



Food Waste Reduction Toolkit for Illinois Schools



Acknowledgments

The *Food Waste Reduction Toolkit for Illinois Schools* is a project of the Wasted Food Action Alliance and was developed by Seven Generations Ahead in collaboration with partners from the Wasted Food Action Alliance.

The Wasted Food Action Alliance is a diverse set of organizations helping to build a unified approach towards reducing wasted food through collaboration, education, and policy.

Seven Generations Ahead is a nonprofit whose mission is to build ecologically sustainable and healthy communities.



Wasted Food Action Alliance Toolkit Committee

Mary Allen, Solid Waste Agency of Northern Cook County
Drusilla Banks, University of Illinois Extension
Renee Blue, Mindful Waste
Becky Brodsky, Seven Generations Ahead
Susan Casey, Seven Generations Ahead
Meryl Davis, Seven Generations Ahead
Danielle Hrzic, Gourmet Gorilla
James Jennings, Illinois Environmental Protection Agency
Jennifer Kainz, Mindful Waste
Jen Nelson, Seven Generations Ahead

Micheal Newman-Brooks, City of Chicago
Melissa Pflugh Prescott, University of Illinois at Urbana-Champaign
Allison Polke, Chicago Public Schools
Alex Poltorak, The Urban Canopy
Joy Scrogum, Illinois Sustainable Technology Center
Alan Shannon, United States Department of Agriculture
Pete Stack, University of Illinois at Chicago
Kate Yager, Healthy Schools Campaign

Graphic Design

Becky Brodsky, Seven Generations Ahead

Additional Contributors

Diane Chapeta, Seven Generations Ahead
Marney Coleman, Academy for Global Citizenship
Greta Kringle, Solorio Academy High School
Pete Leki, Waters School

Diane Renner, Marie Wilkinson Food Pantry
Kate Mason Schultz, Evanston/Skokie School District 65
Sharon Seidelman, Sodexo-East Aurora High School

See back cover for image credits.



Food:Land:Opportunity is a collaboration between Kinship Foundation and The Chicago Community Trust and funded through the Searle Funds at The Chicago Community Trust.



The Food Waste Reduction Toolkit for Illinois Schools, hereafter referred to as the Toolkit, is intended solely for informational purposes. The content, information, opinions, and viewpoints contained in the Toolkit are those of the authors or contributors of such materials. Seven Generations Ahead and the Wasted Food Action Alliance made reasonable their best efforts to provide current, complete, and accurate information to readers but cannot guarantee, and make no warranty, express or implied, this information is current, complete, and accurate. Seven Generations Ahead and the Wasted Food Action Alliance will not be held liable for any unintentional errors, omissions, or inaccuracies that may be found or damages (including direct, indirect, consequential, or incidental damages of any kind) arising from the use of, or inability to use, all or part of the provided information. Reliance on the information contained in the Toolkit is strictly at your own risk. The Toolkit links to many resources that are not maintained or controlled by the authors or contributors, nor can the quality or correctness of the content beyond these links be ensured. Seven Generations Ahead and the Wasted Food Action Alliance are not responsible for and will not be liable for the information presented via these links. Readers are strongly advised to check the most current guidelines and regulations in their specific school, district, municipality, county, and state.

Table of Contents

Food Waste: A Unique Role for Schools. 1



Measuring Food Waste. 2



Preventing Food Waste. 7



Food Recovery & Redistribution 14



Composting Food Scraps. 23



Education & Engagement. 32



Communicating & Celebrating Success. 38

Food Waste: A Unique Role for Schools



Over one-third of all food produced in the United States goes uneaten while one in seven people is food insecure. Roughly 7 billion school meals are served each year, and much of the waste from these meals is ending up in landfills, consuming valuable resources and contributing to climate change.

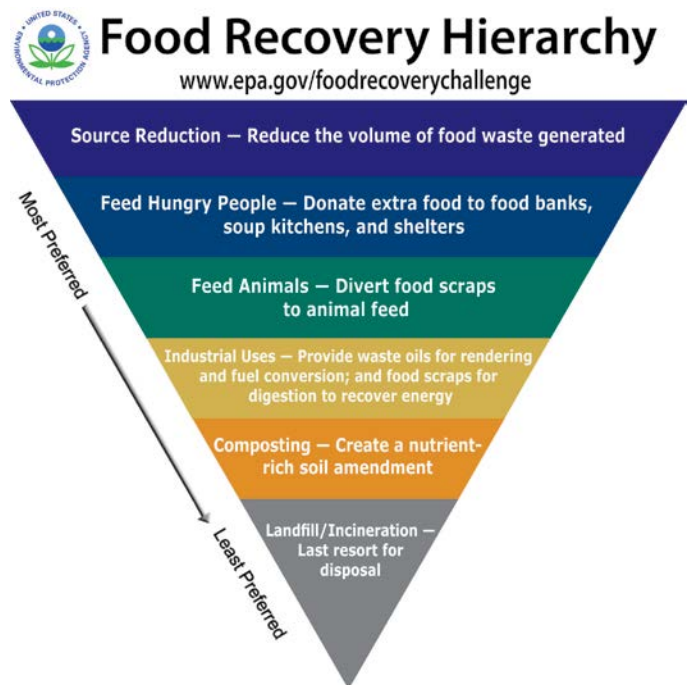
K-12 schools have a unique opportunity to shape the way children think about food. Like classrooms, cafeterias are places of learning. We can teach the next generation about the value of food and natural resources by reducing food waste through prevention, recovery, and composting. Addressing school food waste can provide a focal point for authentic place-based learning, including many hands-on educational activities.

This Toolkit provides schools with useful information and resources for implementing many of the strategies on the Environmental Protection Agency's Food Recovery Hierarchy (right). A variety of solutions are shared—from quick and easy to implement, to changes that require more coordination and resources. Students, teachers, food service staff, lunchroom staff, parents, and administrators can all play a role in reducing school food waste.

The Toolkit's easy-to-use format allows you to jump in to find the strategies that will work for your school. Each section includes case studies that highlight inspirational food waste reduction efforts from schools across Illinois and provide guidance on how to:

- ✓ Measure food waste
- ✓ Prevent food waste
- ✓ Recover and redistribute surplus food
- ✓ Compost food scraps
- ✓ Educate and engage the school community
- ✓ Communicate and celebrate success.

It's time to get started!



Note: Diverting food scraps from schools to feed animals is prohibited in Illinois, but many states permit the practice. See [Leftovers for Livestock: A Legal Guide for Using Food Scraps as Animal Feed](#) for policies in all 50 states.

Benefits of reducing food waste

- Keeps food waste out of landfills which reduces emissions of methane, a greenhouse gas
- Conserves the energy, water, land, and labor that goes into growing, manufacturing, transporting, and preparing food
- Feeds hungry students or community members through redistribution of uneaten, usable food
- Provides opportunities for nutrition education
- Cost savings from food waste prevention during menu planning and preparation
- Reduced landfill hauling costs (less food waste= less food to haul to the landfill)
- Introduces the school community to zero waste practices
- Teaches the next generation about the value of food and natural resources



Measuring Food Waste



It's hard to solve a problem without first understanding it. Waste audits are a way to measure and understand the amount, types, and sources of waste in your school. Food waste can occur at the time of preparation (pre-consumer kitchen waste), in the serving line, and after students eat (post-consumer plate waste). Audits are great opportunities to engage students in authentic, place-based learning.

Most waste audits involve sorting and measuring categories of waste. Measuring weight and volume provides useful data for most categories, such as food scraps or recycling. Counting and weighing are useful ways to determine the amount of uneaten recoverable food, such as unopened milks or whole apples. Photos can provide valuable waste data, as well.

An audit can also be used to analyze school practices and policies that impact waste generation, such as length of meal time, if the Offer versus Serve method is used, if recess is before or after lunch, and more.

This section provides support on how to conduct a waste audit including:

- ✓ How to determine what to audit
- ✓ Waste audit guides
- ✓ Food waste tracking in kitchens
- ✓ Analyzing waste audit data

What do you want to audit?

If you are interested in commercially composting food scraps and starting a share table, an audit that sorts materials in the following categories would provide that information: recoverable food, liquids, recycling, food scraps, and landfill trash.

If you are considering onsite composting, in which only fruit and vegetable scraps are composted, then you should have one bucket for fruit/vegetable scraps and another for all other food scraps since they cannot be composted in an onsite compost bin.

If you want to know which foods are wasted the most, you could further separate each type of food or food group on the menu into different buckets, for example: recoverable food, liquids, recycling, landfill trash, entree scraps, fruit scraps, vegetable scraps, grain scraps.





Waste audit guides

[Guide to Conducting Student Food Waste Audits: A Resource for Schools](#) (USDA/EPA/University of Arkansas) This detailed guide offers instructions for conducting a food waste audit while engaging students. It provides guidance on how to measure post-consumer food waste by food type and for conducting peer to peer interviews.

[Lunchroom Waste Audit Guide](#) (Seven Generations Ahead) This guide will help you determine how much of your school lunchroom and kitchen waste stream is recoverable food, liquids, recycling, compost, and landfill trash.

[How to Conduct a Lunchroom Waste Audit](#) (Solid Waste Agency of Northern Cook County) This 2-page guide explains how to sort materials into categories on a large tarp, which can be an eye-opening experience.

Local assistance and resources

Resources may be available in your area that can provide additional technical assistance or guidance for conducting waste audits. Here are a few:

- Your local county or solid waste agency
- University of Illinois Extension (search [map](#) to find your local office)
- [Illinois Sustainable Technology Center](#) Complete this [form](#) to request a free site visit and recommendations from technical assistance staff.

Food waste tracking in the kitchen

Kitchen food waste is generated through food preparation, as well as from the serving line. Many schools systematically track their food waste, incorporating daily weighing and record-keeping in their operations. This can be done manually or with online tracking systems. Tracking food waste in the kitchen engages your food service in identifying and addressing the root causes of food waste.

Why conduct a waste audit?

