

Global Forum

**For
Environmental Education**
Volume 29, Number 1, July 2018



**32nd Caretakers of the Environment International Conference
Judenburg, Austria July 8 -14, 2018
Let's Experience Nature**



Caretakers of the Environment International

A global network for teachers, educators, and students

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Dear all caretakers – students, teachers and friends

Once again we are looking forward to have a summer conference for Caretakers of the Environment International – this time in Judenburg, Austria, Europe. This time it will be conference number 32. I recently returned from a visit in Judenburg, and I can tell that it is a beautiful village surrounded by mountains, woods and lakes. We are very thankful to school director, professor Johann Mischlinger and the conference chair's Ilse Prenn and Bernd Fiechtl as well as all their helpers from the teacher group and the students. Because of all their work we can have a conference in Austria – and it is the first time ever that CEI has a conference in Austria. The theme of the conference is: "Let's Experience Nature" and all participants from the different countries have prepared projects to the theme. The sub themes are: Climate Change, Conservation of Nature, Bioeconomics and Sustainability, Energy and Waste. These themes are very relevant for the 17 goals for sustainable global development that the United Nations decided September 2015.

The United Nations can't decide that these goals will become reality in all countries in the world. The realization will depend on the people living on this earth. We are depending on people that can see, feel, be engaged, communicate, teach and decide to try to work for realization of these goals. It will depend on decisions from governments, parliaments, ministers, mayors, kings and decision makers all over the world – but also ordinary people, teachers and students like you. If we want a better world we must work on that goal together – and together we can make a change. Albert Einstein once said: "If you want change – then stop doing the same things".

The CEI conferences is a forum where teachers and students from all over the world can come together – discuss and have dialogs, learn about other places and customs and here they have the possibility to develop tolerance and understanding -to make friends and want the best for other people living under very different conditions. This forum is a way to come a step forward – to help to protect our world – to find solutions and to make a better future for our nature – our common globe.

Looking forward to meeting many of you in Judenburg in July 2018.

Elisabeth Brun

Denmark

President of Caretakers of the Environment International



Welcome Letter from 2018 Host

Dear Caretakers of the Environment,

We welcome you to Austria and we are honoured to host the "32nd Annual Caretakers of the Environment International Conference" in Judenburg. The theme, "Let's Experience Nature", is intended to provide participating delegations an opportunity to experience nature in various ways first hand. The conference but also the projects, which delegations implement, should help to raise awareness for changes in nature and their effects on delegates' immediate environment.

The conference should act as a platform for teenagers, students, teachers and trainers, who face serious environmental challenges. The meetings of CEI delegations should be used as a means of environmental, ecological cultural and social exchange in order to understand each other better.

The key aspects for the 32nd CEI Conference are:

- to raise awareness for alarming global changes in our close environment.
- the presentations of ecological phenomena from different national angles.
- to find solutions for environmental problems that directly affect delegates.
- to exchange different perspectives on the topic.
- to raise awareness to take your own responsibility for nature.
- the interaction between teenagers, students, teachers and trainers from all over the world.
- to share social and cultural experiences in order to create a basis to solve environmental problems.
- to strengthen social, democratic and cultural development on an international, national and local level.

The main idea of this year's conference "Let's Experience Nature" is to implement projects in which environmental issues are experienced and worked on directly by the project delegations themselves. It is not the aim to solve environmental problems on a global level, but to find solutions how each delegation member can start to protect environment in their immediate surroundings. The hosts are very curious to see the projects around the sub-themes: Climate Change, Conservation and Nature, Bioeconomics and Sustainability, Energy and Waste.

The host has prepared a wide range of social, cultural, sports and ecological activities and workshops in order to offer the possibility to get to know each other from different perspectives and to find a common ground to share ideas and experiences. These activities and workshops will build bridges between the different cultures, languages and religions, which will then facilitate a better understanding between nations. These bridges will also help to find common solutions to protect our environment.

We invite all delegation members to participate as actively as possible in all workshops and activities and we motivate you to make the most of your stay. Push yourself out of your comfort zones to engage and connect with others. We wish you a wonderful stay and an unforgettable 32nd Caretakers of the Environment International Conference in Judenburg/Austria.



Director HR Mag. Johann Mischlinger (Principal of the BG / BRG Judenburg)

Mag. Bernd Fiechtl (Conference Host / CEI Austria President)

Mag. Ilse Prenn (Conference Host / CEI Austria President)

Mag. Eva Tatschl (CEI Austria Board Member)

Mag. Silke Felfer (CEI Austria Board Member)

Mag. Dr. Eva Gergely (CEI Austria Scientific Advisor)

and the CEI-TEAM

Thanks to Sponsors and Supporters

Dear CEI 2018 Delegates,

Please join us in thanking our visionary sponsors and numerous supporters of the 32nd annual Caretakers of the Environment International Conference in Judenburg / Austria.

Sponsors include : Bundesgymnasium und Bundesrealgymnasium Judenburg, Caretakers of the Environment International Austria, Truppenübungsplatz Seetal, Stadtgemeinde Judenburg, Wirtschaftskammer Murtal, Stadtwerke Judenburg AG, Hypo Steiermark, LIECO GmbH & Co KG, Naturschutzbund Österreich, Intercom – Digitale Bildungs- und Schulverwaltung, proHolz Steiermark, Kraft das Murtal.

We are honoured and excited to have the broad diversity of participation and support for 2018. We thank all sponsors for their overwhelming financial help.

Mag Bernd Fiechtl / Mag. Ilse Prenn

Presidents of Caretakers of the Environment International Austria

HR Mag. Johann Mischlinger

Principal of the BG / BRG Judenburg





The BG / BRG Judenburg

The BG/BRG Judenburg is a lower and upper grammar school with approx. 850 students and 75 teachers in different fields. Students from the BG/BRG Judenburg come from all social classes and also from social minorities. The students start at the BG/BRG Judenburg at the age of 10 and finish school with the leaving certificate at the age of 18. The school offers a wide range of subjects in different fields: science, sports, arts, languages, humanities.

Furthermore the school offers boarding facilities in the afternoon and has participated in different national and international projects. The school is also equipped with a modern IT-infrastructure: computers and projectors in all classes, whiteboards, 67 iPads, 3D-printer, science-, biology-, chemistry- and physics laboratory with high-tech equipment and it is a nationally certified e-learning-school.

In the lower grades (class 1-4) students can choose either an extra second foreign language (French or Latin) or they can focus their studies on science. The BG/BRG Judenburg also provides its students with Content and Language Integrated Learning classes (CLIL), which means that some non-language classes e.g. arts, biology, geography etc. are taught bilingually.

In the higher grades (class 5-8) students can focus on certain fields like: music and arts, language, science in which they also do a lot of project work. Languages play an important role in the higher grades. English is offered as an obligatory 1st foreign language, then French, Italian and Spanish. Some of our students also sit language exams (English FCE/ CAE and French DELF exams) and at the age of 18 they will finally pass the school leaving certificate, also in English.

The school has been participating in several international projects (Comenius, eTwinning, Erasmus+, Caretakers of the Environment International, etc.) and the administration of the school has always tried to offer its students as well as its teachers to create an international network in order to enlarge their personal and professional perspective. Currently the BG/BRG Judenburg is hosting the 32nd Caretakers of the Environment International"- Conference with approx. 300 delegates. Furthermore it is also coordinating 2 Erasmus+ projects. One Erasmus + project focusses on the students' exchange between 4 partner countries focusing on the topics "Film and Drama". The second Erasmus+ project is only for further professional education for language teachers in order to provide training on new teaching methods.

Review of CEI 2017 Oregon USA

CEI 2017 : Reflection of Gratitude, Hope for the Future



Dan Hoynacki

CEI 2017 Coordinator / President of CEI USA Branch

It was an amazing honor to have been able to host CEI 2017 in Oregon. We appreciated our Caretakers friends who traveled great distances, as well as their patience as we encountered and conquered our "holiday" glitches. But the opposite side of the holiday was that we were happy that Caretakers could experience a small town Independence Day celebration with fireworks and parade.

I was only able to listen to a few of the great conversations and exchanges that took place among the educators. I hope that same was true for our youth delegates. When I wasn't too busy with details, I observed a wonderful spirit among our 200 delegates. I believe that the future of a strong CEI is to keep both this spirit and the conversations and personal connections diverse and vibrant, but also with understanding of differing viewpoints.

As our CEI President shared, CEI 2017 tried many new ideas - some worked, some did not. But that is how we move forward and learn. We look forward to an amazing CEI 2018 and beyond.

Take care-



Tony Currier

CEI 2017 Alumni and Volunteer Coordinator

"Live to learn, and you will learn to live" - John C. Maxwell

The conference was a timeless event that inspired me through an Inquisition of my character, and my resolve tempered by exposure to the situation. Like many conferences before it, it was a poem sang by hearts of nearly 200 people, carried on the spirits of 18 countries.

I will never forget the experience, and I hope everyone enjoyed it. Our intention was not only to deliver a conference, but really push ourselves and deliver the best conference possible. We knew that we rarely have a conference in the states, and the last one was held in Oregon over a decade ago, way back in the 2005 conference.

We tried to imbue our conference with a sense of education, culture and purpose. Our chapter has never been the same since, and trying to use our conference to foster evolution of our collective environmental stewardship.

We did this by incorporating our own culture as a platform. For example, our country was born on the 4th of July. Leveraging the holiday in the construction of the conference inside many festivities we were able to show you our own diversity.

I recall Dan Hoynacki, president of the USA branch, making a comment back in Portugal. The conference was a chrysalis for change for all involved. We wanted to amplify the effect, to show the work the melting pot of culture that we are accustomed to here in the USA.

I am grateful that people came to our conference, and had such a good time experiencing the 4th of July, snow, our farms and many other great things.

I hope other people will take the honor and privilege of hosting a conference seriously, and work to provide others and themselves the same opportunity to grow.





Edwin Ho

Po Leung Kuk Laws Foundation College
Hong Kong

This is the first time that I go to CEI conference. After this experience, I felt very content because I made many new friends. I miss them because I need to wait for one year and may see them again. We are really good friends.

Also, we had some field trips. Although I thought it was too short, we had seen many beautiful scenes. When we went to the Mount Hood, we were playing snow war, I felt very happy. It was my first time to touch snow. The surface of the snow was very interesting. We played the snow war and everyone got wet. It was very ridiculous because our bodies were all wet.

At the presentation part, we presented very smoothly and clearly. The judges also appreciated our presentations. We all felt very proud of us. We were one of the best teams in the conference. I didn't expect to get that good of results. I was really surprised when I knew it, I was very pleased to this result. I thought it was great as it was the first time I joined the CEI.

Last but not least, the feeling of my whole CEI trip was cool. I like CEI very much because I can make many friends from other countries in this conference. I can also learn their presentation skills, such as pace and eye contact. I am glad that I can join CEI again in 2018 so I can reunion with my friends and learn more about the environment.

Pearl Chen

Stella Maris Ursuline High School
Hualien, Taiwan

I am so glad that I had an opportunity to attend the CEI 2017 conference. Our team concerned about the decrease of the local Mola mola population. So we investigated how to maintain the local fishing business while preserving local ecosystem. Although it was a big challenge, we never give up and try to do our best.

During the presentation, I noticed that global warming is a severe problem to our living environment at this age. What we can do is to treasure the resources and use them in an eco-friendly way. This is why so many people from different countries join the CEI. We can learn from each other to understand the environmental issues from other countries. We all know that saving the Earth is not just the responsibility of individual caretakers but is the duty of all people. If we do not respond to it at once, more serious consequences will follow.

The CEI conference is an international program which also allows us to make friends from all over the world. One day, we had a marketplace where each team from different countries shared their unique foods or specific games. Although we have cultural barriers in our conversation occasionally, our friendship does not make any difference and we still keep in touch with each other until now.

From now on, I am truly a caretaker and will motivate people to be caretakers too. Then our generation can live in a healthier planet.





Katherine Tu

Stella Maris Ursuline High School
Hualien, Taiwan

The CEI 2017 Conference "Following Nature's Design" in Oregon, USA was a week filled with lectures and activities. Delegates from twelve countries all-over the world shared their ideas and visions for a bright future and eco-friendly world. The topics presented during the entire conference covered from the food systems, natural resources management to the various sustainable designs. I felt so inspired after listening to the extraordinary projects and innovations that delivered by delegates from different continents.

The Fun Market and two Cultural nights brought lots of joys to my CEI adventure. We not only promoted Taiwan, but also learned about different cultures and tasted some odd snacks from other countries. The field trips were unforgettable too. We visited the tsunami laboratory and Mt. Hood and also helped in a youth farm. The most incredible thing to me was the parade and fireworks on the Independence Day (4th of July).

Marvelously, the strong fellowship between students as well as teachers brightened up the whole conference! We 16 Taiwanese delegates from two high schools all really enjoyed taking part of the CEI 2017 and felt very inspired and touched during the conference.

To summarize, I realized that although I'm just a 17-year-old teenage student, I can still use my abilities to affect others and protect our environment. CEI 2017 is the most valuable conference I ever had. I'm proud to say that I'm one of the "CARETAKERS" now.

Karen Garcia

Early College High School
Salem, Oregon USA

I joined CEI with the prospect that I would be taking initiative to do something in my community that will benefit the environment. We spent a lot of time preparing our project and practicing how to present it. On the presentation day, my presentation went smoothly and I enjoyed the presentations from other delegates which gave me a lot of insight on different environmental concerns that I didn't even know existed.

I attended two very eye opening and intriguing workshops during the conference. The first workshop was about the topic of "Fake News": it taught me to fact check and question my sources and their bias. In the second workshop, two speakers from Salem 350 gave us a lecture on persuasion and ways to advocate for something I believe in.

Throughout the week, there were a lot of opportunities to meet new friends and to create enjoyable experiences together. However, I felt like I bonded with the delegates the most when we just hung out at the commons in the university while playing card games and talking about our own lives in order to get to know each other better.

Overall, I felt empowered by my peers; we all shared the same vision which was to make our environment a better place. After this conference, I felt like I've finally found a commitment that gives me purpose. To me this conference isn't just another extracurricular on my resume; it's an opportunity that has given me something to look forward to for the following years to come.



2018 Alumni Team

Jeff Antonio Yeo

Indonesia

Age : 23

CEI Conferences :

2008 Denmark

2010 Indonesia

2012 The Netherlands

2017 USA

Project : Pesticide Alternative



Selfie Kevin (Yu-Wen WU)

Taiwan

Age : 21

CEI Conferences :

2014 Taiwan

2015 Portugal

2016 Denmark

2017 USA

Project : Discovering the Fresh; Make Your Own Meal



Message for the youth :

This era where population and demands grow faster than before, has led people to think more about themselves than others. Those who think for themselves forgot that we share this 'home' together. As Earth is our home, we have to keep it safe, keep it clean, keep it hospitable and better. Therefore we have to start thinking about others and be selfless, rather than being selfish and making us the center of the universe.

