WELCOME to EPA's Solid Waste Resource for Teachers and Students in Grades K-8 !

About This Resource

The *Quest for Less* is designed for teachers in grades K-8 to use as one of the many tools in the development of lesson plans. Activities and concepts in this resource can be incorporated into existing curricula, or teachers can create special week-long units on the environment and solid waste or use the activities to commemorate Earth Day.

This guide provides hands-on lessons and activities, enrichment ideas, journal writing assignments, and other educational tools related to preventing and reducing waste. Its multidisciplinary focus includes math, science, art, social studies, language arts, and health. Lessons encourage students to utilize skills ranging from reading and writing to problem-solving and analytical thinking.

This resource introduces the idea of natural resources as a source for many products that become solid waste; explains the quantity and type of waste products create; and reviews the common methods of managing solid waste, including recycling, composting, landfilling, incinerating, and preventing waste in the first place. It also includes some information about hazardous waste.

Each chapter in *The Quest for Less* includes one or more fact sheets that provide background information on a topic and an index showing the grade ranges, subject areas, and skills used for each activity.

Each activity, in turn, provides a suggested duration, materials needed, and other helpful information for teachers. A glossary of terms and a glossary of skills can be found at the end of the resource.

Goals of This Resource

- To stimulate young people to think critically about their own actions and the results of their actions and to assess their own resource conservation and waste prevention values.
- To help young people understand the connections among the use of natural resources, use of products, waste disposal, and causes and effects of environmental impacts.
- To help students understand the hierarchy of preferred waste management options and students' role in the different options (e.g., reducing, reusing, and recycling are better than throwing things away).
- To introduce and explain behaviors that conserve resources, reduce environmental impacts, and enhance sustainability such as source reduction, recycling, buying recycled, buying with less packaging, and composting.
- To help protect children's health through increased awareness and behavioral changes related to the safe use, storage, and disposal of household products containing hazardous constituents, such as cleaners, pesticides, and batteries.
- To help students understand the concept of personal responsibility toward the environment and to inspire them to make a positive environmental impact in their home, school, and community.
- To make solid waste education interesting, fun, and an integral part of environmental education.

Why Should Kids Learn About Solid Waste?

Despite the fact that individuals and communities are recycling more than ever, each person in the United States continues to generate about 4.4 pounds (EPA, 2003; 2001 data) of municipal solid waste per day! This statistic emphasizes the continuing need to teach the next generation about reducing waste and to energize schools and communities to promote environmental awareness.

Because municipal solid waste issues are intimately connected with resource and energy use, global climate change, air pollution, water pollution, and other concerns, lessons and activities in *The Quest for Less* can be incorporated into other environmental or ecological concepts. For example, kids can learn the connection between recycling an aluminum can and saving energy. They can also learn how their families' purchasing decisions impact what manufacturers produce and sell.

What Is EPA's Office of Solid Waste?

The mission of EPA's Office of Solid Waste is to protect human health and the environment by ensuring responsible national management of hazardous and nonhazardous waste. Close interaction with states, industry, environmental groups, tribes, and the public enables EPA to promote safe and effective waste management. Because everyone contributes to the problems of solid waste, everyone shares responsibility for finding and implementing solutions.

In that spirit of cooperation, EPA reaches out to educators with this resource, enabling them to instill fundamental environmental awareness and values in today's youth and tomorrow's leaders.

And they can learn how the consumption of material goods contributes to air and water pollution.

Sources

In developing this resource, EPA used the North American Association for Environmental Education's (NAAEE's) *Guidelines for Excellence in Environmental Education Materials* as a guiding principle. NAAEE's guidelines address educational standards for fairness and accuracy, depth, skills building, action orientation, instructional soundness, and usability. Information about the organization can be obtained by visiting <www.naaee.org> or contacting NAAEE at 2000 P Street, NW, Suite 540, Washington, DC 20036 or (202) 419-0412 or <email@naaee.org>.

Facts presented throughout this resource derive from a variety of governmental, educational, and trade association sources. While all have been evaluated by EPA, they have not been independently verified and might become out of date over time or with changes in the solid waste industry or individual/community behaviors. Some facts are specifically attributed to *Municipal Solid Waste in the United States: 2001 Facts and Figures,* Executive Summary (document number EPA530-S-03-011), published October 2003.

This resource updates and replaces OSW's previous solid waste teacher's guide, *Let's Reduce and Recycle: Curriculum for Solid Waste Awareness*, August 1990 (EPA530-SW-90-005). Some activity ideas were based on existing solid waste educational materials. These documents can also serve as excellent sources of additional activities for use in the classroom. EPA credits the following publications as sources of information and provides ordering information when available:

A-Way With Waste, Fourth Edition, Washington State Department of Ecology, Air Quality Program. Available online: <http://www.ecy.wa.gov/programs/air/aawwaste/awwwhome.html>. Phone 360 407-6826. No cost.

