
He was totally wrong, and at the same time very right.
Totally wrong, because I have really enjoyed teaching mathematics, physics and chemistry to upper secondary students. The young optimism, humour, joy and great confidence to the future, that is just fantastic. And a teacher can always steal some part of that to himself, too. Not a day to regret!
Yet I thank God for my accidental new profession too.
In early 90's our school was a fresh BSP-school and our local parliament members wanted us to be one of the two special environmental schools that were established in Finland.
A trip with students to environmental conference in Kiel, radioactivity research workshop in Kotka, new friends in coordinators meeting in Poland, more and more friendship schools to our Pine Needle Project, and afterwards to Moss Ball study and Water Analysis Project. After all that, and our annual international camps, well - I was completely sold to BSP.
When we got our BSP-programme "Environmental measurements" I could really say that I had got two careers: One by my original choice, and the other one recommended by my guiding teacher.
Now I have retired and I'm in the beginning of the third career or phase in my life as a pensioner. And the way to end my working life! Last schooldays in Germany visiting our eagerly needed new Pine Needle Project and Water Analysis friendship school!
But now I have to end, because my plane is leaving to Thailand. Maybe I will send you some nice butterfly photo from there…
Thank you BSP and to each and every one of you!
P.s. I hope that BSP will open to all kinds of teachers, students and new ideas. That principle is the secret of its long life and wellness. Nature is for us all!

Simo Korpela
Meri-Pori Upper Secondary
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Photo: Simo Korpela

SAMPLES SENT TO FINLAND

In November 2009, for the first time our school joined the program called Environmental Measurements in the BSP. We took the first samples and sent them to Pori in Finland where they were analyzed in a professional laboratory at the Finnish Marine Research Centre. We did not expect too optimistic results of the analysis, particularly those relating to our river Pełcznica widely viewed as not too clean. Imagine our surprise when we learned the results sent from Finland by the programme coordinator Anja Hokajärvi. It turned out that the Pełcznica was not so much dirty as we thought. The Lesk stream was, as expected, rather clean.
The comparison of water quality in our rivers and other ones in the Baltic countries is quite interesting. We also analyzed the Baltic waters in its various regions, and the results show large differences in water quality of our sea.
We want to continue our works in the programme to compare the last year results with the current ones and therefore, on November 3rd 2010 we took water samples in the same places. The day was quite cold, windy and the sky was overcast.
It looked as if it was going to start raining at any moment.
The sampling from the Lesk stream took place near the headquarters of the Walbrzych Forestry in Boguszow-Gorce at the foot of Dzikowiec mountain. This place is situated in the wood, a few meters behind a concrete bridge. Deciduous trees and conifers grow there.
The sampling of the Pełcznica water was done on the southern outskirts of Wałbrzych where the river enters the town. The place is surrounded by deciduous trees only and the river flows there in a small gorge with quite a steep descend to the water.
The samples were marked, packed and sent to Porii in Finland where they will be subjected to chemical analysis. The analysis' results of all the water from the rivers and the Baltic waters from different regions will be sent to all the schools participating in the BSP Chemical Measurements.
We are waiting ...

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RESULTS OF SPRING OBSERVATION 2010

The aim of the Phenological studies is to observe when spring appears in the different countries around the Baltic Sea.
The observations started with a little group of pupils from Finland, Sweden and Estonia in 1992. Now it has grown up to a common programme of the Baltic Sea Project. Phenological studies as a common BSP programme started in 1994.
Phenological studies are very useful outdoor activity. The studies do not require special equipment, it is easy to work alone and with group, and motivate students to observe environment during for all spring period. The participants have to observe the date they first see: the black bird, the coltsfoot, the skylark, the white wagtail, the blue anemone, the white anemone, the brimstone butterfly, the cuckoo, and white stork and others.
This year more than 15 schools from Lithuania, Latvia, Estonia, and Poland have participated in phonological studies programme. The total number of participants was 245. Classes, groups of students or nature clubs and individual researches were observing 20 species indicating spring periods. There are results of **„Spring observation 2010"** in the table. So you can compare data in different countries and to draw conclusions with schoolchildren.
This year enjoy staying outside in nature and finding out what is going on in the spring time. Let us hope that we have many days full of sunshine during the observation period 2011. With lot of greetings and best wishes!