Doing a waste audit before implementing any waste reduction strategies will:

- Help you figure out which waste prevention and reduction strategies will have the biggest impact
- Establish a baseline
- Determine supplies and equipment needed to implement strategies
- Provide a visual of the food waste to engage students and staff
- Provide mass/volume of food scraps that could be composted, which allows you to estimate the level and cost of hauling service needed



- Provide data to demonstrate benefits (environmental, financial, and social)
- Measure the amount of recoverable food to determine if it warrants a donation program
- Provide the mass/volume of recyclable materials
- Identify opportunities for reducing non-food waste (serviceware and packaging)
- Highlight opportunities for reducing waste from home lunches

A follow-up waste audit (after waste reduction strategies are in place) will demonstrate the effectiveness of your strategies. Keep in mind that waste levels fluctuate day to day due to menu variations.

Tracking Kitchen Waste



[Gourmet Gorilla](#) is a school food service company serving the Chicagoland area that provides approximately 35,000 meals per day to almost 300 sites. Roughly 90% of their meals are cooked from scratch in a central commissary using a target of 70% local and sustainably grown ingredients.

Gourmet Gorilla uses a computer application and digital scales to measure food waste from the lunch line. Their general procedures are:

- Serving staff at each school enter the starting weight and number of portions delivered to the school in an online form.
- After meal service, the leftover portions are counted and weighed. The data is digitally recorded and sent back to the central office.
- This data is then used by the administrative team to track student preferences and meal participation to better plan future orders.



Gourmet Gorilla's system currently results in an average of 10-15% waste reduction from the service line. They are in the process of creating a system for measuring plate waste.

Analyzing waste audit data

After the sorting and weighing are done, think about the most effective ways to analyze and use the data.

Here are some ideas:

- Present the data graphically.
- Take photos that show the waste sorted into categories (try to get all of it in one photo), the contents of student trays before sorting, and student engagement.
- Based on the results of one day's audit, extrapolate for one school year by multiplying the mass or volume of each category by the number of days in the school year. To make this number more meaningful, express it in more relatable terms, such as number of school buses or elephants. [The Measure of Things](#) provides some comparisons.
- Calculate environmental impact using the [EPA Waste Reduction Model \(WARM\)](#). This tool calculates greenhouse gas emissions, energy savings, and economic impacts of your waste. Use WARM Version 15.
- After estimating metric tons of CO₂ equivalents (MTCO₂E) of your waste or waste reductions with the EPA WARM tool, you can express this in terms of arctic sea ice. Based on research reported in the journal [Science](#), 1 MTCO₂E emissions is equivalent to 3 m² arctic sea ice.

- K-12 Food Rescue's free [online tracking tool](#) allows you to enter the number of food items your school donates and convert it into number of meals rescued and greenhouse gas emissions avoided.
- The [World Wildlife Fund's Food Waste Warriors Report Dashboard](#) combines your school's data with that of other schools and calculates the average results and the environmental impact of your waste.



- Estimate how many people could be fed by the uneaten/unopened food and tie that to data about food insecurity in your region.
- Calculate the cost implications of the waste. Does your food service provider have pricing information for food items? What volume of your trash dumpster is used for cafeteria trash and at what cost to the school/district?

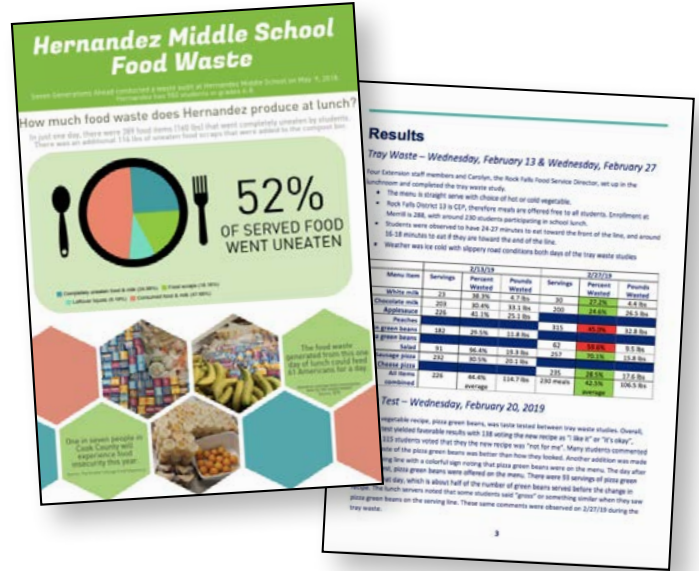
Food waste audit case studies/reports

[Recycling and Waste Reduction Opportunity Assessment: Springfield IL Public School District 186](#) (The Illinois Sustainable Technology Center) This report features a baseline waste characterization of three middle schools. It includes research on recycling and waste reduction practices on campus and recommends steps for waste prevention, increasing diversion rates, and outreach and education.

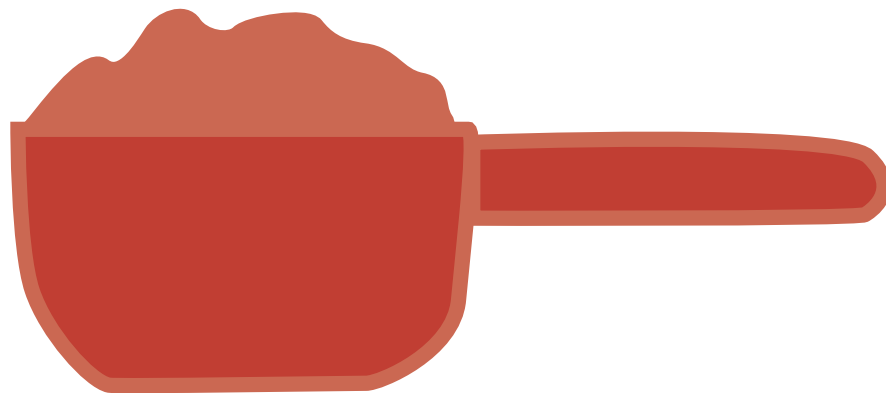
[Tray Waste Report-Ludlow Elementary](#) (University of Illinois Extension) This report looks at factors that contribute to low consumption of school lunches and makes recommendations for possible solutions.

Reports of food waste audits conducted in Chicago Public Schools (Seven Generations Ahead):

- [Hernandez Middle School Food Waste Audit-Lunch](#)
- [Sandoval Elementary School Food Waste Audit-Breakfast & Lunch](#)



Preventing Food Waste





Source reduction, or preventing food waste, results in the greatest environmental, social, and economic benefits of all the tiers on the EPA's Food Recovery Hierarchy. Quite often, preventing wasted food is a matter of making small creative changes in operations and providing education to form better habits. This section of the toolkit focuses on strategies that food service staff, district administrators, school principals, teachers, and lunchroom supervisory staff can implement to prevent food waste at its source.

This section highlights the following methods for preventing food waste:

- ✓ Scheduling options
- ✓ Enhancing the cafeteria experience
- ✓ Food sourcing, including from school gardens and local farms
- ✓ Menu planning and food preparation
- ✓ Preventing food waste at the serving line, including Offer versus Serve
- ✓ Waste audits and tracking
- ✓ Reducing waste in lunches from home

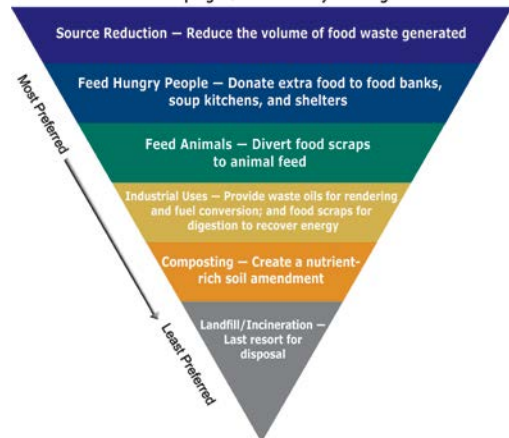
Scheduling

Try these scheduling strategies to increase the likelihood that your students will have the opportunity to eat a complete, nutritious meal:

- Lengthen the meal period. A [study](#) by the Harvard School of Public Health showed that when students had more time to eat there was 13% less entrée waste, 12% less vegetable waste, and 10% less milk waste.

Food Recovery Hierarchy

www.epa.gov/foodrecoverychallenge



- Stagger the start of lunch periods by having groups enter a few minutes apart to reduce wait time.
- Consider using two spaces for lunch to allow flexibility with scheduling.
- Schedule recess before lunch. A [study](#) in *Preventive Medicine* shows that scheduling recess before lunch may increase fruit and vegetable consumption by 54%.

Cafeteria experience

The lunchroom can be an inviting, comfortable place for students to socialize, eat, and rest their minds or it can be an unwelcoming, institutional environment. Use the following strategies to make your lunchroom a place where students feel welcome and enjoy eating.

- Display appealing posters that depict healthy food in dining and service areas.
- Declutter the eating areas.

- Provide a menu board with the day's featured meal options.
- Create a positive atmosphere with good lighting, low noise levels, and a comfortable temperature.
- Friendly staff also contribute to a welcoming environment. They can help students select foods and give gentle reminders to eat or take home lunchbox leftovers.



Food sourcing

Food that is sourced locally often tastes better, may contain more nutrients, supports the local economy, and is better for the environment. Serving fresh, local food in school cafeterias increases the chances that it will get eaten.

School gardens

The sense of pride students feel from growing their own food encourages them to eat a wider variety of fruits and vegetables, preventing these foods from being wasted. Students are less inclined to waste the food they have grown themselves. Gardens also teach students where their food comes from and the value of healthy eating.

Produce grown by students can be used in school meals or snacks. In 2018, the State of Illinois passed the [Illinois Garden Produce Act](#) which states: "A school district may serve produce grown and harvested by students...in school-owned or community gardens if the soil and compost in which the produce is grown meets the standards adopted."

[Eat What You Grow! A School Garden Food Safety Manual for Chicago Public Schools](#) provides safety protocol for serving school garden produce in the classroom and school cafeteria.



