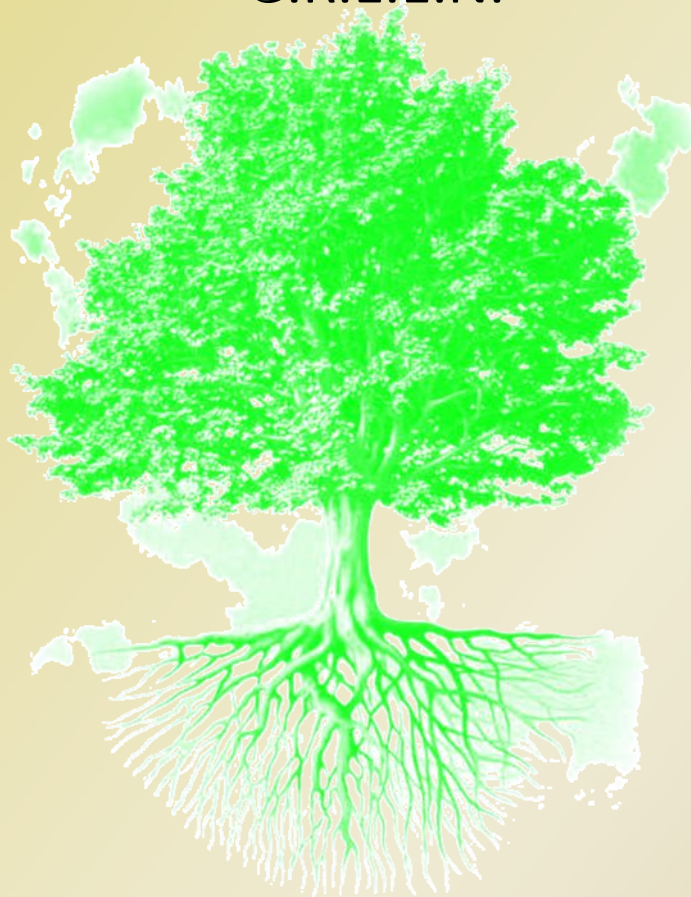




COMENIUS MULTILATERAL PROJECT G.R.E.E.N.



RECYCLING

„OCTAVIAN GOGA” NATIONAL COLLEGE SIBIU

ROMANIA

*This project has been funded with support from
the European Commission.*

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G.R.E.E.N. Go Re-Educate Earth Now!



“Mother nature”
by Sandra Stanciu

ROMANIA

May , 2013

The Process of Recycling

Recycling is an important process that refers to collecting and processing materials that would otherwise have been thrown away and to turning them into new products.



Recycling is a beneficial action that can help our society and improve life, but what is more important is that it will improve the life of future generations.

Recycling doesn't require a lot of effort. It is a process that refers to the fact that household waste needs to be sorted and deposited into special bins, designed for each type of material (for example: plastic, glass, paper, textile).



Benefits of Recycling

Though recycling was initiated as a practice in the 1800s, there are millions of people on this planet who do not understand the meaning of recycling. Therefore, it is important to educate and build awareness regarding the benefits of recycling, especially on a global level.

- recycling reduces the amount of waste;
- It protects natural resources, such as water, timber and minerals;
- It saves energy;
- It's a way of prevention against pollution by reducing the need to collect raw materials;
- Reduces greenhouse emissions that affect the climate change;
- It protects the environment and offers a beautiful place to live for the new generations;
- It reduces the risk of diseases.

Why is Recycling important?

First of all, recycling saves energy, because it takes less energy to process recycled materials than to process raw materials. For example, it takes a lot less energy to recycle paper than to create new paper from trees. The energy from transporting raw materials from the source is also saved. Saving energy also has its own benefits, like decreasing pollution, thus improving people's health and world economy.



What **can** we recycle?

- 1) Computers and electronic devices, as well as mobile phones;
- 2) Metals, especially aluminum;
- 3) Water;
- 4) Plastic, PETs;
- 5) Paper;
- 6) Special waste;
- 7) Hazardous waste;
- 8) Household waste;
- 9) Used tires;
- 10) Anything that can be subject to creative recycling.

What **should** we recycle?

