

GARBAGE PIZZA



Contact Information

Stacey Farrell
706.613.3501, ext. 309
sfarrell@co.clarke.ga.us
www.kaccb.org

Grades

K-5

Objectives

Students will be able to: 1) describe the composition of Municipal Solid Waste (MSW); 2) identify items within each solid waste category; 3) visualize the amount of waste and categories of MSW.

Method

Students will construct a garbage pizza, a three-dimensional pie chart, which represents the MSW discarded in the United States; each slice of the pizza will represent a different solid waste category.

Materials

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

For pizza “sauce:” school glue, red food coloring, small paint brush

For pizza “toppings:” solid waste samples from these categories: paper, yard waste, plastics, metals, wood, food, glass or other materials (e.g., rubber, leather, textiles, misc. inorganic waste), permanent marker, polyurethane or lacquer (optional).

Vocabulary

Garbage, Municipal Solid Waste (MSW), trash

Procedure

1. Before class, prepare a “Garbage Pizza” crust, using the following recipe:
 - Mix 2 c. flour, 2 cups salt, and 1 cup water
 - Knead the mixture, as you would bread dough. Flatten the dough into a well greased, 12” round, deep dish pizza pan, pressing the edges up the inside of the pan until it looks like a pizza.

- Cut the pizza into the same slices or sections to look like the MSW Waste by Weight pie art 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 degrees for 40-45 minutes, or until golden brown. Check the pizza every 10 minutes or so and re-cut the sections. Remove the pizza from the oven and let cool completely. The dough should be hard and dry.
 - Label the underside of each pizza slice with the correct type of waste and the percent it represents. A permanent marker works well. This makes it easier for students to glue the proper waste on the proper slice.
 - 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 it is not necessary for a successful sauce) until you achieve the desired red tomato sauce look.
2. Ask 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.)
 3. Brainstorm with students and list on the board all the waste items thrown away at home or at school. Use the following categories: paper, yard waste, plastics, metals, wood, food, glass and other.
 4. Introduce the concept of municipal solid waste (MSW). MSW is made up of trash and garbage from household, commercial, and institutional sources in the community. Ask the class if the items listed on the board would also be found in a community’s MSW.

Garbage Pizza

Continued

5. Draw a circle on the board. Have the students pretend that all the waste thrown away in the U.S. will fit in the circle. This circle is filled with waste from all the categories (paper, yard waste, plastics, metals, wood, food, glass and other.) Show students how much paper is thrown away by drawing a slice for paper (see [chart included with lesson.](#)) Repeat this demonstration for all eight categories.

Reinforce the fact that the biggest slice, marked “paper,” means that there is more paper by weight than any other item in MSW. The next largest slice by weight is yard waste, etc. Ask the students why it might be important to know the amount and kinds of waste thrown away. By understanding the solid waste stream (MSW), and local conditions, (distance from recycling centers, available space for landfills, etc.), communities can implement responsible, integrated solid waste management programs. Integrated solid waste management includes:

- **Source Reduction** is any activity that reduces the amount of material we use in production, distribution or disposal of products or packaging. Simply put, source reduction means using less stuff.
- **Recycling** is the collection and reprocessing of discards for use in the manufacture of new products.
- **Composting** is the process of breaking down organic materials (food, yard waste, paper products) by exposing them to the elements, resulting in a nutrient rich soil enhancer.
- **Waste-to-Energy (WTE)** is a process in which solid waste is burned and the heat generated is used to produce energy, which may be sold to municipalities in the form of heat, steam or electricity.
- **Landfill** is a carefully engineered site for the safe disposal of solid waste. Solid waste is deposited in a landfill, compacted, and covered with soil. Modern landfills, often called sanitary landfills, are equipped with collection systems for groundwater contaminants, methane gas controls, and environmental monitoring systems.

6. 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;
 - **Plastics:** disposable food service products (cups, plates, cutlery), bread bag clips, jug lids, miniature toys.
 - **Metals:** paper clips, staples, aluminum can pull tabs, nuts and bolts;
 - **Wood:** tooth picks, building blocks, cedar chips, golf tees;
 - **Food:** egg shells, pasta, pretzels, dry cereal;
 - **Glass:** marbles, sea glass
 - **Other:** rubber band, candle, washers
7. 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.
8. Share the garbage pizza model with other classes or the entire school. Have students team-up and teach students in other grades about MSW using the garbage pizza.