Try these Illinois school gardening resources:

[Illinois Learning Gardens Map](#)
[Gardening in Schools](#)

Illinois Farm to School Network

Farm to School is a national movement whose goal is to strengthen the connection between communities and fresh, healthy food from local producers. The [Illinois Farm to School Network](#) provides information and training, connects partners, and shares resources about all aspects of farm to school. The Network has three basic elements:

- Local food procurement
- Food and nutrition education
- School gardens

The Network manages two main programs:

- [Illinois Harvest of the Month](#) The program helps schools purchase, grow, and serve local, seasonal food and offers resources about healthy eating, nutrition, and agriculture.
- [The Illinois Great Apple Crunch](#) Every year on the second Thursday of October, schools across Illinois serve local apples at lunch and crunch into them together at noon.



The [Illinois Farm to School Toolkit](#)

contains resources and activities for farmers, producers, early care providers, and school stakeholders.

Space to Grow



Wadsworth STEM School serves almost 500 students in Chicago's Woodlawn community. In 2016, the school received a [Space to Grow](#) schoolyard that included native gardens and edible garden beds donated by [Big Green Chicago](#).

Wadsworth now has a garden team and engages students of all ages in learning about and caring for these green spaces. The garden serves as an extension of the classroom. Seventh grade students use the garden as a living laboratory to learn about soil formation, while sixth graders study cellular respiration using the garden's plants. Wadsworth students are learning how to grow nutritious food and benefit from the opportunity to connect with the natural environment in their school's backyard.

Space to Grow schools are also encouraged to participate in CPS's [Eat What You Grow](#) program, which allows students to take pride in eating the food they've grown themselves. When students grow their own food, they are more likely to try new things and are less likely to waste the fruits (and vegetables!) of their labor.

Space to Grow is a program of Healthy Schools Campaign and Openlands.



Guidance for sourcing local foods

- Partner with neighboring school districts whenever possible to purchase collectively from local farms.
- Utilize [DoD Fresh](#) to buy produce and meat that are sourced locally.
- Use your micropurchase capabilities for buying direct from local producers.
- Reserve a purchasing window (10-15%) when writing primary vendor bids which can allow you to buy from other sources, including local vendors.
- When working with your primary vendor, use contract language that increases options for local food procurement. See the [USDA Procurement Methods](#) website for more guidance.
- When selecting a vendor, ask questions such as:
 - What are you doing to provide more local options for your customers?
 - As my distributor, what do I need to do to get new items stocked?
 - What is the volume requirement to place an order?

Resources for procuring local foods

[Procuring Local Foods for Child Nutrition Programs](#) (USDA)

[Food and Nutrition Service Office of Community Foods Systems](#) (USDA) helps child nutrition program operators incorporate local foods into the [National School Lunch Program](#).

[Center for Good Food Purchasing](#) partners with institutions to help them shift towards values-based purchasing and resources.

[The Lunch Box](#) offers local procurement guidance.

Scratch: Dreaming a New Dream for School Food (2017, Greg Christian) provides guidance on how to build relationships with farmers and partners to produce high quality meals that don't take a toll on the environment or kitchen staff.

[USDA census data](#) shows that a Farm to School program can help reduce plate waste and increase participation in school meal programs.

Menu planning and food preparation

While onsite kitchens have more options for preventing food waste, there are many simple planning and preparation waste prevention strategies that all schools can implement whether or not they have a kitchen.



Menu planning strategies

- Create a menu that allows multiple uses for key ingredients throughout the week.
- Avoid the “scatter system” which offers a large number of options. Instead, provide fewer options to avoid over-production.
- Use production records to forecast how much of each item to prepare and/or order.
- Observe which menu options are preferred over time to identify items to eliminate or recipes to adjust.
- Conduct taste tests of potential new recipes.
- Use cycle menus to reduce the number of different items that need to be purchased.
- Use strategies to manage food inventory, such as first-in-first-out and just-in-time ordering.
- Prepare dishes in small batches to limit overproduction.

Food preparation

- Provide training to kitchen staff on proper food trimming and preparation methods.
- Provide different portion sizes and/or meal selections for elementary, middle, and high schools.
- Limit the number of options to speed up the lunch line, which will give students more time to eat.
- Use fresh items before they spoil or freeze them for a different use.

Resources

[Food Buying Guide for Child Nutrition Programs](#)

[Illinois Farm to School Toolkit](#)

[Mighty Mini Farm to School webinars](#)

Preventing food waste at the serving line

Offer versus Serve

One of the most effective strategies schools can use to prevent food waste is Offer versus Serve (OVS).

The [USDA Guide on Offer versus Serve](#) outlines how to implement the OVS program in K-12 schools in the National School Lunch and Breakfast Program. The guide states that “OVS allows students to decline some of the food offered in a reimbursable lunch or breakfast. The goals of OVS are to reduce food waste and to permit students to choose the foods they want to eat.”

OVS is mandatory for all high schools and optional for middle and elementary schools. Food service staff at OVS schools should receive OVS training. Students should also be educated on what comprises a meal under OVS, and signs that detail the requirements should be placed at the beginning of the lunch line.

The San Diego Unified School District created this engaging [video](#) to educate the school community about Offer Versus Serve.



Milk is optional with Offer versus Serve. Many schools incorrectly assume that milk is a mandatory component of every meal and, as a result, approximately 30% of milk goes unconsumed in U.S. lunchrooms. The [USDA Guide](#) explains that one cup of fluid milk must be offered, but students may decline milk under OVS as long as they take the required amount of other foods. Consider posting signs that make this message clear to both staff and students.

The USDA offers downloadable [posters and tip sheets](#) for educating students and staff about OVS.

Salad bar strategies

Salad bars help students learn about required portion sizes and how to serve themselves.

- Use the salad bar as a place to offer more of the menu's fruit and vegetable items. This avoids packaging waste and the staff time required to portion individual servings.
- Some whole fruits, such as apples and oranges, can be challenging for kids to eat in the time available. Offer these fruits pre-cut in a salad bar.
- When introducing new items, use shallower pans that hold less food until you can determine consumption patterns.
- Prepare sufficient quantities of produce each morning, but only provide small amounts at a time and replenish as needed.
- Use the salad bar as an opportunity to serve other foods, such as yogurt.
- See [Salad Bars 101](#), a webinar from Illinois Farm to School Network, for more guidance on managing a salad bar.

Additional serving strategies

- Place healthier options at the front of the serving line so students are more likely to select them.
- Use bulk milk dispensers to prevent milk and carton waste. A number of school districts have used these dispensers to avoid thousands of gallons of milk from being wasted.
- Use creative names to encourage students to try new foods or choose vegetables.
- Serve condiments using bulk dispensers.
- Avoid serving packaged food, which can be time consuming to open and also creates more waste.



If packaged food is unavoidable, opt for factory-sealed items which can be collected for redistribution if uneaten. For example, factory-sealed carrots can be collected, but carrots in an unsealed bag or plastic cup cannot.

- Avoid serving pre-bagged meals whenever possible so students can select only the items they are likely to eat.
- Students should be encouraged to save non-perishable meal components to eat later in the day.
- Install a water refill station or water fountain in the lunchroom and encourage students to bring a reusable water bottle.

[Action for Healthy Kids](#) provides simple tools and tips for your lunchroom that will reinforce healthy eating habits and encourage consumption of nutritious foods.

Waste audits and tracking

- Conduct plate waste audits to determine which foods are wasted the most.
- Use production records to track amounts received, served, and not served. Tracking by food type (rather than by total combined weight alone) may allow you to better plan future menus.



Lunches from home

A significant amount of food from home lunches gets wasted. Entire sandwiches, whole fruit, and unopened bags of baby carrots frequently get tossed into the trash without a single bite taken. Here are a few strategies to minimize wasted food from home lunches:

- Encourage students to make their own lunches since they will be more likely to eat what they pack themselves.
- Parents or caregivers who make their child's lunch should discuss their food preferences with them and how much food they have time to eat.
- Cafeteria staff can encourage students with home lunches to take home all uneaten food so parents know what their child is eating and not eating.
- Encourage students to pack a waste-free lunch by using reusable containers and utensils. Not only does this eliminate packaging waste, but students are more likely to bring home uneaten food if it is packed in containers instead of single-use bags.

Resources for packing a waste-free lunch

[Waste-Free Lunch Tips](#) (Solid Waste Agency of Northern Cook County)



[Pack a Waste Free Lunch](#) (EPA) Tips and activities to help students reduce, reuse, and recycle in their school lunches.

Grants for preventing food waste

[USDA Equipment Assistance Grants for School Food Authorities](#)

[Chef Ann Foundation](#) offers two grant programs for schools: [Salad Bars to Schools Grants](#) and [Get Schools Cooking Grants](#).

[Annie's Garden Grant](#)

Offer Versus Serve at Beverly Manor Jr. High



Beverly Manor Junior High in Washington, Illinois, was motivated to tackle their food waste after parents, staff, and students brought the issue to the attention of the district's food service director. The school, comprised of 400 students in grades 4-8, began by conducting a baseline plate waste audit in order to determine which policy change would have the most significant effect on reducing food waste.

The audit revealed that 27% of food served (108 lbs) was being trashed. Beverly Manor decided that implementing the Offer versus Serve (OVS) method would be a good starting point. They posted instructional signage and trained staff and students on the method. Some of the trainings were even student-led. A follow-up plate waste audit measured 53 lbs of wasted food, an almost 50% reduction from the initial audit.

After witnessing the success of OVS, nutrition services was motivated to further reduce food waste and increase consumption of nutritious meals. Another simple change they made was to add a flavor station with a variety of spices so students can season their own food. The flavor station has increased consumption of healthy foods, particularly vegetables.

With the money saved from these waste reduction measures, Beverly Manor is now able to purchase local produce, further enticing students to eat their veggies!





Food Recovery & Redistribution



After source reduction, recovering surplus food to feed hungry people is the next priority on the EPA's Food Recovery Hierarchy.

Even with waste prevention strategies in place, schools will inevitably generate surplus food. School food recovery programs provide a way to reduce wasted food, feed hungry people, and teach students that food is valuable.

This section focuses on the recovery and redistribution of surplus food, including:

- ✓ Policies and laws regarding share tables and the redistribution of food
- ✓ How to set up and operate a share table
- ✓ Redistribution within a school
- ✓ Donation to an outside organization

Share tables and the redistribution of food

A share table is a place where students may return whole and/or unopened food or beverage items from school meals that they did not eat. These items can be made available to other students to consume during or after the meal service or be donated to an outside organization.