Recycling sometimes means REUSING, and it ranks among the priorities in the EU regulations before the disposal of waste into landfills. Here is a list of the most frequently reused materials:

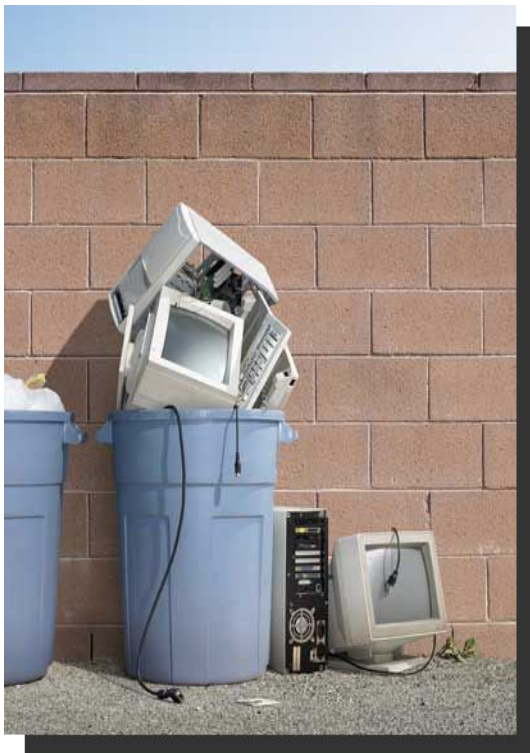
- Plastic
- Glass
- Paper and cardboard
- Waste electrical and electronic equipment (WEEE)
- Batteries and accumulators
- Steel and aluminum
- Waste from construction and demolition
- Used tires

Why **should** we recycle?

1. **Plastic:** because the production of plastic uses 8% of the oil production and recycling a ton of plastic saves about 800 tons oil; Plastic not only adds to landfill space but also takes forever to decompose. Used plastic dumped into the sea kills and destroys sea life at an estimated rate of 1,000,000 sea creatures per year!
2. **Glass:** is a material that can be endlessly reused; it takes over 1000 years to degrade; a ton of melted reusable glass prevents the emission of 500 kg. CO₂ and saves 1,2 tons of raw materials;
3. **Paper and carton:** paper can be recycled up to 6-8 times; recycling a ton of paper saves 3000 l. water, 15-17 trees, almost 2,5 barrels of oil and reduces CO₂ emissions by 95%;
4. **Batteries and accumulators:** the mercury contained in a battery can pollute 500 liters of water per square meter of soil for a period of 50 years.
5. **Styrofoam:** a Styrofoam coffee cup discarded today will remain in landfill space for close to 500 years. This is because it does not get decomposed easily, ie. it is not bio-degradable. Therefore, it is advisable to say, "No," to Styrofoam products
6. And so on...

Computer Recycling

Establish if your computer is usable. If your computer is less than five years old it may still be of use to someone else. Sending your old computer to a business that refurbishes old equipment is often the best way to donate it. This is often better than donating directly to schools or charities, especially if you need to wipe your hard drive for personal information stored in your computer.





Metal Recycling



Copper, nickel, brass, lead, gold, silver, etc. can all be recycled. The recovery of these metals is sometimes ignored especially when they are used in households and these items are disposed of by the householders. By recycling them, we can save energy and we can improve the industry.

- For instance, recycling aluminum prevents the need to mine for ore to create new aluminum. It requires 4 tons of ore to create 1 ton of aluminum.
 - Recycling aluminum cans takes 95 percent less energy than creating new ones.
 - The energy it takes to produce one can could produce 20 recycled cans.
 - The energy saved from recycling one aluminum can could power a 100-watt light bulb for four hours or a television for three hours
- [sources: Can Manufacturers Institute, Russell].

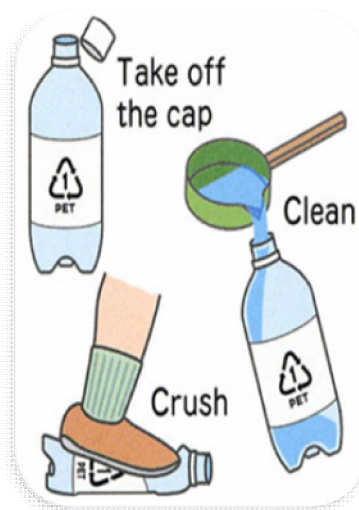
Water Recycling

The most abused and wasted natural resource is water!

