Litter Search

Concept
The solid waste stream can be classified into a number of categories.

Objective
Students will develop an awareness of the variety, sources and amount of litter and will be able to classify its elements.

Method
Students will collect and categorize different litter items from around the school and will dispose of the human-made litter properly.

Materials
Paper bags (preferably reused) for each student, newspaper to spread trash out

Subjects
Social Studies, Science, Language Arts, Mathematics

Skills
Communicating results, gathering information, graphing data, investigating

Time
60 minutes

Vocabulary
Biodegradable, human-made, natural, decompose

Resources
Brad Herzog, S is for Save the Planet: A How-to-be-Green Alphabet

3R’s of the Common Core

Leading Question
What kinds of trash do you think we’ll find around the school?

Procedure
NOTE: Before beginning this activity, make sure there is enough litter outside.
1. Pass out used bags for collecting litter. Discuss some possible items and where they are likely to be found.
2. Take the class outside. Set the boundaries for the litter search. Caution students on cuts from glass, etc. Litter should be collected in their bags. Set a 10 to 15 minute limit for the hunt.
3. Return to the classroom and divide the class into groups of five or so. Combine the group’s litter into piles and sort according to categories: (1) glass (2) metal (3) paper (4) plastic, rubber and textiles (5) food and miscellaneous waste. What is the total number of objects found?
4. Count the number of items in each category. Then determine the fraction of the total items for each category (e.g. total items = 25; glass items = 5; glass fraction = 5/25).
5. Create a line plot showing the results of each category. Visually compare the items with the highest count to the items with the lowest count using the plot.
6. Discuss the results. Where was most of the litter found? How did it get there (careless people, blown out of trash truck)? Why don’t people dispose of waste properly? Which were the fewest items found? What percentage can be reused or recycled? Create a bar graph showing three bars; one for the total items found, one for the items that can be recycled and one for the items that need to be thrown in the trash. This can be repeated for different locations where trash was found (e.g. along the street vs. a playground location).

Option: Half the class could do this using litter, the other half using trash from the trash can. Compare the two.

Evaluation
Were the students able to correctly classify the litter items they collected?
Classroom Activities

A. Make displays of the different kinds of litter. Separate the litter into renewable and non-renewable resources, natural and human-made objects, bio- and non-biodegradable objects, etc.

B. Make a timeline poster of the biodegradability of trash found, using the Enduring Litter chart (see Waste Walk 7-8 II.A.1) and pasting pieces of collected trash on the poster.

C. Make litter collages or posters to discourage littering.

D. Design and carry out a behavioral experiment to determine why people litter. Have students offer individually wrapped treats to other students outside of the class and document in what way the subjects dispose of the wrapping:
   1. Putting the wrappers in their pocket
   2. Putting the wrappers in a nearby trash receptacle
   3. Throwing the wrappers on the ground

E. How would the litter search results differ if students examined a different trash can (e.g.: one from the school kitchen, one from home, one from a factory)? Compare the results.

F. Assess the amount of waste produced in other classrooms and the lunchroom. How many classrooms recycle? Do the classrooms use both sides of the paper before recycling? How many trash barrels are in each room? Is there a recycle bin? Are the bins clearly labeled with acceptable waste or recyclables?

G. Do a classroom trash can sort. Try the same activity one month later to see if students have changed any of their behaviors regarding recycling and the consumption of natural resources.

H. Broaden activity to coordinate with community Green-Up Day activities. What areas in the school need the most help? Conduct a waste audit of classrooms, cafeteria, conference rooms, main office, etc. (see Information Section for how to conduct a school waste audit). Work together to think of activities that would help raise awareness at the school and increase recycling. Start a school Green Team to tackle large tasks and to coordinate environmental education activities.

Common Core Alignments

GRADE 4
CC.L.4.6
Language: Vocabulary Acquisition & Use
CC.SL.4.1
Speaking & Listening: Comprehension & Collaboration
CC.4.MD.4
Mathematics: Measurement & Data

GRADE 5
CC.L.5.6
Language: Vocabulary Acquisition & Use
CC.SL.5.1
Speaking & Listening: Comprehension & Collaboration
CC.5.MD.2
Mathematics: Measurement & Data

GRADE 6
CC.L.6.6
Language: Vocabulary Acquisition & Usage
CC.SL.6.1
Speaking & Listening: Comprehension & Collaboration
CC.6.SP.4
Mathematics: Statistics & Probability