

Facts About Consumption and Waste



Aluminum

- Recycling aluminum uses **less than 5 percent** of the energy used to make the original product.
- Recycling **one aluminum beverage** can save enough energy to run a **100-watt bulb for 20 hours, a computer for three hours, or a TV for two hours.**
- Recycling **10 tons of aluminum** prevents the same amount of greenhouse gas emissions as preserving more than **1.1 acres of forest** from deforestation.

Plastic



- Producing new plastic from recycled material uses only **two-thirds as much energy** as manufacturing it from new raw materials.
- Plastics require **100 to 400 years to break down** in a landfill.
- **Five 2-liter recycled PET bottles** produce enough fiberfill to make a **ski jacket.**
- The energy saved by recycling **one plastic bottle** will power a computer **for 25 minutes.**
- Recycling **10 tons of PET plastic** prevents the same amount of greenhouse gas emissions as removing more than **three cars from the road** for one year.

Glass

- Producing glass from crushed, used glass requires **30 percent less energy** than producing it from new materials.
- The energy saved from recycling **one glass bottle** will operate a **100-watt light bulb for four hours.**
- It takes a glass bottle approximately **one million years to break down** in a landfill.
- The greenhouse gas emission reductions from recycling **10 tons of glass** are comparable to preventing the use of more than **eight barrels of crude oil.**

Steel

- Tin cans contain **99 percent steel**.
- Recycling steel and tin cans saves **60 - 74 percent** of the energy used to produce them from raw materials.
- According to the Steel Recycling Institute, steel recycling in the United States saves the amount of energy required to power about **one-fifth of American households for one year**.
- **One ton of recycled steel** saves the energy equivalent of **3.6 barrels of oil and 1.5 tons of iron ore** over the production of new steel.
- Recycling **10 tons of steel** prevents the same amount of greenhouse gas emissions as growing **470 tree seedlings for 10 years**.

Paper

- Paper can account for as much as **60 percent** of school waste.
- Producing recycled paper requires about **60 percent of the energy** used to make paper from virgin wood pulp.
- Manufacturing **one ton of office paper** with recycled paper stock can save between **3,000 and 4,000 kilowatt hours** over the same ton made with virgin wood products.
- Preventing one ton of paper waste saves between **15 and 17 mature trees**.
- Recycling one ton of paper saves enough energy to heat an average home for six months.
- The greenhouse gas emission reductions from recycling **10 tons of mixed paper** are comparable to preventing the use of **94 barrels of crude oil**.

Electronics

- Each year, more than **350 million inkjet and laser cartridges** are thrown away.
- Each year, **35 million cell phones** are disposed of.

Reources:

- [Energy Kids - Energy Information Administration](#)
- [Science Fact Finder](#)
- [Clearwater Florida Solid Waste and Recycling](#)

Consumption and Waste Resources



Background Information, Tools, Resources & Statistics

- [U.S. Environmental Protection Agency, Office of Solid Waste Planet Protectors Club For Kids](#)
- [Waste Reduction Model \(WARM\) Calculator, U.S. Environmental Protection Agency](#)
Converts waste reduction values into greenhouse gas emission reductions and energy savings.

Rethinking School Lunch

- [Center for EcoLiteracy](#)
- [Reuseit: Waste Free Lunches](#)
- [Green Food Services from the Green Schools Initiative](#)

Aluminum Can Recycling

- [Can Manufacturers Institute and NAAEE \(both in English and Spanish\)](#)

Local Recycling Zip Code Search

- [Earth 911](#)

Reuse and Repurposing

- [Freecycle](#)

Reducing Plastics

- [Plasti-Gone](#)

Top Ten Tips to Minimize Waste



1. Work with your local recycling authority:

- Arrange for recycling bins and collection at your school.
- Acquire information about items and materials that can be recycled in standard collections, special local collections and drop-off recycling sites in your area. (Visit www.earth911.com for details.)
- Obtain posters, leaflets and possible speakers or activities.

2. Evaluate and minimize paper usage and waste.

- Place trays for reusable paper in each classroom, office, copier room and anywhere else paper is used.
- Make double-sided printing and photocopying routine. (Set printers to do this automatically.)
- Encourage staff to save documents electronically rather than printing them.
- Offer parents the option to receive newsletters by email, and post information on your school's website.