Message for the youth :

If everyone does their best to take care of our environment, we will make changes. Eating is essential for our survivability. There are simple actions that we can apply in our daily life such as cooking for ourselves. By cooking for ourselves we will eat healthier and reduce waste, because by not having a take-out we use less disposable containers and tableware. Overfishing is a big issue that leads marine resources to gradually deplete. People can help save the marine ecosystem by reducing seafood consumption, reducing plastic usage, and supporting the sustainable fishing methods. Please remember, the small actions you do every day can make a huge changes for a better environment.



Emily Ausman

USA

Age : 21

Conferences :

2014 Taiwan

2015 Portugal

2017 USA

Project : Promoting Environmental Ecotourism Abroad



The alumni are the young people who have participated in previous CEI conferences as student delegates.

Now they support the conference hosts to carry out various social and cultural activities for CEI delegates.

They will share their experiences and help all delegates during the conference.

Message for the youth :

I want to inspire students through my own experience as a student at the conference. CEI for me was the place that I realized environmental concern was something felt worldwide and could be used as a tool for unification and to promote collective efforts. Often we are only aware of environmental action close to home and I want to use CEI to promote the feeling of a united front in environmental awareness. I additionally want to inspire youth to make a meaningful commitment to environmentalism. Mainstream

environmentalism often leads us astray when we are searching for real ways to change our habits. I want to create a continuous conversation among delegates about the changes they have made to their daily life, and what it means to make meaningful change. I believe that environmentalism takes a daily commitment to changing our harmful habits, and that our actions must go beyond moments of environmentalism and transition into a lifestyle.



Student Projects



Austria



Sustainable Measurements Supporting Ecosystems in the Alpine Region : Biodiversity in Forests and Mountain Waters

School : BG / BRG Judenburg

Teacher : Mag. Dr. Eva Gergely

Students : Bischof Anna, Alexandra Papst, Birgit Gall, Jasmin Pichler, Anna Moser, Jasmin Otto

Partner Organization : Zellstoff Pöls AG, LIECO, Stadtgemeinde Judenburg, Landesfachschule Kobenz, Waldverband Murtal and Pro Wood Styria



This year's Austrian project is carried out by 28 students of the Bundesgymnasium und Bundesrealgymnasium Judenburg attending the biology course BEE (Biological and Environmental Experiences in English) . Out of this group six students will join the CEI-conference in Judenburg.

In this year's project we focussed on the following questions: Why is it necessary to use genetically adapted varieties of species for good growth and the chance of spreading their seedlings in the area? What happened to last year's hand-weeded neophyte cleaned areas? How do different ways of using mountain water influence physical and chemical factors? Which saprobies, plancton and bacteria do we find? This year's project team planted 210 fir trees at a local

forest dominated by spruce and larch in order to enlarge biodiversity. This reforestation was carried out in cooperation with the LFS Kobenz, a school specialised in forestry. Additionally to that, the project group also visited former hand-weeded areas and checked the efficiency of these measurements and its influence on the amount of invasive species.

In 2018 the analysis of two small lakes in the alpine area without human influence and two other lakes with swimming area and regeneration area for wildlife, where results were compared to results from previous years. This project module comprised excursions and activities in a dinghy, taking samples and laboratory work using reversing microscope. We have also extended an ecological geocaching project on sustainable Styrian wood management in cooperation with the Waldverband Murtal and Pro Wood Styria.





Sweden

Preserving Biodiversity in Skåne and Öresund

School : Öresundsgymnasiet

Teacher : Karin Warlin

Students : Van Long Nguyen, Betty Hansson, Ella Falk, Alaa Othman, Hajria Felec

Partner Organization : City of Landskrona, SeaU, Malmö Museum

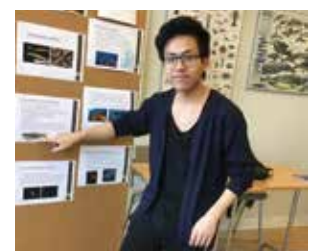


We have worked on our projects in relation to the main theme on the preservation of biodiversity. In our research we have contacted a variety of scientists and experts that work in this field and interviewed them, We have visited the Museum of Malmö and seen aquariums with the typical marine organisms of Öresund (the strait between Denmark and Sweden). This is a unique marine ecosystem with a salinity of only 1% which makes it extra vulnerable. We have met experts who taught us about the problem with invasive species. We have also visited the Marine competence center in Malmö, met up with marine biologists and learnt about the Sustainable development goal #14 (Life under Water) and various threats to biodiversity – global warming, eutrophication, shipwrecks, plastics and invasive species, to mention a few.

At school we have made an exhibition about SDG#14 and

these problems in order to teach the rest of the school about it.

Another aspect of the project is the measures and preventions that can be done in order to salvage the local biodiversity. For this we have contacted our municipality, The city of Landskrona. Next week we will go to the City Hall to interview the cityecologist who works on projects to preserve natural areas around and in the city. In one place they have recreated wetlands, by digging out a creek to make it meander like it did 200 years ago. On CEI2018 we will present what we've learnt on how to preserve biodiversity in our local area.





Portugal

Embrace Volunteering

Organization : ASPEA

Teacher : Laura Gonzalez

Students : Maria Feitor, Joana Ferreira

Partner Organization : ASPEA, Coruche City Council,
Secondary schools from Benavente and Coruche



"Embrace Volunteering" is a project whose main objectives are to carry out voluntary activities and raise awareness about environmental problems.

Due to pollution, human's irresponsibility and greed, planet Earth has been suffering huge changes over time. These changes result in the destruction of species, their habitats and more recently the formation of plastic islands in the oceans.

Environmental volunteering allows different people to get together to help in causes, like clean-up spaces, plant trees, etc.



During this year we have participated in an environmental volunteer program, organized by an Environmental NGO - ASPEA, not only because we enjoy participating but also to get more knowledge about these kind of activities and the problems they intend to solve. Therefore we decided to involve other teenagers in environmental volunteering. In order to do that, we started by conducting questionnaires in our schools, to investigate if students have already participated in volunteer activities. We also asked if they would be interested in participating in an activity that we have intentions of carrying out.

The 207 questionnaires applied resulted in 59 students motivated to participate in our activity, that will be organized by the end of May, in partnership with the city council. In the end, participants will be asked what they felt for being involved and what they think would motivate others to join volunteering initiatives.

The outcomes of this project will be used to propose to the headmasters/principals of our schools to Embrace Volunteering annually by organizing more similar activities.

Fallen Leaves and Food Production

School : José Gomes Ferreira High School

Teacher : Maria Emília Martins

Students : Carlota Marques de Oliveira, Carolina Marques de Oliveira,
Inês Sofia de Barros Castanheira, Maria Teresa de Oliveira Dias Marques



We are a group of students from José Gomes Ferreira High School - Lisbon, Portugal.

Our school has a garden where we plant countless varieties of herbs, vegetables and fruits.

The garden is located in a sunny area making the soil dry, which means our plants don't have

the best conditions to grow healthily.

Therefore, following the theme of CEI 2018, "Let's Experience Nature - Waste ", we tried to find an answer to the question: 'How can we improve our school garden without using methods harmful to the environment?'.

We eventually found out about Mulching, an ancient technique used by our ancestors, which is basically the construction of a physical barrier, covering the soil with organic or inorganic compost (mulch). This offers not only resistance to adverse weather conditions but also numerous benefits to a diversity of crops.

For this reason, we have developed and performed an experimental procedure in which we have been testing and comparing soil with mulch to soil without mulch. For mulch we have used the fallen leaves from our school garden, which are dumped most of the times. By



recycling the fallen leaves, we are avoiding waste and also transforming what would otherwise be useless waste into useful material. A photo exhibition was part of our awareness campaign to this technique. Besides, we talked with children at kindergarten. We aimed at informing people and urging them to use the Mulching technique more frequently. Mulching means having better crops while protecting the environment and saving resources for future generations

From the Kitchen to the Garden

School : José Gomes Ferreira High School

Teacher : Maria Emília Martins

Students : Joana Rita Jorge Nobre, Gustavo Lucena Duarte da Silva Manso, Matilde Graça Dias, Tiago Manuel Peres Dinis



We are a group of students from José Gomes Ferreira High School- Lisbon, Portugal.

As part of the gardening project that has been developed in our school, we asked ourselves: "How

can we improve the soil in our garden in a sustainable way?"

The search for the answer led us to plan a project related to the theme proposed by CEI - Let's Experience Nature - Waste. In most kitchens, including our school kitchen, vegetable scraps are regularly dumped into the regular rubbish- consequently, valuable nutrients are wasted. Bearing in mind that the soil in the school garden area is very dry and poor in nutrients, we decided to study and develop vermicompost processes. The organic material collected in the school would be used and at the same time we would increase the production of vermicompost for the fertilization

of the soil of the garden, as this process reduces the loss of water into the soil and contributes to fertilize the plants.

The main objective of this project is to increase the quantity of plants produced in the school garden, and to make the school community recycle its vegetable scraps. To this end an exhibition was organized, which included various activities to raise awareness of pre-school children.

Overall, this project intends to lead the school community to internalize that sustainability in agriculture involves environmental quality, reduction of waste and preservation of natural resources, consequently increasing man-nature interaction.



The Actual Problem of Pollution by Plastics

School : Colégio de Santa Maria

Teacher : Paulo Meneses

Students : Leonor Graça; Maria Gastão Faria; Manuel Henzler; Sofia Falcão

Partner Organization : ASPEA



We are a group of students studying at Colégio de Santa Maria in Lisbon and we attend the 9th grade.

We are very concerned about the future of our planet and we think we must take care of it, now, to be able to

leave a better planet for our children. In what concerns the use and abuse of plastic, we must be aware that plastic is harming the seas, the earth and our own lives. We organized an exhibition to call the attention of the other students to this awful problem we have nowadays.

In the exhibition, each student, or group of students had to choose a sentence concerning what they thought it was their responsibility to accomplish and a sustainable development goal that they thought had a connection with the sentence chosen. That was also a way of them knowing what the sustainable development goals were.

This is not other people's problem. We must take this problem as our own.



PEDIBUS

School : Colégio de Santa Maria

Teacher : Paulo Meneses

Students : Francisco Silva; Maria Francisca Oliveira

Partner Organization : ASPEA



Pedibus' is the name of our project.

This project aims the decrease of the pollution that cars make (transport of students to school with their parents). With this project, the solution that we created is:

We created several paths that we are going to use in the morning and in the afternoon.

In the morning we are going to collect children that parents leave with us at the beginning of the path; after we pick up all the children, we will follow the path that we did until we arrive school. On the way, we will have



several points (pedibus stops), where we will wait for other children that will join us. As it is, there will be less traffic in front of the school door.

All this is also going to happen in the afternoon but instead of going to school with the children, we will take the kids back to where they joined us in the morning.



Hungary

Let's Experience Nature by an Astronomical Observatory

Organization : SEE the Future Foundation

Teacher : Tamás Szlávecz

Students : Zsófia Szlávecz, Dominik Sszabó, Barnabás Bóbics, Melitta Horváth, Dorka Salamon

Partner Organization : Hegyháti Observatory Foundation



Our choice to find the relevant theme which fits to the the main guideline topic - Let's Experience Nature - was the very simple fact that in our region there is an amateur

astronomical observatory very close to our team members' local residences. The owner, Tibor Horváth, the founder of both the Hegyháti Observatory Foundation and SEE the Future Foundation which we represent on the conference. Tibor has been an enthusiastic and kindhearted donator of our CEI participations for years. The observatory can be found in Hegyhátsál in Vas county, close to the Austrian and Slovenian border. Due to not only its geographical position but even the hardworking team of maintainers, there is a very active life relating to astronomical observations and other social events. From our presentation it will turn out

that the observatory is a perfect place for not only professional and amateur civil observations but for meeting for school groups at every age. As

a place of outdoor learning to study the nature and to experience the nature. We made an interview with Norbert Hegyi, a university teacher in Győr has remained an active environmentalist since 2005, his first CEI participation. We got answers in connection with the programmes - which were organized during the years - as well as the wide scale cooperation among international institutes and civil associations. Finally our team will analyze how the observatory meets the requirements of sub-themes of project guidelines - namely - Waste, Energy and Sustainability.





Hong Kong

The Impact of Greening on Urban Heat Island Effect

School : Po Leung Kuk Laws Foundation College

Teacher : Mr Leung Wing Kin, Mr Lui Ka Sing

Students : Natalie Wong, Quentin Chan, Ryan Lee, Amby Lai

In recent decades, urbanization has become a hot topic. However, the heat island effect is resulted. The heat island effect is the temperature increasing consistently in urban areas due to human activities and urban planning.

The causes of the heat island effect can be analyzed in two aspects, heat production and heat trapping within the city. Under the environment of high temperature and poor air ventilation, different health problems are caused. When the temperature is extremely high, people tend to turn on air-



conditioners, so demand for electricity increases and more energy is consumed. It results in the greenhouse effect.

In our project, there was an attempt to prove the existence of the heat island effect and the relationship between the size of green coverage and the temperature change. A feasible solution to the heat island effect is the main concern. It has been concluded that there is a relationship between the size of the area of vegetation and the heat island effect. The larger the area of vegetation, the more it can reduce heat island effect.

It is hoped that the awareness towards the environment in society can be raised. Our impact on nature is far greater than we assume. In our everyday life, we can take measures to ease the heat island effect. In long term, urban planning is of utmost importance. Don't wait until the earth becomes an intolerable place for living.



Light Pollution in the City Center in Hong Kong

School : Po Leung Kuk Laws Foundation College

Teacher : Mr Leung Wing Kin, Mr Lui Ka Sing

Students : Joyce Chan, Whitney Chan, Jack Hui, Isaac Lee, Yannes Chan



Light pollution is the presence of man-made light which is obtrusive, excessive and unnecessary in the nighttime environment. It is particularly serious in the commercial districts of big cities.

Light pollution has various impacts on both the ecosystem and human physiology. The lifestyle of animals is disturbed and communication among animals in the same species.



Also, people living in the immediate vicinity of neon billboards suffer from loss of vision, hormone problems, heart disease, and cancer.

In our project, the illuminance near the city center is investigated. We compared our data collected with the international standard. It is found that the illumination in some areas of Hong Kong has been increasing continuously over the past 7 years. It reflects that the light pollution problem in Hong Kong is serious and worsening.