The USDA Food and Nutrition Service and the Illinois State Board of Education encourage the redistribution of items placed on a share table through one or more of the following ways, as long as the practice complies with local health and food safety codes:

- Food or beverage items left on the share table can be made available at no cost to other students who may want additional servings.
- Items left on the share table may be served and claimed for reimbursement during another meal service.
- Items left on the share table may be donated to a local food pantry, homeless shelter, or other non-profit charitable organization.

Share tables may be used in the National School Lunch Program, the School Breakfast Program, the Child and Adult Care Food Program, and the Summer Food Service Program.

Share tables are to be used only for food and beverage items served as part of a school meal; no foods from home should be placed on a share table. Instead encourage students with home-packed lunches to take home uneaten food. Students eating school meals should not intentionally choose extra food just to place it on the share table.

Share tables and the redistribution of food have many benefits: preventing wasted food, conserving financial and natural resources, feeding the hungry, and teaching students the value of food.



School share table and redistribution priorities:

1. Students consume the food they are served during school meals.
2. Whole fruit and unopened food items are redistributed through the use of a share table, redistributed within the school community, or re-served by food service.
3. The remaining food surplus is donated to a community organization.
4. Any food that cannot be redistributed should be composted if a composting program is in place.

The National School Lunch and Breakfast Programs use federal funding and are intended to feed students healthy meals. By prioritizing redistribution of food within the school, the original goal of this funding is being fulfilled. Once options for feeding students have been exhausted, surplus food can be donated to help others in the community.

Policies and laws regarding share tables and the redistribution of food

There are several policies and laws at the federal and state levels that encourage the redistribution of school food to prevent wasted food and to protect donors from liability. Local health and safety codes may be stricter than federal and state guidelines, so schools should contact their local health departments before implementing share tables and other methods of redistributing surplus food.

Federal policies and laws

[USDA Memo SP 41-2016: The Use of Share Tables in Child Nutrition Programs](#) This memo promotes the use of share tables and outlines the steps to set up and maintain a share table. It also includes food safety requirements and other best practices.

[USDA Memo SP 41-2014: Clarification on Food Consumption Outside of Foodservice Area](#) This memo encourages schools to allow students to take items out of the food service area to eat later as a way to reduce wasted food and encourage consumption of healthy food.

[Bill Emerson Good Samaritan Food Donation Act of 1996](#) This act protects those who donate food and those who receive donated food from civil and criminal liability if food is donated to a nonprofit organization in good faith, is distributed to people in need, and the ultimate recipient does not pay for the donated food.

[Richard B. Russell National School Lunch Act](#) This act clarifies that schools who donate food to charity are protected by the Good Samaritan Act.

State policies and laws

[Illinois State Board of Education's School Nutrition Programs Administrative Handbook, School Year 2019-2020](#) (see Section J-8, Leftover Foods) This handbook supports eliminating food waste, including using leftovers for subsequent meals, offering share tables, and donating surplus food to nonprofit organizations.

[Illinois Good Samaritan Food Donor Act](#) provides state level civil protections for donors and nonprofit organizations regarding food donations as long as there is no willful, wanton, or reckless acts by the donor.

[Illinois Food Procurement Code](#) This code prohibits school districts from entering into food purchasing contracts with entities whose contract terms prohibit the school/school district from donating food to an outside organization.

Local policies and laws

Contact your [local health department](#) before implementing a share table or food donation program to find out if local health and food safety codes in your area allow these practices.

Standard Operating Procedures (SOPs) for share tables

Many states have developed SOPs for share tables and the redistribution of returned food; some examples are below. While Illinois does not yet have a state-level SOP, schools in Illinois may refer to these examples to develop their own SOPs that comply with their local health and food safety codes.

[Iowa State University Extension and Outreach-Food Safety](#)

[Minnesota Department of Education-Food Safety](#)

[Colorado SOP](#) (Colorado Department of Education)

For a detailed analysis of SOPs, see the article [Characterizing and Assessing the Quality of State K–12 Share Table Policies as a Potential Mechanism to Reduce Food Waste and Promote Food Security](#) in *The Journal of Nutrition Education and Behavior* (Volume 52, Number 1, 2020) which identifies the prevalence of state-level share table policies, evaluates their common characteristics, and assesses their quality as guides.

Setting up a share table

Share tables are most successful when clear steps and responsibilities are communicated to everyone involved, including food service staff, parents, students, lunchroom monitors, and custodians.



“It’s good because if kids want more food, they can get some there.”

-- 3rd grade student

Getting started

- Conduct an audit over a few days to determine the number of share table-eligible items that go uneaten on a typical day. Due to daily variations in the school menu, it is a good idea to collect data from more than one day.
- Contact your local health department to determine:
 - What are allowable uses for food and beverage items collected at a share table? May students take items from the share table during the same meal period? Can share table items be provided to students at other times during the school day? If not, explore options for donating share table items.
 - Which school food items can be collected? Whole fruit with a peel? Unopened, factory-sealed non-perishables such as granola bars? Unopened milk and other temperature-controlled for safety (TCS) foods? Unopened, factory-sealed bags of baby carrots?



◦ If unopened milk and other TCS foods are permitted on share tables, are there any guidelines for their management?

- Share table location: If there is a waste sorting station in the lunchroom, consider placing the share table at the beginning in order to ensure visibility and ease of use. If your school does not use a sorting station, the share table should be in some other accessible location. Some schools place their share tables just after the serving line.

Supplies

- Collection container (plastic box, basket, crate, or tray): Shallow and transparent containers on a low table or cart are recommended so that students can more easily see and access their contents.
- Signage: Clearly mark the share table with signage that shows visual examples of acceptable and unacceptable items.

If share table leftovers will be re-served or donated, these additional supplies may be required:

- Separate container at the share table for collecting temperature-controlled for safety (TCS) foods, such as milk. The container may contain ice or freezer packs to keep the TCS items cold. The container may be insulated.
- Cooling system, refrigerator, or another alternative to store TCS items if they will require storage before being donated.

Share table communication

- Staff and families should be notified about the share table procedures in writing; this conversation is particularly important for children who have food allergies.

- Lunchroom supervisory staff should be informed of the share table guidelines.
- Staff and families should communicate to students that the priority is to eat their food rather than donate it.

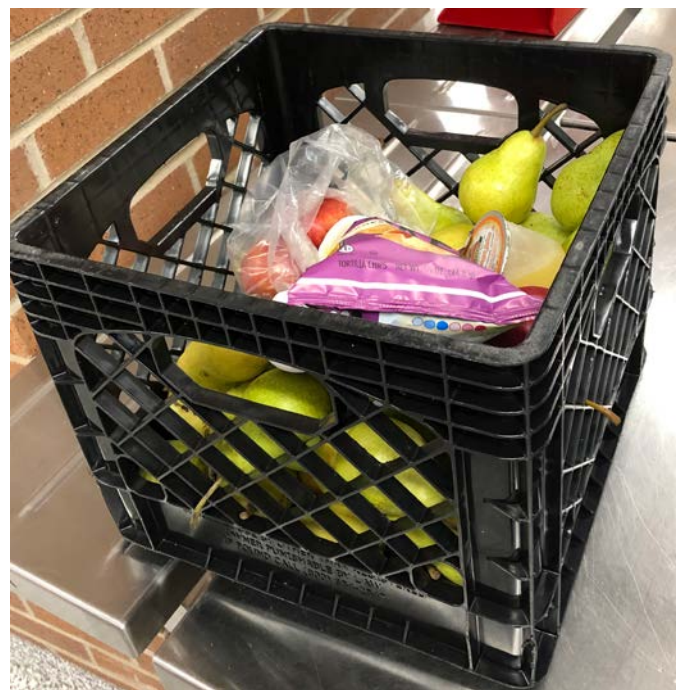
Monitoring and maintaining the share table

Monitoring will keep the share table running smoothly and ensure that health and safety regulations are followed. A sign should be posted for reference that lists acceptable and unacceptable food items and also clearly explains the guidelines for collection, redistribution, and storage of surplus food, if applicable.

The monitoring responsibilities listed below can be distributed among food service staff, lunchroom monitors, students, and parent volunteers. Consider training students as “share table helpers” to teach them about the value of food while helping their community.

Monitors can be asked to:

- Oversee the exchange of food/beverages to make sure they are allowable items and that their packaging is intact.
- Collect and properly manage the recovered food at the end of lunch. For example, if applicable: maintain temperature control, wash whole fruits before re-serving, set aside surplus items for donation, compost remaining food items.
- Clean the share table bin, as needed.



- Optional: Track how much food is collected.

Redistributing share table surplus

While share tables are a practical way to redistribute food during meals, there will likely be surplus food remaining after meal time. Depending on local health codes, food items left on a share table may be:

- Given to school personnel to use as snacks
- Taken back by food service staff to be re-served and claimed for reimbursement during another meal service
- Offered to students or families at another time and/or as part of an in-school food pantry
- Donated to a charitable institution or facility.

Redistribution of share table surplus within the school

Contact your local health department to find out if share table surplus can be provided to students within the school. If allowable, work with the school nurse, before/after school program directors, or the school social worker to provide the surplus food to hungry students at other times during the school day.

If your school offers a culinary class, share table surplus can be a great source of ingredients for their recipes. This can save or extend the funds needed to purchase



ingredients for the class and can also give students a real-world challenge by creating recipes with what's available.

Schools can also use share table surplus in future reimbursable meals, if permitted by local health codes. Both [USDA](#) and [ISBE](#) encourage schools to reuse food and beverage items from the share table: "Food and beverage items left on the share table at the end of the meal service may be served and claimed for reimbursement during another meal service."

Using share table surplus for an in-school food pantry or for school families

Distributing share table surplus directly to students and families within the school community is a great way of helping school families experiencing food insecurity.

A growing number of schools have established in-school food pantries, often with the support of a local food bank. While many of these pantries' inventories are supplied by food banks, some schools are using share table surplus as a supplement. Refer to the case study on page 21 about East Aurora High School's innovative food recovery program. Learn how the Oakland Unified School District in California provides share table surplus directly to school families in their [School Food Donation Program Guide](#).



