

HU GK-12 Activity

TITLE: Waste Not, Want Not: Managing Waste by Recycling

PREPARED BY: Jennifer Perrella & Thomas J. Hardy

DCPS STANDARDS: E.5.1

GOALS:

1. Scholars will be able to distinguish between different types of packaging.
2. Scholars will be able to determine whether packaging can be recycled or not.
3. Scholars will be able to understand the benefits of recycling on the environment and develop a relationship among people, trash and the earth.

OBJECTIVES:

1. Given a variety of waste products, scholars will classify different types of garbage by their mechanism of disposal and propose new methods for reducing the amount of indestructible waste products.

PREREQUISITE KNOWLEDGE:

Background

In early societies garbage disposal was not a problem. They simply left their garbage where it fell and moved on. Later, some simple societies grew more complex, developing agriculture and building small cities. As cities grew, refuse disposal became a problem. Over the past few decades, recycling has become a central component of many business operations in the United States. Solids wastes such as garbage, trash, refuse, junk, scrap, and sewage are all examples of waste materials that need to be disposed of in a way that does not pollute the land. Recycling became the most obvious way individuals could assist in waste management.

Recycling is valued for the cost-savings associated with some programs as well as its general environment-friendly aspects. Recycling programs are comprised of three elements in a continuum represented by the well-known "chasing arrows" symbol that adorns recyclable products: 1) collection of recyclable materials from the waste stream; 2) processing of those materials into new products; and 3) purchasing of products containing recycled materials.

ESSENTIAL QUESTIONS:

1. What is waste management and what does it mean to recycle?
2. What are the similarities and differences between renewable and nonrenewable resources?
3. Which factor is most important in determining the amount of environmental damage caused by a society?

LABORATORY MATERIALS:

soda containers - aluminum, plastic, returnable

shampoo bottles - plastic (no. 1,2, others), glass
potato chips - cardboard can, cellophane bag, foil bag
ketchup - glass, plastic
vegetables - fresh, frozen, canned
cookies - boxed, bagged, blister packed
juice - frozen concentrate, glass and plastic bottle
eggs - styrofoam or cardboard carton
hair spray - aerosol can, plastic pump can
laundry supplies - box, boxed concentrate, plastic
toys - cardboard, cellophane, blister packed
margarine - plastic tub or squeeze bottle, cardboard box with foil.

RESEARCH ACTIVITY:

1. Develop a relationship among people, trash and the Earth
2. Identify which of the packaging materials are being thrown away in the community.
3. Rate each material on its ability to be recycled.
4. Identify instances in which the packaging materials are being recycled in the community, and in what ways.
5. Determine a relationship between the packaging materials being thrown away and materials that can be recycled (Do the materials being thrown away have a high ability to be recycled?). Which are renewable and which are non-renewable?
6. Describe the steps involved in recycling each type of material and propose new methods for recycling each type of material.
7. Develop a classification system for packaged waste by mechanism of disposal and rank each form of packaging in terms of the most environmentally friendly to the least environmentally friendly.
8. Evaluate the effectiveness of these methods.
9. Identify the best type of packaging material for each product based on the recycling capabilities of your community, mechanism of disposal and ability to be recycled.
10. Scholars should make suggestions on how to reduce the use of non-recyclable products in your community.

DIFFERENTIATING INSTRUCTION:

For this activity, accelerated scholars will be grouped with other scholars and will become the group leaders. This will help them to assert themselves as leaders and nurture their potential for peer tutoring and mentorship. This action may also assist scholars not considered accelerated to be introduced with a different approach to reasoning and performing activities, as well as ensuring creativity and motivation. English language limited scholars should have no problems with this activity. They will be paired with bilingual scholars for group work.

Scholars with disabilities can be placed in special groups which will work at a pace complimentary to their speed and learning capabilities. These scholars may also have reduced responsibilities and will be explained the activity in a more detailed and thorough manner. The instructor can focus more on this group than the other groups who

will be allowed to work more independently. More applicable examples to the life of the child with the disability could be used focusing on his/her strengths in order to get the activity done.

RATIONALE:

This activity is designed to raise scholars' awareness of the amount of trash they generate, the problems that result, and possible recycling solutions available.

EVALUATION AND ASSESMENT:

1. Each group should make a recommendation for dealing with their category of refuse. This should be based on their own research. The entire group can formulate a plan for dealing with their community's household trash. Plans should include means of paying for the plan. It should also address whether the material should be sorted. In other words, should it be sorted by the persons generating it, or should be sorted in a central collection facility?
2. List ten ways you can implement sustainable development in your life.