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No	Species	Poland	Lithuania	Latvia	Estonia
1.	Skylark (Alauda arvensis)	11.04	15.03	10.03	17.03
2.	Starling (Sturnus vulgaris)	30.04	**07.03**	20.03	15.03
3.	Hazelnut (Corylus avellana)	15.03	25.03	18.03	**10.03**
4.	Snowdrop (Galanthus nivalis)	06.04	21.03	**02.03**	15.03
5.	Coltsfoot (Tussilago farfara)	06.04	05.04	**21.03**	23.03
6.	Blue anemone (Hepatica nobilis)	17.04	08.04	**16.03**	05.04
7.	Brimstone (Gonepteryx rhamni)	19.04	26.03	26.03	**15.03**
8.	Black ant	04.04	24.03	**14.03**	23.04
9.	White stork (Ciconia ciconia)	04.04	**19.03**	22.03	25.03
10.	Wagtail (Motacilla alba)	08.04	25.03	26.03	**13.03**
11.	Sallow (Salix caprea)	07.04	02.03	12.03	28.03
12.	Wood anemone (Anemone nemerosa)	05.04	12.04	**22.03**	15.04
13.	Bumble-bee	09.04	31.03	**05.03**	25.03
14.	Black bird (Turdus merula)	24.03	**12.03**	15.03	25.03
15.	Frog concert	08.04	31.03	18.03	23.03
16.	Cuckoo (Cuculus canorus)	15.05	**02.04**	17.04	10.04
17.	House martin (Delichon urbica)	15.05	**28.03**	08.04	30.04
18.	Cabbage white (Pieris brassicae)	09.04	02.04	**21.03**	08.05
19.	Bird-cherry (Padus avium)	20.04	11.05	05.05	05.05
20.	Dog-rose (Rosa canina)	23.04	18.05	**18.04**	01.06

First observe - **20.04**

Happy starling (Picture author Marta Dell'Oro)

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BSP international events

When?	What?	Where?
	2011	
March, 18 th – 20 th	The 24 rd Consulting Meeting of National and Programme Coordinators of the Baltic Sea Project within UNESCO ASPnet	in Latvia
May 29 th – June 3 rd	The 18 th International Environmental Camp School 2011 of Meri-Pori upper secondary school	in Finland
September 12 th – 16 th	Baltic Sea Project Camp 2011	in Denmark

Contributions:
Would you like to contribute to our Newsletter?
You are very welcome!

We are looking forward to receiving and publishing your contributions, such as:
- accounts of your work
- art works for the covers (size: 42x24 cm)
- newspaper and magazine clips presenting environmental issues in your country (the original article must be included)
- activity pictures presenting you and your students performing the BSP activities

There are, however, a few rules which you HAVE TO observe if you want your article to be published in the BSP Newsletter. There are:

1. Keep your articles short, precise and interesting
2. All contributions are to be e-mailed to velga.kakse@visc.gov.lv or sent by post (on CD) to:
Velga Kakse
State Education Centre
Valnu str.2, Riga, LV 1050, Latvia
3. All articles are to be composed as **WORD** documents
4. Please **DO NOT** include any photos, pictures, illustrations or any other scanned materials directly **IN** the Word document; they are to be enclosed as **SEPARATE** attachments
5. All photos and illustrations are to be saved in **JPEG** format (more than 1 Mb size). If you send photos with people, please name them.

Webmaster:
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United Nations
Educational, Scientific and
Cultural Organization

UNESCO Associated Schools

United Nations
Educational, Scientific and
Cultural Organization

Latvian National Commision for UNESCO

Wetland in the middle of forest

Light find it's way

Lichen after rain

Color carneval on the swamp

Here are some nature pictures of Nature Photography and Video filming-course: Taking photos, developing and printing pictures. We train tecniques how to take nice pictures and show best sides of the nature.

Frans Duldin
Student
Meri-Pori enviromental upper-secondary from Finland