- Water recycling provides enormous environmental benefits. It also provides an additional source of water for various purposes. This a list of some benefits that water recycling can present:
- Water recycling decreases the extraction of water form sources that may be dwindling and may stop being viable as habitats for valuable and endangered wildlife.
- Recycling wastewater can decrease the discharge of effluents that may damage and pollute the ecosystems of the sensitive bodies of water.
- Recycled water can be used to create new wetlands or to enhance and improve the quality of existing ones.
- Water recycling can reduce and prevent pollution by leaving damaging pollutants in the treatment plant.

PET Recycling

Over 60 percent of global production of PET is used in the manufacture of synthetic fibers. Bottle production accounts for about 30 percent of the PET produced. The bottle that everyone is familiar with today started out as American Patent No. 3733309 which was published in 1973. This invention is usually credited to Nathaniel Wyeth of Du Pont. The main problem was recycling.



PETs can be very dangerous and they take many years to degrade, so the best way to be safe is to recycle them. You can do that by throwing them in the right place.

Plastic Recycling

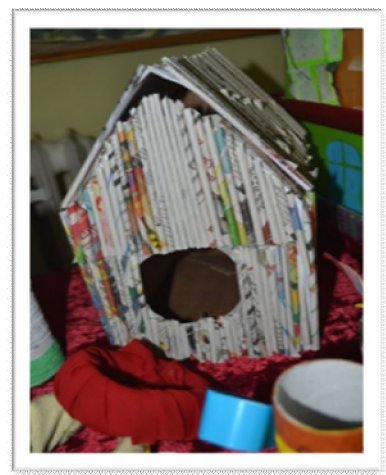
The recycling process for a plastic product begins by individuals separating them from their regular trash. Most communities have a trash collection that includes a bin for materials that can be recycled. In Romania (our country) such bins have appeared, and we have them even in our school, so that we can improve the recycling process. One of the most important reasons why we should recycle plastic is the fact that plastic can take thousand of years to biodegrade. So, if you want your plastic to live longer than you, then don't recycle, but I think that a wiser choice would be to live longer than your plastic!



ECOSAL, MEDIAȘ

Paper Recycling

Offers two possibilities: to be collected and taken to a waste management company, or to be submitted to creative recycling!



Special Waste

It can influence the environment in which we live as it has a direct effect on our health. Its collection is beneficial, helping reduce disease and health problems in the case of the workers from companies which use special waste. If managed in the wrong way, it could cause an explosion or a catastrophe. In Romania there are companies specializing in waste collection for special waste and in its re-usage in high caution conditions.



HOUSEHOLD WASTE

Recycling household waste is very important as a first step towards an improvement of the system. Everyone of us selectively collects garbage (plastic, glass, paper, etc.) to ease their sorting process and save time in the production of new goods.

What can we do to recycle them?

The first step that you must do to recycle is to equip your house with different trash bins for each material (glass, paper, metal, etc.). The second step is to throw away the containers in a larger container provided by the city. If you live in a city where there is a selective recycling programme, call a company that deals with the collection of household waste from houses. A person who recycles means a plus for our society.

- **HOUSEHOLD WASTE** is waste which usually comes from house activities, but also from shops, hotels, canteens, public food places, schools, public institutions, workshops, companies. It may contain a considerable amount of toxic or hazardous waste from improperly discarded pesticides, paints, batteries and cleaners.
- **STREET WASTE** consists of dust, dirt, sand, leaves, branches, papers, mud resulted after cleaning sewers and other rubbish resulting from the activity of cleaning public places.
- **INDUSTIAL WASTE** comes from technological processes.
- **BULKY WASTE** can have a volume of up to 2 mc and because of the large size (maximum 3m) it cannot be thrown in containers. Some examples: used or damaged consumer goods; furniture and mattress; bicycles, strollers, gardening tools; linoleum or carpets etc.