There are various methods to alleviate the light pollution problem. As a citizen, we can turn off unnecessary lights, pay greater attention to current news about light pollution in order to understand the most updated situation, and install apps to investigate the illumination of our hometown.

It is hoped that we can raise people's awareness towards



light pollution. The current policy in Hong Kong towards light pollution is definitely insufficient. It is crucial for everyone to give a helping hand in order to solve the problem of light pollution. Many hands make light work. Turn off unnecessary lights to make Hong Kong a beautiful city with starry sky.

Environmental Impact of Reclamation in Hong Kong

School : Po Leung Kuk Laws Foundation College

Teacher : Mr Leung Wing Kin, Mr Lui Ka Sing

Students : Rani Cheung, Edwin Ho, Chelsea Kwok, Michael Li, Sevilla Lee

In order to cope with the rapid growth of the population in Hong Kong, reclamation projects have long been conducted in Hong Kong since the mid-19th century.



A variety of reclamation methods are being used for increasing land supply to facilitate the development of Hong Kong. Undoubtedly, nature is greatly affected.

According to statistics from 2018, the land reclaimed in Hong Kong has exceeded 67 square kilometers. It brings several changes to Hong Kong's marine ecology and coastal environment. Due to the destruction of the natural shoreline for reclamation, the number of pink dolphins has dramatically declined. A physical removal of seabed causes injuries to the natural marine communities. For coastal areas, today's harbor reclamation has threatened the function of the harbor and the environmental capacity of the harbor declines.



In our project, there is an attempt to identify the changes and impact of the reclamation in Hong Kong. In the past few months, we participated in fieldtrips to reclaimed areas. With the information from the Society for Protection of the Harbor, we are aware of the harm from reclamation and the importance of protecting the harbor.

Minimizing the adverse changes from reclamation is our first priority, a new non-dredge reclamation method should be adopted more generally in the coming future. This can help preserve marine ecology and comply with the principle of sustainable development.



Compost Tea

School : Queen Elizabeth School Old Students' Association Secondary School

Teacher : TSANG Wai Kwan, HO Sze Sam

Students : HO Hiu Ying, WONG Ying Kwan, CHAN Yee Man, HO Hei Yung, LEUNG Yan Kiu



Human takes in nutrients by consuming food from animals or plants. A stable food source is therefore very crucial to human survival. Agriculture and animal

husbandry are developed with vegetables are grown and animals are raised in a massive scale to provide food for us. In this project, we try to look into soil-conserving methods of agriculture. In particular, our project aims to show that using compost tea is a better method than using chemical fertilizers, in terms of environmental sustainability. We will also try to explain why using compost tea is a better method to farm, in terms of the relationship between plants and microorganisms in the soil. According to the international initiative "4 per 1000", launched by France on 1 December 2015 at the COP

21(<https://www.4p1000.org/>), agriculture, and in particular, agricultural soil can play a crucial role where food security and climate change are concerned. By using the method of compost tea, it can theoretically reduce carbon stocks in the soil, dealing with the problem of both climate change and sustainability of the environment.



Sharing Economy

School : Queen Elizabeth School Old Students' Association Secondary School

Teacher : TSANG Wai Kwan, HO Sze Sam

Students : LAM Wan Ying, YAU June, LI Chak Yan, YUEN Ka Yui, MUI Yuet Chai



In recent years, sharing economy, also known as collaborative consumption, collaborative economy or peer economy, has risen in various places and more new companies or platforms have developed and become more popular. For

example, Airbnb provides short-term accommodation, Uber has developed a mobile application that allows consumers to submit a trip request which is then routed to Uber drivers who use their own cars. We will explore how sharing economy affects the 21st century lifestyles, how it works in our real life and compare the sharing economy in Hong Kong with those in other Asian cities. Moreover, we would like to promote the awareness of sharing economy. People can use their underutilized resources more efficiently, which can promote the sustainable development in the society. It makes the redistribution of resources more efficient and helps



reduce wasted resources. In the project, we will talk about what the status of sharing economy in Hong Kong is. We will analyze the stances of different stakeholders, including the government, residents, social groups and enterprises. We will also find out why they support or oppose to it and what benefits they can get from sharing economy. We will know more about how sharing economy help sustainable development and how sustainable development influences us to engage in sharing economy. At last, we will share the experience of some social actions we have participated in.

We joined some sharing economy activities that were organized by other groups, including collecting leftovers from market and also collecting useful materials from the flower market during Lunar New Year. After joining these activities, we organized a barter activity on school fun day to promote sharing economy to our schoolmates.



Mexico

The Intensive Cultivation of Avocado in Mexico and Its Social and Natural Impact

School : Instituto Escuela del Sur

Teacher : Magalí Sarmiento Fradera

Students : Denisse Guevara Espinosa, Natalia Jabnéh López García, Herminio Martínez Rodríguez, Helena Sabina Reyes González, Christian Vargas Tena.

Partner Organization : Alianza por la Conservación de Bosque, Suelo y Agua A.C.



Mexico is a privileged place for the cultivation of avocado: this fruit is native of Mexico and is part of our diet, cosmetics, medicine and tradition. It has been a source of prosperity

and wellbeing, but recently, it has also generated, deforestation, greed, corruption, health problems and social imbalance. The escalating world demand has caused the harvest of avocado to become intensive, transforming not only its commerce, but also the way of life of farmers and the environment in the communities that produce it. This great commercial impulse should generate economic abundance and social welfare in the host community, but this has not been the case. The challenge is to find solutions that take advantage of the potential of the avocado for the benefit of the environment and of the population. In this work we present the impact that the unsustainable

exploitation of this important resource has had in our country at an environmental and social level, rescuing some solutions that can gear direction to the sustainable use of this fruit.

As a student community we know that the problem is huge since it is related not only to national resources, but also to global demand, and we are convinced that our best contribution to find solutions begins with the formation of an environmentally global awareness.



The Solar Oven as a Tool of Sustainability in Mexico

School : Instituto Escuela del Sur

Teacher : Abraham Pita Larrañaga

Students : Alberto García Martínez, Santiago García Martínez, Nareni Pineda Juárez, Martina Sánchez Caballero, Patricio Sánchez Caballero, Javier Vega Sandoval.

Partner Organization : ENGIE Mexico



Mexico's sunny weather throughout the year and all along its territory makes possible to take advantage of the energy radiated by the sun for its use in the operation of some thermal machines, for example, solar ovens. In specific, one can take advantage of the sun's energy for domestic cooking, and thus reduce the consumption of natural gas and LP gas. A technology as simple as a homemade solar oven is

important in Mexico, because it helps communities that do not have access to fossil fuels and therefore have difficulty cooking their food, on the other hand, it is possible to reduce the CO₂ (carbon dioxide) emissions and other pollutants to the environment. The homemade solar oven is not the solution to the problem of pollution, but it helps to the care of the environment.

The materials used to make the oven are: a wooden box, we use a 30 cm long by 30 cm wide and 13 cm high. The box was painted black, its interior was lined with mirrors covering the base and the walls. It also has a parabola of mirror paper that reflects the rays of the sun towards the inside of the box. The oven is efficient, reaches temperatures between 70 °C and 100 °C in a relatively short time.



Obtaining Biogas from Cactae (Opuntia ficus-indica) in Mexico

School : Instituto Escuela del Sur

Teacher : Carmen Larrondo Sayavedra

Students : Sofía Arriaga Galicia, Ana Paula Marín González, Nicolás Moreno Torres, Natalia Moscoso Lomnitz, Luis Félix Olivares Herrera, Samuel Palacios De La Mora.

Partner Organization : SUEMA S.A. de C.V.



The term biogas describes gas fuel produced by means of the decomposition of organic matter, generating 95% less greenhouse effect gas emissions than oil, besides the resultant biomass works as biofertilizer.

Instituto Escuela del Sur alumni, visited two biogas plants that use cactae (*Opuntia ficus-indica*) -an endemic plant of the American continent, used for medical, gastronomical and



cosmetic purposes- as a substrate in our country: one plant in Zitácuaro, Michoacán, and the other one in Mexico City. Zitácuaro biogas plant (Manjar del Campo) , produces methane gas from eight tons of crushed cactae for the

manufacture of their tortillas, their own electricity & finally, fertilizer for the cactae crops that they grow. The Mexico City plant holds a gathering center : a market that generates up to 10 tons p/day, by collecting only the residues of the cactae peeling. SUEMA (Sustentabilidad en Energía y Medio Ambiente S, A de C.V.) company, handles and transmutes the residues to turn them into methane, which, at the end of the process, feeds the plant and 25% of the market with luminous energy.

We conclude that these methods will result in a viable way of obtaining clean energy and supporting a certain percentage of the villagers' life customs. These are projects that encourage learning, creativity, social integration, team work, for the care of the environment.

Saving Stoves

School : Instituto Escuela del Sur

Teacher : José Antonio López Tercero Caamaño

Students : Emiliano Cruz Ramírez, Pablo Shamash Hernández Uribe, Kevin Portugal Vela Morales, Rafael Sánchez Vidal.

Partner Organization : ENGIE Mexico



The purpose of this project is to present a solution to the serious deforestation and CO2 emissions in Mexico. According to the Institute of Geography of UNAM, deforestation in the country is very intense and places us in the 5th place worldwide, losing 500 thousand hectares of forests and annual jungle. This puts at risk of extinction a great variety of plants, animals, and communities that might try to take care of their environment.



Mexico is the 2nd country in America with the highest use of fuels per every 100 inhabitants. Carbon dioxide emissions from industrial processes also have an impact on deforestation, since carbon -which is naturally removed from the atmosphere- is stored in the oceans and soil generating plants. These areas, known as carbon "sinks", release it when there is logging, either deliberately or accidentally, thus promoting even more carbon emissions.

Faced with this problem, a cost-saving and inexpensive stove is presented as a solution that decreases carbon emissions by reducing the use of firewood for cooking. This stove works with bricks, mud and sand, all materials that allow heat to be retained and released slowly via tunnels or pipes through which hot air flows and connect the combustion chamber with the burners and the chimney, to finally release it. This operation greatly reduces carbon emissions produced by cooking and prevents deforestation, thus achieving our main objective: lower carbon emissions in the atmosphere.



USA

Resource Management Education for Youth

Organization : Youth Enviro Squad

Teacher : Tony Currier

Students : Benjamin Bond, Karen Garcia, My'chaela Maine

Partner Organization : Oregon State University Extension Service



Our project is based around educating the next generation of caretakers. We built curriculums for 5th graders as well as informational one-pagers to present in class. The three main topics for our education are 'energy', 'waste' and 'invasive species'. Each topic involves a mini presentation followed by a short activity with students. The energy activity teaches students about how to conserve energy in their homes. For the waste lesson, students will decide what can and can't be recycled. For the invasive species activity, students will find as many species living outside the school

as they can as well as try to identify which species may be invasive. During these lessons, we will cultivate a relationship for the best tactics with schools and teachers. Once we perfect our approach, this curriculum can provide further education opportunities for both Caretakers Oregon delegates as well as youth in these classes.

After the 2018 CEI conference, we will further the learning process by bringing youth to local wilderness and outdoor locations. Because many students in Oregon lack the experiential learning that comes from these activities, we will be providing outdoor school a number of times during the fall. Through this project we hope to inspire and motivate youth to further their education of how their actions affect the world around them, because even one motivated class of students can make a big difference in our world.



Wildcat Ridge Restoration Project

Organization : OSU Extension / CEI

Teacher : Dan Hoynacki

Student : Andrew Bond

Partner Organization : Wildcat Ridge Sanctuary

We worked on the restoration of the natural forest and wetlands of an NGO wildcat sanctuary closed to the public. First, we worked on the removal of invasive species located around the property, especially Scotch Broom on 5 acres of the site. Our six



work sessions engaged as many as 40 people, but were usually 10-12 students and adult volunteers. We planted native species, 650 native evergreen trees and 350 willows, depending on soil hydrology, in multiple waves, from fall, winter (in snow!),

and twice in the spring. Dan and I would create the on-site plan just before each event. The short term goal is to create a natural barrier between the sanctuary and prevailing weather, and to prevent people from easily being able to enter. This is an ongoing project, started in May 2017. Future plans for this site include adding native oak trees to the southern part of the property, the removal of more invasive species from the property, and maintaining what has been recently planted, in order to prevent the regrowth of the invasive species. At the same time, a physical wire fence is being installed along the edge of the property, which will function as another barrier while the trees



mature in the next 5 to 10 years. The site manager is in charge of this project, but has relied on our CEI team to design and prioritize the restoration phases, with the support of the watershed council, university students, and other adult volunteers.



Nigeria

The Goal of the Water and Sanitation Education for Schools and Communities in Lagos Project

Organization : Pan African Vision for the Environment (PAVE)

Teacher : Anthony Akpan

Students : Nwagbo Jacinta Chinenye, Chidera Iheme Christian, Egede Amarachukwu Daniel, Onyekwere Christian Chika, Okele Lucky Chidi, Onyenwe Johnpaul Chimeremeze



The broad aim of the Water and Sanitation Education for Schools and Communities in Lagos Project is to promote better understanding of water as a key social, economic and environmental resource and to facilitate a new water-use ethic in Nigeria. It is about the community's

sense of duty- the obligation members have to each other, to the use of water itself and to future generations. The community sense of responsibility ought to be strengthened towards the management of water and other natural resources which took billions of years to develop and, yet, which could be diminished or exhausted within a relatively shorter period of time. That this is highly probable is evidenced in the population growth rate of

Nigeria and, in particular, the rapid increase in the rate of growth in urban cities in Nigeria including Lagos.

Introducing the Water and Sanitation Education for Schools and Communities in Lagos Project would be strategic entry points to developing awareness of water and sanitation related environmental issues among others.

Activities for the Water and Sanitation Education for Schools and Communities in Lagos Project includes the Sensitization of the communities on Water and Sanitation issues including the development and distribution of IEC materials and conducting community clean-up activities to mobilize communities.





Husk Reuse

School : Huey Deng High School

Teacher : Shu-Ya CHAN

Students : Jui-Che HAN, Jung-Hsuan HUANG, Po-Hsien YU, Hung-Chi HSU

Partner Organization : Music Rice



Rice husks are usually considered useless and an origin of exhaust after the harvest of rice. In Taiwan, an Asian country, the most common way to deal with the husks is to burn them out ; however, it leads to serious air pollution.

