

Reuse + Recycling = Waste Reduction

A Guide for Schools & Groups



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Introduction

Schools and Groups = Waste Reduction Opportunities

Organized groups have a tremendous opportunity to operate waste reduction programs. School-related groups might include science classes, environmental clubs, and parent-teacher organizations. Other groups might include Girl and Boy Scouts, Boys and Girls Clubs, 4-H, or Future Farmers. These groups can often educate the whole community about the benefits of waste reduction and encourage everyone to make waste reduction a part of their everyday life styles. Increasing the flow of reusable and recyclable materials can even generate extra funds for school departments and groups.

No matter how you live, work, and play, everyone produces waste. We can control this waste by reducing, reusing, and recycling it.

While many people already recycle products at home, waste reduction opportunities exist anywhere we have waste. Recycling is one way to reduce waste; reusing products is another. Products that can be reused and recycled are countless, and include everything from paper to clothing to worn-out electronics. Some examples of the many items we can reuse include clothing, school supplies, and sports and electronic equipment. The items we most commonly recycle are paper, aluminum, glass, steel, cardboard, and yard waste.

Most waste reduction efforts save money, energy, and natural resources, and can teach children and young adults how solid waste affects their lives and their environment.

The Benefits of Waste Reduction



Be Part of the Solution

Nearly 70 million tons of materials were recycled or composted in 2000. Help add to that number by recycling at least one pound of waste per day.



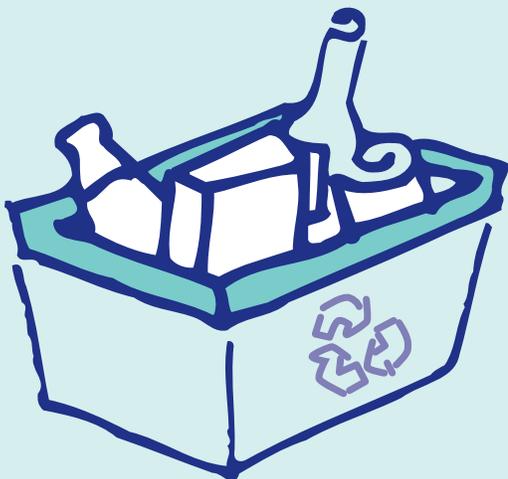
The economic and environmental benefits of waste reduction (which includes preventing waste, reusing, and recycling) accrue both locally and globally. These activities can:

- Prevent pollution created by manufacturing new products or products made from virgin materials.
- Save energy in manufacturing, transportation, and disposal of products.
- Decrease greenhouse gas emissions, which contribute to global climate change.
- Conserve natural resources such as timber, water, metals, and fossil fuels.
- Reduce the need for landfilling and incineration, which are expensive to operate and maintain.
- Protect and expand U.S. manufacturing jobs and increase U.S. competitiveness.
- Help sustain the environment for future generations.

Waste Reduction Programs that Work

You Are Unique

The ideas in this handbook require various levels of commitment and support. Depending on the nature of your school or organization, you will have different needs and considerations in terms of storage, space, time, commitment, types of materials collected, costs and level of interest and participation. As you consider various waste reduction options, think carefully about your overall capabilities to meet your program's goals. Also, keep in mind that you might run into issues specific to your school or group that need to be resolved before you can begin a program.



The following options for waste reduction programs are some suggested methods that work for others. After evaluating your needs, capabilities, and goals, choose the option that works best for you.

- **One-time or periodic reuse or recycling drives**
- **Continually operating reuse or recycling programs**
- **Stationary or mobile collection centers**
- **Sponsored waste reduction programs**
- **Credit accounts at local recycling or materials collection centers.**

After assessing these options, use the worksheets on pages 11 and 12 to help you get started.

Conduct one-time or periodic reuse or recycling drives

Students and groups can establish one-time or periodic drives to collect reusable and recyclable items. Reusable items, such as clothing, books, toys, computers, and other electronic equipment, or recyclable materials, such as paper, aluminum, glass, and plastic, can be brought to a drop-off location on an appointed day or days.

A reuse program might involve:

- Swapping with one another on site.
- Donating the collected materials to a specific beneficiary, such as a library, shelter, or charitable organization.
- Selling the collected materials at a community yard sale and using the profit for school or group activities. (These drives are also sometimes part of a national, state, or local government campaigns.)
- Collecting materials for a commercially sponsored “take-back” program.

