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# Waste Pizza

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## Background Information:

Students will work together, and independently, in this activity to identify common components of a municipal solid waste stream by predicting proportions for each of the materials found in the Chatham County waste stream. After determining whether their predictions were correct, they will compare and contrast Chatham County's data with the United States as a whole!

## Important Vocabulary:

**Landfill** – a place to dispose of waste by burying it and covering it over with soil.

**Municipal solid waste (MSW)** – a waste type consisting of everyday items that are discarded by the public.

**Recyclable** – items that are able to be recycled, such as certain plastics, glass, aluminum, and paper products.

**Textiles** – items made from cloth, fiber, or other filaments; often used to describe clothing items.

## Materials:

- Chatham County's Waste Composition Study
  - Chatham County, North Carolina 2017 Waste Composition Study  
<https://www.chathamnc.org/recycle>  
(Several copies included in the *Don't Waste It!* Educator Check Out Program)
- EPA Sustainable Materials Management Report: <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management> (One copy included in the *Don't Waste It!* Educator Check Out Program; one graph included below.)
- Waste Pizza pieces: (7 sets included in the *Don't Waste It!* Educator Check Out Program)
  - one pizza crust
  - 11 slices
  - pizza category labels
  - pizza category examples
- Waste Pizza Answer Key

## Instructions:

1. Preview the lesson by discussing waste management with students. Use any of the lessons in the *Don't Waste It!* activity guide as background information.
2. Ask students to help brainstorm a list of things that are thrown away.
3. After about 20 items have been listed, group these items by similarities, such as recyclable, plastic, metal, landfill, compostable, textiles, etc. If desired, allow students to do this independently and then compare the categories together.
4. Next, tell students they are going to categorize the items from their brainstormed list into 11 different categories based on the waste composition of Chatham County from a 2017 waste

characterization study (WCS). The WCS is where a company came to Chatham County and sorted the collection center trash receptacles to determine what residents had thrown out.

5. List the following 11 categories on the board and tell students that they are going to be responsible for determining which slices of the pizza they think belong to each category. Examples of each category are provided on page 4.
  - a. Garbage (landfill)
  - b. Non-recyclable plastics
  - c. Construction and demolition (C&D)
  - d. Textiles
  - e. Metal cans
  - f. Recyclable plastics
  - g. Glass containers
  - h. Paper products
  - i. Food waste
  - j. Other compostables
  - k. Other recyclable items
6. Break students up into small groups of 4-5 students and give each group a folder with a blank pizza, slices, and labels. Be sure to save one pizza for the teacher to project under a document camera or to hang on the board.
7. Have students work in their small groups to place the slices in the correct areas on the pizza and label each category according to which they think are the largest, or smallest, components of Chatham County's waste stream.
8. Walk around and ask questions about the students' thought processes. Record or take note of similarities and differences between the groups to discuss as a class.
9. After all groups are finished, go through the "slices" by size and ask various groups to discuss which label they put on that "slice" and their reasoning behind why they chose that percentage for that "slice."
10. Reveal the correct percentages and discuss any disparities between what they thought was correct and what was found in the WCS for Chatham County, what surprised them, and any questions they may have.
11. As an added group activity, compare the EPA's Total MSW Generation chart (below) to the one the class made for Chatham County. How is it similar? How is it different?

### **Follow-up:**

- Is there another category of items that your family throws out that is not on the chart? If yes, what? Why do you think it's not on there? (Example: yard waste – it is illegal to landfill yard waste in North Carolina.)
- Are there certain cities, states, or countries where you think certain categories may be higher or lower? Why?
- Which categories in the pizza could be greatly reduced? How?
- Re-draw the pizza to exemplify how you think it would look if everyone in Chatham County recycled and composted.
- Re-draw the pizza to exemplify how you think your household waste composition looks.

## Pizza Category Examples:

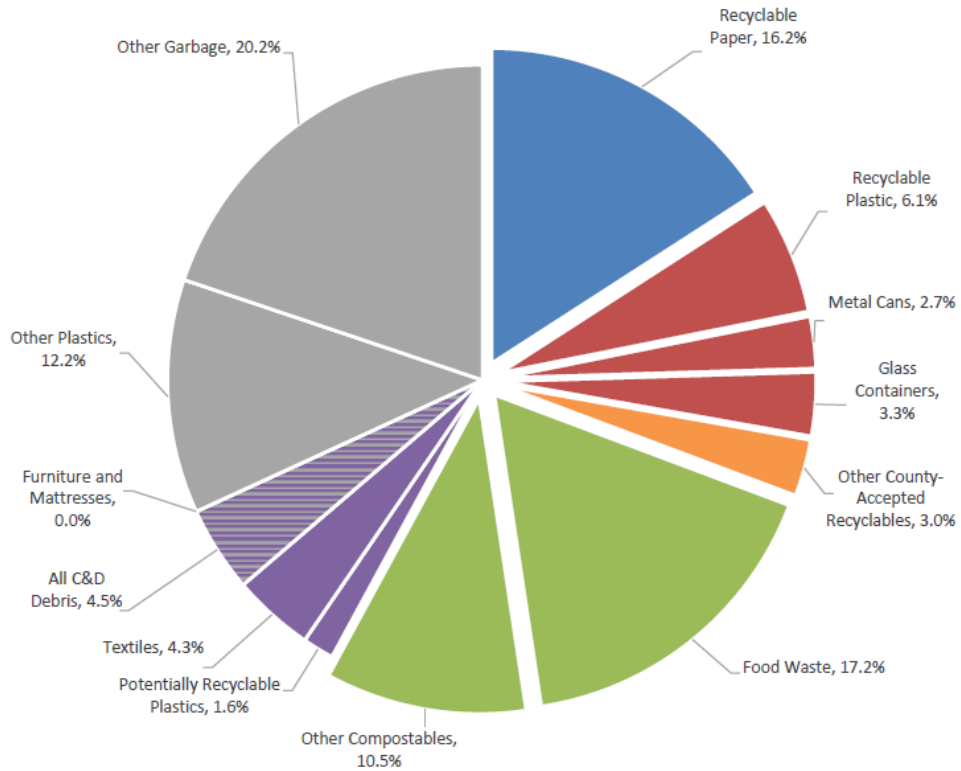
- Construction & Demolition (C&D)- wood, shingles, bricks, doors, windows, etc.
- Food waste- banana peel, chicken bones, bread, etc.
- Garbage (landfill)- diapers, animal poop, shredded paper, etc.
- Glass containers- food and drink bottles and jars
- Metal cans- aluminum and steel (tin) cans
- Non-recyclable plastics- plastic cup, to go container, yogurt cup, etc.
- Other compostables- grass clippings, leaves, branches, etc.
- Other recyclable items- batteries, electronics, tires, etc.
- Paper products- printer paper, cardboard boxes, milk cartons, etc.
- Recyclable plastics- bottles, jugs, jars, and tubs
- Textiles- clothing and shoes