3. Communicate waste and recycling initiatives regularly to staff, students and parents.



- Ensure that recycling bins are obvious and appealing.
- Use colorful stickers and posters to clarify what does and does not go in the recycling bins.
- Announce recycling initiatives in school assemblies, staff meetings, newsletters and on the website.
- Hold class competitions or recycling days to keep waste reduction prominent and fun.
- Use bulletin boards and displays around the school to show progress.

4. Set up a composting system for organic waste.

- Find out if reduced-cost or free composting bins are available through your recycling authority or local environmental groups.
- Consider vermicomposting for cafeteria waste.
- Incorporate composting activities into science lessons or after-school clubs.

5. Investigate whether you can make money by recycling steel and aluminum cans.

6. Recycle used electronics and e-waste.

- Many companies will collect old printer cartridges and mobile phones and give you money in return or donate funds to charity.
- Donate unneeded computers and other electronic equipment to re-use organizations.

7. Obtain supplies made from recycled or reused materials.

- Look for printer paper, notebooks, pencils, binders and other products with a high percentage of recycled, post-consumer waste content.
- Look for backpacks, totes, and other products made from recycled plastic bottles.
- Contact local businesses and organizations to "rescue" supplies that might otherwise go to the landfill.

8. Avoid disposable food service items whenever possible.

- Provide mugs and glasses in the staff room instead of disposable cups.
- Encourage students to bring lunchboxes and reusable drink bottles instead of throw-away bags and containers.
- Strive for "zero-waste" special events by using washable dishes or compostable dishware.

9. Repurpose clothing, furniture, and other durable items.

- Set up a "swap shop" to help parents exchange second-hand clothing and uniforms.
- Reupholster or refinish furniture to prolong its life, and donate unneeded furnishings to local charities.
- Hold a garage sale to raise funds for your Eco-Schools program.

10. Create a culture of re-use.

- Prolong the lives of envelopes by sticking new labels over previous addresses.
- Designate a supply closet where teachers can swap supplies and other items instead of purchasing new ones.
- Include "want lists" in school newsletters to ask parents and other community members to donate useful items they no longer need.

Consumption and Waste Curriculum Connections



Schools play a major role in the education of tomorrow's consumers and decision makers. Investigating consumption and waste at school prepares students to take an active role in making good choices for both society and the environment.

Organization	Resource, Activity, or Lesson Plan	* Grade Level
Waste		
U.S. Environmental Protection Agency, Office of Solid Waste	Trash and Climate Change (available in English and Spanish (PDFs, 386 Kb and 406 Kb) - Provides an activity booklet on trash and climate change	Middle
Keep America Beautiful / Clean Sweep America	Waste In Place: Lessons in Waste Management - Provides ideas for web-directed research and in-class activities	Elementary, Middle
Keep America Beautiful / Clean Sweep America	Pick Up a New Attitude (PDF, 27 Kb) - Provides lesson plans on understanding litter and littering behavior	Elementary, Middle
Reducing		
U.S. Environmental Protection Agency, Office of Solid Waste	Case of the Broken Loop available in English and Spanish (PDFs, 810 Kb and 732 Kb) - Provides activities to learn about reducing waste and conserving resources	Elementary
Keep America Beautiful	Waste Watchers (PDF, 24 Kb) - Helps students understand source reduction and reuse	Middle
U.S. Environmental Protection Agency	School Waste Reduction Toolkit Web - Provides schools, school districts and school business officials with information for starting or expanding an existing	Elementary, Middle, Secondary

	waste reduction program	
Reusing		
U.S. Environmental Protection Agency	Reuse & Recycling: A Guide for Schools and Groups (PDF, 1 Mb) - Provides information, ideas, activities, and case studies for implementing a reuse and recycling program in schools	Elementary, Middle, Secondary
U.S. Environmental Protection Agency	Planet Protectors Create Less Waste in the First Place: A Story about Reuse on Earth - English and Spanish (PDFs, 392 Kb and 382 Kb) - Provides easy activities to reuse glass containers	Elementary
Keep America Beautiful / Clean Sweep America	Landfill Lounge (PDF, 86 Kb) - Helps students understand landfills	Middle
Recycling		
Keep America Beautiful / Clean Sweep America	Recycling Rules (PDF, 27 Kb) - Helps students understand recycling and a Materials Recovery Facility	Middle
Can Manufacturers Institute and NAAEE	Cans: Infinitely Recyclable (PDF, 8.61 Mb) - Provides curriculum using the aluminum can as a case study	Secondary
American Forest & Paper Association (AF&PA)	Recycling at School: Tools for Teachers - Provides free lesson plans, classroom posters, activities, online tutorial and videos	Elementary
U.S. Environmental Protection Agency	Follow That Trail! English and Spanish (PDFs, 1.21 Mb and 2.65 Mb) - Provides activities, and games about recycling and resource reduction	Elementary
Land-of-Sky Regional Council, NC	Implementing Successful School Recycling Programs: A Handbook for Teachers and Schools (PDF, 565 Kb) - Provides issues, opportunities, and case studies for implementing a recycling program	Elementary, Middle, Secondary
Composting		
State of California/ California Integrated Waste Management Board	The Worm Guide: A Vermicomposting Guide for Teachers - Explores vermicompostingâ€”the practice of using worms to transform food waste into a nutrient-	Middle, Secondary