A recycling program might involve:

- Having your local recycling center collect the materials and transport them back to the center for processing.
- Arranging for adult volunteers to take the collected materials to the recycling center.
- Hiring a hauler for transportation.

Seasonal Products

Collect Christmas trees and recycle them into mulch. Use the mulch to help offset landscaping costs in green spaces at your school or group’s location. Alternatively, you can donate the mulch to nursing homes or other organizations for their use. If you collect enough trees, you can also consider selling the mulch for fund-raising. Keep in mind that you will need to rent mulching/shredding equipment from your home improvement store, unless you can find someone to loan a free machine to a good cause! And remember, only an adult can operate such equipment.



If you have a community waste reduction or recycling coordinator, be sure to coordinate with them on this process.

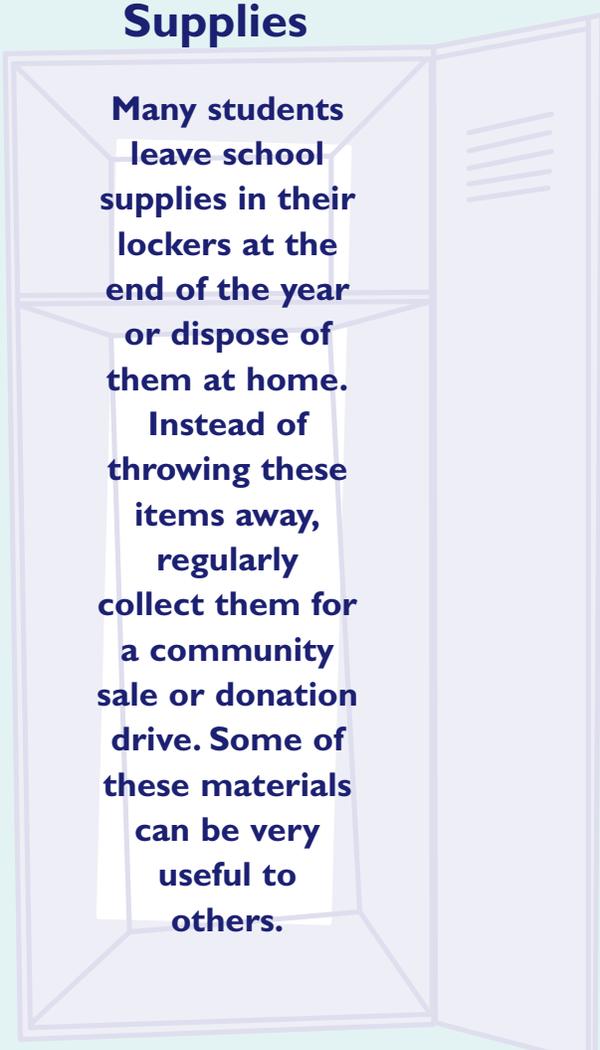
This option does not require long-term storage space, but it does require extra space in people's homes for collecting materials before they are brought to the collection location.

Establish a continually operating reuse or recycling program

Many different kinds of permanent reuse or recycling programs exist, with different options for funding, supplies, and services. Student-run clubs, local or state government programs, or nonprofit institutions are all possible sources of support for your program. For this kind of program, your school or group needs collection bins and storage space for the reusable or recyclable materials, which also should be picked up regularly by a designated hauler.

Even though a long-term reuse or recycling program requires careful planning and continuous outreach, it can also offer great rewards. Such a program allows participants to see the results of their collection efforts on a daily or weekly basis. Depending on how the program is set up, students might even run the program, with adult supervision. An in-school or outside group program also greatly encourages people to make waste reduction part of their daily routine.

School Supplies



Many students leave school supplies in their lockers at the end of the year or dispose of them at home. Instead of throwing these items away, regularly collect them for a community sale or donation drive. Some of these materials can be very useful to others.

Composting

Composting is an age-old practice with modern-day applications that appeals to people of all ages. Composting is the controlled biological decomposition of organic material, such as food scraps or lawn trimmings. It is also a waste reduction method.

Collecting certain food scraps and yard trimmings significantly reduces the amount of waste that needs to be disposed of or otherwise managed. Compost can be used as a soil additive to improve soil texture, increase the ability of soil to absorb air and water, suppress weed growth, decrease erosion, reduce the need to apply commercial soil additives, and degrade some toxic materials in the soil.