Closing the Loop: Integrated Waste Management Activities For School and Home, K-12, The Institute for Environmental Education and the California Integrated Waste Management Board, 1993. *To order:* Office of Education and the Environment, 1001 I Street MS-14A, Sacramento, California 95814. Phone: (916) 341-6769. No cost.

"Luscious Layered Landfill" activity, Delaware Solid Waste Authority. To order: 1128 S. Bradford Street, P.O. Box 455, Dover Delaware 19903-0455. Phone: (800) 404-7080. No cost.

Environmental Education: Compendium for Integrated Waste Management and Oil, The Institute for Environmental Education and the California Integrated Waste Management Board, 1993. *To order:* Office of Education and the Environment, 1001 I Street MS-14A, Sacramento, California 95814. Phone: (916) 341-6769. No cost.

Environmental Pathways (formerly Air, Land & Water Teachers' Manual), Illinois Environmental Protection Agency, Office of Public Information, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276. To order: Phone: (217) 558-7198. No cost.

Environmental Protection: Native American Lands, Grades 1-12, Second Edition, The Center for Indian-Community Development, Humboldt State University, Arcata, California 95521. Available online: <http://tismil.humboldt.edu/epa>. No cost.

Forever Green: A Recycling Education Program for Grade 3, Fort Howard Corporation, Green Bay, Wisconsin. (No longer available.)

4th R Recycling Curriculum, San Francisco Recycling Program, 11 Grove Street, San Francisco, CA 94102. (No longer available.)

4Rs Project: A Solid Waste Management Curriculum for Florida Schools, The Florida Department of Education. Available online: <http://www.naplesgarbage.com/curriculum.htm>. Phone: (239) 649-2212. No cost.

Here Today, Here Tomorrow (Revisited): A Teacher's Guide to Solid Waste Management, State of New Jersey Department of Environmental Protection and Energy, Information Resource Center, 432 E. State Street, CN 409, Trenton, New Jersey 08625. (No longer available.)

LifeLab Science Program Web site, Santa Cruz, California, <http://www.lifelab.org>.

Mister Rogers: Activities for Young Children About the Environment and Recycling, Family Communications, Inc., 1990. Phone: (203) 323-8987. (No longer available.)

Mystery of the Cast Off Caper: 4-H Solid Waste Leader's Curriculum Guide, North Carolina Cooperative Extension Service, 1992. Phone: (919) 515-8479. (No longer available.)

Nature's Recyclers Activity Guide, Wisconsin Department of Natural Resources, 1991. Bureaus of Solid Waste and Information and Education. P.O. Box 7921, Madison Wisconsin 53707. Available online: <http://www.dnr.state.wi.us/org/aw/wm/publications/recycle/publie043.pdf >.

Planet Patrol: An Environmental Unit on Solid Waste Solutions for Grades 4-6 The Proctor & Gamble Company. *To order:* P&G Educational Services, 2 P&G Plaza, Cincinnati, OH 45202. Phone: (513) 983-2139. No cost.

Recycling Study Guide and K-3 Supplement to the Recycling Study Guide, Wisconsin Department of Natural Resources, 1993, 1990. Bureaus of Solid Waste and Information and Education. P.O. Box 7921, Madison Wisconsin 53707. Available online: <http://www.dnr.state.wi.us/org/aw/wm/publications/>

Rethinking Recycling: An Oregon Waste Reduction Curriculum/Teacher Resource Guide, Oregon Department of Environmental Quality, 1993. To order: Department of Environmental Quality's Solid Waste Policy and Program Development Section, 811 SW Sixth Avenue, Portland, Oregon 97204. (503) 229-5913. Available on CD or online at: <http://www.deq.state.or.us/>. No cost.

The No Waste Anthology: A Teacher's Guide to Environmental Activities K-12, California Environmental Protection Agency, Department of Toxic Substances Control. *To order:* Dept. of Toxic Substances Control; Education and Outreach Unit; 400 P Street, P.O. Box 806; Sacramento, CA 95812-0806. Phone: (916) 324-1826. No cost.

Trash Today, Treasure Tomorrow University of New Hampshire Cooperative Extension, 1990. *To order:* Northeast Resource Recovery Association, 9 Bailey Road, Chichester, NH 03258. Phone: (603) 798-03258. Cost: $20.

Visit OSW's Educational Resources Page

EPA continually adds new resources and Internet activities to the Office of Solid Waste Educational Resources . This page features interactive activities, documents, and other materials for kids in grades K-5, students in grades 6-8, teens in grades 9-12, and teachers. Check the site periodically for new enrichments for your students.

www.epa.gov/epaoswer/education/index.htm