



Innovative
practices to give
solutions to avoid
climate change



Undertaking, recycling and creating

COUNTRY AND ORGANIZATIONS: EKPOL/ 2o GEL NEAS IONIAS MAGNISIAS, VOLOS, GREECE

RELEVANT PRACTICES, APPROACHES, INITIATIVES

Please supply examples of 'best practice', training or guidance enacted/offered/provided by schools or other organizations, which incorporate recycling

Background information	Name of example: CLOTHES' RECYCLING SPOT	
Provider/ Original source	<p>Who is the author, developer or originator of this example? What country are they from? Who is the author?</p>	<p>The author of the idea for this example is https://earth911.com/ It is an organization aiming to provide green solutions in terms of what and how to recycle anything which can be recycled. The directory provides consumers and businesses with many different ways to recycle a very large variety of materials. The organization is open to cooperation with educational institutions, so as to raise awareness. If there is need to recycle a product, Earth911 can help.</p>
Participants	<ul style="list-style-type: none"> - Who is involved in the practice? - Is a school were involved? - For whom was the activities/ training devised 	<ul style="list-style-type: none"> - citizens, students, and whoever might be interested in recycling items - if schools wish to, they can refer to the organization and recycle used clothes, or set up a permanent channel of cooperation to recycle clothes on a regular basis. - it was devised to be addressed to the public, so as to raise awareness about the issue of textile waste and its impact on the environment.
Purpose	<p>What was the aim behind this example? e.g. to develop children's understanding in one subject area? Develop teachers' subject and/or pedagogical knowledge?</p>	<p>-to develop students'/teachers' knowledge and understanding of the impact of fast fashion on the environment.</p>

		<p>-to suggest ways to develop a more circular model of handling our clothes.</p> <p>-to make students understand that textile recycling has a major impact on reducing greenhouse gasses. As yet clothing is not typically considered recyclable, it is very important to make the issue known to all student community. They are an age range regarding the way they look and dress highly.</p> <p>-to familiarize students / teachers with various ways to reuse, recycle, repair our clothes so as to reduce the amount of textile waste.</p>
<p>Subject focus</p>	<p>What curriculum subject area(s) is/are targeted?</p>	<p>Mathematics = keeping record of the number of items recycled on a weekly basis.</p> <p>Chemistry = teaching of how chemical dyes are used in the textile industry and their impact on the environment.</p> <p>Geography=Students can consider the use of raw textile materials by industry and how consumers treat their unwanted textiles. How would a large-scale transition to a more recycling-led textile industry change current patterns of raw-material production, and their use in textile manufacture?</p> <p>Science=Recycling technology is driven by science. Students can consider recycling as an example of how science has moral implications in how it is applied.</p>

		Technology=Students can consider how existing products are made and how they can be disposed of or recycled. Students can learn how to make use of recyclable materials in order to upcycle them.
Description of Example:		
Context	Provide further details about the context.	
Innovation	Do you find it innovative in any way?	It allows a student to demonstrate his or her capabilities while working independently. It shows the student's ability to apply desired skills such as doing research. It develops the student's ability to work with his or her peers, building teamwork and group skills. It promotes problem solving. Students acquire a deeper knowledge through active exploration of real-world challenges and problems.
Main pedagogical approach	<ul style="list-style-type: none"> - Outline the teaching and learning methods - medium of presentation 	<p>Students are divided in teams supervised by teachers of the disciplines involved.</p> <p>The activity can be implemented as follows: Students are made familiar with the issue of fast fashion and the consequences on the environment. Then, they are divided in 5 groups and they are assigned their responsibilities.</p> <p>Group 1: They make the "Wardrobe Facts" questionnaire. The aim of the questionnaire is to gather data about the content of students' and their family closet as well as their familiarization with the notion of textile recycling.</p> <p>Group 2: Their responsibility is to build the recycling spot. It contains at least 4 compartments with a lid on top of each. It can be constructed with wood, thick cardboard, or plasterboard.</p>

