

WASTE MANAGEMENT SESSIONS

Materials provided by speakers from the following sessions:

- **Detective Seymore Green & the Recycle Rodeo**
 - Vocabulary List
- **Waste Free Lunch Bunch**
 - Why Pack A Waste Free Lunch
 - Say No to Landfills
 - Evergreen Partnering Group – Frequently Asked Questions
- **Reuse, Recycle, and Beautify at Your School**
 - Garbage Pizza

Detective Seymore Green & The Recycle Rodeo

VOCABULARY LIST

Bauxite—a mineral that yields aluminum

Benefit—an event held to raise money for a person or people who are in need

H₂O—water

Litter—trash put in the wrong place

Non-renewable resource—a supply that cannot be restored or replenished

Pollution—waste that ruins the environment

Ranger—an official in charge of or patrolling a park

Recycling—reprocessing a manufactured substance for use again

Rodeo—a competition between cowboys involving cattle and horse handling events

Silica—a naturally occurring element found in sand

The Recycle Song

R-E-C-Y-C-L-E

Recycling is easy, and it's good for you and me.

R-E-C-Y-C-L-E

These are just a few things that **RECYCLE** means to me:

R is for re-using as often as we can.

E is for environmental protection of the land.

C is for collecting trash in our community.

Y? Because we care, and we want to keep it clean!

C is for the cardboard boxes and containers, too.

L is for the learning of what we need to do.

E is for EVERYONE working as a team!

When we recycle, we keep Newton beautiful and clean.

R-E-C-Y-C-L-E

Recycling is easy, and it's good for you and me.

R-E-C-Y-C-L-E

When we recycle we keep Newton beautiful and clean.

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Why Pack a Waste-Free Lunch? Because you like living on our Earth!

As Americans we have come to depend on the many convenience products that are available to us, and no where is this more evident than in the school lunch room. Most parents pack lunch items in single-use plastic bags, aluminum foil, or wax paper, or they purchase single-serving items that come in their own disposable package. Admittedly, these products are extremely convenient, but what is the environmental cost to a country that relies so heavily on them? Landfills are full and overflowing. Incinerators pump contaminants into the air. Communities are battling over who will accept the nation's trash. We all enjoy these conveniences, but few of us are willing to allow new landfills and incinerators to be built in our own backyards.

For each student packing a school lunch, it estimated that 67 pounds of waste is generated per school year. Project that number to the approximate 300 plus students who pack lunch at CMS and you get over 20,000 pounds of waste! You may shrug and say, 'What can I do about it?' Never fear, there is a lot that both you and your student can do to impact this number and help preserve our earth for many years to come. Read on about actions you can take and goals we can achieve!

A waste-free lunch program is a process of educating students, parents, and school staff about where our trash ends up and how we, as individuals, can reduce the amount of trash we generate. Waste-free lunch programs favor the use of reusable food containers, drink containers, utensils, and napkins. They discourage the use of disposable packaging, such as prepackaged foods, plastic bags, juice boxes and pouches, paper napkins, and disposable utensils. And also very exciting is that waste free lunches actually reduce the lunch budget cost by about 1/3.

Here is one of many success stories....Lions Park School in Mount Prospect, Illinois conducted a waste audit last year as part of an Earth Flag Extension Program criteria. Garbage was collected and weighed, both on a regular lunch day and on a waste-free lunch day. On the regular lunch day, 136 pounds of garbage was collected and on the waste-free lunch day, 87 pounds of garbage was collected. By students and teachers making an effort to bring their lunch in reusable containers, packing a cloth napkin, and eating the food they brought, forty-nine less pounds of garbage was generated.

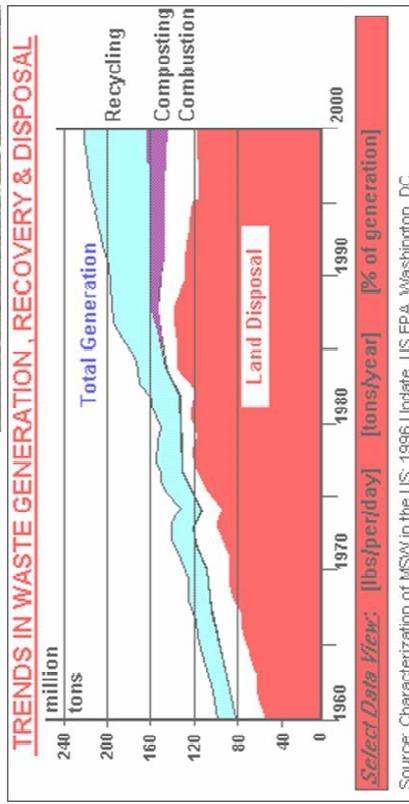
Watch for future details on how CMS will join the worldwide ranks of 'earthdwellers' paying attention to our waste and doing something about it! Interested in helping out? Call Linda Porter at 770-518-1510 or e-mail at portvine@bellsouth.net.