	rich finished product called vermicompost	
State of Connecticut, Department of Environmental Protection	School Composting: A Manual for Connecticut Schools (PDF, 3.37 Mb) - Provides a manual for initiating and implementing a school composting program	Elementary, Middle, Secondary
Keep America Beautiful	Compost Office (PDF, 27 Kb) - Provides lessons for understanding composting	Middle
Sustainable Consumption		
Annie Leonard, The Story of Stuff	Video Activities (PDF, 135 Kb) Discussion Guide (PDF, 117 Kb) Provides a 20-minute, fast-paced, fact-filled video and activities about our production and consumption patterns	Middle, Secondary
Facing the Future	Shop Till You Drop? Is it Sustainable? Real World Math: Engaging Students through Global Issues Lesson 1: Waste Not, Want Not (p. 14) Lesson 6: Consumption Choices (p. 53) Lesson 12: Sustainable Design (p. 103) Provides a variety of lesson plans on sustainable consumption	Middle, Secondary
Facing the Future	Buy, Use, Toss?	Secondary

GREEN CHOICES

Tips for at Home

Tips for the Workplace/School

- [Tips for your Commute](#)
- [Energy Conservation](#)
- [Water Conservation](#)
- [Recycling/Waste Reduction](#)
- [BMP's for Industry](#)
- [How Do I...](#)
- [Did You Know?](#)

Tips for Recreation



Sponsored by the Utah Department
of Environmental Quality

Recycling and Waste Reduction at Work and School

Recycling is important, not only to save energy and to conserve our natural resources, but to reduce the amount of waste going to landfills. Recycling can be beneficial to your school by cutting down on garbage disposal costs, making students and staff aware of environmental concerns and helping to reduce waste instead of creating it. Take pride in showing respect for our Earth!

How to Set Up a Recycling Program at Your Workplace or School

1. **Form a "Green Team"**: Approaching recycling as a team can help ensure the success of your recycling program. A "green team" is a group of employees interested in recycling and helping to set up a program.
2. **Determine Materials You Will Recycle**: Performing a waste audit can help. A waste audit is an inventory of the amount and type of solid waste (trash) produced at a location.



Commonly recycled business items:

- Aluminum Cans
- Cardboard
- Magazines and Catalogs
- Newspaper
- Office Paper
- Plastic Bottles
- Toner and Ink Jet Cartridges

3. **Contact Property Manager/Principal:** Find out if there are any recycling programs in place. Ask them to provide office paper, cardboard, aluminum can and plastic bottle recycling as a service to building tenants. Remind them that recycling can reduce waste disposal costs. On your own—If your property manager cannot provide recycling, or you are a small business, meet with your green team and decide what materials you want to recycle.
4. **Drop-off Recycling:** If pickup services are not an option, another option is to take your recyclables to a drop-off recycling center.
5. **Coordinate Collection:** With the recycling service provider, janitorial crew and/or staff.

Think about:

- **Small Bins:** You can provide durable recycling containers to each staff person or ask them to use copy paper boxes or something similar at their work stations. Decide what type and size of bin to locate next to printers, fax machines and other machines that generate paper.
- **Central Bins:** Locate large recycling bins in copy rooms or break rooms.
- **Collection:** Create a regular schedule and determine who will pick up recycling from the small and central bins. It may be staff, janitorial crew or a combination.
- **Drop-off Recycling:** If your staff is using a drop-off collection center, set up a team and schedule for taking recyclables to the center. You may also need to determine a place to store recyclables.
- Communicate all this information to your entire staff and janitorial crew.
- 6. **Educate Staff and Students**
 - Distribute fact sheets describing the new recycling program for employees and janitorial staff and post updates on your company's intranet site.
 - Provide bins and collection containers as mentioned above.
 - Mark containers with signs labeled by item. It is helpful to use the "chasing arrows" recycling symbol.
- 7. **Plan a Fun Kick-off Event**
 - Send a memo from management to all employees encouraging participation.
 - Fun events, giveaways and refreshments could be provided.
 - Distribute fact sheets, signs and containers.
 - Schedule orientation sessions for each department.
- 8. **Let Others Know About Your Efforts**
 - Write articles for the employee newsletter, intranet, and building and industry newsletters. Acknowledge people for changing their habits and keep people informed of the results of their efforts. Seek staff's suggestions.
 - Send out press releases to the local media. You may also want to include information in customer or client mailings.
 - Include your recycling efforts in company promotional pieces.
- 9. **Maintain Your Program**
 - Have your green team meet regularly to evaluate your recycling program's progress. A successful program will continue to grow in volume recycled. The team can also address other green issues such as energy consumption and alternative transportation.
 - Stay in contact with staff. Update your staff regularly on the program's progress. Send out periodic recycling reminders. Train new employees about the recycling program.
 - Identify a recycling point person to handle tasks such as answering staff questions, managing the green team and program oversight.

Waste Reduction in the Workplace and School

According to the United States Environmental Protection Agency, each year, Americans generate millions of tons of trash, more than any other country. "Source Reduction" (reduce and reuse) is a basic solution to the garbage glut. Because source reduction actually prevents the generation of waste in the first place, it comes before other management options that deal with trash after it is already generated. After source reduction, recycling and composting are the preferred waste management options because they reduce the amount of waste going to landfills and conserve resources.

Reduce

- **Weekly Newsletter:** Send one newsletter home per family when multiple siblings attend the same school. Better yet, send the newsletter via e-mail. Resources are saved because paper is not generated and information is received in a timely manner.
- **Paper Copies:** When making copies, use both sides, a half sheet or dry-erase boards instead of paper, whenever possible. Use an overhead projector or marker board to display meeting agendas, rather than making individual copies.
- **Waste-Free Lunch:** Designate a day each week to have students/teachers/staff members bring their lunch and drinks in reusable containers, in a reusable bag, including a cloth napkin. Involve students and staff in designing a logo to have printed on their usable lunch bags to sell in the school store. If you buy lunch, take and use only what you need ie: one napkin, one ketchup packet, one salt packet, etc. Remember to recycle your cans and bottles.
- **Use Reusable:** Make cups, plates and tableware available to teachers and parents during meetings, as well as encourage waste-free classroom parties.
- **Milk Cartons and Trays:** When these items are not recycled, schools can reduce trash volume by having students empty leftover milk in a bucket and flatten the carton. Tap food from lunch trays in a garbage can and stack them. Biodegradable and reusable trays, plates, cups, bowls and tableware are available.
- **Waste Audit:** For one day or one week—collect all garbage then sort and analyze it to see if the garbage could have been reused or donated, recycled, composted or repaired.

- **Saving Energy:** Turn off computers and lights when not in use. Unplugging appliances and electronics saves even more energy and money.
- **Packaging:** Buy products with minimal packaging or buy in bulk without packaging whenever possible. Take reusable cloth bags to the store - leave them in your car to have them at hand.

Reuse

- **Formalwear and Costume Exchanges:** Coordinate a day for classmates to bring their gently used formal wear, such as dresses, accessories, ties, shirts, etc. and receive a voucher for items they brought. Once items are organized, students are invited back to swap a dress for a dress, a purse for a purse, etc. It is best to involve multiple schools to get a variety of items. On an elementary level, this type of exchange can be done with Halloween costumes.
- **Puzzle and Book Swap:** Instruct parents to make sure the puzzle or game is complete, tape up the box and sign the box stating this is so. Each student can be given a token for each item he/she brought to trade in for new ones. Milk caps that have been washed work well for tokens (different colors reflect the type of trade in). Other items to swap can include CDs, DVDs, VHS videos and magazines.
- **Trash to Treasure Art Projects:** Find creative ways to incorporate materials that would ordinarily be thrown away into a piece of art or a game.
- **One Person's Trash is Another's Treasure:** Collect gently used clothing, equipment and furniture to donate to a favorite charity or organization rather than throwing it away. Have a school rummage sale where proceeds are used for a school project.
- **Locker/Desk Leftovers:** Organize an end-of-the year locker or desk clean out. Redistribute library books and school supplies, and donate unwanted clothing items (wash first).
- **Be Nice Use It Twice:** Keep a box for paper that has only been used on one side. The other side can be used later for fax cover sheets, math problems, brainstorming for writing assignments or spare-time drawings.