		<p>Group 3: Responsible for communicating the good practice and its aims to the rest of the school community and the general public. Also, they contact relevant local authorities or shops which adopt similar practices, so as to set up a recycling network.</p> <p>Group 4: Responsible for the infographics, posters, signs with instructions to be put up on the recycling box to help sort the textiles according to material (cotton, synthetic, wool, leather, household textiles).</p> <p>Group 5: Responsible for creating the application to depict and count the items to be recycled. Every time someone wishes to recycle fabric, he/she uses the tablet right next to the recycling spot and enters the relevant data by using the touchscreen. Students of this group collect the data every month, process the statistics and inform Group 3 in order to have the results disseminated. At the end of the school year students publicize their achievements in the school's site, local news and social media. Moreover, when students are about to graduate, they can instruct new students how to continue the activity, ensuring its sustainability.</p> <p>USEFUL ADVICE: It is advisable to create the working groups within the same class. This will enable frequent meetings of the involved teachers-students on a weekly basis to monitor the progress of the activity. Students will be able to work smoothly exchanging advice, ideas, brainstorming solutions to problems, and progressing the project.</p>
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Accessibility	<ul style="list-style-type: none"> - Is this example open access/freely available? - Media tools required? 	<p>-This example is freely available.</p> <p>-</p>
Sustainability	<ol style="list-style-type: none"> 1. Is the information likely to become outdated? 2. Is it innovative 3. ... 	<p>The information is anything but likely to become outdated. In view of dwindling resources, especially through resource-intensive natural fibers like cotton and the environmental impact of petroleum-based fibers like acrylic, polyester, nylon and spandex, it is about time for the textile and apparel industry to look for sustainable alternatives and to prove that the production of textiles and clothing does not have to pollute the environment. Towards this target, students will learn that alternatives like hemp, fibers made up of coffee beans, bananas or pineapples and lotus plants, might provide consumers with environment-friendly, durable biodegradable fabrics It can also signal a shift of the textile related enterprises to a more sustainable model of production.</p>
Website		

Undertaking, recycling and creating

COUNTRY AND ORGANIZATION: VOLOS, GREECE- EKPOL / 2o GENIKO LYKEIO NEAS IONIAS MAGNISIAS

RELEVANT PRACTICES, APPROACHES, INITIATIVES

Please supply examples of 'best practice', training or guidance enacted/offered/provided by schools or other organizations, which incorporate recycling

Background information	Name of example: RECYCLING PAPER AT SCHOOL	
Provider/ Original source	Who is the author, developer or originator of this example? What country are they from? Who is the author?	Teachers of 2o Geniko Lykeio Neas Ionias Magnisias, Volos, Greece
Participants	<ul style="list-style-type: none"> - Who is involved in the practice? Is a school were involved? - For whom was the activities/ training devised? 	Students, teachers, parents, local community, local authorities
Purpose	What was the aim behind this example? e.g. to develop children's understanding in one subject area? Develop teachers' subject and/or pedagogical knowledge?	<p>The main objectives are:</p> <ul style="list-style-type: none"> - informing the children about the management of paper waste but also of the waste in general in our country. - promoting the principles of sustainable waste management. - developing a sense of responsibility for paper and waste management in general. -encouraging active participation in order to contribute to combating deforestation and environmental damage caused by paper production.

		<p>- development of creative and critical thinking about the ways that can help address and solve the problem.</p>
<p>Subject focus</p>	<p>What curriculum subject area(s) is/are targeted?</p>	<p>CHEMISTRY-BIOLOGY SENIOR HIGH SCHOOL 2nd GRADE: Environmental pollution-impact of pollution on the biodiversity of ecosystems</p>
<p>Description of Example:</p>		
<p>Context</p>	<p>Provide further details about the context.</p>	<p>School Paper Reduction Campaign</p> <ul style="list-style-type: none"> -Placement of recycling bins in accessible places on school site such as: in classrooms, in the library, next to all copiers and printers, as well as corridors. -Reduce the use, or deactivation of devices that need paper for their operation, such as: copiers, printers, fax machines. -If paper is needed, we buy recycled. -Use of other ways of communication or cooperation between students or teachers such as: e-mail or other digital educational platforms for students

