Teacher Tool 38: It's Good to Be Green: Reduce, Reuse, and Recover

Study Guide for Environment 6: It's Good to Be Green-Reduce, Reuse, and Recover 1 and Environment 7: It's Good to Be Green-Reduce, Reuse, and Recover 2

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HEC-TV Live! Presents
It's Good to be Green: Reduce, Reuse, and Recover

Original Date: November 3, 2011
Times: 10:00 a.m. to 11:00 a.m. and 1:00 p.m. to 2:00 p.m. CDT
Grade Levels: 4-8

Program Description:

What happens to that aluminum can, plastic bottle, office paper, or cardboard cereal box when you place it in the recycling bin? Where does it go? How is it sorted? What kind of impact are you really having on the environment when you decide to reduce, reuse and recover? In this archived program, we explore those questions and more as we see how our trash is recovered and recycled to be used again in new forms. We also learn ways each of us can go greener and help reduce our impact on the environment by developing strategies that "reduce, reuse, and recover."
Meet experts from the Earthways Center of the Missouri Botanical Garden, experts from the Missouri Recycling Association, and students who are making a difference in their community with their recycling projects.

Program Objectives:
1. The participant will gain a greater understanding about the nature of our ecosystem and of the role environmental awareness and action takes in maintaining that ecosystem.

2. The participant will interact with experts involved in recycling and other environmental industries.

3. The participant will gain a greater understanding of his or her individual impact on the environment and learn how to utilize "green" strategies to better balance that impact with his or her life needs and choices.

Program Format:
Student questions and comments are woven into all segments of the program.

1. Welcome and Introduction—Student groups and experts will be introduced and welcomed to the program.

2. The Big Picture—We look at general information about the amount of trash individual Americans and the country as a whole produce each year, and the toll this takes on our environment. As part of their preparation for the program, student groups joining us for the live program took part in the "Waste Audit" activity that is included in the pre-program activity materials for this show. You may wish to have your students do the same activity either before or after viewing this program.

3. What Happens to Your Trash? — In this segment we follow the trail of some trash from the point where it gets tossed in the trash can through its placement in a larger dumpster to being picked up by the waste company and then sent on to the recycling location or dump location. We also talk about the wide variety of items that can be recycled and look at examples of that in practice. Students will have the chance to ask questions and also share their experiences with recycling themselves.

4. What You Can Do—In this segment we look at ways people can recycle even more and see examples of programs in practice in communities where our student audiences are located. Composting and other reduce, reuse, recover methods will be discussed.

5. Summary and Closing—We summarize the major concepts learned today and seek final questions from students.

Featured National Standards: (Science)

Unifying Concepts and Processes - Unifying concepts and processes help students think about and integrate a range of basic ideas which builds an understanding of the natural world

1. Systems, order, and organization
2. Evidence, models, and explanation

Science as Inquiry - Science as inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science.

1. Abilities necessary to do scientific inquiry
2. Understandings about scientific inquiry

Science and Technology - An understanding of science and technology establishes connections between the natural and designed world, linking science and technology.

1. Abilities of technological design

Featured State Standards (Missouri):
Schools from across the country are invited to join in the program. Missouri state standards are provided for Missouri schools since funding for this program comes from various Missouri organizations.

Missouri Grade Level Expectations

Strand 7: Scientific Inquiry
Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

Program-Related Activity Suggestions:

1. To gain a better understanding of how much trash they produce, have your students do a Waste Audit either at home, in the classroom, or both. Utilize the instructions provided in the "Waste Audit Instructions" included at the end of this document. As you read over the activity you will notice that teachers may determine if they wish to have students do this activity with their home trash, their classroom trash or both.

2. After viewing the program, have each student journal on what they have learned about trash, recycling, the environment, actions they could take, etc. that they did not know before the program. What did they find most interesting, frustrating, unique, etc. about the topic they choose to write on? Have them share their journal entries with a partner or with the teacher.

3. Numerous follow-up activities related to recycling and environmental awareness are provided at the websites included in the "Supplemental Resources" section of these materials. Please peruse these sites to determine which activities are most appropriate for your students.

Supplemental Resources:

http://www.epa.gov/wastes/education/teach_curric.htm
This is the EPA's website which has a wide variety of curriculum and educational materials related to the topic of our program. Resources and materials are broken into three grade levels: K-5, 6 to 8, and 9 to 12.

http://americarecyclesday.org/
Find out more about America Recycles Day and see activities that you and your students can do to participate in the national event.

http://mora.org/
Guests for our program will include a representative from the Missouri Recycling Association. Find out more about the organization and view their educational materials at their website. See how your students can participate in the Recycle Bowl.

http://www.earthwayscenter.org/
Another of our guests will come from the Earthways Center of the Missouri Botanical Garden. Find out about that organization and view their educational materials at their website.

http://www.greeneducationfoundation.org/
This website of the Green Education Foundation provides a wealth of curriculum resources. The "Waste Audit" pre-program activity is modified from one on their website.

http://www.recycle.com
This is the website for Resource Recycling Systems. One of our program panelists will be from this company. To learn more about the company and the work they do, and to learn more about how recycling helps the environment and the economy check out their website.

Waste Audit Activity

Purpose: This activity is designed to give your students an idea about just how much trash they and their classmates produce in a week's time, either at school or at home.

Teacher Instructions: You may choose to have students do the audit either at home or at school or both. Once students have completed the audit you choose, please tabulate the results.

Student Instructions:

For a Classroom Trash Project:
Part 1: How much waste does your classroom produce?

Weigh your classroom's trash at the end of each day for one week.
Average the weight of the trash over the five days.
Multiply this number by 20 to obtain an estimate of trash produced per month for your classroom.

Examples:

10 lbs. + 7 lbs. + 5 lbs. + 12 lbs. + 6 lbs. = 40 lbs./one classroom/week
40 lbs.÷ 5 days = 8 lbs. of waste produced per classroom per day
8 lbs. x 20 school days = 160 lbs. of waste produced per classroom per month

Part 2: What kind of waste does your classroom produce?

Separate the waste from the classroom trash bin into the following categories:
Paper: newspaper, notebook paper, magazines, boxes, wrappers
Plastic: disposable food service products (plates – e.g. Styrofoam, cups, cutlery), product wrappers, food and beverage containers, markers
Glass: marbles, food and beverage containers
Metal: paper clips, staples, aluminum foil, food and beverage containers
Food: classroom snacks, cafeteria food waste
Wood: toothpicks, cedar chips, blocks, pencils
Other: rubber bands, fabric, balloons, mixed material (e.g. plastic and metal) products

Next steps:

Weigh the separated waste.
Average the weight of each trash category.
Convert to a percentage.
Record the data on a chart and graph the results.

For a Home Trash Project:

Have students follow the same procedures at home as they are listed for the classroom project above. The only difference would be to have them do the trash weighing every day for a week (7

days), and to then take the average weight they get for that week and multiply it by 30 to get an estimate of trash produced per month at their home. Part 2 instructions would be the same as the classroom project. Consider having students share their results with others at their home as well as with their classmates.