Recycle

Use in addition to the tips listed above:

- **Pre-Cycle:** Buy goods in containers that can be recycled at your workplace/school. Talk with the director of operations for the most up-to-date information.
- **Traditional Materials:** Aluminum and steel cans, plastics, office paper, newspaper and cardboard.

Buy Recycled

- **Workplace/School Store:** Make available tree-free or recycled-content pencils, paper, folders, rulers, scissors and MORE!
- **Team Shirts:** Clubs and Organizations can purchase t-shirts made from recycled materials. Most shirts can be customized to include your school's logo.
- **Awards:** Recognize special efforts and milestones by giving awards made from recycled glass, metal and wood.

Compost

- **Worms:** Use organic food scraps (fruits & vegetables) from the lunchroom/cafeteria to feed red wigglers (worms) housed in an indoor bin with a lid. This is called vermi-composting. Worms are nature's recyclers because they eat half of their weight in food garbage a day and produce a nutrient-rich soil.
- **Outside:** Outdoor composting bins are good for small branches, leaves and grass clippings. Be mindful of any applicable municipal codes.

U.S. Environmental Protection Agency

Wastes-Educational Materials

<http://www.epa.gov/epawaste/education/teachers.htm>

[Planet Protectors Club](#)

(Grades K-5)

[Make a Difference Campaign](#)

(Grades 6-8)

[Your Environment. Your Choice.](#)

(Grades 9-12)



These resources will assist you in teaching your students about the waste we generate in our schools, homes, and communities—and what we can all do to make a difference! From classroom activities, to starting a school electronics recycling program, these materials will help you and your students learn what we can do to reduce and better manage waste in the world around us. Many of these resources are provided in both English and Spanish.

[Basic Facts about Waste](#)

Provides information about the amount and types of wastes produced by households, businesses, and industrial and manufacturing processes. Also includes information on how to reduce the amount of solid waste generated in our schools, homes, and communities.

[Composting & Recycling](#)

Provides links to general information about recycling and composting, as well as detailed information on how to set up a school recycling program.

[Curriculum & Activities](#)

Provides tools and resources for teachers and youth leaders including project ideas, games, clip art, mapping tools, and other educational materials.

[Student Awards & Grants](#)

Provides information on awards, grants, and scholarships available to students through government agencies, as well as private organizations.

[Tools to Reduce Waste in Schools](#)

Tools to Reduce Waste in Schools provides schools, school districts, and school business officials with information on reducing, reusing, and recycling your waste.

[Teach English, Teach about the Environment \(PDF\)](#) (133 pp, 1.9MB, [about PDF](#))

This curriculum will help you teach English to adult students while introducing basic concepts about the environment and individual environmental responsibility. These concepts can help the newly-arrived be part of cleaner and healthier communities by understanding and practicing the “3Rs” of solid waste management — reduce, reuse, recycle.

[Keep Your Paws Off Mercury](#)

Clancy the Mercury Detecting Dog, EPA, and the Minnesota Pollution Control Agency teamed up to create the Keep Your Paws Off Mercury campaign to teach students across the country about mercury and its dangers. The cornerstone of the Keep Your Paws Off Mercury campaign is an educational video that shows students where mercury can be found in schools and what to do if they see it.

[Climate Change – What You Can Do at School](#)

Students, educators and school administrators can all play a key role in reducing greenhouse gas emissions. This site provides a directory of some education and action planning resources to help you.

[Schools Chemical Cleanout Campaign \(SC3\)](#)

Learn how to develop a successful chemical management program for your school

[Eco-Schools USA](#) [EXIT Disclaimer](#)

Learn the benefits of joining Eco-Schools, an internationally acclaimed program that provides a framework to help educators integrate sustainable principles throughout their schools and curriculum

Eco Schools

<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA.aspx>

[How Can Eco-Schools USA Benefit Your School?](#)

- Improves academic performance
- Leads to financial savings
- Reduces waste and conserves resources

What Is Eco-Schools USA?



Eco-Schools USA is a holistic, green school program that

- greens the school building
- greens the school grounds
- greens the curriculum and student experience

NWF is working to recruit thousands of K-12 public, private and charter schools across the United States to become a part of the Eco-Schools USA program. [Learn more about Eco-Schools USA.](#)