		<p>and teachers.</p> <ul style="list-style-type: none"> -Post on the school website all announcements of the class / department instead of handing them out on paper. -Encourage e-learning to achieve reduction of photocopies: students submit their assignments via email or educational platforms available. -Checking and grading on the computer by the teacher.
Innovation	Do you find it innovative in any way?	<p>This good practice is considered innovative for the following reasons:</p> <ul style="list-style-type: none"> - Contributes to the sustainable use of resources - Less energy is spent on recycling paper which ensures that fewer greenhouse gases, that cause global warming, are released - As more paper is recycled, less land is filled with waste paper. - less water is required so as to process paper; the process of recycling paper uses up much less of this crucial resource.
Main pedagogical approach	- Outline the teaching and learning methods medium of presentation	<p>Motivated by environmental awareness in a topic that is of particular concern to society as a whole, through the proposed good practice - digital scenario, students are given the opportunity to acquire knowledge of the subjects of Organic Chemistry and Biology through active learning processes in a multimedia digital environment in which students can work individually and in groups.</p>

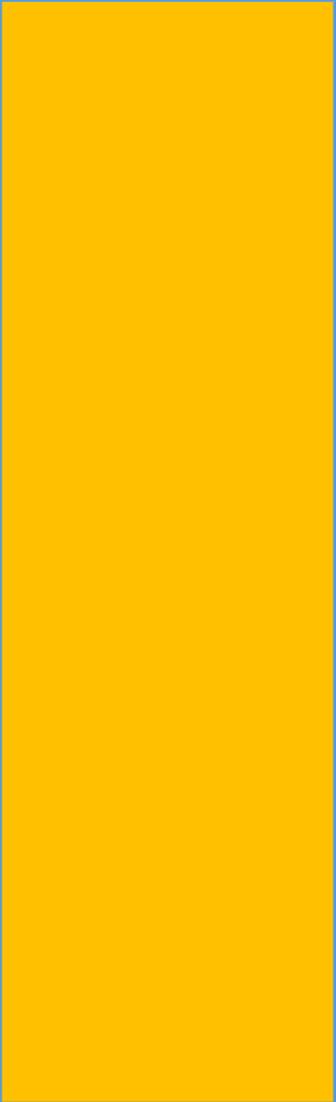
The scenario is based on guided discovery, collaborative method and active learning.

Students practice skills relevant to searching, analyzing and organizing content, expressing themselves with multimodal texts and collaborating to achieve a common goal. Thus, from passive receptors to a behavioral type of teaching, they acquire an active role. The teacher sets the appropriate questions to cause a cognitive conflict in the students and through it to overcome any prejudices-misunderstandings.

More specifically, the scenario concerns the **solid waste management** and is addressed to students of the 2nd grade of Lyceum (11th grade) and is implemented in three teaching hours.

1st Hour: students learn from the Chemistry lesson the phenomena caused by the emission of exhaust gases into the environment (greenhouse effect, ozone hole, acid rain, photochemical cloud) and their effects on the preservation of ecosystems from the Biology lesson.

With the help of the teacher, by showing a presentation, students focus on the problem posed by deforestation for paper production and the significant impact on the environment (global warming, biodiversity reduction, burden on air quality, etc.).



At the same time, information is provided about the pulp and paper industry, which in most countries is considered the largest industrial water user, the largest water pollutant and the third largest pollutant transmitter responsible for global warming.

At the end of the lesson we conclude after a discussion that reducing paper use worldwide is considered as a means of combating deforestation and environmental damage caused by paper production and we aim to implement the Reduction Campaign Paper at school.

2nd hour: The children are divided into 4 groups and discuss practices which can be adopted by the class and the school unit to reduce paper consumption. Installation of recycling bins in classrooms, in the library, etc., reduction of prints, use of e-mail or other digital educational platforms for students and teachers, etc.