Therefore, we intend to find if there is any better way to apply the chemical property of rice husks with more efficiency while reducing the pollution at the same time. We figure out that the best way would be focusing on how to apply the characteristics of rice husks on what they can attribute to. In order to achieve the aim, we transform made them into two valuable products, the rice carbon and the rice vinegar. The rice carbon is the solid remain from burning the rice husks. It can improve the quality of soil by keeping the moisture content and increasing the

nutrients content of soil. The Rice vinegar is the liquid obtained from the smoke after burning the rice husks. It is a natural pesticide. These two products can reduce the use of chemical pesticides while fertilizing the soil so that the environment will no longer suffer more damages. "To protect our nature" is our concept to involve the annual courses at school, and to promote it to the local farmers through our cooperative community. Through our project ,we hope to decrease the environmental damages caused by agricultural purposes with this method.



Natural Blue Dye of Ching-Yang Farm

School : Stella Maris Ursuline High School

Teacher : Yu-Hsiang HUANG, Fan-Tso CHIEN

Students : Shan-Yu HU, Hao-Chun YU, Li-Chen HUANG

Partner Organization : Ching-Yangt Farm



In recent years, Taiwanese farmers started to make changes in how they use their land because many farmers' business has been pressured by the increase of imported agricultural products. However, some methods of using the land are damaging our environment. To balance environmental protection and farmers' economy, we intend to turn Assam Indigo



into dying materials and then it will achieve our goals of dying through natural ways. Assam Indigo can increase the diversity in the ecosystem, and further assure farmers' income.

At the present stage, we have been cooperating with Ching-Yang Farm, whose owners have made a great contribution not only to the preservation of the natural environment but to job offerings for the local farmers. We choose three Independent Variables about where we should plant Assam

Indigo. The ideas are described as follows: the first one is the land beside the river, the second one is in open fields, and the last one is a reproduction area for the forestation. We expect that through optimizing these Independent Variables can we achieve the best benefits.

We will record Assam Indigo's growth, and we collect the leaves on Assam Indigo to produce the indigo. We analyze it by comparing the colors, degrees of difficulty when dying, and the color fastness. According to these tasks, we can make a conclusion. Hopefully, we can give the results to the government and advise them in the direction of policy making to change the environment in Taiwan.

Hands-on learning is undoubtedly the best way to acquire knowledge. Obviously, what we have learned from nature is the most valuable experiences during this process.

Recover Ecological Pond with Taiwanese Native Plants

School : Stella Maris Ursuline High School

Teacher : Yu-Hsiang HUANG, Fan-Tso CHIEN

Students : Jhih-Han FANG, Pin-Yuan WEN

Partner Organization : Tai Chang Elementary School



We aimed to restore the ecological pond of our school for the purpose of environmental education. Therefore, by joining this program, we can gain more

knowledge and practice team work. More specifically, Taiwanese original plants are desired to be planted in this pond.

The restoration includes three phrases. Firstly, we removed most of the plants out from school pond. Secondly, we designed a circulating system. Thirdly, we used soil to make an incline at the bottom of the pond, creating a deep end area and a shallow end area. Different areas are separated by stacked stones. We also made three zones in the pond, respectively for submerged plants, floating plants, and emergent plants. In the submerged plant zone we plant the Round-leaf Rotala, stabilizing our soil. In the floating plant zone we plant the



Yellow Water Lily, which is endangered in Taiwan—The idea is to preserve this unique Taiwanese species. In the emergent plant zone we plant three kinds of Hygrophila, educating our

students to observe and appreciate the beauty of their flowers. Moreover, we invited two experts. One is specialized in water circulation, and the other is specialized in ecological restoration. They corrected our mistakes and taught us more knowledge.

To promote environmental awareness, we will report our achievement to all junior high classes in our school, telling them how important of sustainable development is and what they can do for the environment. This project not only helped us learn from cooperation but also demonstrated a good place of ecological restoration to the whole school community.



The Influence of the Passive Solar System on Interior Temperature of Shipping Container House

School : Humanity Primary and Junior High School

Teacher : Chi FAN

Students : Bo-Wei CHANG, Chen-Wei PAN, Luo-Wei WU, Yen-Ting LIAO, Tzu-Yi LEE



It is undeniable that this generation is experiencing extreme climate change and the catastrophic effects related that it brings along. Currently topping at 38

Degrees Celsius, Taiwan is amongst many places around the globe that has seen a gradual increase of record-breaking high temperatures.

Consequently, Taiwan's energy production plants have vigorously struggled to keep up with the growing demand, such as extended use of outdated traditional coal-fired power plants and purchasing of emergency generators from abroad. As difficult as it may currently sound, the only solution is for Taiwan citizens to conserve energy on a micro level, primarily using less power on air conditioners. Research and discussion about alternative energy sources have led to the idea of designing an area on campus, which can be cooled without excessive use of electrical energy.

The decision was made to restore an unused shipping

container into a green building. A passive solar system is built by lining the outer walls with plants, with the plants absorbing and deflecting heat radiation that would otherwise enter the building. As for the irrigation of the plants, we used recycled bottles, buckets, and PBC piping to install a gravity pressure water pump. The buckets collect rainwater to be dispersed among the plants, and when the water evaporates, it takes heat energy away from the room. Through this example, we hope not only to raise awareness of the energy crisis around the world, but also to show the ease and practicality of DIY green projects.



An Application of Renewing Shipping Container House by Using Wastes

School : Humanity Primary and Junior High School

Teacher : Shiang-Yun WU

Students : Jane HSU, Cheng-Ting LIAO, Shang-Hao CHING, Shih-Neng LI

Partner Organization : Yen-Chen YEH



The average annual general waste produced in Taiwan is 8.8 million tons, while business waste is twice that amount, reaching 18 Unmarked set by Ali million tons each year. This problem is only getting worse, with economic development pushing up the numbers 5-7 percent each year. Although the Taiwan government has implemented recycling for the last few years, there has been no significant



decrease in the amount of general waste and garbage produced. This major issue led us to contemplate alternative methods to counterbalance the abundance of garbage already in Taiwan. As opposed to following the norm and sending unrecyclable garbage to landfills and recyclable materials to recycle plants, all of which increase energy consumption and carbon dioxide pollution, we wanted to take personal responsibility for the garbage and unused materials in and around our school. With the fresh and eco-friendly goal of reuse in mind, observing our school and the available materials it provided, gave us the idea to build a greenhouse for our school. Lying idle and its walls rusting away, a steel shipping container gave us a perfect starting point. With the idea similar to traditional Japanese



window architecture, we rebuilt the walls with bamboo and driftwood. The double layer bamboo walls have multiple positive attributes; such as rain resistance, heat deflection, and air ventilation. We hope to continue finding ways to improve this green building and to be a beacon to the people around us who have yet to see the importance of caring for mother earth.



France

Environment and Solidarity, Here and There

School : Lycée André Boulloche

Teacher : Guillaume SALIEGE

Students : Alan SEDDIKI, Andréa AMISADOR and Andréa MATENS SIDA

Partner Organization : School of Saly and Loveyourwaste



There are two teams of eco-citizens in our high-school.

Firstly, a group of eco-delegates is involved in tackling sustainable development issues in the school.

Several actions have been led on waste processing by this group of students over the past few months, such as:

- equipping each classroom with "paper trays" in order to recycle paper
- working with a local farmer and organization to transform the bio-waste of our canteen into biogas and fertilizers (methanisation process). It's also a solidarity-based action implementing long-term unemployed people.

The second eco-citizen group works on a project named «Salydarity». They are involved in an international solidarity project

created in 2004 by former students of our school. This students' initiative aims at helping a school in Senegal, in the town of Saly. Consequently, we work to collect money by different actions, like selling pancakes or organizing special events / evenings. Moreover, together with eco-delegates, we sometimes sell African handmade items made in Saly. Thanks to the funds raised, we installed dry toilets in the school of Saly in 2015, for instance. And soon, we will help them develop permaculture during our next trip, in 2019.

Finally, with all of these actions, we strive to contribute to a sustainable development, both here and there.





The Benefit of Recycled-Materials Usance for Early Childhood Education

School : ABhome Bogor (2nd Grade)

Teacher : Diena Syarifa

Student : Atika Rahma Putri

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)



I have been interested in early childhood and special needs education since junior high school. Nowadays, I find some related problems, such as

waste dump and the availability of proper learning materials. As we know, waste in Indonesia are not well managed yet. Based on data from Bogor Strategy of Sanitation, the waste dump volume in Bogor City is about 1.756 cubic meters or equals to 600 tons each day, while only about 53% that transported to final disposal.

Because of that matter, I try to reduce waste by reuse and turn into learning materials. In fact, there are many early childhood education programs or schools haven't proper learning materials yet because of the high cost. By self-making learning materials out of waste, it should decrease the cost of learning materials and help students getting proper learning materials.

To prove my hypothesis, I have done a survey to teachers that using waste-based learning materials. The data said that by using waste to make learning materials, it can decrease cost to 75,43%. 89% respondents have proven that self-made learning materials can support effective learning activities. By these project I hope Early Childhood Educators (Teachers) produce the learning materials by them self using out of waste around school. it will reduce amount of waste and surely will improve the learning materials quality.



Usage of Solar Power System on Household Scale in Indonesia

School : ABhome Bogor (2nd Grade)

Teacher : Diena Syarifa

Student : Ihsan Aulia Rahman

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)

Since the dawn of humanity, We have been craving for energy. From animals, biomasses, to underground fossil deposits. But we soon learn carbon based energy have some bad inevitable consequences. Some has started using wind and heat from earth. But the one that



catch my attention most is the solar energy, as my school ABhome has been using solar energy to cover the half of it's daily consumption electricity.

But it was such unfortunate not much people care or even know about this ultimate technology here. With this project I have promoted the usage of solar energy in Indonesia by observing, analyzing and compiling the effects and benefits of solar energy in Indonesia. After all the research, i then present the results to communities around me to raise

awareness in solar energy.

The campaign ends up wonderfully, with audiences intrigued to learn more and asks questions. Some of them even straight up



asking where they can buy one for their home. I am very glad seeing that much enthusiasm, more than expected!

Hopefully, with the campaigns i did, more people will consider to adopt the carbon free energy from renewable source, and more people will get encouraged too. By changing our way to light our world, we will do better to overall humanity and even triggering more innovations.



The Utilization Of Palm Cooking Oil Waste for Mosquito Repellent

School : Sekolah Alam Indonesia

Teacher : Ainun Nurul Fitriyah

Students : Salma and Aisyah

Partner Organization : University of Indonesia



The research is about mosquito repellent lotion out of waste cooking palm oil. Waste cooking palm oil is one of waste problem that exist in Indonesia,

especially Jakarta. Oil waste contains so many dangerous substances. If the oil waste is thrown out carelessly it can damage the environment. Also it is not very good for our body. The purpose of the research is to reduce oil waste. So we utilize the oil waste into a mosquito repellent lotion. And the lotion that made of oil waste may reduce the oil waste.

Cooking palm oil is oil that people usually use for daily frying need. Cooking palm oil also has so many vitamins. But, cooking oil usage cannot be used more than 3-4 times, because it can eliminate the vitamins that contain within the oil. In time oil waste will grow more and more. That's why



we want to find a way how to reduce oil waste.

We did this research under scientific procedures of University of Indonesia. The result of the research shows that waste cooking palm oil can be the main ingredient of mosquito repellent lotion. From this research we can conclude that waste cooking oil can be processed into a mosquito repellent in a form of lotion without any rancid smell from the oil waste. We suggest to continue this research to get improved results. The research team also going to socializing our product, mosquito repellent, to Jakarta local community and school.



Portable Ecofriendly Kitchen Utensils Set

School : Sekolah Alam Indonesia

Teacher : Ainun Nurul Fitriyah

Students : Khansa, Nasywa and Haniyah

Partner Organization : Jaringan Sekolah Alam Indonesia



We chose this title because in our school we have an annual camping/outdoor activities event. A lot of people like outdoor activities like camping & hiking and they always bring kitchen utensils. Some people feel heavy when they're carrying it. This research hopes that our product will help to decrease the weight of the kitchen utensils.

Kitchen utensils is tool that is used for cooking. There are many types of kitchen utensils; like pan, knife, grater, ladle. Utensils is some tool that can be used for cooking. Portable is an object

that easy to carry, easy to be moved, lightweight, and other.

This research was done for 2 months and we get satisfying results of the research that we did. The method that we use when we complete the task research is Sugiyono method of research. We do this is research in our school and at one of our neighborhood.

From the research that we make, we organize some survey at our school. The results of our surveys are positive and their responses are good, even though some suggest that the research should be continued to mass production and the result to be sold.

We hypothesises that this tool can be easily carried wherever we want to go. We suggest to continue this research to make kitchen utensils more practical than the pre-made kitchen utensils.



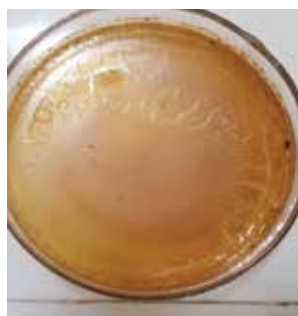
Jackfruit Seeds Biodegradable Plastic

School : Sekolah Alam Indonesia

Teacher : Ainun Nurul Fitriyah

Students : Khozanullah, Najmi and Admiral Partner

Partner Organization : University of Indonesia



This effective one-and-a-half month study aims to reduce the amount of plastic waste that contaminates the oceans and our earth. Researchers hope that with this research, the amount of plastic waste will reduce, especially in Indonesia.

The product developed based on this preliminary research is still in the prototype stage of the expected final product, biodegradable plastic from jackfruit seeds. The product itself is still a raw plastic. The raw plastic still needs to go through four more stages. The first stage is injection molding, then extrusion, thermoforming, and the last stage is blow molding. The



expected product will also consist of various materials, is Jackfruit Beans, Glycerol, PVa, Aquades.

After various experiments, researchers also got various results. In the first experiment, the researchers got unsatisfactory results. It happened because we have not

got the appropriate dosage, so the prototype in the first experiment is charred and sticky. We continue to get the same results until the third experiment. In the next experiment or the fourth experiment, we use aquades and laboratory tools to get better results. The results were different from before. Our biodegradable plastic was wet, whereas before using aquades, the plastic was charred and sticky. After that, the research team tried other dosages many times. Unfortunately, the results obtained are not perfect and not as expected.

Thus, the researcher hopes to continue the research until it gets maximum results and meets the initial expectations. The research team is also going to run a campaign to reduce plastic bags and implement their product.