The waste production (measured in March) from YOUR cafeteria during the lunch time was **255 pounds**. Projected over 180 school days, this represents almost **46,000 pounds** of trash going to landfills!

SAY NO TO LANDFILLS!
REDUCE
REUSE
RECYCLE

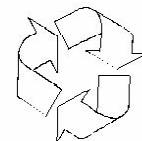


YOU CAN BE PART OF A GREAT TREND!



You can make a difference—

Reduce – pack or bring only what you plan to eat.



Reuse – when possible, replace bags and prepackaged food types with portions in ‘Tupperware’ or reusable containers.



**ON FRIDAY APRIL 21ST
 LET'S REDUCE OUR
 LUNCH WASTE BY 33%**

Evergreen Partnering Group (EPG)

Polystyrene Foam Food Service Ware Recycling Program

School and Institutional Cafeterias

Frequently Asked Questions (FAQs)

What does EPG do?

EPG offers a patented closed-loop process specifically designed for recycling used polystyrene foam from school and institutional cafeterias. Under this closed loop process, used foam is recovered from school and institutional cafeterias, processed into food grade polystyrene resin and blended with virgin resin and post-industrial recycled resin to produce a “PolyStyRecycle” material. This material is used by designated partnering manufacturers to produce new food service products. These environmentally friendly products are sold back to the participating schools and institutions to complete the closed loop. EPG is the only firm in the country that currently offers this unique closed loop recycling program.

How long has EPG been in business?

EPG has been involved in the recycling of used polystyrene foam from school cafeterias since 2002, beginning with our partnership with the Boston, MA Public School System. EPG expanded its school recycling program to the Providence, RI Public School System in 2003. In April 2006, EPG opened a second recycling facility in Atlanta, Georgia. This facility is currently processing used polystyrene foam from the Gwinnett County, GA Public School System and the Pasco County, FL Public School System.

What food service items can be recycled as part of EPG's program?

All polystyrene foam food service items such as plates, bowls, cups and trays are accepted in EPG's recycling program.

What materials are not acceptable?

Food, napkins, ketchup wrappers, utensils (forks, spoons, knives) and other non-foam items such as milk cartons, bottles and other types of plastic are not accepted in EPG's recycling program.

Does the used foam need to be washed in the cafeteria before recycling?

No. The used foam is washed at EPG's recycling facility to remove food residue prior to being processed into recycled resin.

How is the used foam separated in the cafeteria?

The process used to separate the used foam from the remaining items to be disposed in the trash varies from cafeteria to cafeteria depending on the current method used to dispose of these items and the sites preference. Manual separation can be accomplished by either the individual student/patron under the supervision of food service or janitorial staff, by special needs students or by food service or janitorial staff. Customized programs are set up at each cafeteria so as to minimize the change from current practices.

How is the used foam stored prior to removing from the cafeteria?

After the used foam is separated from the trash, the foam items are placed in clear plastic bags. The foam can either be placed in the bags loose or, if practical, stacked. Stacking is preferred since it significantly reduces the number of bags that are generated and lowers the cost to transport the foam to EPG's recycling facility. Once the bags are full, they are temporarily stored in a designated area near the trash dumpsters for collection.

How is the used foam transported from the each site to EPG's recycling facility?

The bags of used foam are collected on a daily basis and transported to EPG's recycling facility. Transportation is provided by the customer or EPG. EPG can also supply centrally located storage trailers for consolidating the bags of used foam to reduce the transportation costs to the recycling facility. For schools with established centralized distribution centers, backhauling of the bags to the central site by school personnel during their daily runs offers significant transportation cost savings.

How does EPG's recycling facility work?