Many municipalities collect compostable materials, such as yard and food scraps, paper, and coffee grounds and filters, instead of disposing of the waste. This technique may require more time, commitment, management, supervision, and space than other waste reduction programs discussed in this handbook, but it is a viable option proven to be successful in schools, groups, and communities. Your school or group should work closely with your community leaders before beginning this kind of waste reduction program. Lawn businesses can also collect yard waste and conduct their own composting program. For more detailed information on composting, visit www.epa.gov/epaoswer/non_hw/compost/ or www.compostingcouncil.org.

Establish a stationary or mobile collection center

Because schools often serve as focal points for local residents, they are ideal for stationary reuse and recycling drop-off points. A storage facility where people can drop off their reusable and recyclable products should be put in an easily accessible holding area, such as a parking lot. You can either arrange for pickup of the collected items by a local recycling center or hauler or enlist volunteers to transport the collected materials to a nearby recycling center or charity. For some very specific materials, such as computers and other electronics, you might need to make special arrangements with a manufacturer or business that collects those particular items (sometimes called “take-back programs”).

Schools in smaller communities or rural areas can also serve as mobile recycling centers. Smaller schools or groups can make arrangements to share a trailer that travels to different locations. For example, the trailer can be borrowed from a recycling center for a special fund-raising activity.

Since these waste reduction programs directly involve the community and depend heavily on the support of its residents, be sure to widely publicize your efforts to maximize participation. Post a schedule of the trailer’s stops in schools, in area stores, and on the Internet.

You will need storage space at each pick-up point where reusables or recyclables can be collected until the trailer arrives. Arrange for convenient locations, such as grocery store parking lots, to temporarily park the trailer, and establish regular deposit schedules with your local recycling facility.

Team up with a sponsor for waste reduction programs

Corporate or government organizations sometimes sponsor reuse or recycling drives or donate money or supplies to start a waste reduction program. Corporate sponsors may be good sources for funding and advertising, but you might have to follow their guidelines and have the sponsor's name associated with your school or group.

Through EPA's "Plug-In To eCycling" program, companies that manufacture and sell consumer electronics are teaming up with government agencies to increase the opportunities Americans have to reuse or recycle their old electronics and motivate them to make use of these opportunities. Your school or group may be able to spread the word about these opportunities, or may be welcome volunteers at some events. See the "Resources" section for more information.



Do you have any old computers, cell phones, stereo equipment, televisions, VCRs, PDAs, video games, or other electronic equipment sitting around in your home? Believe it or not, these items, as well as other pieces of electronic equipment, can be recycled and refurbished for reuse in your schools and community organizations. You can help by partnering with your local government or community groups on their electronics recycling efforts.

To learn more about e-cycling and ways you can contribute to the safe reuse and recycling of electronics, see EPA's "Plug-In To eCycling Event Tool Kit." Offering valuable guidance on planning, funding, staffing, and collecting and reporting, the kit is intended to provide interested individuals with easy-to-act-on information, helping them plan successful recycling collection events for consumer electronics.

The Event Tool Kit provides valuable information about:

- Your first steps in planning an event
- Necessary tasks to complete before the event
- Things you need to know about the day of the event
- Important post-event tasks

To learn more about EPA's "Plug-In To eCycling" Program, and to view an online version of the "Plug-In To eCycling Event Tool Kit," visit www.epa.gov/epaoswer/osw/conserves/plugin/toolkit.htm.

Establish a “credit account” with a local recycling center

If a school or group establishes a “credit account” with a local recycling center, the monetary value of any recyclables dropped off there will be added to that account. Students and others can drop off recyclables and have the proceeds of those items posted to that account. That means your school or group will receive the money from those recyclables.

Promoting the school or group that will be the recipient of the recycling effort is important as a motivator for participation and to ensure that credit is properly given to the organization. Classroom activities and publicity reinforce recycling lessons and increase participation. If storage space is a problem for your location, you might want to consider this type of program.

Recycling Ideas

Paper: If you collect paper for recycling, be sure you are collecting it properly. Contact your municipal solid waste management agency or your local recycling center, and follow their specific guidelines on collecting and sorting. Your diligence in sorting will ensure that the paper is not only recyclable but also marketable to companies that can turn it into recycled-content products.

