

# \* Understanding Waste



**Learning Objectives:** To have students examine the materials that comprise the products they use, describe whether these materials are renewable or non-renewable resources, observe what happens to materials when placed in an old fashion dump and a newer sanitary landfill, and decide whether they should be disposed of in a different way.

**Subjects:** Science, Social Studies, Environmental Education, Family and Consumer Education, and Health.

**Wisconsin Model Academic Standards:** SC C.4.2, SC C.4.5, SC C.4.7, SC C.8.6, SC C.8.10, SS D. 8.11, EE A 4.1-4, EE A.8.4, EE B.4.3, EE C.8.2, FCE introductory A.2, FCE intermediate A.3, H A.4.2, H A 8.2.

**Grades:** 4-8

\* Section is adapted from A-Way With Waste curriculum guide, a program of the Washington State Department of Ecology.

## Materials:

- Eight large clear glass jars
- Four tight-fitting lids for jars
- Dry soil
- Miscellaneous solid waste
- Crayons/markers
- Masking tape

\* Procedure and diagram of activity is on the next page.

## Pre-and Post-Activity Questions:

1. Define and give examples of: organic materials, renewable resources and non-renewable resources.
2. What do you think will happen to items made of renewable or non-renewable resources when they are put in a modern landfill?
3. List four items you use everyday that you could recycle.



## GOING BEYOND

1. Keep a record of your family's purchases from two trips to the grocery store.
  - Record what your family does with the waste from its store purchases.
  - Is there anything your family could do with the waste from its store purchases besides landfilling?
2. Predict how many plastic shopping bags your family brings home in one month (include grocery and retail bags). Count how many plastic bags accumulated. Was the number more or less than you expected? What are a majority of these bags made of? What resources are used in the production of the bags? What retail locations in your area offer plastic bag recycling? Find a way to let others know about these recycling locations (i.e., posters, information on school mailers, school website).
3. Visit a local landfill. A list of Wisconsin's sanitary landfills is available at [http://dnr.wi.gov/org/aw/wm/faclists/WisLic\\_SWLandfills.pdf](http://dnr.wi.gov/org/aw/wm/faclists/WisLic_SWLandfills.pdf)



## Procedure:

1. Ask students to choose one item you threw away today. What is your item made of? Into which of the following four categories of solid waste does your item fit?
  - a. organic (e.g., potato peels)
  - b. renewable resource/recyclable (e.g., newspaper)
  - c. non-renewable resource/recyclable (e.g., aluminum cans)
  - d. non-renewable resource/hard to recycle (e.g., toothbrush)
2. What happens to the item you threw away?

Discuss: Where is away? What is a dump? What is a landfill? What is the difference between a dump and a landfill? List ways you can avoid disposing of your item in a landfill.
3. With crayons and masking tape, label two sets of glass jars with the four category headings above. Label one set of jars "Set 1," and the other "Set 2."
4. Fill each jar in "Set 1" and "Set 2" about half full with soil.
5. Sort each solid waste item into its proper category (a-d). Put a small sample of each into the "Set 1" and "Set 2" jars with the corresponding labels and cover with soil.

Do the following:

  - "Set 1," leave the lids off and keep soil damp with water.
  - "Set 2," put the lids on tight; do not add water.
  - Place both sets of jars on a shelf away from people and out of direct sun.
6. Predict what you think will happen to the solid waste in each jar. Record your predictions.
7. Observe and record what changes, if any, occur during a 4–6 week period.

Discuss: What happened to the items made of organic and renewable resources in each set? What happened to the items made of non-renewable resources in each set? How did what happened compare with your predictions? What comparisons can you make between the two sets?
8. "Set 1" represents the old fashioned dump; "Set 2" represents the newer sanitary landfill. What comparisons can you make between your mini-dumps and mini-landfills and a real dump and a real landfill?