Share Tables at Sunny Hill



Sunny Hill Elementary, a school of 350 K-5 students in Carpentersville, Illinois, has worked with [Mindful Waste](#) to reduce their landfill waste by implementing a comprehensive food recovery program in their lunchroom. Mindful Waste, a local nonprofit, operates food recovery programs in all District 220 schools. See their video [here](#).

At Sunny Hill, the Girls Encouraging Meaningful Social Support (GEMS), comprised of fourth and fifth grade students, serve as food recovery student ambassadors. They educate the school community on the importance of rescuing perfectly good food, teach what can and cannot be recovered, and are in charge of data collection each week weighing, tallying, and charting the recovered food prior to pick up.

The food recovery efforts at Sunny Hill prevent an average of 300 whole, edible items from going to the landfill each week. This food is first shared with the Boys & Girls Club that meets daily at Sunny Hill. What remains at the end of the week is picked up by F.I.S.H. Food Pantry in Carpentersville, where it is distributed to community members in need.

Sunny Hill produces an average of only 5 lbs of landfill waste daily as a result of their food recovery and commercial composting programs.



Donation to an outside community partner

Schools may also have the option of donating surplus school food to a nonprofit community partner that distributes food to people in need, such as food pantries, soup kitchens, and homeless shelters. To find food pantries near you, use [Ample Harvest's mapping tool](#).

In addition to share table surplus, schools may also be able to donate surplus pre-consumer "back-of-the-house" foods, including:

- Surplus prepared meal items from the hot lunch
- Extra canned goods or other pantry items
- Extra inventory that, before weekends and school breaks, won't keep until school resumes

Look for other potential areas to capture surplus school food such as school events, teacher meetings, school gardens, and central kitchens.

Questions for the school to consider when looking for a community partner:

- Is there enough food to donate on a regular basis?
- What kinds of items will the school typically have to donate? Will there be any kitchen (pre-consumer, back-of-house) foods?
- Is there someone to pack the food and make sure it's ready for pick-up?

- What is the best day/time for transport?
- If the community partner does not have the capacity to transport, are there school volunteers who can drop off the donations?
- Where can items be stored before pick-up?
- If donating perishable items, is there access to refrigerated storage? If not, are there funds to purchase a dedicated refrigerator?

Questions to ask a potential community partner:

- What items will they accept? Whole fruit? Unopened milks and other factory-sealed foods that require temperature control? Unopened nonperishables? Leftover prepared foods from back-of-the-house?
- How often, and at what time of day, can they accept donations? How frequently does the community partner distribute food to clients? Does this match the frequency that your school can donate?
- Do they have the capacity to pick up the donation?
- How much can they accept?
- If the community partner can accept items that require temperature control, what procedures and/or equipment are needed during transport?

Food Recovery Innovation at East Aurora S.D. 131



East Aurora School District 131 in Aurora, Illinois, has developed an exemplary food recovery and redistribution program that serves the food insecure in their community and keeps precious food out of landfills. The program began as a collaboration among the Marie Wilkinson Food Pantry, Sodexo (the district's food service provider), Feeding Illinois, Northern Illinois Food Bank, and the school board. All of the District's 20 schools participate in these efforts, including the 4,000-student East Aurora High School (EAHS). Their innovative program provides a replicable model for other districts across Illinois and beyond.

The Marie Wilkinson Food Pantry serves the nutritional needs of over 11,000 families and individuals in Aurora and Kane County at its two locations in east and west Aurora.



Program highlights

The Marie Wilkinson Food Pantry operates an in-school food pantry at EAHS that is open to students twice per month and open to the community every Saturday.

- Share tables are used in all 20 schools in the district, including EAHS, to reduce waste and provide additional nutrition to students during lunchtime.
- Surplus from share tables is delivered weekly to EAHS and used to supplement the food pantry inventory.
- The pantry inventory is also stocked with food from 40 food rescue pick-ups per week from local grocery stores, as well as with food from the Northern Illinois Food Bank.
- At EAHS, Sodexo food service staff bag and freeze leftovers from the serving line, which get picked up weekly by Wayside Cross Ministries to provide 300 meals per week to the homeless.
- School custodians and kitchen staff take pride in assisting food pantry staff wherever help is needed and are vital to the success of the program.

Share table logistics

- In some district schools, students collect uneaten food for the share table from their classmates at lunchtime.
- District trucks pick up share table surplus on their regular route and take it back to the high school. Half of the recovered food is used at the East Food Pantry at EAHS and the other half is delivered to the West Food Pantry.
- Student workers in EAHS' Transitional Program sort the collected food items into categories to prepare them for distribution at the food pantry.
- Food served outside the lunchroom is recovered, as well. On testing days when students eat school-prepared bag lunches in their classrooms, custodians collect any leftover food for the pantry.
- About 1,700 lbs of surplus food is recovered from share tables every week.



Additional guides and resources

[Sharing the Table: A Roadmap to Reducing and Recovering Surplus Food in Schools](#) (The Center for Green Schools) This 13-page guide is targeted to school stakeholders to reduce and recover surplus food from school meals. It includes examples from California that schools elsewhere may be able to adapt.

[Washington School Food Share Program Toolkit](#) (EPA Region 10) This 37-page guide outlines the steps for how to reduce wasted food in the cafeteria, including how to set up a food share and donation program.

[Iowa Department of Education's Food Waste Reduction in School Meals](#) This website shares tools, programs, and additional resources to reduce wasted food in schools, including the use of share tables.

[Green Gloves Resource Drive](#) (Oakland Unified School District) See their Food Donation and Food Share folders and their *How to Use a School Food Share Table* video.

[K-12 Food Rescue](#) shares success stories to inspire students to rescue food for donation. They provide an online tracking tool that converts donated food items into pounds, meals, and greenhouse gases.

[School Food Recovery Handbook: A How-to Guide to Reduce Wasted Food in Maine's K-12 Schools](#) (Natural Resources Council of Maine) This 26-page guide provides the steps to reduce wasted food in schools with a focus on collaborative solutions.

[Green Lunchroom Challenge](#) (Illinois Sustainable Technology Center) Activities and best practices for food waste prevention and reduction for K-12 schools.

[Wasting Less Food in K-12 Settings: Best Practices for Success](#) (National Resources Defense Council) This brief guide covers food waste prevention, redistributing surplus food, and recycling food scraps.

Composting Food Scraps





Composting is the best way to manage food scraps or leftover food that can't be redistributed or donated.

Separating food scraps for composting can be done wherever food is prepared or consumed, including in the lunchroom, kitchen, teacher's lounge, classrooms, and at school events.

Composting is a way of recycling food scraps and other organic materials. Decomposition happens all on its own in nature when soil organisms, such as bacteria, fungi, worms and insects, consume organic matter for their own energy and create soil nutrients in the process. When we compost, we create conditions that optimize and speed up the decomposition process accomplished by soil organisms.

Composting offers many curriculum connections and opportunities for student leadership.

This section highlights:

- ✓ The benefits of composting
- ✓ Types of composting
 - Onsite composting
 - Offsite commercial composting
- ✓ How to start composting in your lunchroom
 - Setting up a sorting station
 - Education
 - Monitoring

Benefits of composting

Composting has environmental, economic, and educational benefits.

Composting provides many environmental benefits:

- Reducing food waste is one of the most effective ways to help mitigate climate change. When food and other organic materials decompose inside the oxygen-free environment of a landfill, methane is produced. Methane is a greenhouse gas that is [84 times more potent than carbon dioxide on a 20-year timeframe](#). Compost-amended soils also sequester carbon.
- Adding compost to soils returns nutrients that support the soil food web. Compost also improves soil structure and water retention, reduces storm-water run-off, and minimizes the need for synthetic pesticides and fertilizers.



- Diverting food waste through composting extends landfill capacity.
- Recycling efforts typically increase when composting is implemented because more attention is paid to sorting and where the waste is going.

There are also economic benefits to composting. Removing food waste from the trash may significantly reduce trash volume, resulting in lower removal costs. Other economic benefits include job creation and turning what was once an environmental and financial liability into a valuable commodity.

Composting in schools can be used to educate students about the connection between wasted food and climate change and provides a hands-on way to learn about a closed loop food system. Composting can also provide leadership opportunities by engaging students in the lunchroom sorting process and maintaining an outdoor compost bin.

Types of composting

The main methods available to schools for composting food scraps are onsite composting and offsite commercial composting. The chart on the following page compares the two options. Schools can even opt to use both onsite and commercial composting to obtain the benefits from each (perhaps collect fruit/veggie snacks in the classroom for onsite compost and use commercial composting in the lunchroom).

For a more comprehensive description of the variety of composting methods, see the [EPA's Types of Composting and Understanding the Process](#).

Onsite composting

Onsite composting provides hands-on opportunities to learn about decomposition, the soil food web, and how to turn food scraps into soil nutrients.

Onsite composting is ideal for schools that generate fruit and vegetable scraps and have space on their campus for a compost bin. Photos below (left and middle) show examples of school compost bins.

Most towns and municipalities in Illinois allow onsite food scrap composting, but check with your local community or county waste and recycling coordinator to identify any potential restrictions.

Vermicomposting and in-vessel composting

Vermicomposting relies on worms to convert food scraps into compost and is a useful way for students to learn about the composting process in the classroom. "Worm bins" are primarily used in classrooms for educational purposes since they cannot handle the volume of food scraps typically generated in a lunchroom.

In-vessel composting converts all food scraps, including meat and dairy, into compost using special containers in which the internal temperature, moisture, and aeration are monitored and controlled, causing decomposition to occur at a faster rate.

Composting onsite using an in-vessel container can be a good option if there is no commercial facility in your area or if you'd like to have access to the compost for use on your school garden or landscaping. The U.S. Composting Council created a [Compost Equipment](#)

[Guide](#) for institutions to learn about different options for in-vessel and other types of mechanical onsite composting equipment.