EPG's recycling facility includes processing equipment to grind, wash, dry and extrude the used foam into clean recycled resin. Incoming material is ground into approximately 3 inch flakes/chips prior to being fed to a washer/dryer. The clean flake/chip coming out of the dryer is then ground to a ¼ inch size and fed to an extruder. The extruder reduces the flake/chip to pellets. The post-consumer recycled pellets are then transported to partnering manufacturers where they are blended with virgin pellets and post-industrial recycled pellets to produced new food service ware products.

What is the recycled content of the new foam products?

The recycled content of EPG's new foam food service products ranges from 10-25 percent post-consumer recycled food service resin from EPG's processing facilities and 10-25 percent post-industrial recycled food service resin from EPG's partnering manufacturers.

Is the use of recycled polystyrene in new food service products approved by the Food and Drug Administration (FDA)?

Yes. EPG has a letter of non objection from the FDA to use up to 25 percent post-consumer food service resin in new food service products. EPG's new food service products are tested to ensure compliance with applicable FDA regulations.

Can I purchase new polystyrene food service products with post-consumer food service resin from EPG?

Yes. EPG will work with the customer and our partnering manufacturers to supply new polystyrene products with post-consumer food service resin in order to close the recycling loop. New food service products are available in both foam and rigid form.

How many times can polystyrene foam be recycled?

Unlike other materials such as paper which have more finite recycling lives, polystyrene foam can be recycled an unlimited number of times.

What is the cost of EPG's recycling program?

EPG's used foam recycling program actually results in a net savings to the customer. Recycling used foam can reduce the volume of waste requiring disposal by as much as 40 percent. The trash disposal savings realized by removing the foam material from the waste stream more than off sets the cost to collect and transport the used foam to EPG's recycling facility. There is no charge to accept the used foam at EPG's recycling facility.

Are there other benefits to EPG's recycling program besides lower trash disposal costs?

Yes. EPG's recycling program offers training and employment opportunities for special needs students and adults. EPG's Atlanta, GA recycling facility currents serves as a training site for special needs students from the Gwinnett County Public School System. Trained students and graduates can be employed at the recycling facility to operate the processing system and/or employed at individual cafeteria sites to separate and bag the used foam.

Will EPG conduct an audit of our operations to determine the potential cost savings?

Yes. EPG will perform an audit at no cost to determine the potential trash disposal cost savings and the cost to transport the foam to EPG's recycling facility. EPG also works with the customer to establish the appropriate collection program for each of the customer's sites.

What information does EPG need to determine the potential avoided trash disposal costs?

The potential trash disposal savings are based on the quantity of foam used by the customer, the unit cost for trash disposal and the projected recovery rate.

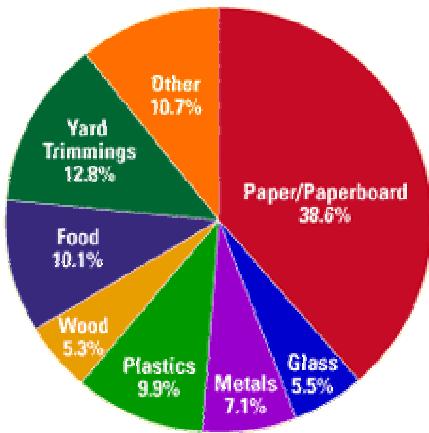
For further information, please contact Mike Forrest at 978-764-4159.

GARBAGE PIZZA

This sample lesson plan was taken from Waste In Place. If you would like to order the complete curriculum guide, please visit SHOP Keep America Beautiful.

What's In Our Waste?

Materials Generated in MSW by Weight
(total weight = 209.1 million tons)



Source: "Characterization of Municipal Solid Waste Management 1997 Update" U.S. EPA

Objectives

Students will be able to:

1. Describe the composition of Municipal Solid Waste (MSW);
2. Identify items within each waste category; and
3. Visualize the amount of waste and categories of MSW.

Method

Students will construct a garbage pizza (a three-dimensional pie chart) representing all of the waste thrown away in the United States, with a slice for each waste category.

Materials

For pizza dough: mixing bowl, spoon, rolling pin, pizza pan, 2 cups flour, 2 cups salt, 1 cup water, oil or shortening.

For pizza "sauce" and toppings: school glue, red food coloring, small paint brush, waste items from these categories: paper, yard waste, wood, metals, glass, food waste, plastics, and other waste (e.g. rubber, leather, textiles. misc. inorganic waste), polyurethane or lacquer (optional).