One City One Voice : A Dynamic Movement for Younger People to Tackle Land Pollution Issue in Jakarta

School : Sekolah Alam Indonesia (Indonesia Nature School)

Teacher : Ainun Nurul Fitriyah

Students : Thoriq Yahya & Zahra

Partner Organization : Bye Bye Plastic Bags (www.byebyeplasticbags.org)
and Trash Hero Jakarta



Indonesia is the second largest country that contributes plastics to the ocean. Plastic is something we cannot live without. Plastic bags, plastic

straws, plastic wraps. We are a society that has become highly dependent on plastic. It is incredibly easy to make and we have an almost unlimited supply. That's the pattern we have adapted to, but plastic is not a material that the earth can digest. One City One Voice (OCOV) is a movement driven by the youth to say no to a single-use plastic. In Bali, we held the Indonesia biggest cleanup consisting 120 cleanup areas, 20.000 participants, and 55 tons of waste collected. By May, we are planning to visit 100 schools to educate the students by giving them presentation and booklets as one of our education programs.

We are currently running a petition to demand the Jakarta Government assertiveness to plastic waste as well as adding tax to plastic bags in mini markets and we have collected 40.000 signs by April.

OCOV plans to make schools affiliated with BBPBJ to be plastic bags free by the end of 2018 and so far we have 1 plastic-free school. We hope that we can work with the government to secure stricter policies regarding plastic waste.



Plastic to Fuel : Low Cost Solution for Energy Deficiency

School : Sekolah Alam Palembang (Senior High School)

Teacher : Nurbaiti Ekasari

Students : Thoriq Rifki Mubarak, Imadul Aqil Yuwono, Mamduh Widad Yuwono

Partner Organization : Pertamina Foundation, Jaringan Sekolah Alam Nusantara



Indonesia is the world's largest archipelagic nation with 17,000 islands stretching 5,150 kilometers along the equator. This means that distribution of goods takes a lot of money. This includes fossil fuel, of which Indonesia is very dependent. In some remote islands, fuel costs twice the price in main islands; Java and Sumatra. Meanwhile, over 500 billion pounds of new plastic are manufactured each year. Roughly 1/3 of them are single use and immediately thrown away. Of this waste, only 9% are recycled, mostly in developed countries. Many developing countries, including Indonesia, do not recycle their waste at all. Wastes end up

dumped into landfills, or even worse, oceans. Indonesia is second only to China in polluting the ocean with garbage. Plastic accounts for 4/5 of the accumulated garbage in the world's oceans.

Our project focused on developing a prototype of simple plastic-into-fuel generator. It could process mainly polyethylene and polypropylene. Styrofoam and PVC are not recommended. The resulting fuel contains less sulfur, therefore it produces less pollution. Compared to bio-ethanol making, producing fuel from plastic emit less carbon. Our modified reactor could produce three different types of fuel, categorized by octane number. We have been using these fuels for many purposes, including for vehicles.

We have also made campaigns to raise this project's awareness through events and media, including an educational video game. Hopefully, this project can help many people and solve problems regarding waste management and fuel scarcity.



Managing Household Organic Waste by Biopore Composting

School : Sekolah Alam Palembang (Junior High School)

Teacher : Nurbaiti Ekasari

Students : Tsamara Tyara Ulfa, Sayyidah Afiffah, Afaf Nihlah Y.

Partner Organization : Pertamina Foundation, Jaringan Sekolah Alam Nusantara



Our hometown Palembang produce 900 tons of garbage every day. About 60% of them are organic waste. These include food leftovers, rotten fruits and vegetables from traditional markets and households. With limited waste managing knowledge, many people would simply throw away all the garbage without any sorting, even less recycling and other waste processing. This has led to overcapacity of wasteland in Palembang. Aside from limited environmental education, the government also spend less investment on waste processing

facilities, because it deemed too costly to build. There is, however, a much cheaper alternative to process organic waste. This is what we call a Biopore (Biopori in Indonesian), a method devised by Indonesian engineer Kamir R. Brata. To make a Biopore, dig a hole for about 1 meter deep. Then we place a cylindrical holder, could be made from an unused bucket (the bottom part discharged) or a pipe. This acts as barrier from soil erosion that can bury the hole. Before, drill some holes around the holder to let the water through. Fill the Biopore with organic waste. Finally, put a filter at the top of the hole. The resulting compost could be harvested after some period. We have implemented this system in many households in



Palembang. It has been implemented in our school as well to provide drainage and composting system. Through this simple project, we hope that we can raise public awareness of waste managing.

"Let's Write With The Nature"

An Innovative Program to Improve Environmental and Ecological Awareness of the People in Young Age

School : Sekolah Alam Medan Raya

Teacher : Nurbaiti Ekasari

Student : Azzam Habibullah

Partner Organization : Jaringan Sekolah Alam Nusantara

The development or invention of technology has changed the way of thinking, behavior, and culture in humans. An example is the internet revolution. This is very influential to the Young Generation, because they are the most internet users in the world. If they are affected by this technology, they will become increasingly unconcerned about the preservation of nature and the environment, and they will never know the true meaning of Nature to the world and themselves.

'Let's Write With The Nature' is a training program that has facilitated and directed young people aged 13-18 to become future leaders, through writing to conserve nature by exploration activities. The program has 3 main steps; Exploration, Write it down, and Deliver it.



'Exploration with nature' is an activity that can foster inspiration and caring. 'Write it down' is an activity to train creativity, imagination, and visionary thinking.

'Deliver it' is an activity that can foster the character of communicative, solutive, and responsibility. Indication of the success of this program is to get the character of the leader and awareness of the environment.

This program has been implemented 3 times, with total participants reaching 50 people. According to the participants, they felt more respect to the Nature, knowing themselves, and more confident after attending the program. All writings they have created are taken home and all participants are committed to preserve the environment as future leaders.



The Advantage of Black Soldier Fly (BSF) Farming Application for Organic Waste Treatment In School's Algiculture Practice

School : Citra Alam Senior High School

Teacher : Desi Arti

Students : Evada Putra Widatama

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)



We've studied for 3 years on our school and during those time we've building and developing the agriculture business on our school. Of course we've stumbled upon

many challenges and these 2 are the most concerning one:

The abundant of feces. 140kg feces/month are made from our rabbit farm, 35% are used as fertilizer mixture while the other still sacked and thrown away. Expensive catfish feed.



With the current catfish pellet price and low guaranteed harvest rate (40% of total catfish), we currently have minus earning every harvest cycle (-\$21.91).

Examining those problem we found a promising solution that should solve both problem at once And that's BSF farming. BSF farming is the process of breeding Black soldier fly (*hermetia illucens*) From the egg to larvae/maggot to pupae to fly and repeat. Now why should it solve both problem?: Because BSF Maggot need food to grow, Thus Feces combined with organic waste is the perfect combination to sustain greedy appetite (45.000 maggot can consume 24kg pig feces in 14 days). 2 weeks after the maggot hatch they're at it's peak nutrient (39%-49%protein) therefore we will harvest and use them as replacement for catfish pellet.

The next step is. After acquiring more data we use those data to support a proposal to implement BSF farm on nearby garbage bank to reduce the organic waste that would have end up in landfill or incinerator, also 9000 tons of garbage are produced in Jakarta each day and 54% consist of organic waste.

SOLPAQUA : A Basic Solution Model For Food And Nutrition Adequacy in Indonesia

School : Citra Alam Senior High School

Teacher : Desi Arti

Students : Gloriana Fattimia Amadea

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)



Indonesia is the country with the greatest biodiversity in the world. Unfortunately, about 20 million people who do not have enough food eat and nutritional fulfillment in order to lead a healthy and productive life. There are more than 80 million people worldwide

who go to bed with a hungry stomach now. That is, a quarter of the number of people lacking food in Indonesia.

Indonesia has the potential to generate renewable (solar) energy equivalent to 2.000 kWh (per year) with a module of 5 m2.

That is, it takes only a series of modules covering 40 hectares to produce electrical energy equivalent to national consumption. One of the advantages of developing Solar Power Generations (PLTS) is the flexibility of its development. It can be built from small scale to large scale. The increase in the ratio of electrification and electricity supply is important in order to increase domestic electricity consumption. Economic growth does not trigger electricity consumption. The addition of access to electricity makes the economy more advanced.



Aquaponics is a combination of aquaculture, which is growing fish and other aquatic animals, and hydroponics which is growing plants



without soil. The Solar-Powered Aquaponic (SOLPAQUA) Model that I build is for producing vegetables and fish. I implemented the usage of Solar Power Plant for Aquaponics in my house.

I think that SOLPAQUA concept should be campaigned to many people, especially for household needs. Then, I do a campaign starting from my nearest neighbor and parent community.

'Food Monster' A Waste Art Installation For An Interesting and Creative Campaign about Monosodium Glutamate (MSG)'s Harmful Effect on Children's Health

School : Citra Alam Senior High School

Teacher : Ary Okta

Students : Satriani Rahmadita

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)

Consumption of snacks containing MSG (monosodium glutamate) among children always Increasing everyday, with the cheap price, joyfull taste, and colorful packaging the temptation are too many for children to resist. They consume all MSG based product starting from factory processed foods, potato chips and fast food.

The impact of excessive consumption of MSG for children is no longer a concern. Age of children or growth period more sensitive to MSG effects than adults.

Since 2006 the year that bad symptoms are popped up. Such as can trigger allergic reactions such us itching, red spots on skin, complaints of nausea, vomiting, headache and migraine.



It called "MSG complex syndrome". Several surveys conducted that twenty five percent from population are sensitive with msg. With these conditions, I feel have to do a campaign movement on the hazard of MSG and invite to re-consume healthy food. Nowadays it is very rare for school children to bring food from home, because parents are too busy to prepare The MSG food product packaging usually made from plastic, and it become garbage.

According to DKI Jakarta cleanliness agency, Jakarta every day produces more or less seven thousand ton garbage from settlements, offices and rivers, and of course including MSG food packaging.

So I made this art installation from recycling waste, as a learning tool of the effects of MSG on the human body, especially children. I do a learning roadshow, education for preschoolers, elementary, and junior high school students.



Coffee Grounds Waste Utilization for Odour Remover and Natural Fertilizer

School : Sekolah Alam Bogor

Teacher : Okwan Himpuni

Students : Ahmad Raif. S, Nico Putra. R, and M. Rayhan Vatian.

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)



Our experiment is based on processing Coffee Grounds. The goal of our experiment is to find an alternative solution in processing Coffee Grounds into Odour Remover and Natural

Fertilizer. Finding the perfect combination of Coffee Grounds and specific ingredients to create the perfect Odor Remover. And to acknowledge the growth rate of plant using Coffee Ground as the Natural Fertilizer.

Coffee is a popular beverage and has become a lifestyle for the majority people of Indonesia and the world. Consumption of coffee in Indonesia has reach 4,6 Million bags (@60Kg) per year. Which produces 237.360 ton of Coffee Grounds that is thrown away. The weight of the Coffee Grounds produce per year is equivalent to five RMS Titanic.

We have introduced the coffee grounds as an odour remover to the community, and they wanted to try it at home. We actually give them a free sample that they can use it for a long term period and to give opinion about it. Our conclusion that is achieved from the experiments shows that the mixture between

5 gr of coffee grounds and 10 ml of olive oil is the most effective combination for odour remover with the best absorption and is the most durable combination, which made this combination last for over 7 days. This is possible because the structure of coffee includes Ethypenol and Pheomoron, those two materials are the main source of what makes coffee has it's special aroma. Coffee grounds can be use for natural fertilizer for plants because of it's pH that ranges between 5,5 – 6,5 (tomato, chilli, etc). This is because coffee grounds have the compatible nutrition for natural fertilizer. Coffee have a low dose of pH (6,9 – 6,2 pH) it helps to speed up the process of composting on planting medium.



Electricity Generator Trash Cans

School : Al-Jannah Senior High School

Teacher : Tri Mulat S.TP

Students : Grensando, Fawwaz Hafitz Saskara Yowi

Partner Organization : Jaringan Sekolah Alam Nusantara (JSAN)



Fallen leaves are often thrown away or burnt down after being collected. The trash cans become full in a short time. Meanwhile, electricity often blackout at night. Of course, it's hard for people to do their daily activities such as studying, reading, etc. Two problems appeared; so much trash and the

blackout, creating a trash cans might be one of solution. Creating trash cans to produce electricity that consist of 2 plastic jars with different size, the smaller one is put inside, and the bigger one outside. Put a metal that consist of copper plat and aluminium plat and both electrode don't touch each other. Connect the upper part of metal electrode with a cable to a different metal electrode. And also Connect both cable ends to LED leg. In order to turn on the LED, insert fallen leaves to the small jar until full. Pour water to the leaves until all the small glasses are full.

The result is the trash cans, can produce voltage from leaves water in six plastic glasses in 3,28 volt. With that voltage, the Trash cans, can turn on 7 LED. With this trash can, the leaves can be used as an alternative energy source.



It had been socialized about Electricity Generator Trash Cans in front of Al-Jannah teachers on April 25th, 2018. The result of that activity is the teachers' understanding about fallen leaves that are always happen has been changed; fallen leaves can be used as electric energy source.



Poland

Surface Water Pollution – Modern Day Jack the Ripper

School : Szramek High School

Teacher : Mariusz Kamrowski

Students : Tomasz Janiec, Marek Janiec, Maciej Kamrowski, Maciej Biegas

Partner Organization : National Institute of Public Health in Warsaw



In our project we focus on the impact of water contamination on aquatic ecosystems and freshwater fauna. We have done an experiment on the influence of analgesics dissolved in water on aquatic invertebrates. In the experiment we prepared ten solutions of different concentrations of



paracetamol and ibuprofen. Afterwards, we placed daphnia in the solutions. After one day, we were able to observe the results. On the basis of the experiment we determined the concentration of analgesics lethal to daphnia. We observed a curious phenomenon: the daphnia placed in the solutions containing ibuprofen practically dissolved. We made videos of the changes in heart rate in the daphnia depending on the concentration of the solution containing paracetamol. Shortly, we will be carrying out an experiment on the absorption of acidic substances and pollutants by soil and plants. The experiment has been made possible thanks to the cooperation with the National Institute of Public Health in Warsaw, which has kindly consented to our using its laboratory. We are also preparing an article on eutropication caused by fertilizers.