- **WASTE FROM CONSTRUCTION** consists of scrap wood, debris, packing materials, even mixed with mineral debris and also dirt from the excavations etc.
- **ANIMAL WASTE OR WASTE FROM AGRICULTURE AND ANIMAL HUSBANDRY:** bodies of birds and animals, manure, dung, excrement of birds.
- **REUSABLE WASTE:** fragments or parts of objects that can be recycled such as glass, paper, metals, plastics, plant debris etc.
- **SPECIAL WASTE:** toxic, flammable, explosive, pollutant and infectious waste resulted from the activity of individuals and legal entities who are not covered by sanitation services business.

Used Tires

Used tires can be recycled for their high content of calcium and steel, but only in special recycling places. The tires have a high caloric value and they can be used as an energy source. They fit better in the field☺ of creative recycling, as you can see...

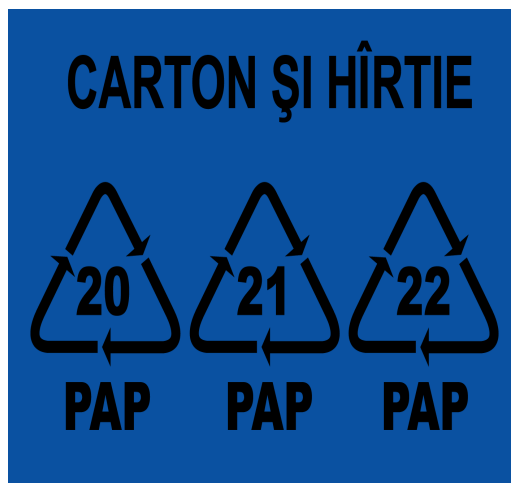
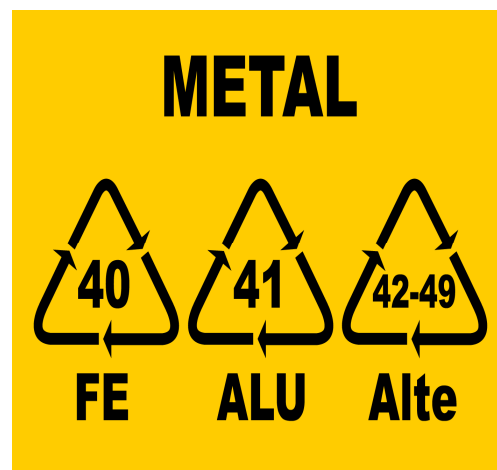


NEVER RECYCLE!

- Aerosol cans:** Sure, they're metal. But since spray cans also contain propellants and chemicals, most municipal systems treat them as hazardous material.
- Batteries:** These are generally handled separately from both regular trash and curbside recycling.
- Brightly dyed paper:** Strong paper dyes work just like that red sock in your white laundry.
- Ceramics and pottery:** This includes things such as coffee mugs. You may be able to use these in the garden.
- Diapers:** It is not commercially feasible to reclaim the paper and plastic in disposable diapers.
- Hazardous waste:** This includes household chemicals, motor oil, antifreeze and other liquid coolants. Motor oil is recyclable, but it is usually handled separately from household items. Find out how your community handles hazardous materials before you need those services.
- Household glass:** Window panes, mirrors, light bulbs and tableware are impractical to recycle. Bottles and jars are usually fine. Compact fluorescent lightbulbs (CFLs) are recyclable, but contain a small amount of mercury and shouldn't be treated as common household bulbs.
- Juice boxes and other coated cardboard drink containers.** Some manufacturers have begun producing recyclable containers. These will be specially marked. The rest are not suitable for reprocessing.

- **Medical waste:** Syringes, tubing, scalpels and other biohazards should be disposed as such.
- **Napkins and paper towels:** Discouraged because of what they may have absorbed. Consider composting.
- **Pizza boxes:** Too much grease. While some compost enthusiasts steer clear of adding pizza box cardboard to their pile, others report no problems. It's that or the trash.
- **Plastic bags and plastic wrap:** If possible, clean and reuse the bags. Make sure neither gets into the environment.
- **Plastic-coated boxes, plastic food boxes, or plastic** without recycling marks: Dispose of safely.
- **Plastic screw-on tops:** Dispose separately from recyclable plastic bottles. Remember that smaller caps are a choking hazard.
- **Styrofoam:** See if your community has a special facility for this.
- **Tires:** Many states require separate disposal of tires (and collect a fee at the point of sale for that purpose).
- **Wet paper:** In general, recyclers take a pass on paper items that have been exposed to water. The fibers may be damaged, and there are contamination risks.

