

EarthDay Recycling Lesson and Bottle Collection Contest



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This lesson plan/contest is intended to provide a valuable lesson to children about recycling; specifically plastic (PET) bottles. The contest is designed as a goal-oriented activity that will create strong sense of community. The goal of the contest is to collect as many PET water bottles as your class can. The bottles will be collected and displayed at Miami Goin' Green, an Earth Day event on April 25th at Bayfront Park in downtown Miami. The winning classroom will be honored at the event and win an incredible prize for the classroom. In addition to the prize, the hands-on lessons learned will be a valuable addition to your Earth Day activities and lessons.

You will be provided with:

1. In this package:
 - a. Lesson Plan
 - b. Student Hand-Out which conform to Florida Sunshine State Standards SC.G.1.4.1 and SC.G.2.4.2
2. Recycling container
3. Container liners (bags)

Important Information

- Collection of the bottles will happen on Friday April 17, 2009 by a staff member of Miami Goin' Green.
- If you run out of container liners and/or need a pickup of bottles due to space restrictions, call the event hotline at 305-461-2700



Recycling Plastic Bottles

Grades: 5, 6, 7 & 8

Florida Sunshine State Standard: How Living Things Interact with Their Environment

- **SC.G.1.4.1-** The student knows of the great diversity and interdependence of living things. (Also assesses SC.G.1.4.2)
- **SC.G.2.4.2-** The student knows that changes in a component of an ecosystem will have unpredictable effects on the entire system but that the components of the system tend to react in a way that will restore the ecosystem to its original condition.

Objective: The student after participating in a school recycling activity will understand most items that can be recycled will remain unaltered in a landfill or on the side of the road for years or even decades.

Background Information for the teacher:

As our landfills become increasingly larger and our soil becomes increasingly polluted, it is necessary to develop a means of reducing the amount of trash we produce. While paper breaks down and decomposes fairly quickly, most items that can be recycled (cans and plastic bottles) will remain unaltered in a landfill or on the side of the road for years or even decades.

Not only is there the need to recycle such items, there is also the need to make people aware of the problem and that the solution is quite simple. Many people don't recycle simply because they don't even think about it. Even with the advent of recycle pick-ups on garbage day, many people still do not make the effort needed, both at home or at work. They may think that their little amount of trash doesn't matter in the long run. But when entire neighborhoods "little amounts of trash" piles up, it becomes a very BIG pile of trash that can instead be recycled.

At the very heart of waste management is the waste management ladder—reduce, reuse, and recycle.

- The first, and most preferred way to be environmentally conscious is to reduce what you use. Buy items with less packaging, and only buy what you need. That's easy! When you reduce, you save landfill space, valuable agricultural land, natural resources, and money.
- The second step is to reuse an item that you no longer use or want. The saying "One person's trash is another person's treasure" is true! Take items that are in good shape to a secondhand store or to other reuse organizations such as Goodwill or the Veterans of Foreign Wars, for someone else to use.
- Many items intended for the landfill can easily be refurbished or combined with other materials to make new, functional products. Most of us are familiar with the idea of recycling, but as the third step on the ladder, recycle is less favored than reducing and reusing. When materials are recycled, energy and resources are still spent, whereas with

the first two steps, they would not be. The good news is that when manufacturers use recycled materials to make a new product, they often use fewer natural resources and less energy than if they had used new materials. Recycling materials is definitely a better choice than sending them to the landfill. To support recycling efforts, buy back the materials you recycle by purchasing recycled-content

Activity: School Recycle Program

This activity is used in conjunction with the school recycling program and is meant as a way for the students to present with numbers, charts, graphs, how well the program is doing

Procedures:

1. The students are divided into different groups. The groups are to begin competing by collecting plastic PET water bottles.
2. Students are to do research on the amount of trash that is produced from plastic bottled water bottles. Groups should come up with numbers of how much trash is piled up each day, week, month, year, etc..
3. They should also come up with how much recyclable material is used in the production of different goods after the plastic water bottles are recycled and refined. (Example: 5,500 clear plastic soda bottles produce 700 pounds of fiber thread used for clothing, fiber filling and carpet fiber.)
4. Using these numbers, students can post daily and weekly updates (on the morning announcements) of how successful their school plastic water bottle recycling program has been in terms of how much trash has been reduced from going into a landfill and also how much material can be produced by what they have collected.
5. This information can be presented in graphs or charts.

Evaluation:

1. Student generated graphs
2. Student research papers
3. Student participation

Glossary Terms

Bale - A large block of crushed PET bottles held together tightly with plastic strapping. Recycled PET bales can hold more than 9,600 bottles and weigh more than 1,200 pounds each.

"Closing the Loop" - While materials that are thrown into the trash end up in landfills or incinerators, recycled materials can be transformed into new and useful products. In this way, recycled materials can "loop" back to the consumer. "Closing the Loop" means buying products made from recycled materials so that recycled items can be used again.

Drop-off centers - Community locations that collect recycled materials. These centers are especially popular in communities that do not have curbside bin collection. The items collected by drop-off centers differ by location.

Fiberfill - Thin hair-like fibers of PET plastic that are crimped and fluffed to add volume and warmth to the material. This fiberfill can then be used to insulate ski jackets, sleeping bags and other materials that we use to stay warm.

Flake - Small bits of shredded recycled PET bottles that are easier to melt down in the recycling process.

Polyethylene Terephthalate - (POLY-ETHEL-LEAN TARIFF-THEY-LATE) a type of plastic known as PET or #1 plastic. It is used to package beverages, food and non-food products because it is lightweight, durable, shatter-resistant and resealable.