Glass: Regardless of color, most glass food and beverage containers are 100 percent recyclable and can be reused an infinite amount of times. Some glass products, such as windows, mirrors, drinking glasses, dishes, and light bulbs, cannot be recycled. Be sure to find out if your local recycling center has any restrictions regarding separation of colors before you start collecting glass for recycling. Also check with the center about metal tops and rings.

Metals: Different metals require different recycling processes. Two of the most common metals that are recyclable from schools are aluminum cans and steel (actually tin-coated steel) cans. An easy way for students to separate steel from aluminum is to hold a magnet to them. Magnets won't stick to aluminum. If you plan to collect mixed metals, you might be able to borrow magnetic sorting tables from a can recycling company. Check with your local recycling center or solid waste agency.

Plastics: Different types of plastic are chemically different and are, therefore, recycled differently. Schools commonly generate two types of recyclable plastic: polyethylene terephthalate (PET) and high-density polyethylene (HDPE). Check with your local recycling center or solid waste agency to find out which types of plastic are accepted.

Steps for Starting a Waste Reduction Program

Safety First

Remember to consider safety issues when deciding what kind of waste reduction program you want to run. For example, if you are holding a glass recycling program at an elementary school, make sure glass recyclables are safely contained and handled by adults. Middle and high school students are probably able to manage these products safely with the proper equipment. Be sure to wear heavy gloves and goggles while handling glass recyclables. Also be sure to wash glass products before adding them to the recycling bin to avoid bugs, odors, and rodents. Also make sure that everyone, including students participating in the program, is covered by the appropriate and necessary insurance in case of accidents.



The most successful reuse and recycling programs follow a series of steps, as follows:

- 1 Select the type of waste reduction program that works best for your group.
- 2 Organize a team.
- 3 Decide what materials to collect.
- 4 Identify viable end uses or markets for your materials.
- 5 Work out a budget.
- 6 Contact your local authorities for assistance.
- 7 Establish a system for collecting and storing materials.
- 8 Educate your school and group about the waste reduction program.
- 9 Set overall and individual goals.
- 10 Reward participants.

Step 1:

SELECT THE TYPE OF WASTE REDUCTION PROGRAM THAT WORKS BEST FOR YOUR GROUP

You can model your program after one described in this handbook or design one to fit your schools and group's needs. Because the success of your waste reduction program will depend on the level of interest and enthusiasm in your school or group, let others help you make this decision.

One possible way to measure the level of interest in your program is to survey students, parents, and group leaders, asking specific questions about their willingness to participate. Some questions to ask might include:

- Do you know about the benefits of reusing and recycling?
- Are you willing to keep reusable and recyclable materials at home?
- Are you able to bring reusable and recyclable material to school or another drop-off location?
- Can you donate your time to volunteer for the program?
- Can you contribute money or donate advertising for the program?

After the survey has been completed, you can use the results to gauge which type of collection program might work best for your school or group.

Step 2:

ORGANIZE A TEAM

A good team will help the program run smoothly. Besides being responsible for program planning, publicity, and operations, the team structure makes waste reduction fun. The team can include students, parents, teachers, custodians, or other volunteers. A strong team leader is essential for generating support and enthusiasm for the waste reduction program. A student leader, department director, club sponsor, or teacher, whose program benefits from the waste reduction effort, is a good choice for team leader. In fact, anyone interested in protecting the environment by reusing or recycling will probably do a great job!

Step 3:

DECIDE WHAT MATERIALS TO COLLECT

Deciding what materials to collect for reuse and recycling is an important initial step. You might know of a particular material or product that is generated in large quantities that can easily be reused or recycled, and you might want to focus your entire program on that one material. You might decide to address a once-a-year issue, such as Christmas trees or old telephone books. Or, you might want to address an issue that is not handled by your municipal recycling program, such as batteries or electronic equipment.

When deciding what materials you want to include in your reuse or recycling program, first consider what programs are already underway in your area. Use the worksheet below to help you. Next, consider materials that you know you can sell, donate, or otherwise deposit at a municipal recycling center. Participating in a community waste reduction program is only part of the reusing and recycling process. For reuse to succeed, materials must be donated or sold to people or organizations that will use the material. For recycling to succeed fully, recyclable materials must be sold to a company that can process them into new products, and those products must be purchased and used.