Symbols on the selective recycling containers

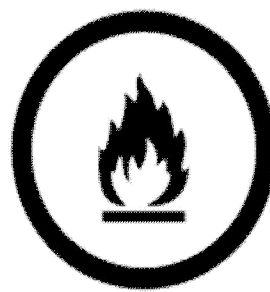


Symbols indicating objects never to be tossed into the recycle bin!!

Radioactive
Toxic/Poisonous

Biohazard

Flammable



Reduce Consumption!

- Buy products that are eco or bio!
- Choose longlasting products!
- Try to buy more local products! It reduces costs and provides healthy nourishment!
- Pay attention to the package recommendations!
- Read the label carefully!
- Choose handmade products!
- Try riding a bike instead of taking the car!
- When you visit a country, be responsible!



Recycling in Romania



Content



1. Recycling of packaging

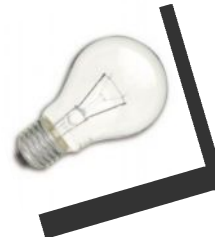


2. Recycling of IT and electronic products



3. Recycling of metals

4. Recycling of light bulbs



5. Recycling of steel and aluminum

6. Creative recycling

- in Romania, only **one percent** of the waste that people produce is recycled, the rest being “stored” or kept in landfills;
- the amount of garbage collected in Romania is about 8 million tons per year;
- the selective collection targets and recycling of waste increase each year, the aim being to reach European standards;
- in 2010, recycling was done as follows:
 - 60% paper
 - 14%, plastic
 - 44% glass
 - 50% metal

The more you generate trash, the more you need to pay – this is law of “the polluter pays”: if you are not responsible, you pay.

In addition, in Romania, since 2011, we have to distinguish between **garbage** and **waste** (waste is recyclable, is a product that can be reused); only the garbage reaches dump!



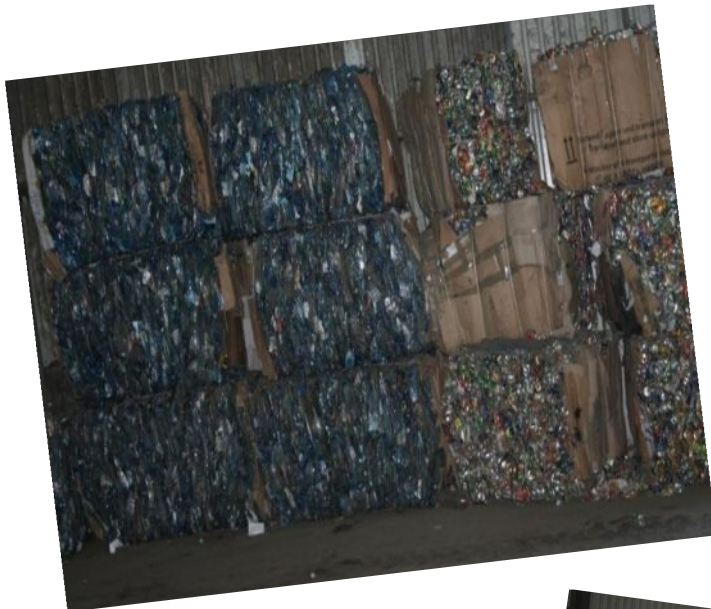
1. Recycling of packaging



According to the National Environment Protection Agency, in 2007, the total amount of packaging placed on the market was over one million tons, of which nearly 400,000 tons (30%) were recycled.

- In Romania, Eco-Rom makes sure that their companies fulfill the obligations to collect and recycle.