	Onsite composting with a compost bin	Offsite commercial composting
Waste diversion	<p>Limited diversion Can compost only fruit/ vegetable (plant-based) scraps, in addition to yard waste, so waste diversion is less than with commercial composting.</p>	<p>Significant diversion Can typically compost:</p> <ul style="list-style-type: none"> • ALL food scraps (check with hauler about meat/ bones). • Food-soiled paper (napkins, pizza boxes). • Certified compostable tableware (confirm with hauler). Unlike recyclable products, compostable products can be composted if food-soiled. <p>Schools typically divert 40-50% by weight.</p>
	Recycling efforts typically increase when composting is implemented because more attention is being paid to sorting and where the waste is going.	
Cost	<p>Relatively low cost Start up costs include buying or building a bin and purchasing a few hand tools (\$120-\$500).</p>	<p>Hauling: An ongoing cost that can be significant. Typically, this added cost is at least partially offset by reduced need for trash hauling.</p> <p>Supplies: Depending on the hauler, compostable liner bags, which are typically more expensive, may be needed. This cost will be partially offset by a reduced need for trash bags. Refer to the Biodegradable Plastics Institute for compostable products that are tested and certified.</p>
Availability	<p>Generally available Most schools with some outdoor space can have an onsite compost bin.</p>	<p>Limited availability Commercial composting is not available in all regions. Visit illinoiscomposts.org to find out if it is an option near you.</p>
Educational & student engagement opportunities	<p>More opportunities Students learn how to manage a compost bin, analyze compost data, and use compost in their school garden.</p> <p>Composting can be used for lessons or experiments and provides hands-on learning opportunities in many subjects.</p>	<p>Fewer opportunities The actual composting process happens offsite and is not as directly accessible to students.</p> <p>School events, however, may be easier to make zero waste if the hauler/facility accepts compostable products.</p>
	Both methods engage ALL students in learning about the importance of composting and its impact on climate change.	
	Both methods can equally engage student leaders that help monitor the lunchroom sorting process and prevent contamination.	
Effort	<p>Greater effort</p> <ul style="list-style-type: none"> • Need to purchase or build a bin. • Students, with adult supervision, need to empty food scraps daily and turn the compost often. • Maintenance is needed to keep out rodents and prevent odors. • Need to collect and store a supply of “browns,” such as dried leaves, throughout the school year. 	<p>Less effort</p> <ul style="list-style-type: none"> • No need to manage an outdoor bin. • Requires little maintenance. • Only need to arrange logistics with hauler to pick up the food scraps.
Use of finished compost	Schools can use compost on their gardens. Check for local or district guidelines about using compost generated onsite on edible gardens.	Schools may be able to get finished compost from the compost facility. Check if testing or certification of compost is required.

Offsite commercial composting

With commercial composting, all food scraps and food-soiled paper may be accepted for composting. These materials are stored outside in a separate cart or dumpster. A compost truck collects the materials (typically once a week) and transfers them to a commercial composting facility where they get processed into finished compost and sold as a valuable soil amendment.

Offsite composting offers a viable alternative for schools that don't have space or the people to maintain an onsite compost bin. Once the initial logistics are arranged, very little maintenance is required.

If food scrap composting is available through your current waste hauler, you can ask to modify your existing contract to include composting. If your hauler does not offer composting services, check out the [Illinois Food Scrap Coalition's](#) list of food scrap haulers to see if there is one in your area.

Questions to ask a potential hauler:

- What types of organic materials do they accept? Do they accept compostable serviceware?
- Frequency of pickups? Once per week works well for many schools.
- If your existing hauler takes organics, ask about a discounted rate for adding that to your contract; costs vary across the region and the country.

- What is the ideal location for the collection container?
- Does the hauler provide compost education?
- Does the hauler provide containers and/or compostable bags, or are the containers switched out for clean ones at pickup time?

Getting started

Once you've decided if onsite or offsite composting is right for your school, you are ready to get started.

Build a team

Implementing a successful composting program requires a team effort. Bring together administration, facilities staff, food service staff, teachers, parents, and students from the start. If your school does not already have a green team, form a student or parent/teacher green team to lead the effort. It can be helpful to visit other schools that are already composting to learn from their best practices.

Waste audit

Conducting a waste audit will help you estimate the volume of food scraps and other compostable materials generated in a typical day. For onsite composting, this information will help you determine the number of buckets needed. For commercial composting, this information will help you estimate the level of compost hauling service you will need, as well as its cost. See the section on *Measuring Food Waste* for guidance on conducting a waste audit.





Sorting station location

Take time to observe the flow of students and staff on a typical day.

- Where do students enter and exit? Does this routine change depending on weather and where recess will be? Locating the station on the way to the exit will make for the most efficient flow. Think about where your sorting volunteers will stand and ensure there is room to accommodate them behind the station or in between the containers.
- Good signage in a visible location is key to a successful sorting station. Signs should be color-coded, include photos of the most common items that students will encounter, and be placed at eye-level.
- Will more than one sorting station be needed? Depending on the size of your lunchroom and number of students eating at one time, you may need more than one station. Note, however, that using more than one sorting station requires more oversight/volunteers, uses more bags, and increases the number of containers that the custodian will need to empty.
- To maximize participation, remove all extra stand-alone containers from the lunchroom.

Sorting station set-up

The goal of a sorting station is to separate waste streams. How you sequence the containers can make sorting easier and reduce contamination. The following sequence works well for sorting stations with recycling and composting: Share table (optional) - Liquids - Recycle - Landfill - Compost - Tray stacking.

Determine the size of compost container needed for your sorting station. Food scraps are dense, so smaller containers work best. For onsite composting, 5-gallon buckets work well. For offsite composting, containers that are 5-20 gallons are ideal. Also, if you need to use compostable bags, keep in mind that smaller bags cost less than larger bags.

Monitoring

Identify student sorting station volunteers from each lunch period who will help students learn the routine, ensure participation, and prevent contamination. Some schools use student volunteers from existing clubs, such as a green team or student council. Other schools open up this leadership opportunity to all students.

Student monitors are especially important in the first week or so to help establish the new routine but may not be needed on an ongoing basis. Parent volunteers and/or school staff should be available to help with initial implementation and regular check-ins (weekly or biweekly).





Education

To have a successful composting program, students need to understand what can be composted and why it is important. Education can be done using presentations and videos in the classroom, lunchroom, or in an assembly. Demonstrations on the actual sorting station in the lunchroom are also helpful in teaching the sorting process.

Consider creating your own slideshow presentation or how-to video to educate students, or use one of these:

[Composting for Kids](#) (Video, 5:56, Highfields Center for Composting) Note that paper and wood are compostable at a commercial facility.

[How to Sort Waste in the Cafeteria](#) (Video, 3:08, Hennepin County) Covers commercial composting and recycling in schools.

[The Compost Story](#) (Video, 6:46, Kiss the Ground)

[Green Gloves Sorting Videos](#) (Oakland Unified School District)

Launch day implementation

- Train kitchen, lunchroom, and custodial staff on the new system.
- Expect students to need additional time for sorting the first week or so, but over time, the process will become routine and take less time.
- If your school has a kitchen, set up their compost container at the beginning of the day so that all meal prep scraps can be included. Kitchens will

need sorting containers and signs, which should be placed in locations easily accessible to staff.

Post implementation

- Monitor outdoor landfill, compost, and recycling dumpsters over the first several weeks. Adjust pickup schedules and container sizes based on the new volumes of each materials stream. This is also an opportunity to monitor costs and identify potential savings.
- Share successes with school community. See the section on *Communicating and Celebrating Success*.

Guides and tools for implementing composting

[Guide to Composting Onsite at Schools](#) (The Institute for Local Self-Reliance) A detailed resource that contains instructions for building and managing your own onsite compost bin, putting together a team to maintain the compost, and troubleshooting.

[Organics Recycling in Schools: Best Practices Guide](#) (Hennepin County Public Works, Minnesota) This guide contains detailed steps on how to set up a lunchroom sorting station, school case studies, and expert advice on implementing a sustainable organics recycling program.

[A Guide to Starting a Composting Program in Your School](#) (Green Mountain Farm to School) A detailed guide on how to set up both onsite and offsite composting programs. Logistical guidance, signage, log sheets, and more are included.

Additional resources

[Illinois Food Scrap Coalition](#)

[EPA's Sustainable Management of Food: Composting](#)

[Institute for Local Self-Reliance - Composting for Community](#)

[Biodegradable Products Institute](#)

Your county solid waste agency

Commercial composting at Washington Elementary



Washington Elementary in Evanston/Skokie School District 65 began their lunchroom commercial composting program in 2017 as part of a pilot program. Two parent volunteers began the efforts at the school of 560 students, but the program

quickly became a community effort as the principal, lunchroom supervisors, custodian, and students witnessed the volume of food scraps that they could keep out of the landfill by sorting their waste.



Metrics

- The school diverts between 30-50% of total lunchroom waste by composting.
- The total amount diverted as a result of separating food scraps, recycling, and liquids was 80-90%.
- Prior to the program, students generated over ½ lb of landfill waste per person. With the program, only half that amount is generated.

Logistics

- The custodian retrieves the bins for the sorting station and the lunchroom staff set them up.
- In one lunchroom, the compost is emptied by the custodian. In the other two, the lunchroom staff empty it.
- Rotating student volunteers (overseen by lunchroom staff) assist their peers with the sorting process.

Keys to success

- Respect and appreciation for staff.
- Principal buy-in and support.
- Lunchroom staff and custodians are aware that their efforts are essential to the success of the program.
- Staff has autonomy to solve problems when they arise.

Challenges/Solutions

- The students eat in two different spaces, so the school implemented the program two grades at a time.
- One of the lunchrooms is a multipurpose space and requires quick turnover. Converting the space after lunch became a team effort between custodian and lunchroom staff.
- There was no official training for staff, so they learned alongside the students.

Changes that further reduced food waste

- Recess before lunch for all students.
- Reduced portion sizes for hot lunches.

Onsite Composting at Waters School



Waters School, a Chicago Public School, has a thriving student-led onsite composting program that helps sustain their school and community gardens. The program was inspired by “[What a Waste.](#)” a video that the school’s garden and ecology program leaders created which exposed the huge amount of perfectly good food that was going to waste. The entire school community of 640 students in grades K-8 was galvanized to participate after seeing the waste with their own eyes. In its 12-year existence, Waters’ composting program has diverted approximately 9 tons of fruits and vegetables from the landfill.