Let's Experience Insects

School : Szramek High School

Teacher : Mariusz Kamrowski

Students : Magdalena Kita, Jan Swadźba, Szymon Szustak

Partner Organization : Pet and Fishing Tackle Shop "Zebra" in Katowice



It all began last year during the Open Day in our school. We invited our guests to sample "entomological delicacies", as well as asking them to ponder on the possibility

to substitute meat for insects – a feasible way to reduce CO2 emissions caused by cattle breeding and to end world hunger. We would like to raise awareness about insects being our friends and an indispensable link in the food chain without which we will not be able to survive. To this end, we organized a "biology lesson with a difference". We had invited the owner of the pet and fishing tackle shop "Zebra" in Katowice to come to our school, show and talk about different arthropods. For some students it was the first time they had seen these creatures live and realised that they are fascinating. During this year's Open Day the biological laboratory in our school teemed with insects. Again, they attracted huge attention from our guests, allowing us to explain the complexity of their world

and their usefulness. In September 2017 we initiated a campaign entitled "Spiny Leaf Insects Welcome You to Their Humble Abode". Drawing on the experience of the previous year, we organized waste-paper collection for recycling. We collected more than two tonnes of waste-paper, the money from which was later spent on setting up an insectarium with spiny leaf insects. We are planning to continue our mission to make people realize that insects are beautiful creatures, and were it not for them, people would have become extinct long ago.



The Arctic – Fridge of the Earth

School : Szramek High School

Teacher : Mariusz Kamrowski

Students : Konrad Borkowski, Mikołaj Deja, Kamila Kraut, Paweł Durmała, Aleksander Feruś, Agnieszka Kozłowska

Partner Organization : ConfreyLab Waldemar Szendera



Since the climate of the Arctic is changing and the issue of smog affects each and every one of us (including our climate and environment) we have decided to look into this topic through various field and web research. Every

day from 12.02.2018 to 1.05.2018 we have registered the daily temperature in order to find the anomalies connected with the climate changes of the Arctic. Through "the issue of smog" we mean the catastrophic growth in CO₂, SO₂ and NO₂ emission rates which were noticeable during the winter season especially in the town of Katowice. All of this leads to numerous illnesses of the respiratory and circulatory system, some of which cause death. The topic of smog is really important because every year at least 10000 people (almost 3000 in Silesia) complain about having symptoms of pertussis (whooping cough) which is caused in 8/10 cases by smog. Apart from describing those issues, we have undertaken the challenge of educating young people from our school in order to properly shape their ecological approach. To accomplish



that, we organised ecology lessons as part of the subject of biology during which we presented various effects of the climate changes of the Arctic and the smog issue as having a direct impact on our local environment. In addition we showed methods of preventing such issues, and encouraged the students to implement them in their daily life.

Peace or War – Nature vs. Coalmines

School : Szramek High School

Teacher : Mariusz Kamrowski

Students : Magdalena Stępiak, Oliwia Gubała, Maria Żukowska, Monika Skibska

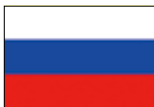


We live in Upper Silesia. It is a region of Poland that is directly related to mining. In our project, we have attempted to determine the impact of coal mining on the nature of our region. We were wondering what kind of processes accompanied

this activity and what kind of changes in the environment can be observed today and what the future of our cities may look like. Even 25 years ago, we had over 60 coal mines in our region. Today, as a result of successive liquidation, coal mining is carried out only in 19 coal mines. To this end, we went to the "Segiet" and "Murckowski Forest" nature reserves. The first is the so-called "Tarnogórski Underground", which was created during the mining exploitation from the 12th to the 20th century. In Murckowski Forest, however, we observed the apparent deformations resulting from

the exploitation by the "Murcki-Staszic" coal mine. We also visited places that are examples of the revitalization of the post-mining area or the useful use of land that has been affected by coal mining: Reden - today a district of the town of Tarnowskie Góry, where a mine operated until 1935; Guido mine – a closed mine in which a museum has been established; Silesia City Center – a shopping centre built in the ground of the former "Gottwald" mine. We also conducted an interview with the employees of the Central Mining Institute about the amazing possibilities of nature: "Where are we heading for and will nature manage it?". We hope that our project will gain appreciation and will arouse interest among our peers.





Save Water, the Source of Life

School : Lyceum No.28, Kirov

Teacher : Tatiana Khodyreva

Students : Georgi Bryazgin, Viktor Gotovtsev , Polina Eremina, Artem Moshkin, Ilona Orlova, Mikhail Sergeev



The aim of our project is to explain people the importance and the value of water, to learn how people use water and how the water is purified for using.

We organized excursions to the enterprises that supply our city Kirov with clean drinking water. We watched the process of cleaning water and the process of pumping water out of the well and delivery of water to the consumer.

At school we carried out TV information giving a lot of significant and serious facts about water. We conducted water lesson for pupils of elementary and middle schools.

We learnt how much water was consumed by school for 24 hours before the informational lessons and after them. We are going to continue this work at school summer camp.



People in Kirov drink water from several sources: the Vyatka river, the wells in the gardens and private property and the industrial wells (clink). We drank this water exploring the taste. We conducted a chemical experiment to determine the quality of water, its rigidity and purity. We are shooting a short TV interview about the price of water for people in different places and recommendations for pupils how to save water in everyday life.



Batteries and Heavy Metals

School : Lyceum No.28, Kirov

Teacher : Marina Konopleva

Students : Aleksei Zubarev, Natalia Sadovnikova, Anna Bezdenezhnykh

Partner Organization : the "Cuprite" enterprise



The majority of gadgets work from batteries which contain harmful heavy metals (lead, cadmium, mercury, nickel and zinc). They cannot be thrown out to litter boxes.

Our goals :

- To inform pupils and their parents about batteries damage and the collecting points in Kirov
- To organize the Action of collecting batteries at school

All batteries contain toxic elements. If toxins contact with the soil and the air they cause harm





for people's health. Poisonous elements even in small amounts can cause oncological, reproductive and other serious diseases. In our city there are only 3 containers for used batteries. There is also the «Cuprite» enterprise which collects batteries from the population. Workers sort them and then bring to the only battery recycling factory in the

country to the city of Chelyabinsk. This factory recycles about 1000 tons of batteries a year.

At school we carried out an Action of collecting batteries. Pupils, their parents and teachers brought them to school. We collected and hand over 52 kg of batteries to «Cuprite» for recycling.

There is a Robotics club in our school where children can create robots under the supervision of a teacher and show them at various exhibitions and competitions. After these events there are a lot of batteries left. Not all of them are completely discharged. That's why the member of our team Aleksei Zubarev made the robot which can define a battery charge. If the battery is not completely used, it can be applied on devices with average energy consumption.

Green School

School : Lyceum No.28, Kirov

Teacher : Marina Konopleva

Students : Dmitrii Zorin, Ilia Prokashev, Lev Gubnitsin, Matvei Gordin

Partner Organization : LInTech No.28, Kirov



Actuality

After the big repair of our school building we decided to garden the recreation window sills. These windows face North-East. Not all plants can grow in such conditions. We tried to solve this problem.

Our goal

To study the light level of the recreation window sills to select the optimal indoor plants.

Tasks

- To learn ecological groups of plants according to the natural light.
- To measure the light intensity on the recreation windowsills and analyze the results.
- To choose the plants for a certain light level and plant them.
- To create favorable conditions for their growth with the help of mobile portable laboratory Labdisk GLOMIR (temperature, water regime, the mode of nutrition etc.))
- To monitor the development of planted species after their landing.

The study was carried out from 15.10.2017 to 15.01.2018. Our studies show a rather low level of light, as well as the current

tendency of its reduction in accordance with the time of the year. Therefore, the following unpretentiousness plants were selected for planting :

1. Senpolia. It is loved for its beauty, abundant flowering and endurance.
2. Chlorophytum. This plant is beautiful and able to purify the air.
3. Sansevierier. It tolerates a shadow and the sun, dry air and coolness, it is able to protect against the accumulation of harmful substances.

Results

The selected plants for windowsills are optimal. The monitoring of the status of planted species say about their satisfactory condition. They require good care, timely watering and fertilizing.



Let's Save Energy!

School : Lyceum No.28, Kirov

Teacher : Tatiana Khodyreva, Tatiana Fetinina

Students : Dana Smerdova, Mariia Araslanova



Contemporary society is constantly facing ecological and energy saving problems. Firstly, every year the cost of resources used for electricity production rises. Secondly, a growing number of different electrical appliances and general computerisation have raised the level of energy consumption. Thirdly, power stations affect ecology badly. So, the more electricity consumption, the more our ecosystem suffers.

But what can a teenager do to save electricity? We suggest the following.

1. Unplug electrical appliances and chargers when not using them.
2. Use appliances economically.



- Choose one programme so that the whole family could watch (one television at a time).
 - Use natural hair drying.
 - Wash the dishes yourself.
 - Warm over food in microwave ovens instead of electric cookers.
 - Wash small articles of clothes yourself and use a washing machine for large amounts of clothes.
3. Prefer damp sweeping to vacuum cleaning.
 4. Don't open the fridge door without necessity, don't keep hot dishes in the fridge.
 5. Recycle batteries (in this case no electricity will be used to produce them).

We also asked the teachers and the pupils to take part in our survey in order to see if our respondents were aware of the problem.

We made a report in the primary and secondary school and explained the pupils the importance of saving electricity at home as well as in the school and the simplicity of doing it. Our research showed that every person was able to do his/her own bit to gain the common goal.

Trash for One, Treasure for Others

School : Secondary Comprehensive School 37, Kirov

Teacher : Marina Avdeeva

Students : Alena Rudkovskaia, Mariia Korotysheva, Anastasia Filippova, Saveliy Plaksin, Mikhail Zykin



People have spent thousands of years fighting for their survival. Yet now we have discovered that our planet is under threat and, to make matters worse, it's all our fault. The problem of Domestic Waste is drawing increasing attention of people in the place where we live. With the

growing population the huge waste is being generated day by day. This resulted in different characteristics of waste, which became complicated problem for management of Domestic Waste and disposal techniques.

There are several ways to improve the situation. All of

us should be aware of the benefit of Reducing, Reusing and Recycling materials. Firstly, we should reduce the consumption of materials that are not eco-friendly. Thus we will reduce domestic waste. Secondly, we must learn to reuse things like plastic bags, containers and bottles. Furthermore, we should encourage recycling, because it is the production of new materials which causes the



most damage. Lastly, participating in such activities as planting trees or cleaning up parks and areas where we live would be proof that we are really concerned about the environment.

The concept of using recycled materials for art is not a novel one. We showed primary school pupils how plastic objects can be used to create works of art instead of being thrown away.

We also participated in some volunteer activities such as cleaning-up the area around us. Besides, we took up an action collecting paper and plastic waste. We would like to recycle it and get enough money to buy food for animals in the local shelter.

Revitalization of the Eco-trail in Zarechniy Park

School : Secondary Comprehensive School 37, Kirov

Teacher : Olga Khmelevskaia

Students : Sofia Papulina, Eseniia Kosulina, Bogdan Kuchumov, Kirill Kostin



We live in a small provincial town on the bank of the river Vyatka. In 1935 there was made a decision to organize a recreation area for the citizens in the wood on the opposite bank of the river. This place was cleaned, many trees were planted, a tourist trail was created. Many people used to spend their weekends there, in winter a lot of skiers took part in ski races there. The forest park became socially and environmentally significant. But since 1990s it has lost its popularity, the trail was ruined, public transport stopped travelling there.

Environmentalists in our town decided to bring this tourist trail back to life. The idea was supported by the local authorities.

We decided to join the project and see what we can do to take care of the natural environment. The goal of the project is the re-establishment or

improvement and long-term protection of natural forest and river landscapes. Furthermore, the recreation area might also bring new opportunities for eco-tourism.

Motivated students of our school are given the opportunity to observe and record the biological increase of biodiversity in this new area. We participated in some clean-up activities, collected facts for information desks, printed leaflets with the description of various species typical of our region. We tried to spread awareness about the biodiversity of our region among the pupils of our school.

This project is an efficient measure for a successful revitalization that can help to obtain a local recreation area for everybody.





Turkey

The Recycle Project

School : Fethiye Kemal Mumcu Anatolian Highschool

Teacher : Ali Demir & Gökhan Yazıcı

Students : Emre Yalçın, Elif Erdal, Hakan Salman, Burak Vergi, İzzet Enes Yılmaz, Ali Eren Korkut, Zeynep Ece Korkut

Partner organization : Keçiören District National Education Directorate



Recycle bins for glass, paper and plastic are placed in each floor in school. These bins are collected and stored in school's storage

after every one week. These three groups of materials are sold to recycle factories after four weeks of collecting. The money which is collected from the factories returns to the school itself. The school uses this money to upgrade its environment and to improve its greenery. Therefore, both the environment in general and the environment of the school will benefit from this project. Our main goal is to

generalize this project through-out Turkey. This will help us to raise environmental consciousness.



Keeping the Lycian Way Clean

School : Notre Dame de Sion French High School

Teacher : Seval Erol

Students : Helinnaz Taş, Berkin Toy

The Lycian is one of the most interesting regions in terms of the historical and natural riches of Anatolia. In ancient times, as the "Country of Light", ancient cities in the region



of knowing are almost intertwined with nature.

The Lycian route, starting from Fethiye and extending to Antalya, is a nature and a walking route created by mapping and marking a part of the pathways along Teke peninsula.

The Lycian Way was opened in 1999 by Kate Clow.

It is shown as one of the top 10 longest walking trails in the world.

Notre Dame de Sion French High School students walked the Fethiye-Faralya route for 2 days in order to emphasize



the pollution of nature and to raise awareness by raising environmental awareness on April 20-24. Students who volunteered to collect garbage along the way while walking, aimed at greening by throwing seeds and fruit cores they had prepared at the same time. Students who walked in history, mountain and sea trio and marveled at wonderful landscapes, succeeded this activity and took the attention of the local and national press.

With this project, the students of Notre Dame de Sion aim to voluntarily clean up some of the historic Lycian way and to lead them in their efforts for a sustainable future.



Examine the EcoCity

School : Notre Dame de Sion French High School, Saint Michel French High School

Teacher : Inci Kimyonşen, Seval Erol

Students : Serra Atilla, Hürmüş Göksu Türker, Asli Ünlüer, Mehmet Barış Avkovan, Mehmet Hamza Ulutaş



It is hard to constitute an ecocity despite the growing population but in Turkey, the mayor of Eskişehir, Yılmaz Büyükerşen is reorganizing the city as an ecocity since 1999. The concept of ecocity, the search for the sustainability of the cities and the results of the work has emerged.

The Great Marmara Earthquake that lived in 1999 was effective in the re-creation of the city. With the project of "Creating a city example", the city was re-created.

Therefore, the students of the club "Sustainable Life/ Environment" of Private Notre Dame de Sion French High School and of Private Saint Michel French High School visited Eskişehir between 16-18 March.

The students got information about Eskişehir which is also called "The City of Pedestrian" at the town hall. They made a tour of the city for two days and they witnessed the changes

that took twenty years.

It was also a relief for the big-city students to see a city without traffic because the transportation is provided by the modern tram system. Trams of the city work with solar energy ensuring that the air is clean. This city emerges as a self-sufficient eco-city project with zero energy and zero waste.