Paper, bottles, jars, and cans are some of the most commonly collected items in

municipalities, schools, and groups. Detailed information on collectible commodities can be found at: www.epa.gov/epaoswer/non-hw/recycle/jtr/comm/index.htm.

Step 4:

IDENTIFY VIABLE END USES AND MARKETS FOR YOUR MATERIALS

Before you embark on a collection effort, you need to identify a “home” or market for the materials you will collect. Remember the adage, “one person’s trash is another person’s treasure.” You might not have any more use for a product, but chances are, someone else does.

Before beginning any type of reuse or recycling program, assess what types of programs are already underway in your area. You can use the sample worksheet below to determine whether it is feasible or necessary to start another reuse or recycling program.

Sample Assessment of Current Reuse and Recycling Programs Already Underway in Your Area

1. What agencies/organizations/companies are already collecting reusables/recyclables? _____

- Contact names and phone numbers: _____

2. What materials are collected for reuse? _____
3. What materials are collected for recycling? _____
4. How is collection conducted? (e.g., curbside pickup, drop-off points) _____
5. Is your school or group already participating in a reuse or recycling program? _____

- How does participation work? _____
6. What are future area plans for collection of reusables/recyclables? _____

Knowledge of your own community's resources can be your first step to locating an end use for reusable materials. Libraries, charities, schools, community centers, or even local businesses might be places to donate or sell used materials. The local phone book and the Internet are good resources for material markets as well. Look in the yellow pages under recycling, charities, waste paper, and salvage or scrap dealers. If your area government already collects some materials and has a local municipal, tribal, or county recycling coordinator, that person can help you find markets for your reusable and recyclable materials. You might also contact your state environmental agency for assistance in locating viable markets.

Once you have identified a market for your reusable and recyclable materials, find out what services they have; how and when they pay; if, and how often, they collect items; and whether they transport the materials. The highest price per pound might not always be the only thing to consider if you have to transport products yourself.

The sample form on this page can help you determine items that might be good candidates for reuse or recycling by your school or group.



Reuse/Recycling Candidate Form

1. Candidate materials for reuse:

 - Candidate materials for recycling:

 2. Amount available for reuse:
_____ lbs/month
 - Amount available for recycling:
_____ lbs/month
 3. Approximate net selling price for reusables:
_____ \$/month
 - Approximate net selling price for recyclables:
_____ \$/month
 4. New costs for group to collect or reuse:
_____ \$/month
 - New costs for group to recycle:
_____ \$/month
 5. Estimated net revenues (Item 2 x Item 3 - Item 4)
 - Reuse: _____ \$/month
 - Recycling: _____ \$/month
 6. Estimated savings from current practice (Item 2 x current hauling cost)
 - Reuse: _____ \$/month
 - Recycling: _____ \$/month
 7. Net gain or less (Item 5 + Item 6)
 - Reuse: _____ \$/month
 - Recycling: _____ \$/month
 8. Subjective factors
- Consider these questions for each material on the candidate list:
- Is this material consistent with community solid waste management plans? YES NO
 - Is there a market for this material (paying market or recipient)? YES NO
 - Is reuse/recycling compatible with other reuse/recycling programs for this item in the school/group? YES NO
 - Are the equipment needs and methods for collection for this item "reasonable" and sustainable? YES NO
 - Will reusing/recycling this item have a significant environmental benefit? YES NO
 - Are there any items that can be collected or donated for free? YES NO

Step 5:

WORK OUT A BUDGET

Setting up and operating a waste reduction program costs money. These costs often can be recovered from your reuse and recycling revenues. Find out if your school, group, or sponsor's budget can cover the launch and possibly some operating costs. Look for funding sources, such as your parent-teacher organization, local service clubs, local civic or church groups, local businesses or sponsors, or the student body general fund.

Possible costs might include:

- Supplies and equipment
- Transportation of materials
- Facility construction, maintenance, and/or rental
- Storage space rental
- Insurance
- Utilities
- Advertising
- Labor wages

Step 6:

CONTACT YOUR LOCAL AUTHORITIES FOR ASSISTANCE

Because local ordinances might apply to waste reduction programs, you should contact your local authorities before starting your program. If you're considering any type of in-

Recycling Requires Recyclers

Remember that your school or school-related group can only recycle materials accepted by your local recycling facility or by other entities, such as manufacturers. Make a list of items you would like to recycle and then call your recycling center or other sources to verify that they will accept those items.

school program, check with the fire marshal, school administrators, and building superintendents regarding storage containers and collection do's and don'ts. Paper recycling, for example, might have specific requirements to prevent fire hazards. You might also check with local solid waste management officials to see if your area can get credit for your group's waste reduction efforts when applying for state tonnage grants. If so, you'll need to keep records about the types and weights or volumes of your reusable and recyclable materials.