Logistics

Each day, students sort their recycling, landfill, and fruit and vegetable scraps during lunch. The food scraps are collected in 5-gallon buckets. At the end of lunch, three 8th grade compost captains carry the buckets to the compost bin next to the school garden. Using a shovel or sidewalk ice scraper, they chop the food scraps into smaller pieces, empty the contents of the buckets into the bin, and cover it with “browns,” such as dry leaves and straw. The students clean the buckets before returning them to the cafeteria. The entire process only takes about ten minutes of the students’ day but provides them with invaluable leadership experience and skills.

Over the course of about three months, the food scraps and other organics transform into nutrient-rich compost. Eighth grade students and other volunteers from the school community distribute the finished compost in the flower gardens. (Per CPS guidelines, compost produced on-site can only be used in CPS ornamental gardens and not in edible gardens.) The students are treated to a sit-down celebration luncheon every fall where they have the opportunity to discuss any questions or concerns about the process.

Authentic Learning

Onsite composting provides endless hands-on learning opportunities for the children at Waters. The compost bin is often featured on garden field trips during which students poke around the compost to learn about soil critters and the soil foodweb. Using a large compost thermometer, students identify the most active (ie, hottest) areas of the bin and hypothesize about the temperature variation. They also test the pH of compost samples relative to other substances, such as wood ash and citrus.

CPS Composting Cohort

In addition to managing the composting program at Waters, their Ecology Director leads the districtwide Composting Cohort that supports schools with starting their own onsite composting program. Schools in the Cohort attend a composting workshop at Waters and receive a compost bin, *Rodale’s Guide to Composting*, and composting tools. Through the Cohort, school composting leaders receive on-going mentorship, including a site visit and ideas for integrating composting into the curriculum. The Cohort also provides schools the opportunity to network and share best practices, challenges, and successes. In the first year alone, the Cohort converted roughly 45 tons of food scraps into compost.





Education

&

Engagement



Addressing school food waste can be a focal point for learning. Food waste presents an authentic problem and provides excellent opportunities for place-based and project-based learning. Place-based learning is an educational approach that uses a student's own environment as the basis for hands-on learning experiences. Project-based learning engages students in exploring and solving real, often complex, problems and cultivates critical thinking, creativity, and communication skills.

By actively participating in food waste reduction efforts, students learn the environmental, economic, and social impacts of food waste.

This section of the Toolkit will cover:

- ✓ Engaging students to take action on food waste
- ✓ Curricula about food and food waste
- ✓ Teaching tools and resources

Ways to engage students

Food waste reduction projects may be one-time events or longer-term efforts. Some activities can be integrated into a classroom project or curriculum, others may be extracurricular or service learning projects. All have the potential to empower students to make a difference.



Short-term projects

- Conduct a waste audit to learn data collection and analysis skills. See the *Measuring Food Waste* section.
- Take a field trip to a local landfill, commercial composting facility, or food pantry.
- Expand palates and learn about healthy eating through tastings. See the *Preventing Food Waste* section.
- Write stories about student efforts for the school newspaper or other news outlets. Be sure to include photos. See the *Communicating and Celebrating Success* section.

- Create artwork that educates about food waste and inspires others to take action.
- Advocate for change by presenting data and ideas for reducing food waste to the school principal, PTO, school board, city council, or other governing organizations.
- Learn about food, how it is grown, where it is grown, and what foods are indigenous to which countries.
- Start a culinary class using surplus food from a share table and/or foods grown in the school garden (as permitted). Design a chef's challenge to fully utilize foods that are available.
- Create a short documentary film for the [Young Filmmakers Contest](#) and the One Earth Film Festival that focuses on food waste.
- Create a poster about the benefits of composting for the [International Composting Awareness Week Poster Contest](#).



- Give presentations about food waste to classmates or to students in neighboring schools.
- Invite local experts to speak (farmers, food pantry staff, composters, nutrition educators).

Long-term projects

- Monitor a lunchroom share table. See the *Food Recovery* section.
- Monitor the lunchroom sorting station to teach other students how to sort and ensure that sorting is done properly. See the *Composting Food Scraps* section.
- Manage a school compost bin. This can involve emptying food scraps daily, measuring and recording the amount of food scraps added, turning the compost, and harvesting finished compost for the school garden. See the *Composting Food Scraps* section.
- Maintain a classroom vermicomposting “worm” bin. See *Composting Food Scraps* section.

Student-led sustainability at the Academy for Global Citizenship



At the Academy for Global Citizenship (AGC), a K-8 public charter school of 460 students on the southwest side of Chicago, education and engagement are vital to their goal of student-led sustainability. Students as young as first grade engage in an inquiry based unit called “Our Cool School” that looks at what makes their school unique and highlights the sustainability practices that are at the heart of AGC’s mission.

Food is a central learning tool for all students at AGC. Through activities such as working in the garden, studying the origins of the foods they eat, and composting, students learn the value of food while helping the school minimize food waste.

One way students raise awareness about food waste is by conducting audits. They take turns weighing food waste after lunch and illustrate this data on a bar graph to demonstrate any patterns. The graph is posted in the cafeteria to remind everyone to finish their food.

For the IB Exhibition Project, a group of 5th graders chose to study the impacts of food waste. They identified which school lunches generated the most waste by weighing food waste and noting their corresponding menu items after lunch each day. Next they surveyed their peers to get feedback on the menu offerings and shared this information with the kitchen staff so they could adjust the menu accordingly.



- Help manage a food donation program. Roles may include tracking how much food is donated and organizing the food items for donation. See the *Food Recovery* section.
- Grow food in a school garden that can be served in the cafeteria or used for tastings. See the *Preventing Food Waste* section.

Curricula

[The Soil Story Curriculum](#) (Kiss the Ground/Life Lab, middle school) This 5-lesson curriculum connects composting to the regeneration of soil health and the vital role that soil can have in reversing climate change. Lessons cover the carbon cycle, photosynthesis, soil science, and regenerative agriculture.

[Food Waste Warrior Lessons and Activities](#) (World Wildlife Fund, Grades K-12) Students learn how food impacts the environment and about the importance of reducing food waste by doing waste audits and other hands-on activities.

[Composting in the Classroom: Scientific Inquiry for High School Students](#) (Nancy M. Trautmann and Marianne E. Krasny) This 126-page manual offers numerous in-depth compost experiments and guidance for students to design their own experiments.

[Scraps Into Soil](#) (Population Connection, Grades K-5) Students learn to differentiate between natural and man-made waste products, examine their decomposition rates, and determine how composting impacts the amount of waste that goes to landfills.

[Food Waste Curriculum](#) (Purdue Agriculture) Most lessons are K-5, but some include middle school and high school standards.

[Pilot Light Food Education Standards](#) Created by chefs, these standards teach the important role that food

plays in students' lives and the need to acknowledge and embrace its value.

[FoodSpan Curriculum](#) (Grades 9-12) Highlights critical issues in the food system and empowers students to be good food citizens.

[Don't Throw Me Away: A Zero Waste Curriculum](#) (Seven Generations Ahead, Grades K-5) Addresses the challenges of waste and how it is handled in our schools and communities. Students learn different options for conserving and recovering resources such as reusing, recycling, and composting.

[Learning Lab](#) (U.S. Green Building Council, Grades K-12, \$40) Project- and STEM-based lessons that encourage student leadership and sustainability literacy.

[K-12 Food Rescue Toolkit](#) This functional academic curriculum creates a business learning environment with job descriptions, job applications and interviews, marketing, and program management.

[The Edible Schoolyard Project](#) (Grades K-12) Lesson plans that engage students in hands-on education that teaches them how to grow, prepare, and value food.

[USDA's Team Nutrition Garden Education](#) Curricula that integrates nutrition education into core subjects using school gardens, local farms, and farmers markets.

Teaching tools and resources

The following resources can supplement your school's food waste education efforts.

Books

Worms Eat My Garbage (2017, Mary Appelhof, Joanne Olszewski, Amy Stewart)

Garbage Helps Our Garden Grow: A Compost Story (2010, Linda Glaser)



Chemistry Curriculum Focuses on Waste



Tenth grade chemistry classes at Solorio Academy High School in Chicago incorporate zero waste thinking into their unit on conservation of mass. The unit, which teaches Next Generation Science Standard [HS-PS-1-7](#), addresses the central question: “What happens to all of our garbage?” Students investigate this question in various ways both inside and outside the classroom by:

- Exploring different types and representations of molecules and atoms found in garbage.
- Creating mathematical representations for the chemical and physical changes that occur when waste decomposes, breaks down, or is incinerated.
- Volunteering at the lunchroom waste sorting stations to help classmates recycle, compost, and recover food at a share table. Other student projects include teaching about zero waste at neighboring schools, leading neighborhood clean ups, and making art installations with recycled objects.
- Constructing an argument for changes we need to make to our consumption and waste systems in the United States.



“The action component was not always part of the unit” explains teacher Greta Kringle. It was actually driven by her students who said at the end of the unit one year: “That’s it? We’re not going to do anything about this huge problem in our society?” The following year, Kringle enlisted the school in the [Chicago Public Schools Commercial Composting Program](#), which has provided the solution-oriented action that her students had been missing.



Aside from chemistry class, students in Solorio’s extracurricular Zero Waste Ambassadors Club keep the lunchroom program running smoothly by regularly serving as volunteers and managers. Club membership has grown from roughly 20 students to 90 students over the past 3 years. Often, students join to earn service learning hours but it ends up becoming something they truly enjoy doing and really care about.

“The process has not been easy,” says Kringle. “There are some days that volunteers don’t show up for their shifts and the custodians get frustrated with the program. It gets better every year, but it does take time, organization, and students you can rely on to follow through with a commitment.”

Every year, the chemistry department tries to make the content connections richer and improve something about the service learning component. This year, they plan to separate the content into two units. The conservation of mass unit will now focus primarily on food waste. A new unit will center around plastics by asking, “How do we get plastics from oil? Why are plastics everywhere?” and focus on molecular structure and function ([HS-PS-1-3](#)).