This study gave another perspective to the student's relationship with the city they live in and an ecocity which they could live in.



Harvesting Rainwater at School

School : TED İstanbul College Foundation Private High School

Teacher : Nurten Mersinlioğlu, Didem Demirci

Students : Bessu Tuğlu, Dilara Büyüksoy, Lara Ömür,
Mehmet Kalaycıoğlu, Berke Özcan



Water is our most precious natural resource and something that most of us take for granted. We started to feel the effects of climate change heavily in Turkey. We all know that

water supplies are the first to suffer from climate change. Rainwater harvesting is a method for collecting water that has been in practice for thousands of years. Primarily, it is used as a way to collect and store water for future needs in areas

where water is not readily available all year round.

Three years ago, we constructed our Eco Teams at school and as volunteer students; we investigated methods to decrease our footprint on the nature. One of the methods we found was harvesting rainwater. At first, we collected rainwater at our homes. After that we asked the school administration to build a rainwater harvesting tank at school.

The tank was built a year ago and the drain water is used in the flushing mechanisms of the bathrooms. We are proud of our project and are continuing our effort to convince other schools to employ a similar setup.



Green Virtual Reality in the Metropolitan City of Istanbul

School : Saint Joseph Frech High School

Teacher : Şükran İnce Toy

Students : Öykü Candaş, Bengisu Duygu, Şirvan Garod Horozoğlu, Yasin Tuna Kurşunlu

Partner organization : Fenerbahçe Municipality



We, who live in a metropolitan city has developed an application which can work in phones IOS and Android. We realized this project to encourage people who are living far away from our nature and soil to work with technology

and natural gardening for making our living area a better place. To be heard, we used virtual reality. With the use of a tele- phone and VR glasses, users can easily see our Park of Fenerbahçe and they can get some information concerning our areas of growth. We are trying to prepare the park, which can be a solid example for us to write the history of cycle for the next generations...

We also want to live with our philosophy which says that “we give the things coming from the nature, to nature”.



What Is A Sustainable City, How To Be One And The Sustainability Index Of Istanbul

School : Üsküdar American Academy Private High School

Teacher : Sedat Toy

Students : Yaprak Su Akın, Defne Güllüoğlu, Begüm Atasoy, Alin Deniz Kutan



In this project, our goal is to study the sustainable city index in the world by approaching the topic with the concept of “Sustainable City”. We are examining the criteria on which the measurements concerning the sustainability city index are based on and the effects of these measurements. We are investigating the ranking of the cities based on their sustainability indexes and how the cities are arranged with respect to the measurement criteria. We will include these findings in our presentation. We are considering the position of Istanbul according to the Sustainable City Index and we will present its progress

of becoming a sustainable city. We will present the areas in need for development in Istanbul and the projects which are planned for the improvement of the city. We will do our research on our government’s plans, what has changed from the past until now and what can the people of the city can do concerning sustainability and becoming a “Smart City”. We want to concentrate on natural and environmental issues and the studies on these areas in our project. We are researching how Istanbul can reduce its damage on nature in spite of its increasing population. On the second stage of our project, we want to have a contribution in making Istanbul a sustainable city by turning our school campus into a “Sustainable Campus”. We will present what we did to accomplish our goal and what we have planned for the future.





Japan

Fly Tipping in Beautiful Historic Japan

School : Ritsumeikan Uji School

Teacher : Mr. John Mackenzie

Students : Ayaka Okeda, Sayuri Ito, William Chapple, Oto Narumiya

Partner organization : Takatori Town Council



Observed piles of litter building up in the woodlands near Tsubosaka yama castle, South of our school.

Upset that people would dump their waste here in such a beautiful and historically and politically significant location.

Waste included car batteries, vehicle tires, computers, TVs etc as well as waste which is actively recycled by local authorities here in Japan, so this is unacceptable.

Considered what we could do to sort it out – we tried moving some but there were two main problems with this: 1. There

was too much and it was too heavy for us to move. 2. A lot of the waste is not actively recycled by the local authorities.

So we contacted the local authority in Tsubosaka yama to see if they would help us take the waste away if we can get it out of the forest. We were apprehensive as we thought they may refuse due to costs (people are supposed to pay to have these items removed in Japan, hence the fly tipping). But, they agreed to help us and we are making trips there and collaborating with them to clean up this mess.

Our concerns now are the message we send to the fly tippers – maybe they will see it as an opportunity to throw away waste illegally without incurring a waste disposal fee. Our next steps are therefore to continue to remove the waste and also to raise the awareness of the problem as well as the harmful effects on the environment.



Aspiring for the Common Good, Together

Fatima Matos Almeida

Vice-president of CEI / CEI Portugal

I recently watched two films which made me wish to share some of the thoughts that came to my mind. Both films were portraits of our past history, the post war period after WW I - "Frantz" and after WW II - "The Guernsey Literary and Potato Peel Pie Society".

The reality of war as seen by the eyes of the enemy on both sides and our humanity highlighted by art (and love), the supreme expression of "being human". Both films share a very interesting vision and the personal struggle of the population who endures wars decided in the backstage by people who do not really get involved in them.

They were very beautiful films, where the power of art - literature music and painting as the universal language, the ultimate expression of human spirit, the creativity and the capacity of reaching to everyone and causing big resonance in our hearts and forwarding our deepest wish for something beyond our oneself.

You may ask what this has to do with environmental education, what does it have to do with what we are doing here?

From my point of view, it is this capacity of the human spirit of doing something beautiful, ensuring this beauty vision for a better life for all, for a common good for all living beings, which has driven us together to this conference - the XXXII CEI conference. And how did it all start?

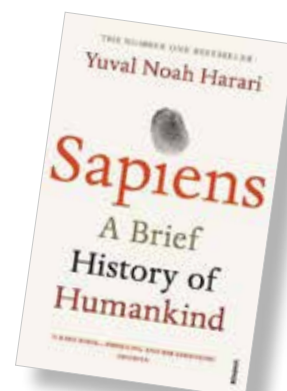
It is the time to recall that we are here and now together due to the vision and aspiration of those who started this huge, valuable project, the founders of Caretakers of the Environment International. You have met some of them in the conferences, but there are some of them that you have

never met and I would like to remind you of the recent decease of Ed Radatz, the mentor and co- founder of CEI. He was a vivid spirit, an inspiration to all those who had the opportunity to spend some time with him and had the chance to call him a friend. Especially for the Portuguese delegations where he was considered an honorary member who would join our cultural performances on stage, singing even though he couldn't speak a word of Portuguese.

He will be missed, I miss him.

So we are here now once again, once a year, sharing our dreams and projects, working together and this reminds me of an author that I invite you to read or at least listen in the YouTube channel - Yuval Noah Harari, who wrote "Sapiens, a brief history of humankind", where he says that human beings are not so different from the other animals when taken individually but it is the strength given by our ability to join forces to work together in very large numbers that allows us to shape the reality, for the good and for the bad. This capability of working together in very large numbers depends on the capacity of creating, sharing and believing in myths, stories, ideologies and visions.

We are all here in Austria, as a collective group of engaged students and teachers, with the vision that we can do our part in contributing to a better and just world. Welcome.



Theatre in Environmental Education

Annie Begg

Secretary of CEI Board / CEI Scotland

Quids In Theatre Company are an independent theatre company, based in Aberdeen Scotland producing touring shows, community drama and most importantly, for the past four years we have been delivering Theatre in Education to primary and secondary schools across the North East of Scotland.

Why is drama an important medium for Environmental Education?

The Greek philosopher Plato, although not a fan of drama admitted that it was the best way to impart knowledge and teach a student. Participation in drama activities is a perfect way to encourage young people to develop awareness, knowledge and concepts, to encourage positive attitudes and personal lifestyle decisions and to help them acquire action skills in and for the environment. The immersion in imagined context and narrative, integral to telling 'stories' in drama, allows young people to feel sympathy for and empathy with people who are affected by environmental issues and problems.

This idea of storytelling to highlight problems in the environment is one we use frequently. As part of Climate Action week, we were asked to stage a production of our drama, Getting Hotter which highlights some of the problems of global warming and suggests ways in which young people can help. Getting Hotter by Annie James, tells the story of Joules, a teenager engaged in a computer game ; The Green Planet, when suddenly there is an energy surge and the hero

of the story, Major Earth and his arch enemy Greenhouse Gas Man are catapulted into real life. Major Earth and Greenhouse Gas Man have several battles but Major Earth is not strong enough to finally defeat him because he cannot find enough energy to recharge because of the amount of energy being used by Joules. The story explains the problem and potential causes of global warming and suggests possible ways in which Joules can help to save her planet.

Although this is quite a superficial treatment of the problem, it is colourful and fun and introduces young children age 4-8 to the issue. The narrative is simple and engaging, but the message is still there. Although the children are involved in various aspects of the production, this is still largely a performance which the children watch. A more interactive approach is one where the children are creating the drama themselves and is an approach we use when delivering Theatre in Education in the classroom.

The focus of the lesson is usually one of the Global Goals; seventeen Sustainable Development Goals set by the United Nations in 2015 as the 2030 agenda. These goals cover social and economic development issues including poverty, hunger, health, education, climate change, gender equality, water sanitation, energy, urbanization, environment and social justice. In a primary school, each class is assigned one of the Global Goals to develop. When we work with the pupils, the discussion





centres round what they would like to see happen to achieve the global goal and how they could use drama: rhythm, song, dance, movement and voice to put their message across. At the end of the week, the classes share their work with parents, teachers and the rest of the school. For the older students, a script is written which tells a short narrative and allows them to learn the techniques of theatre while getting their environmental message across.

To give an idea of the sort of material the pupils work with, this is the rap produced to highlight the dangers of pollution in the ocean. This is used with small children, aged around seven.

Make a Wave

Make a wave, Make a wave,

There's an ocean to save

From Petrol and oil

Plastic and foil

Acids that Boil

Make a Wave, Make a Wave

Make a wave, Make a wave

There are Seas to save

From Chemical spills

Whaling that kills

Pollution that fills

Save

Our seas

Save

Our seas

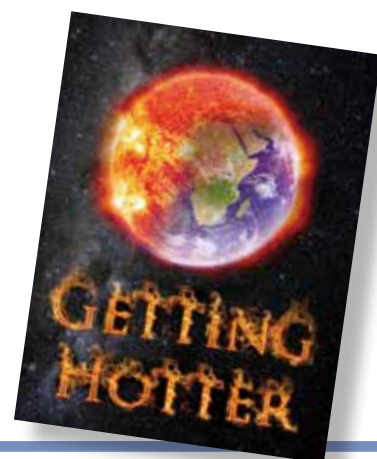
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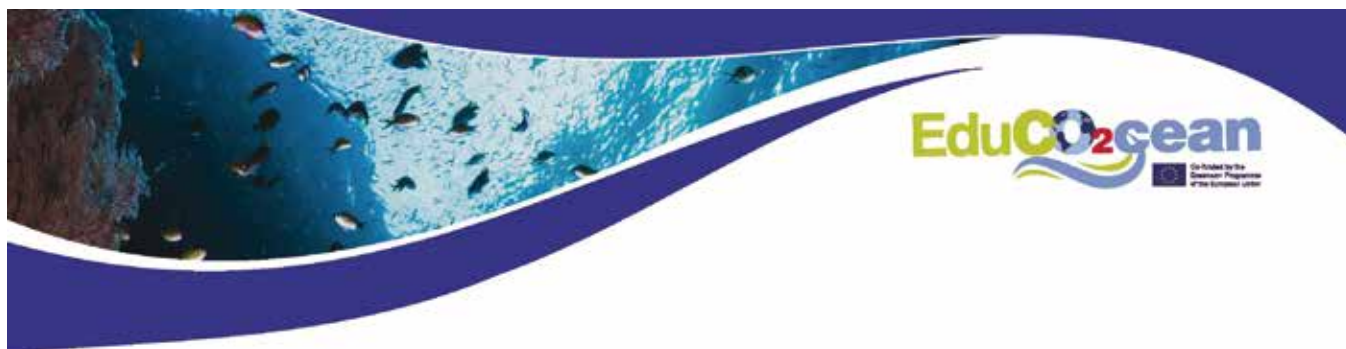
Make a Wave, Make a Wave, Make a Wave

Rhythm and rap is an easy way for young children to engage with a message and to perform as a group.

The third method we use is promenade theatre which allows the audience to move with the actors as a story unfolds. We use the life of John Muir, the Scottish environmentalist and founder of National Parks in America to engage the young people with nature and his vision of what needed to be protected. This show can be performed outside in any 'wild area' and allows the audience to experience not only the place but also to learn about the life of the character: John Muir.

As a theatre company, we are always looking for new and innovative ways to engage young people in caring for their environment. Developing the concept of good citizenship is one area that is currently being focussed on in both primary and secondary schools. Theatre and drama is a universal tool to bring communities together to share stories, develop and explore ideas and entertain each other. We need to ensure that all young people are exposed to this opportunity. It is only by allowing youth to develop the facts they have learnt into narratives to tell others, to create empathy and share in communities that we can hope to engage communities to take action to preserve our environment.





EduCO2cean Project and Environmental Education

Antoni Salamon

Website Host of CEI board / CEI Poland

CEI Poland, together with four schools from Silesia, for almost two years, has been participating in the international project ERASMUS + "STS Education models to transmit to society the challenge of global change in the ocean". The coordinator of the project is ASPEA from Portugal, and partners are schools, universities or research centers from Portugal, Spain, Scotland and Poland. The aim of the project is to promote, among the school and local community, a knowledge about the impact of human activity on the state of the global ocean and its relationship with climate change. The website <https://www.educo2cean.org> has been created and is constantly being developed, which will act as an e-learning platform with an e-book, didactic units and a digital magazine containing scientific and auxiliary articles related to the topic of the project. You can also find there reports on "young scientists" from schools participating in the project.

As part of the project, we organized in Katowice at the turn of October and November 2017 a five-day methodological course for teachers from Poland and abroad, devoted to the issues of creating activity and good practices in ecological education. Nearly 100 teachers from Portugal, Spain and Poland took part in lectures and workshops conducted by scientists from the University of Silesia and Warsaw University.

In Szramek High School, the base school for CEI Poland, we organize a lot of different actions, eg. participate in ecological workshops, listen to lectures of environmental experts, clean forests and water reservoirs, plant trees, conduct street surveys, participate and present projects at annual CEI conferences, engage in actions for clean water and air. We have been doing this for 27 years, but the answer to the question whether we see the positive effects of these activities is not clear. Undoubtedly, the knowledge



Street Probe



Teacher Training Course 2017



Partner Meeting in Katowice



Forest Planting

of next generations about how our behavior influence the state of the natural environment is much richer, but littering forests and water reservoirs, or getting rid of rubbish by burning in a campfire or a household stove, has not changed significantly for the better.