- monthly, the company receives from each company an amount of money for the quantity of waste that they collect
- the amount of money gained is invested in the system of collection, transport and recovery of packaging waste

2. Recycling of IT and electronic products

- as part of the European Union, Romania has an obligation to collect and recycle 80 000 tons of waste of electrical and electronic equipment - WEEE annually (4 kg of WEEE per person)



- since 2007, campaigns for collecting the electrical and electronic waste have been organised, known as the “Great Disposal”, initiated by the Ministry of Environment;
- the largest company specialising in IT equipment and appliances recycling in Romania is owned by GreenWEEE company and is located near Buzău;
- the factory has a capacity to recycle 50,000 tons of waste of electrical and electronic equipment (WEEE) per year;



3. Recycling of metal

- in 2007, the scrap iron market in Romania was estimated at over one billion Euro annually
- in terms of the benefits of recycling iron, a ton of scrap iron replaces 3 tons of ore iron and about one ton of ore coal



4. Recycling of light bulbs

- in Romania, the organization Recolamp collects non-functional bulbs and it has 4,800 collection points across the country;
- every year Recolamp collects between 150 and 200 tons of bulbs;



- In Romania, the first factory which recycles used lighting equipment was opened in 2010;
- GreenLamp Recycling is the only recycler in Romania that uses a technologically advanced process equipment using distillation lighting to recover the mercury.



Recycling of steel and aluminum

- steel and aluminum can be recycled whenever we want, however, in Romania, only a part of the waste is collected and recycled (about 10,000 tons of high-purity aluminum reach landfills).



- by reusing a ton of steel we save 1-1.5 tons of iron ore
- this reduces emissions by 86% and water pollution by 75%



Mobile phone recycling

- There are several poisonous elements like arsenic or lead, contained in the mobile phones. So, if they are not disposed of properly, it may lead to long term damage to the environment.
- There are sites like the www.buybackmobile.ro where you can just recycle the mobiles
- You can donate your cellular telephone to the charities. They will give the mobiles to people who are in real need of them. Also, they offer the phones to people who can use the cellphone in cases of emergency or domestic violence.



Recycling Companies in Sibiu

GETESIB SA



Getesib Sibiu implemented a system of garbage selection

GOLDSTAR
IMEX



GOLDSTAR IMPEX

Prolongs Active Metal Components

Since 1977

It has the necessary equipment for processing plastic waste.

PROMBAT SA

Prombat SA recovers lead from accumulators.

REMAT SA

scrap collection center



SCHUSTER and CO ECOLOGIC SRL

collection of garbage





ECOSAL Mediaș

Ecosal is a recycling and waste management station in Sibiu area, developing its activity with financial help from the European Community

- On 25 April 2013, the students in the Comenius G.R.E.E.N. team from the National College „Octavian Goga” Sibiu, visited ECOSAL Mediaș, to get information about the recycling process in industrial areas. The aim was to involve the students in active and selective recycling, to get necessary information about Ecosal and thus to be able to inform the population about recycling.



Creative recycling workshop

On Saturday, May 11, we put our imagination to work, in order to create beautiful decorations from recycled objects. The event took place at Pizzeria Izi D'oro from Sibiu, which was a comfortable place to work in. The staff were very friendly and they provided us with all the materials we needed, giving us advice, opinions and help when we asked for it. They also answered all our questions, helping us create the most beautiful decorations.

We worked in a calm, relaxed atmosphere, using music for inspiration. Our group had a lot of fun and we became children again when we had to deal with the colors and the glue from our hands. We decorated bottles and we made pompons from rope, enjoying the results together. The lemonade and the juice helped us make it through that hot day. From four-year old children to adults, all the participants joined hands to do something for nature. We love nature! We recycle! You should do it too!

Written by Stoica Stefana



Magic Hands Studio
 Sibiu, 11 May 2013



We also had a contest, entitled
“The beautiful colours of our world”:





We proudly called the whole series of activities “THE COMENIUS WEEK”



Săptămâna Comenius G.R.E.E.N.



**Colegiul Național
“Octavian Goga”
Sibiu
11-17 mai 2013**

**Together for a better
G.R.E.E.N.
future!**



COMENIUS TEAM:

Teachers: Andra Tischer, Felicia Pătcaș, Diana Chirilă

Students: Oana Coșa, Iris Rusu, Ruxandra Virca, Ioana Cojocariu, Andreea Văcăroiu, Marian Eftenie, Dan Popa, Daria Mărcuș, Raluca Marinciu, Alina Roman, Ștefana Stoica.



This project has been funded with support from the European Commission.

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