

Reducing Landfills: What Can You Do?

Service Learning Action Project

Target Grade Level: 9-10th Graders

A. Description

Landfills release a lot of methane when organic materials such as paper, food waste and yard debris undergo anaerobic decomposition. This methane gas enters the atmosphere and mixes with other greenhouse gases that collectively contribute to global warming. Therefore, reducing landfills should be a concern for every country, especially those countries that cannot afford to install gas capture systems to control the amount of methane emissions. In this service learning action project you will explore ways you can take action to reduce the amount of materials that enter landfills from your home or community.

B. Background

In a natural system, waste is produced by organisms at a rate proportionate to the amount of waste the system can breakdown in a given amount of time; however, humans don't seem to be following this natural system. We produce far more waste than can be broken down and recycled back into the natural system. As a result, our waste products, which include, sewage, old clothes, used toys and electronics, raw materials, etc, are collecting in massive landfills that surround our cities. Based on the volume of space these landfills occupy, they could easily be considered the largest manmade structures in the world.

C. Summary of Other Groups' Actions

There are hundreds of legitimate organizations around the world that focus on reducing landfills, I've listed three examples: (1) Green Rubber, a company that strictly focuses on keeping tires out of landfills. (2) Zero Waste Alliance, an organization that helps businesses make smart/green decisions about the products they buy, so those products can eventually be recycled and not end up in landfills. (3) Sustainable Landfill Foundation, a European organization that consists of individuals that are directly involved in the building and operating of landfills, thus are in the best position to make the common use of sustainable landfills a reality.

Green Rubber - <http://www.green-rubber.com/>

In order for tires to withstand the impacts associated with carrying thousands of pounds for thousands of miles they need to be vulcanised, which is to say, they need to be practically indestructible. However, the problem with vulcanized rubber is it's impossible to recycle. As a result, millions of tires are thrown into landfills each year, and when the rain oxidizes these tires they release chemicals into our drinking water. In addition, tires hold water, which creates awesome breeding grounds for mosquitoes and other disease vectors.

Green Rubber is a company with a mission to reduce the amount of tires thrown into the garbage dumps around the world by using patented technology that devulcanises the tires so their raw materials can be reused/recycled to make new products.

Zero Waste Alliance - <http://www.zerowaste.org>

The Zero Waste Alliance (ZWA) was formed to provide businesses and organizations with strategies for accumulating “zero” waste. Of course, there will always be something that needs to be thrown away, but does it need to go into a landfill? ZWA incorporates technology developed by universities to help businesses and organizations make wise/green decisions about the products they purchase so that when they no longer need those products, or those products have been fully used, they can be recycled or sold for additional use, thus keeping them out of landfills.

Sustainable Landfill Foundation - <http://www.sustainablelandfillfoundation.com/>

The Sustainable Landfill Foundation (SLF) is a small organization that mostly consists of ranking officials from European waste management companies that operate landfill sites. The objective of the SLF is simple; keep landfills in equilibrium with the environment. To meet that objective, members of the SLF engage in open discussions with technology experts about ideas for constructing sustainable landfills, and then they actually deploy those ideas in the landfills they manage.

D. Visit the following websites to visit to learn more about reducing landfills and taking action.

- The best place to take action against irresponsible waste is right at home. Visit <http://www.epa.gov/epawaste/wycd/index.htm> to learn more about what you can do to reduce, reuse, and recycle materials to decrease household waste. This site also has information on what you can do to take action in your community and local businesses.
- For more information about who’s contributing to the waste in landfills, and to find information about the politics, government policies, and federal and state laws relating to waste, visit <http://www.zerowasteamerica.org/>
- Visit <http://www.postcom.org/eco/facts.about.landfills.htm> to find some hard facts about America’s landfills.
- If you want to find out who’s licensed to “dump” in your community, visit this website <http://www.epa.gov/epahome/commsearch.htm> and enter your zip code.
- If you see someone illegally dumping visit <http://www.kabtoolbox.org/toolbox.asp?id=351&rid=352> to see what you can do to report the incident.
- To learn more about solid waste management and recycling operations in Gainesville, FL, visit <http://www.cityofgainesville.org/GOVERNMENT/CityDepartmentsNZ/Recycling/tabid/106/Default.aspx>
- Visit <http://earth911.com/> to find out where to recycle just about anything.

E. Potential Action Projects

(1) Select a large/complex item in your house (Ex. Computer, refrigerator, mom’s fancy China cabinet) and create a list of all the materials you think were needed to

build that item. This list of materials should include not only those materials currently present in the item (Post-production materials), but also materials required to make the product (Pre-production materials). For example, your mom's China cabinet may be 100% wood, but that wood was cut using a table saw and saw blades, which are both made of metal. For each material you identify, describe in one paragraph how it should be properly disposed.

(2) Visit a local retail business (Ex. Publix, Walmart, Jiffy Lube, Goodyear, etc) and ask the manager about the different types of waste the business accumulates on a weekly basis. Create a table with three columns: In the first column list the waste items, in the second column identify whether those items are recycled or dumped in the trash, in the third column discuss how you personally feel about the way that particular item is being "handled" and what you would do instead.

(3) Build a map showing the distribution of garbage you recycled around your community. First, obtain and photocopy a map of your local community. Then, buy a box of large garbage bags and have your parents drive you to different spots in your community so you can look for materials to recycle. Bag all the materials that can be recycled and take them to the appropriate recycling location. Finally, list on your map the items and quantities found and where you took those items to be recycled. For example, your map might show that you recycled 100 cans from the S.W. Recreational Park, 15 bottles from the downtown middle school, and 20 newspapers from the local bank.