

How much garbage do we produce?

Grade Level: 4-6

Subject Areas:

Science:

- Environmental Science
- Earth Science

English

National Standards:

- Standard C:
 - Organisms and their environment
- Standard D
 - Changes in the earth and sky
- Standard E
 - Implement a solution
 - Communicate a problem, design, and solution
- Standard F
 - Types of resources
 - Science and technology and local challenges

Overview:

- Students will determine how much waste they produce a day and how much of that waste is compostable. Using their new knowledge, they will present their information to the school to demonstrate the benefits of composting.

Objective:

- Students will be able to work together to create change in their school.
- Students will understand where trash comes from and where it goes.

Materials:

- Rolypig© composter
- Scale
- Data sheet
- Pencil
- Two buckets labeled
 - Compost
 - Non-compost
- Rubber Gloves

Background

In the United States each person produces approximately 3.5 pounds of trash a day, of which 25% is food and yard waste that is biodegradable. When this is put in a landfill, it can take years to decades to decompose. When it is left outside or put in a composter, it will decompose in as little as a few weeks to a few months. Once this material is turned into dirt, it can be used as fertilizer in gardens or left on the ground to fertilize the local flora and fauna. If this trash is put in a landfill, those valuable nutrients will not return to the ground to be used by plants.

Procedure:

1. Do Now:

- a. In their journals
 - i. Record how much trash you think you produce a day.
 - ii. What item do you think takes up the most space in your trash?

2. Class discussion:

- a. Review students answers from their journals
- b. Where does the garbage go?
- c. How might they reduce the garbage?
 - Recycling
 - Reuse
 - Composting
- d. What is composting?
 - i. What can be composted and what cannot be.

3. The project:

- a. Break the students into groups and have each group write a letter to various people in the school explaining the project and why it is important.
 - Parents
 - Principal
 - Kitchen staff
 - Students
 - Custodians
- b. Assign a student to be in charge of the buckets during lunch.
 - i. Each student will divide their waste into two groups, compost and garbage, depositing their waste into the respective bucket.
- c. During class have the students weigh the material in the buckets and record their data.
 - Weight
 - What was thrown away?

Homework or classroom work:

- Have students create posters to be posted around the school. Posters can include
 - What can be composted and what cannot.
 - What is composting?
 - Why composting is important?
 - How much trash do we produce and what happens to it?

4. Day 2:

- a. During lunch make sure the students assigned to buckets are at their buckets.
- b. Have each student divide their waste and put it in the appropriate bucket.
- c. During class have the students weigh the food scraps and put the food in the Rolypig©. Throw out the rest of the garbage.
- d. Record data
 - Weight
 - Observation
 - Have a student rotate the Rolypig©

5. Each week

- a. Assign a student to rotate the Rolypig©.
6. When the compost is done, have the students find a location at the school where the compost can be used.
7. Have students compare their data and present to the school how much waste can be saved by composting and why the school should compost.

Data Sheet:

Name: _____

Date: _____

Data:

1. Total waste collected in pounds: _____
2. Total compostable waste collected in pounds: _____
3. Total non-compostable waste collected in pounds: _____
4. Percentage of waste that is food waste: _____
5. Observations:

Questions:

1. **What items couldn't be composted and why?**

2. **Where else do you think it might be important to compost?**

3. What other solution can you think of to reduce the amount of trash produced?

4. Why is it important to reduce the amount of trash we produce?