

# GARBAGE PIZZA

© Keep America Beautiful, Inc. 1996

This sample lesson plan was taken from Keep America Beautiful's Waste in Place Curriculum Supplement for grades K-6. If you would like to learn about how to obtain additional lesson plans, please contact the Iredell County recycling coordinator.

## 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

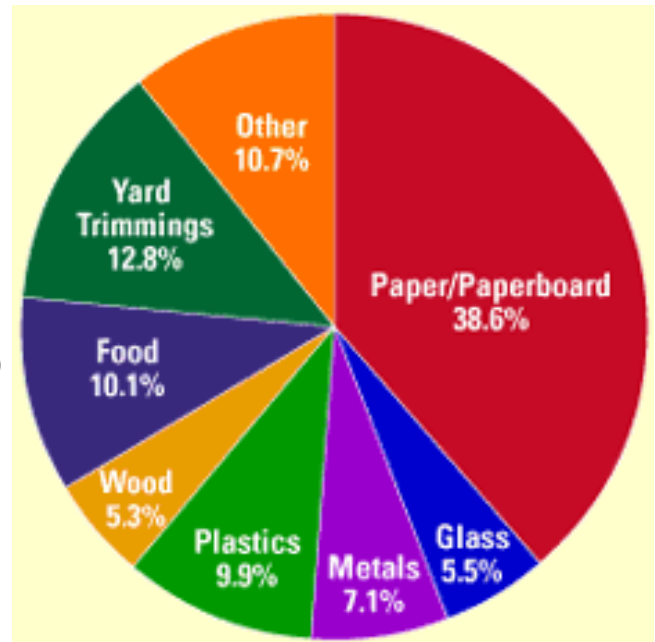
### Objectives

Students will be able to:

- Describe the composition of Municipal Solid Waste (MSW)
- Identify items within each waste category
- 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

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

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 at <http://www.kab.org/aboutus.asp?id=120&rid=121>.

### **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.).