According to Kringle, Solorio’s waste reduction efforts have led students and teachers to think more critically about how much waste they produce. Many have started backyard composting at home and have shifted to reusable lunch containers. Some teachers bring their food waste to the cafeteria and have become more thoughtful about the number of copies they make.

What started as a unit of study at Solorio has since permeated the school culture and beyond.



“The fact that we’re sharing this experience is amazing. You’d be surprised; a lot of kids do care. Some might do it at first as a service learning project, but once they see the impact, they want to be on the Zero Waste Team.”

--10th grade student

American Wasteland: How America Throws Away Nearly Half of Its Food (and What We Can Do About It) (2011, Jonathan Bloom)

Alice Waters and the Trip to Delicious (2014, Jacqueline Briggs Martin)

Videos

[The Compost Story](#) (6:46) and [The Soil Story](#) (3:19) (Kiss the Ground)

[Soil Health Theater](#) (USDA Natural Resources Conservation Service)

[Food is our Future](#) (2:05, Mindful Waste) Highlights the issue of school food waste, its impacts, and what can be done about it.

[Just Eat It: A Food Waste Story](#) (74-minute documentary) Available in some public libraries or for purchase. Curriculum to accompany film is available.

[The Global Food Waste Scandal](#) (14:01, Tristram Stuart, TEDSalon)

Posters and infographics

[International Compost Awareness Week posters](#) (Composting Council Research & Education Foundation)

[Compost Impacts More Than You Think](#) (Institute for Local Self-Reliance)

Organizations that educate and engage

[Seven Generations Ahead](#) Their Zero Waste Schools Program shifts operations and minds towards generating zero waste through source reduction, recycling, composting, and food recovery.

Your local county or solid waste agency

[Mindful Waste](#) partners with schools on waste reduction and composting education and offers Project Foodprint, a K-8 curriculum.

[Cafeteria Culture](#) An environmental education organization based in New York City that works with youth to achieve zero waste schools, rid waters of plastic, and create climate smart communities using citizen science, civic action, media, and the arts.

[SCARCE](#) (School and Community Assistance for Recycling and Composting Education) An environmental education nonprofit serving schools and communities in DuPage County, Illinois.

[University of Illinois Extension Supplemental Nutrition Assistance Program Education](#)

[USDA's What You Can Do To Help Prevent Wasted Food](#) This booklet discusses ways to reduce, recover, and recycle food before it goes to waste. Provides tips for school nutrition professionals, teachers, parents, students, and school administrators.

Grants

Captain Planet Foundation offers two grants:

- [ecoSolution Grant](#)
- [ecoSTEM Kit Grant](#)

[Illinois Agriculture in the Classroom](#) offers two grants:

- Teacher Project Grant
- Teacher Book Grant



Communicating & Celebrating Success



One of the best ways to ensure the long-term success of any waste reduction effort is to communicate and celebrate your school's accomplishments. Doing so:

- Creates awareness about wasted food
- Acknowledges the work of those involved
- Provides documentation of efforts to help demonstrate progress over time
- Inspires schools to take on additional food waste reduction projects
- Gives schools a positive story to share
- Inspires other schools to take action
- Encourages school families to reduce food waste at home
- Can help support goals in your school's wellness plan while engaging parents.

What to communicate and celebrate

Success can be conveyed in a variety of ways:

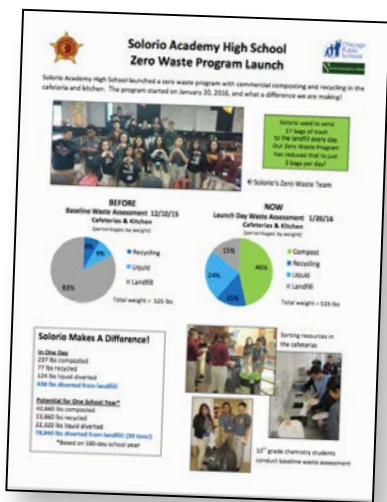
- Waste audit data demonstrates impact (weight or volume diverted from landfills, amount of food rescued, and greenhouse gas emissions avoided). See page 5 for different ways to analyze data.
- Photos are a powerful way to share the impact of your efforts. Try to capture photos that show the before and after, student engagement, and the volume of food waste diverted.
- Number of students, staff, and/or community members impacted can be used to quantify a program's success.

- Estimate how many people could be fed by the uneaten/unopened food and tie that to data about food insecurity in your region.
- Testimonials/quotes from staff and students.
- Highlight new routines that contribute to reducing food waste, such as longer lunches, share tables, or using the Offer versus Serve method.
- Calculate the cost savings associated with your waste reduction efforts. Does your food service provider have pricing information to quantify savings from prevention and recovery? Have there been any cost savings associated with downsizing trash hauling? Has your school or district saved any money by redistributing surplus food within the school?

In-school communications

Share your program successes through one or more of the following methods:

- One-page summary for the school community that highlights impacts
- Social media (PTA listserv, Facebook page, Twitter)
- School newsletter
- School website
- Morning announcements
- Bulletin board with rotating information to highlight successes while providing education
- Back-to-school welcome packet
- Student TV station or TV monitors for school news

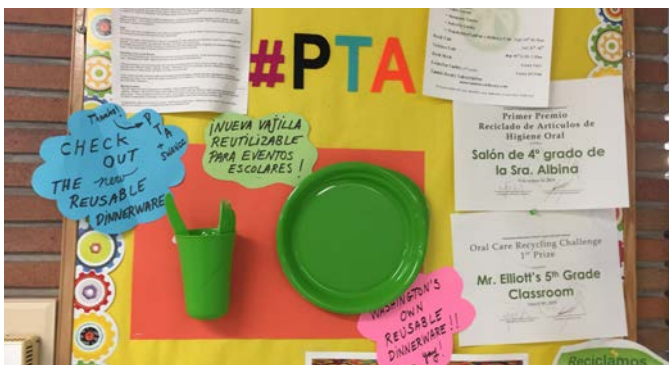


- A letter from your principal or superintendent can show administrative support.
- Announcements at meetings (PTA, school board, staff/faculty meetings, and assemblies)
- Reconvene your planning group to share results and experiences.


Celebrating success with the broader community

Your school can serve as a model and inspire others to implement similar programs. Sharing successes will also help demonstrate your school's environmental commitment. Use the following tools to reach your desired audience:

- Press releases and articles to local media
- A regular column in the local newspaper
- Solid waste agency community newsletters
- City council presentations
- Case studies
- Podcasts
- Conference exhibits or presentations
- Your school's food waste reduction efforts may help local governments reach their environmental goals. Contact them to share your story and data.



Programs that celebrate success and provide recognition

- [Food Recovery Challenge](#) (EPA) Participants in this voluntary incentive program set goals and implement strategies to reduce wasted food in their operations, then report results to compete for recognition from the EPA.
- [We Compost](#) (Illinois Food Scrap Coalition) This free recognition program promotes businesses and institutions that participate in a commercial or onsite composting program. Get your school on the map and receive a window decal. 
- [U.S. Department of Education Green Ribbon Schools](#) This award recognizes K-12 schools, districts, and institutions of higher education for their sustainability practices that correspond to the pillars of reducing environmental impact and cost, improving health and wellness, and providing effective environmental education.



- [Eco-Schools USA](#) (National Wildlife Federation) This program engages students in making their schools and communities more sustainable. Using their Seven Step Framework, schools are recognized at three levels of achievement: Bronze, Silver, and Green Flag.

Image credits

Front cover, top, bottom left & bottom right:

Seven Generations Ahead

Front cover, bottom middle: Healthy Schools Campaign

Page 1: Seven Generations Ahead

Page 3, top: Seven Generations Ahead

Page 3, bottom: Solid Waste Agency of Northern Cook County

Page 4, top: Seven Generations Ahead

Page 4, bottom: Seven Generations Ahead

Page 5, inset: Gourmet Gorilla

Page 5, bottom: Seven Generations Ahead

Page 6, middle & bottom: Seven Generations Ahead

Page 8, top: Seven Generations Ahead

Page 9, top left, top right, & bottom: Seven Generations Ahead

Page 10, inset: Healthy Schools Campaign

Page 11, top: Seven Generations Ahead

Page 12, top: U.S. Department of Agriculture

Page 12, bottom: Seven Generations Ahead

Page 13, top: Jenny Futterman

Page 13, inset: University of Illinois Extension

Page 15: Seven Generations Ahead

Page 16: Seven Generations Ahead

Page 17: Seven Generations Ahead

Page 18, top & bottom: Seven Generations Ahead

Page 19, top: Mindful Waste

Page 19, bottom: Seven Generations Ahead

Page 20, inset: Mindful Waste

Page 21, top, bottom & inset: Seven Generations Ahead

Page 24, top & insets: Seven Generations Ahead

Page 25, bottom left, bottom middle & bottom right:

Seven Generations Ahead

Page 27, inset & bottom: Seven Generations Ahead

Page 28, top left sign: Evanston/Skokie School District 65

Page 28, top right & top middle signs: Seven Generations Ahead

Page 28, bottom right: Willard Elementary School,

Evanston/Skokie School District 65

Page 29: Seven Generations Ahead

Page 30 inset: Washington Elementary School, Evanston/Skokie School District 65

Page 31, top & bottom: watersecology.org

Page 33, top: Academy for Global Citizenship

Page 33, inset: Seven Generations Ahead

Page 34, top: Solid Waste Agency of Northern Cook County

Page 34, inset: Academy for Global Citizenship

Page 35, bottom left & bottom right: Healthy Schools Campaign

Page 36, top & middle: Seven Generations Ahead

Page 37: Seven Generations Ahead

Page 39, top left: Philippa Djemal

Page 39, top right: David B. Sutton/Sutton Studios

Page 40, top left: Seven Generations Ahead

Page 40, bottom left: Washington Elementary School, Evanston/Skokie School District 65

Page 40, middle right: Illinois Green Alliance

Page 41, bottom left: Seven Generations Ahead

Page 41, bottom middle: Academy for Global Citizenship

Page 41, bottom right: Seven Generations Ahead



Contact the Wasted Food Action Alliance to learn more about efforts to reduce wasted food in Illinois.

www.wastedfoodaction.org