3rd Hour: Assignments are distributed, for example a group undertakes to inform and request the contribution-help for the activities that are going to be done by the School Management, the teachers 'association, the parents' association and the body of the Municipality

Another team undertakes to create an information and awareness poster and post it in a prominent place in the school.

Accessibility	<ul style="list-style-type: none"> - Is this example open access/freely available? - Media tools required? 	<p>-Yes, it is free, there is open access to everyone.</p> <p>-Active internet connection is required. There should be enough digital devices to ensure prompt communication, once the paper is reduced or banned in school.</p>
Sustainability	<ol style="list-style-type: none"> 1. Is the information likely to become outdated? 2. Is it innovative 3. ... 4. 	<p>No, it is not likely to become outdated. On the contrary, it is a common target for our school - and hopefully more schools- to adopt similar practices so as to reduce paper use and paper waste.</p>
Website		

Undertaking, recycling and creating

COUNTRY AND ORGANIZATION: VOLOS, GREECE- EKPOL / 2o GENIKO LYKEIO NEAS IONIAS MAGNISIAS

RELEVANT PRACTICES, APPROACHES, INITIATIVES

Please supply examples of 'best practice', training or guidance enacted/offered/provided by schools or other organizations, which incorporate recycling

Background information	Name of example: RECYCLING OF ELECTRONIC DEVICES	
Provider/ Original source	Who is the author, developer or originator of this example? What country are they from? Who is the author?	Teachers of 2o Geniko Lykeio Neas Ionias, Volos, Greece
Participants	<ul style="list-style-type: none"> - Who is involved in the practice? - Is a school were involved? - For whom was the activities/ training devised 	Students and teachers
Purpose	What was the aim behind this example? e.g. to develop children's understanding in one subject area? Develop teachers' subject and/or pedagogical knowledge?	<ul style="list-style-type: none"> • To make teachers and students realize the environmental impact of the rapid increase in the volume of waste of electronic devices • to be aware of the dangerous substances contained in electrical appliances, which, after the end of their useful life do not undergo proper environmental management. • To learn that recycling of electronic waste recovers usable

		<p>materials, such as metals, glass and plastic, which are reused in the production process.</p> <ul style="list-style-type: none"> • to know that this procedure reduces the cost of production for those manufacturers that use recycled materials. Therefore, lower costs for industry mean lower prices for consumers. • To cultivate among students and teachers and in the broader public, a spirit of cooperation, method and planning, as well as the importance of sustainability attitude towards electronic waste
<p>Subject focus</p>	<p>What curriculum subject area(s) is/are targeted?</p>	<p>Mathematics: keeping record of the number of items recycled, information management of the recycling results</p> <p>Chemistry: learning about the elements that electronic devices are made of and whether they are recyclable or not.</p> <p>Language: writing articles and press releases</p>

Description of Example:

Context

Provide further details about the context.

The reason for starting this project is the plethora of old computers remaining unused in the School's storage room. The students were concerned about how to give them new life. The activity can be implemented as follows:
The students are divided in groups
The first group: Their task is to search what materials electronic devices are made of, which of them are recyclable and which are harmful if not recycled and make a presentation which should be displayed in the school function room, to inform and raise awareness of students and teachers.
The second group : their responsibility is to contact, by phone, by e-mail, by open call through local radio and media, companies that collect and recycle electronic devices. After negotiating with them about the school's benefit , they must choose the one that makes the most advantageous offer.
The third group: it is responsible of collecting the material, counting and processing the data of the recycling process: how many devices are recycled, how many and which recyclable materials have been collected and in what quantity.
The fourth group: they undertake the dissemination of the project: They take photos, record videos of the process, upload

		an article on the school website and audiovisual material, and sent press releases to the local media.
Innovation	Do you find it innovative in any way?	Students acquire skills necessary for their lives like taking initiative and problem solving, critical thinking, assigning roles and responsibilities, time management, conflict resolution, resourcefulness, project management, negotiating . They also develop communication skills, listening, open-talking, argumentation. They practice active learning; they are encouraged to collaborate and cultivate team spirit. Moreover, they become aware of environmental issues and sustainable waste management.
Main pedagogical approach	<ul style="list-style-type: none"> - Outline the teaching and learning methods - medium of presentation 	<p>The collaborative method is applied, with the guidance and supervision of the teachers.</p> <p>The students are divided into mixed groups. They are guided and they take feedback by their teachers. They are encouraged to discuss their ideas, to take initiative, to search and learn by themselves.</p>

