

Buried Treasure Lesson 1: What is in our Trash?

Lesson Overview:

Students begin the lesson by examining items to determine what they are made of—glass, paper, plastic, or metal. Next, students collect data to determine what types of trash they produce at lunch time. After making a class graph of this information, students discuss what happens when trash is thrown away and discover four strategies for using resources wisely (reduce, reuse, recycle, and recover). After learning more about recycling by exploring the ThinkGreen website, students display their new learning on a mini poster. Finally, the lesson is extended to the home, where students analyze the trash they produce and brainstorm strategies for reducing the waste.

Objectives:

Students will collect and record data of the trash they generate.

Students will describe strategies for using resources wisely (reduce, reuse, recycle, and recover).

Essential Question:

What are some ways to use resources wisely?

Materials:

- Student Page: Lunchtime Trash Tally
- Graph paper for class graph
- Vocabulary response cards
- Student Pages:
 - Recycling Poster
 - Buried Treasures Crossword Puzzle
 - Home Trash Survey
- ThinkGreen.com website:
<http://www.thinkgreen.com/recycling>
<http://www.thinkgreen.com/recycle-what-detail?sec=paper-and-cardboard>

Time Frame: 1 -2 sessions

Instructional Activities (may include formative assessment within the lesson):

1. Hold up some items from around the classroom for students to see. Ask the students if the items are made from paper, plastic, glass, or metal.
2. Tell students that they are going to look for items made from paper, plastic, glass, and metal from the trash they generate at lunchtime. Be sure students understand that they will NOT be looking through any trash cans. Rather, students will eat their lunch as normal, but before disposing of any of the material, they will take notes of all the trash they have generated.

Provide students with a tally sheet (Student Page - Lunchtime Trash Survey). Prior to cleaning up, ask students to tally the number of paper, plastic, glass, or metal items they have collected as trash from their meal. Encourage students to place the sorted items into an appropriate recycling bin. (Note: If recycling bins are not yet available at your school, provide students with labeled boxes in which to place the recyclables.)

3. Create a class graph (bar graph, pictograph, or circle graph) to show the amounts of paper, plastic, glass, and metal generated from the lunchtime trash. Analyze and discuss the graph as a class

4. Discuss the concept of a treasure. (e.g. A treasure is something valuable. Sometimes a treasure is hidden. You may not see a treasure right away, but when you find it, there is great value.) Discuss how many of the items that people throw away are actually quite valuable. Many of these items can be recycled or used for energy.

5. Discuss the importance of using scarce resources wisely. As natural resources become scarce, recycling is more important than ever. Recycling saves landfill space. It generally takes less energy to make recycled products. Thinking creatively about waste can help save energy.

6. Provide students with vocabulary word cards (Reduce, Reuse, Recycle, and Recover).

*Explain each term to the students.

- Reduce refers to using less of an item.
- Reuse refers to using an item more than once before discarding it.
- Recycle refers to taking out useful materials that otherwise might be thrown away so that they can be used again (often in a different form.)
- Recover refers to changing waste into useful products like compost or energy.

* Read the following examples to students. Students should hold up the correct vocabulary card to match each example. Ask students to explain their thinking.

Example	Answer
Using a cloth bag at the grocery store instead of plastic	REDUCE the number of plastic bags
Using composted soil for gardening	RECOVER
Using newspaper for gift wrapping	REUSE
Mashing up a paper carton and using the paper fibers to make tissue	RECYCLE

7. Allow students to explore two areas from the ThinkGreen.com website (URL is thinkgreen.com/recycling): sections entitled "What can I recycle?" and "What happens to my recyclables?" Provide students with the Student Page - Think Green: Exploring the World of Recycling to help them organize their notes from the website. Using the Recycling Poster student page, students should make a small poster showing facts about recycling and share their poster in a small group.

8. As an extension, students can collect data from home to compare with the data collected at school. What types of trash are produced when preparing and eating one meal at home? Remind students again that they will NOT need to go through any trash cans to complete this assignment. Rather, students should take note of any items before they are discarded. Encourage students to recycle if they already do so at home. If not, students can encourage their families to investigate how they might participate in any local recycling programs.

Lesson Assessment:

Students complete the Buried Treasures Crossword Puzzle.

Reflection:

Ask students to identify some ways to use resources wisely.

Standards Correlation:

This lesson may be used to address the National Science Education Standards listed below.

NSES 4FSPSP3.3: The supply of many resources is limited