**Weigh Your Waste!**

**Objective**
To increase students’ awareness of the amount of waste they generate and the implication of that waste.

**Activity Description**
Students will collect, weigh, record, and analyze the amount of trash they generate in the course of a week.

**Materials Needed**
- One trash bag per student
- One twist tie garbage bag fastener for each student
- One 3- by 5-inch note card per student
- One plastic tarp
- One set of gloves per student
- One scale
- One copy of My Trash Journal for each student
- Clear tape

**Key Vocabulary Words**
- Waste
- Per capita

**Duration**
1 to 2 hours, with periodic discussions over the course of a week

**Skills Used**
- Computation
- Observation/classification
- Problem solving

**Activity**

**Step 1:** Photocopy and distribute copies of the *My Trash Journal* worksheet to each student. Refer to the Teacher Fact Sheet titled *Wastes* for background information.

**Step 2:** Distribute one garbage bag, one twist tie, and one note card to each student. Tell students to take the trash bag to classes for 1 week (5 days), using it to collect all of the “dry” garbage they throw away at school. Instruct students to include all of their used containers, paper waste, and packaging, but *not* to include food waste or any other type of “wet” trash that might decompose or be unsanitary. For safety reasons, instruct students not to collect glass items either.

**Step 3:** Have the students put their names on the note cards and tape them to the twist ties (or use a hole-punch). Then have students use the twist ties to close their garbage bags. Explain that at the end of each day, students will bring their garbage bags back to the classroom and store them overnight in a designated spot (show them the location). The name tags will allow them to pick out their trash bag the next morning.

**Step 4:** At the end of the week, ask the students to predict how much their individual piles weigh. Ask them to predict how much the total pile of garbage for the whole class would weigh. Write some of these predictions on the board.
Step 5: Bring in a tarp and spread it on the floor. Have each student spread the contents of his or her personal trash bag on the tarp. Have the students put on gloves and sort their individual piles of garbage into as many categories as possible: plastics, aluminum, paper, steel, and mixed materials (those that fit into more than one category). Have them record the contents of their garbage piles using the My Trash Journal worksheet.

Step 6: Have students weigh their individual piles of garbage on a scale and record the amounts on the chalkboard.

Step 7: Ask a student to total the weights of each individual pile of garbage and put this number on the chalkboard. Determine the average weight of trash generated per student per day. Compare these weights to the students’ predictions.

Step 8: Write the national average of waste generation on the board: 4.3 pounds per person per day.

Ask the students to determine the following:

• How much waste did the class generate per day on average? Is this higher or lower than the national average?

• If each person in your community (population ____ ) throws away ___ pounds (use the students’ average calculated above) of garbage each day, how many total pounds of garbage are thrown away each day in your community?

• How many tons is this? (To help children grasp the concept of a ton [2,000 pounds] you might want to ask them how many tons some familiar objects weigh, for example, an average 4-door compact car weighs about a ton.)

Assessment

1. Ask the students why they think they generate so much trash. Is it more or less than they anticipated?

2. Ask the students if they were surprised at how much trash they generated. Where does all of this waste go every day? (See the Teacher Fact Sheet titled Landfills on page 165 for background information.) Why should we care how much we throw away?

3. Ask students to look at their waste generation charts and think of ways they could have reduced the amount of garbage generated this week. (Could any items have been recycled or reused? What about using less in the first place? For example, bringing a reusable cloth lunch bag instead of a paper lunch bag each day.) Refer to the Teacher Fact Sheets titled Source Reduction on page 79, Recycling on page 101, and Composting on page 141 for background information.

Enrichment

1. Have students identify the categories of materials they generally throw away or recycle. Make a list of common items on the board (recyclable and nonrecyclable). Ask students how much less waste they would have generated if they recycled instead of discarded all of the recyclable materials they used this week.

2. Have a student contact your state or municipal solid waste manager to find out about your community’s trash generation rate. How does it compare to other communities in your county or state? Discuss the results and reasons behind them with your students.

3. Have students record the amount of waste their families generate at home in 1 week (a note to parents explaining the assignment might help). Suggest students weigh each bag of trash generated on a bathroom scale.
Students should keep a log of these weights. At the end of the week, have students compare their data with classmates.

4. Either in class or as a homework assignment, ask the students to create graphs and charts of their data from class and home waste generation. The graphs might include:

- A pie chart of the number of pounds for each material measured for each individual.

- After pairing up with a partner and comparing notes, a bar graph of the number of pounds of each material for the two students.

- A bar graph and/or pie chart showing the amount of total materials collected that were recyclable versus not recyclable in your community.

Discuss with students which materials were generated more than others and whether more recyclable or nonrecyclable materials were generated.

5. Take a field trip to a landfill or combustion facility so students can see what happens to their trash.

6. Partner with a local business to calculate how much waste the company generates in a given day by conducting an audit of the paper waste (or other dry waste) generated.

7. Get permission for your class to sort through the school dumpster on a given day (with appropriate safety equipment such as gloves and goggles) to weigh its amount and determine how much useful or recyclable material is thrown out.
# My Trash Journal

Name: ________________________________

<table>
<thead>
<tr>
<th>What Did I Throw Away?</th>
<th>What Material Category Does it Belong In? (Paper, Glass, Aluminum, Steel, Plastic)</th>
<th>My Ideas for Using Less, Reusing, or Recycling this Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: 1 soda bottle</td>
<td>Glass</td>
<td>I could recycle this in bins outside my school.</td>
</tr>
<tr>
<td>Example: 5 lunch bags</td>
<td>Paper</td>
<td>I could use a cloth lunch bag each day instead of using paper.</td>
</tr>
</tbody>
</table>

Total weight of my garbage for one week = [calculated in class]

Weight of recyclables = [calculated in class]

Weight of nonrecyclables = [calculated in class]

Total weight of my garbage per day = [calculated in class]

Total weight of class garbage for one week = [calculated in class]

Average amount of waste generated per student per day in our class = [calculated in class]