Accessibility	<ul style="list-style-type: none"> - Is this example open access/freely available? - Media tools required? 	<ul style="list-style-type: none"> -This example is freely available. - It requires ICT media tools.
Sustainability	<ol style="list-style-type: none"> 1. Is the information likely to become outdated? 2. Is it innovative 3. ... 	<p>This information is unlikely to become outdated. Nowadays technology is accelerating, electronic items are spreading rapidly and as a result the volume of their waste is increasing. This problem will become more and more acute in the future and its treatment will be more and more imperative.</p> <p>Students get familiar with good practices for reducing waste, saving natural resources and protecting the environment from hazardous substances contained in electronic devices.</p>
Website		

Undertaking, recycling and creating

COUNTRY AND ORGANIZATION :Volos, Greece EKPOL/2o GENIKO LYKEIO NEAS IONIAS

RELEVANT PRACTICES, APPROACHES, INITIATIVES

Please supply examples of 'best practice', training or guidance enacted/offered/provided by schools or other organizations, which incorporate recycling

Background information	Name of example: composting at municipalities	
Provider/ Original source	Who is the author, developer or originator of this example? What country are they from? Who is the author?	https://webgate.ec.europa.eu/life/publicWebsite/index.cfm?fuseaction=search.dsPage&n_proj_id=3952 European Commission, Life program biowaste management Athens-Kifissia case studies
Participants	<ul style="list-style-type: none"> - Who is involved in the practice? - Is a school were involved? - For whom was the activities/ training devised 	<ul style="list-style-type: none"> -municipalities of Athens, Kifissia, and later on other municipalities in Greece. -schools were involved. -the project was devised for citizens of all ages.
Purpose	What was the aim behind this example? e.g. to develop children's understanding in one subject area? Develop teachers' subject and/or pedagogical knowledge?	<ul style="list-style-type: none"> -The main objective of the Athens-Bio-waste project was to establish and promote sustainable biowaste management in Greece, using the municipalities of Athens and Kifissia as case study areas. The aim was to launch two separate collection systems, with collected material being composted. -The project aimed to assess the quality of the produced compost to ensure it meets European standards, and to create a compost quality model to match it to parameters such as biowaste composition and collection method. The project also sought to develop a market for the compost.
Subject focus	What curriculum subject area(s) is/are targeted?	In the case of having schools participating, teaching fields such as Biology, Chemistry, Social Studies, Physics
Description of Example:		
Context	Provide further details about the context.	The project firstly examined and evaluated different biowaste separate collection

		<p>methods in use across Europe. Suitable best practices were identified and implemented. In total, more than 6 000 inhabitants participated in the door-to-door and central collection bin schemes in the pilot areas. The project conducted an extensive awareness-raising campaign concerning the separate collection of biowaste, which led to significantly increased public and stakeholders' awareness about the recovery and reuse of biowaste.</p> <p>The project team distributed collection bins and biodegradable bags to citizens. Outdoor bins were purchased and installed by the participating municipalities. During the project, more than 500 tonnes of biowaste was recovered. This was sampled for its composition and physicochemical characteristics. The collected biowaste was composted, producing more than 130 tonnes of good quality compost. Analysis of the produced compost was conducted, proving its compliance with the relevant End of Waste Criteria.</p>
Innovation	Do you find it innovative in any way?	<p>The Guide includes step by step guiding instructions and practical advice about how a Municipality can design, install, implement and monitor a separation at source scheme (in combination with information campaign), promoting enhancing the development of a market for compost and the awareness of the citizens, the competent authorities and other stakeholders on the management of bio-waste. The guide is available at www.biowaste.gr.</p>
Main pedagogical approach	<ul style="list-style-type: none"> - Outline the teaching and learning methods - medium of presentation 	<ol style="list-style-type: none"> 1. Presentation of theoretical framework: Teaching terms and issues of: organic waste, organic waste management, composting, greenhouse gas, CO2 emissions, separation of waste in the source. 2. Theoretical presentation of how the school will participate in composting.