## Waste Pizza Answers

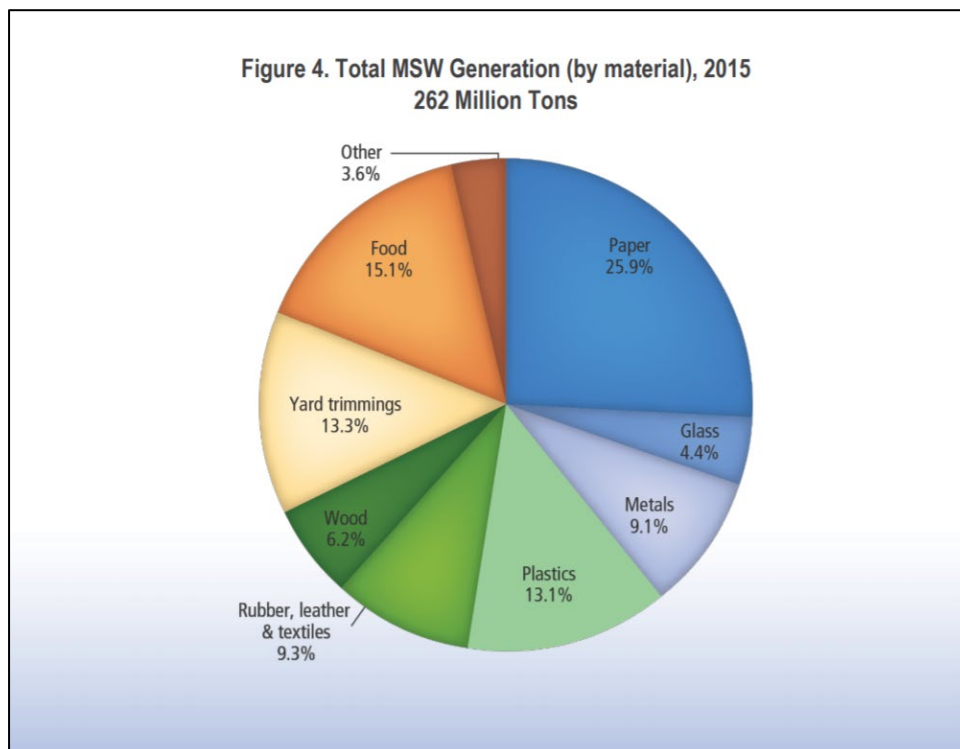
From largest to smallest:

- 20.2%- Garbage (landfill)
- 17.2%- Food Waste
- 16.2%- Paper Products
- 12.2%- Non-Recyclable Plastics
- 10.5%- Other Compostables
- 6.1%- Recyclable Plastics
- 4.5%- Construction & Demolition (C&D)
- 4.3%- Textiles
- 3.3%- Glass Containers
- 2.8%- Other Recyclable Items
- 2.7%- Metal Cans












Chatham County 2017 Compactor Pie Chart from the Chatham County, North Carolina 2017 Waste Composition Study













United States EPA Total MSW Generation chart from the Advancing Sustainable Materials Management: 2015 Fact Sheet



**Pizza category labels (two provided on sheet for printing purposes)**

<b>Other recyclable items</b> 	<b>Garbage (landfill)</b> 	<b>Construction &amp; demolition</b> 
<b>Metal cans</b> 	<b>Glass containers</b> 	<b>Paper products</b> 
<b>Food waste</b> 	<b>Other compostables</b> 	<b>Non-recyclable plastics</b> 
<b>Textiles</b> 	<b>Recyclable plastics</b> 	

<b>Other recyclable items</b> 	<b>Garbage (landfill)</b> 	<b>Construction &amp; demolition</b> 
<b>Metal cans</b> 	<b>Glass containers</b> 	<b>Paper products</b> 
<b>Food waste</b> 	<b>Other compostables</b> 	<b>Non-recyclable plastics</b> 
<b>Textiles</b> 	<b>Recyclable plastics</b> 