So what to do? In November 2017, an organization Global Environmental Education Partnership, through its advisors, outstanding researchers dealing with the environment and environmental education, called for action - select from the 10 proposed by the advisers, the most important actions to be implemented in the next 10 years. We will find, among others, such actions as: Champion of Environmental Education, Expand Environmental Education's Role in Achieving Conservation Success, or Strengthen Environmental Education's Role in Achieving the UN Sustainable Development Goals.

It seems that for a universal change in people's attitudes to be environmentally friendly, giving the chance to stop the unfavorable trend in climate change (to achieve the 1.5 degree C target), we need a different environmental education. Not the one currently being practiced in schools that makes us more or less green. The need for new forms of learning (transformative social learning), those that will

change our attitudes, which enable people to contribute meaningfully sustainability. We can read about it on the blog Arjen Wals, a Professor of Transformative Learning for Socio-Ecological Sustainability at Wageningen University in The Netherlands.

We must also ensure universal access to environmental education for people of all ages. One way to do this is, for example, to participate in the CLIMATE REALITY LEADERS training carried out as part of the CLIMATE REALITY project, founded by Nobel Laureate and former US Vice President Al Gore. Trained CLIMATE LEADERS volunteers will be able to reach with knowledge of critical climate change to a much wider range of people than is the case at school.

Now our city is preparing to host in December 2018, the participants of COP 24 - the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change.

More information about the EduCO2cean project and CEI Poland activities can be found at:

Twitter : <https://twitter.com/educoc2cean>

Facebook : <https://www.facebook.com/educoc2cean>

Instagram : <https://www.instagram.com/educoc2cean>

Youtube : <https://www.youtube.com/educoc2cean>

<https://www.ceipl.eu>

A Tribute to the Memory of Ed Radatz

Ed Radatz 1940-2018

Leader, Educator, Coach, Mentor and Inspiration for Youth and Educators Worldwide

The loss of Ed Radatz to our planet is a sad event for his Caretakers family, softened only by his genuine friendship and spirit. Ed's legacy will endure not only for those he left, but for future generations of Caretakers and those that they, in turn, will continue to inspire. Isabel Abrams has written his memoriam, followed by comments by Caretakers. -DH



In Memoriam : Edward Radatz

Edward Radatz, co-founder of Caretakers of the Environment International, passed away on May 1, 2018. He was my mentor and a friend for many years, during which time we had a lot of fun and amazing international adventures. Ed and I met at the American Biology Teachers convention, I believe. He was a teacher at Oak Park and River Forest High school (near Chicago) and I later learned he was honored as the most outstanding Biology teacher of Illinois. I was a science journalist who invited him to be an educational consultant for the magazines I wrote for: Current Health 2, Current Energy and Ecology, Science Challenge and Biology Bulletin. That meant he was my editor, yet I never felt he was criticizing my writing. We were a team, making the articles better.

In 1986, Ed invited me to lunch so I could meet Arjen Wals, an intern in his biology class who was researching his master's thesis on American attitudes about the environment. When Ed said, "I think we can get something going." I didn't know what that meant, but I surely didn't dream it would be Caretakers of the Environment International. During lunch on that cold winter day, Ed, Arjen and I chatted about pollution, endangered species and other environmental problems. By the time dessert came, we agreed that young people – no matter where they lived, or what their career choice or lifestyle was – needed to understand that they were caretakers of the environment. (I said, "caretakers of the environment" because I thought Dr. Noel Brown, Director of the United Nations Environment Programs (UNEP) said that when I interviewed him. Later, I looked at my notes and learned Dr. Brown had said "shareholders of the environment.") Although Caretakers of the Environment was a misquote at the time, we kept the name because it described our mission: to provide youth with the skills and knowledge for environmental leadership; and to encourage them to think globally and act locally.

Caretakers of the Environment International (CEI) was born that day and Ed, Arjen and I decided it would involve high school students and teachers. We did not know of any environmental organization that involved teenagers in environmental work. And we had no funding and no network. But that did not discourage us at all.

That year, we flew to Amsterdam with several of Ed's students. Arjen's mother, Joke (who was a teacher) and his father Harry (Director of Parks, Gardens and environmental education for the Hague, Netherlands, took us out to dinner. We also met with a European environmental education group that was about to disband so we offered to take over their work and invited them to join us. And Harry Wals offered to host the first Caretakers of the Environment International conference in The Hague, Netherlands.

Ed introduced me to writing the Constitution and articles for CEI; and to the worlds of business and politics. In order to obtain support and funding for CEI, Ed and I met with heads of corporations and members of government. And he always took students to those meetings. The students often asked questions I never would have dared to ask. But their knowledge and passion for protecting nature convinced these leaders to support our cause. Dr. Noel Brown, director of UNEP and Senator John McCain of Arizona were among the leaders who became members of the CEI/USA Honorary Board.

When we hosted the 1989 CEI conference on Technology and the Environment, Ed gained the support of the Illinois government and guided a team of teachers who were in charge of the housing, food and program. I planned tours to sites where technology affected the environment. It was a lot of work but the reward was that we gained so many international partners.

Ed always seemed to have a group of students around him. They listened to what he said, and they laughed with him. At the CEI conference in Israel, Ed asked if I had met the Palestinian students. When I said that I had not, he accompanied me into the dining room, pointed to the table where the students were having lunch, and left. After I introduced myself, I asked the students what they wanted. One boy replied, "All I want to do is walk down the street with my Jewish friend." It was heartbreaking. So I tried to give them some hope about the future. I pointed to Alexander Ryzhenkov, a teacher from Russia who came to the CEI/Illinois conference in 1989 when Russia and the U.S were pointing nuclear missiles at one another.

A friend of Ed's, Barbara Rinnan arranged for the 2 Russian teachers and their students to come to the CEI/Illinois conference. In 1991, Barbara invited Ed and me to join her on a trip to meet with teachers in Moscow, then travel by train 36 hours to Murmansk, to honor teachers who had arranged a students' march in protest against having a nuclear plant built in Murmansk, and against a polluting nickel plant in the Arctic. That visit led to a CEI/Murmansk conference in 1995.

Ed's work brought honor to CEI –from Renew America, a United Nations Youth Forum, the United Nations Global Assembly of Women and the Environment, and the United Nations conference on Environment and Development (also known as the Earth Summit).

When Ed became ill and could no longer travel to CEI conferences, he continued to support the outreach of our international environmental education network. Ed remained at the helm of CEI/USA branch until the end of 2015. For more than 30 years, he inspired CEI students and teachers from around the world to work together to protect nature. Ed Radatz will be missed by all his friends. But he will always be remembered as a smart and fun-loving teacher, and an extraordinary friend to Caretakers.

Isabel S. Abrams
(CEI Co-founder, USA)

He meant a lot to me. The first conference I took part in – Sweden 2000 – was where I first met Ed. I hardly knew anything about CEI but was very interested. In some way Ed spotted that and he took his time to talk with me and told me a lot about CEI – we also talked about human rights, different countries and conditions for people in the world. In the week in Sweden there were suddenly troubles with the delegation from Palestine and the delegation from Israel.

Some of their discussions were quite aggressive and Ed was asked to help to solve the conflicts. For some reason the delegation from Palestine wanted to use me to help them to express their opinions (they knew that the Danish government had expressed sympathy for the Palestine people) and then Ed and I suddenly were some kind of negotiators – in fact more times during that conference. It was not easy to try to calm down the parties, but Ed was a gifted person – he could talk to them in a way that made them listen – and I just tried to support as good as I could.

I'll never forget that week – I learned a lot – and I talked a lot to Ed about that experience too. World politics and the Middle East Conflict suddenly appeared in the middle of a peaceful conference for young students. I had many reflections and I would say that it was one of the experiences that changed my life.

Later – first time in Oregon – I talked a lot to Ed again and he just had the right way to communicate with my 2 young students of 14 – Asbjorn and Morten. They liked him very much and I know that they still remember him with pleasure. During the years I had mail correspondence with Ed and once he sent me a mail in Danish. At that time he had a Danish physiotherapist and he had asked her to translate his mail.

I think all of this tells that he was a great man – both in big and small things. I'll never forget him – or the talks I had with him.

All honour to his memory.

Elisabeth Brun
(CEI President, Denmark)



Mustafa Sultan of Qatar and Ed Radatz CEI 2005

Back row : Kate Graves of Canada, Ed Radatz,
2 Israelis, Wayne Schimpff, Joke Wals
Front row : Israeli, Isabel Abrams, Arjen Wals



I wrote Ed a few months ago and included a newspaper article from 1986 when we started Caretakers during my time as an intern with his Pollution Control Center at OPRF high school. I'm still grateful for the opportunity he provided me back then. When I sent the email I realized it would probably be my last contact with him. It is with great sadness I read the emails you forwarded.

He will be dearly missed!

Arjen Wals
(CEI Co-founder, The Netherlands)

Ed was my environmental education mentor. He opened so many doors for me and we opened many together as we pioneered the development of environmental education together in the greater Chicagoland region back in the late 1960s and early 1970s.

Together we planned the first international conference of the environment for high school students back in 1973. He later on got us 8 complementary seats on a charter to Rio, Brazil and we turned it into an invitational conference on the environment for educators for 7 days.

Our lasting legacy is our beloved Caretakers.

Wayne Schimpff
(Secretary, CEI USA)



CEU USA Board: Wayne Schimpff,
Isabel Abrams, Ed Radatz, Cris Leibner

This is very sad news. Ed was a friend of people, also a friend of Barbara and mine, and he was an example to us, what it means to be a caretaker. He will remain in our memory.

Toni Salamon
(CEI Board, Poland)

I personally never met Ed Ratz in person, but his name is always still fresh in my mind, as the word from my late teacher and inspirator, Suryo Prawiroatmodjo. Suryo always mentioned Ed Ratz, Isabel Abrams, and Arjen Wals as CEI founders when we introduced CEI to teachers and educators across Indonesia. Through CEI, I learn that school linking is one of top strategies in environmental education and education for sustainable development.

Not only that, when series of bomb attack hit churches and police office in Surabaya-Indonesia on 13-14 May 2018, I was really down in the dumps and in such a dicey situation. During a conversation with my colleagues about these terrible events, sometimes my thought kept flying to the principle of living in harmony that CEI has. CEI exactly not only infuse the value of caring and preserving the environment, but also educate people of different religions, races, social classes to live together in a society, but maintain their different traditions an interest. We all experienced it a lot through our interactions in CEI activities.

Therefore, it is crystal clear that the Ed Ratz through CEI had planted one of basic living principles that remain important up to now. Ed had a strong vision on what we (and the world) need to continue our long journey on the road ahead for the life's future and humanity.

Dear Ed, on behalf of thousands of Indonesian students, teachers and educators who got a privilege to learn from CEI, please accept our heartfelt gratitude for everything you had done for us. Rest in peace Ed, your spirit, your inspirations remain alive in our life.

Stien J. Matakupan

(CEI Board, Sampoerna University-Indonesia)

When Ed visited us in Oregon in 2005 for our first conference, I was so impressed with his eagerness to visit with the delegates and to be involved with all the activities. He epitomizes the spirit



of what a Caretaker is : he connects, cares, and engages to make a better world.

What a good man!

Ryan Kinnett

(CEI USA)

Back Row: Ed Ratz, Andrew Cox, Cris Leibner
Front Row: Fatima Almeida, Joke Wals, Isabel Abrams, Birgitta Nordén

I remain very grateful towards Ed Ratz for the empowerment and the confidence he gave me in the early days of my career, as well as his words of encouragement during the preparations of CEI 2012. Yes, the picture is from a series of drawings that Ed loved very much, as I had the chance to present some of these works to both Ed and Isabel during the 1996 conference in Heerlen, Netherlands.



Armand Wachelder

(Former CEI Board member, host of CEI 2012)

My inspiration from first meeting Ed and the rest of the CEI Board was so enlightening; I agreed to host the first Oregon CEI conference just one year after my first one in 2004 in Greece. Before the conference, Ed was on the phone as coach and advisor, and never made me feel I was incapable of hosting a successful conference with Ryan Kinnett. Ed had a quiet but direct way to motivate and inspire. I'm sorry I never got to see him in his classroom, but as a fellow educator, we were always in sync.

Even though Ed was physically unable to attend conferences after 2005, he kept a close eye on CEI activities and remained as Board Treasurer through 2013. Joyce and I often met Ed in Phoenix on our way back from Tucson. At the end of 2015, he turned over his presidency of CEI/USA to me so that we could operate the USA branch from Oregon.

I gratefully appreciated how Ed could keep me on my toes. My final message on a greeting card that was read to Ed spoke to his passion and connection to youth: "If not for you, someone who needed love would have gone without it... there would be one less smile, one less laugh, one less hug, and the song of life might have skipped a beat . If not for you, something special would be missing." Ed, if you can hear me, I am not wishing you "rest in peace", but in your new world I hope you will to continue to "push the envelope" and inspire others to do great things. Bon Voyage!

Dan Hoynacki

(CEI Board, CEI USA)

Country List of CEI 2018

CEI 2018 Conference in Austria has 275 delegates from 18 countries !



Austria



Denmark



France



Hong Kong China



Hungary



Indonesia



Japan



Mexico



Nigeria



Pakistan



Poland



Portugal



Russia



Scotland



Sweden



Taiwan



Turkey



USA

The Story behind the Conference Bags

The Turkish delegations have been attending Caretakers of the Environment conferences for three years. For the last two CEI conferences (2016 Denmark and 2017 Oregon) our families sponsored the bags of the conference and this year we want people to know how these bags are made.

Commonly known as reuse, up-cycling, is to transform the by-products, waste or unwanted materials into new products with better quality and better environmental value. Over the last decade, up-cycling has emerged as one of the most important

weapons in the fight against global warming and climate change. Being fully aware of the fact that up-recycling saves energy, reduces deforestation, minimizes greenhouse gas emission, and prevents the waste of potentially useful materials, we decided to collect second hand denim clothes from our schools and use them to make the back sides of the CEI bags. The front side with the conference logo is made by organic fabric. We are really excited to present the story behind the conference bags really hope that everyone will be pleased by the outcome.

Country : Turkey

Schools : Üsküdar American Academy Private High School, TED İstanbul College Foundation Private High School

Teachers : Sedat Toy, Nurten Mersinlioğlu

Students : Lara Ünal, İdil Türk



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32nd CEI Conference Judenburg, Austria July 8-14, 2018