		<p>3.Students assign working groups: Group A will deal with the composting bin, ensuring appropriate waste goes in, maintaining the soil in good condition, keeping it hydrated, checking ventilation holes, unfilling it when it is full.Group B will make use of the compost in the school’s garden , grove or garden. If the production is high, the produced compost can be donated or sold, making some profit for the school.</p>
Accessibility	<ul style="list-style-type: none"> - Is this example open access/freely available ? - Media tools required ? 	Yes it is freely available.
Sustainability	<ol style="list-style-type: none"> 1. Is the information likely to become outdated? 2. Is it innovative 3. ... 	No it is never going to be outdated quite the contrary it should be encouraged on a household or broader scale.
Website		

Undertaking, recycling and creating

COUNTRY AND ORGANIZATION :Volos, Greece EKPOL/2o GENIKO LYKEIO NEAS IONIAS

RELEVANT PRACTICES, APPROACHES, INITIATIVES

Please supply examples of 'best practice', training or guidance enacted/offered/provided by schools or other organizations, which incorporate recycling

Background information	Name of example: recycling of batteries	
Provider/ Original source	Who is the author, developer or originator of this example? What country are they from? Who is the author?	-2o Geniko Lykeio Neas Ionias -Greece -Teachers of 2o Geniko Lykeio Neas Ionias, Volos, Greece
Participants	<ul style="list-style-type: none"> - Who is involved in the practice? - Is a school were involved? - For whom was the activities/ training devised 	-Households , local community, students of 2o Gen. Lykeio -Yes the school is responsible for collecting and recycling these items to the relative recycling authorities, especially https://afis.gr/
Purpose	What was the aim behind this example? e.g. to develop children's understanding in one subject area? Develop teachers' subject and/or pedagogical knowledge?	The mission is to raise awareness and participation of students and local community in the most efficient and effective recycling of batteries, through a project involving all stakeholders and cooperating with AFIS ,the approved institution by the Greek Ministry of Environment. It aims at improving cooperation,between citizens and educational foundations, so as to foster a pro environmental attitude with the aim of creating social awareness for a better environment.
Subject focus	What curriculum subject area(s) is/are targeted?	Chemistry, Environmental Studies
Description of Example:		
Context	Provide further details about the context.	

Innovation	Do you find it innovative in any way?	Batteries account for 20% of the planet's toxic waste. It is a practice many times recommended and described, but the innovation behind this example is that schools can become a collecting station of batteries to be recycled. The school will act as the collecting source. So the recycling authority will collect large amounts of batteries from one point, reducing time and resources.
Main pedagogical approach	<ul style="list-style-type: none"> - Outline the teaching and learning methods - medium of presentation 	<ul style="list-style-type: none"> -Students are divided in working groups. - Group A will set up a battery recycling station. The station will consist of separate booths, one for each kind of battery (zinc-carbon, alkaline, lithium) -Group B will inform the local community of the recycling station and its purpose. Group C and Group A will classify the batteries according to type. They will also weigh the batteries to be recycled. -Group D will contact AFIS and set up a time schedule for collecting the batteries. Every year the working groups will report their progress to the school's social media and the press.
Accessibility	<ul style="list-style-type: none"> - Is this example open access/freely available ? - Media tools required ? 	<ul style="list-style-type: none"> -Yes it is freely available. -Media tools are required for the dissemination of the practice.
Sustainability	<ol style="list-style-type: none"> 1. Is the information likely to become outdated? 2. Is it innovative 3. ... 	<ul style="list-style-type: none"> -No the information is not likely to become outdated . -It serves the notion of sustainability and environment protection. The chemicals of the recycled items will be reused and not released to the atmosphere.
Website		



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