Vocabulary

garbage, Municipal Solid Waste (MSW), trash, volume, weight

Procedure

1. Before class, have prepared a "Garbage Pizza" crust, using the following recipe: Mix 2 cups of flour, 2 cups salt, and 1 cup water (adjusting water per altitude and/or humidity) until a stiff dough forms. Knead as you would a bread dough. Flatten the dough into a well greased round 12" deep dish pizza pan, pressing the edges up the inside of the pan. Flatten out slightly until it looks like a pizza pie. Cut the pizza into the same slices or sections to look like the Municipal Solid Waste by weight pie chart template included in this lesson. Using a fork or knife, puncture each slice several times before baking to avoid expanding air pockets. Bake at 350° F for 40-45 minutes, or until golden brown. Check the pizza every

10 minutes or so and re-cut the sections. (If you do not cut the pizza before cooking, you will need a chain saw after it's done!) Remove from the oven and let cool completely. Dough should be hard and dry. Mix approximately 4 oz. of white school glue with approximately 2 oz. of red food coloring (adding a drop of blue food coloring will darken the red, but is not necessary for a successful "sauce") until you achieve the desired red tomato sauce look. Apply sauce with a small paint brush (an apron is highly recommended). Allow to dry thoroughly. Label the underside of each slice with the correct type of waste and percent it represents. A permanent marker works well. This makes it easier for students to glue the proper waste on the proper slice.

2. Ask the students to define the words GARBAGE and TRASH. Garbage refers to only the organic or food waste thrown away. Trash represents broken, discarded or worthless things (e.g.. rubbish and other forms of refuse which are not food). Brainstorm with students and list on the chalkboard all the waste items thrown away at home or school. Use the following categories: paper, yard waste, metals, glass, plastics, wood, food wastes, and other.

3. Introduce the concept of Municipal Solid Waste (MSW). MSW is made up of trash and garbage from household, commercial, and institutional sources in a community. Ask the class if the items listed on the board would also be found in a community's MSW.

4. Draw a circle on the board. Explain to students that we are going to pretend that all the waste thrown away in the U.S. will fit into this circle. This circle is filled with waste from all of the categories (paper, yard waste, metals, glass, plastic, wood, food waste, and other waste). Show students how much paper is thrown away by drawing a slice for paper (see chart included in this lesson). Repeat this demonstration for all eight categories. Reinforce the fact that the biggest slice, marked "paper" means that there is more paper than any other item in MSW. The next largest slice is yard waste, etc. Ask the students why it might be important to know the amount and kinds of waste thrown away. By knowing what kinds and amounts of things are in MSW, communities can plan better programs to reduce the amount of waste disposed (e.g., office paper recycling, telephone book recycling, yard waste composting), and plan better waste handling options (e.g. waste-to-energy incineration, sanitary landfilling).

5. Announce that the class is going to make a garbage pizza (with garbage and trash). Collect the items you need for the toppings, or have the students bring them from home. For example: paper: newsprint, shredded paper, boxes, wrappers; yard waste: grass, sticks, leaves, potpourri; metals: paper clips, staples, can, small hardware; glass: marbles, sea glass; plastics: foam cup, plastic fork, bread clips, jug lids; wood: tooth picks, building blocks; food wastes: egg shells, pasta, pretzels, dry cereal; other: rubber band, candle.

Show the students the "pie chart" pizza dough. Glue the waste items onto their corresponding pizza slices with uncolored glue or a hot glue gun. For an added touch after the glue has dried, spray the garbage pizza with polyurethane or lacquer, available at your local hardware store. Share the garbage pizza model with other classes or the entire school. Have students team up and teach students in other grades about the MSW using the garbage pizza model.

Note: Keep America Beautiful's poster "230 Million Tons of Trash" would provide a visual picture of the waste disposal alternatives available. For information on how to receive this poster, visit [Shop Keep America Beautiful](#).

Assessment

Set up a table with items from the eight categories of MSW: paper, yard waste, metals, glass, plastics, wood, food wastes, and other. Make signs for each category, and have students separate the waste items into the appropriate piles.

Enrichment

Ask students to look through magazines for pictures of items from each MSW category. Have each student draw a garbage pizza on poster board and glue the pictures on the appropriate sections. Display the posters in the cafeteria.

Plan a classroom project to reduce the amount of paper in MSW. Discuss ways students could reduce paper use and waste at school (e.g.. don't waste paper, use both sides of paper, start a reuse box for all kinds of paper, start a paper recycling program, ask the principal if the school uses recycled paper, etc.).