Be careful not to compete with other local organizations that regularly conduct waste reduction programs. Existing volunteer groups (such as a Girl or Boy Scout Troop) that conduct waste reduction drives might depend on the program for money and goodwill. When possible, try to combine your resources and efforts with theirs.

Step 7:

ESTABLISH A SYSTEM FOR COLLECTING AND STORING MATERIALS

An efficient collection program is simple and well-organized. Depending on the type of program, you should designate logical deposit locations, either within or around your drop-off location. You should also acquire, label, and place appropriate containers for the collected materials.

If you store reusable and recyclable materials at school, you'll need ample

Reuse Ideas

Books: Instead of tossing your old books, consider establishing a book swap in your school or community. Or, take up a collection and donate used books to a library, nursing home, or other organization that might want them.

Art Supplies: Organize a collection of art supplies to use at school, to swap among interested students, or to donate to a needy organization such as a homeless shelter for families and children. These materials can be hazardous if sent to landfills or incinerators, so encourage complete use or donation of unused supplies.

Sports Equipment: You can collect unwanted or unused sports equipment to swap within a school, for reuse in different schools, or to raise money for charities.

Special Occasion

Items: Consider an annual prom dress swap or donation drive. Collect once-worn dresses and donate them to other interested schools and organizations. For more ideas on prom dress swaps, see the case study on page 18.

storage space with truck access. You can use a shed, garage, or even a receptacle specially designed for your type of product. Smaller spaces might need “igloo” type structures, while larger areas might hold special dumpster-like storage bins.

Properly separated recyclables usually will bring higher prices. Your local recycling center can specify how materials should be separated. Establishing a good, long-term relationship with your center can prevent possible disruption of service due to unacceptable materials.

Step 8:

EDUCATE YOUR SCHOOL, GROUP, AND COMMUNITY ABOUT THE WASTE REDUCTION PROGRAM

Notify the entire school, members of your club or group, and the surrounding community about your waste reduction program. You should explain how it will run, and when and where collections will occur. You can also display examples of reusable and recyclable materials and storage containers.

Advertising is essential to your waste reduction program’s success. At the start of your program, send flyers home with students or group members to inform parents and others of program specifics. Display posters, make announcements, and consider having a special assembly or presentation to kick off the program. Send press releases to local newspapers and radio and TV stations to encourage the community at large to

Recycle and Buy Recycled Too!

Selling your recovered materials is really only one part of the recycling process. Recycling involves separating reusable materials, collecting them, processing them, making them into new usable items, and then marketing and purchasing the new products. When people use products made from recycled materials, they are “closing the recycling loop.” Remanufactured material is critical to the success of recycling. If material is simply collected and stored, we cannot achieve our ultimate goal of waste reduction.



participate. Run announcements in weekly shopping circulars, local bulletins, and club and church newsletters. Post flyers around town in local stores. States, tribes, and communities might help promote your waste reduction program, so check with officials about special publications or presentations they might have developed about reuse and recycling.

Step 9:

SET OVERALL AND INDIVIDUAL GOALS

Goals usually encourage people to excel. Set a target amount of reusable and recyclable material that you want to reach and keep a running total prominently displayed. Children, especially elementary school-aged children, work hard to reach goals if they know what is expected. You could even set individual goals for participants.

Step 10:

REWARD PARTICIPANTS

Your program should stress the environmental benefits of reuse and recycling. A reward system, however, may provide stronger incentives to make your waste reduction program successful. Take into account school or group size and available resources when establishing rewards, so that everyone has an equal chance of winning something.

The rewards you offer will probably depend on your budget. In some successful programs, the winning group received free pizza, a zoo trip, computers, or other new school equipment. In other programs, participants were awarded “Certificates of Appreciation” or earned Scout badges. Rewards might be donated by local businesses or bought with the proceeds of the waste reduction program. Individuals can be rewarded for outstanding efforts with cash prizes or gift certificates.

