



SCHOOL KIT FOR COMPOSTING

A Guide for North Carolina Schools





Mission Statement

Every Tray Counts is dedicated to working with children, parents, and communities to promote responsible purchasing and waste diversion practices in North Carolina schools. Our mission is to replace lunchroom polystyrene trays with a sustainable alternative, and to divert lunchroom compostable materials away from landfills.



www.everytraycounts.org

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Our Call To Action

It all started with lunch! A conversation between two moms about our kids' daily lunches led us to a little known fact: most schools have moved away from re-usable trays and are using polystyrene trays.

The concern for the health of our children and our environment propelled us into action. We had read that polystyrene can leach into food when it is hot, and that it is rarely recycled.

We approached the Chapel Hill-Carrboro City School system with the interest of replacing polystyrene trays used in school cafeterias with a compostable alternative. They enthusiastically agreed to a pilot!

The pilot grew from its original focus on reducing the exposure of our children to polystyrene trays into a school lunchroom project in favor of compostable trays and food waste diversion. Students, school administrators, staff and the community dedicated time and resources to this effort.

In August 2013, Chapel Hill-Carrboro City Schools committed to use compostable trays instead of polystyrene

trays with the start of the new school year. In 2017, Kingswood Elementary in Wake County in collaboration with ETC began a full pilot lunchroom program. In the intervening years, we were able to assist many schools in establishing sustainable lunchrooms, answering specific lunchroom questions, attending meetings of general interest, and helping schools move to a more sustainable position.

Our hope is that the success of community efforts in the Chapel Hill-Carrboro school district will inspire other school districts across North Carolina to join the movement to replace polystyrene trays with a compostable alternative in school cafeterias. We look forward to hearing from you!

For more information, please visit www.everytraycounts.org.

Every Tray Counts, Every Throw Counts, Every Time Counts!

Why Provide a School Kit for a Sustainable Lunchroom?

The school kit is a road map that demystifies issues relating to food waste, composting, and tray options in the school lunchroom.

The school kit provides:

- Instructions - both simple and organized - that demonstrate that using a compost line in the lunchroom is not added work—just different work.
- Options that guide you to determine your barriers and capabilities in order to find the best possible route to a sustainable lunchroom.

- Tips on economic feasibility and cost shifting that show you how to save money by reducing trash and using those savings towards a more sustainable lunchroom.
- Information that helps you to develop statewide connections to groups and agencies working in the area of environmental education, sustainability, and fiscal responsibility.
- Resources that spotlight educational opportunities designed around a sustainable lunchroom.

The complete school kit is available on our website: www.everytraycounts.org



Full pilot lunchroom line at Kingswood Elementary School in Cary, Wake County, NC.

Why Develop a Sustainable Lunchroom?

What is Polystyrene?

Polystyrene is a petroleum-based plastic and is commonly referred to by the brand name Styrofoam. It is a synthetic resin; a polymer of styrene that is used chiefly as lightweight rigid foams and films. Expanded polystyrene foam (EPS) is a plastic material that has been injected with chemicals to make it much lighter than its pre-injected form. It is commonly used to make lunch trays, cups, and plates. Styrene, pentane, and benzene are the main chemical ingredients in polystyrene lunch trays.

As many as 142 million polystyrene trays are used in school lunchrooms across North Carolina each year.

Health Concerns

Styrene is a chemical that has garnered notice by federal agencies. In 2011, the Department of Health and Human Services (DHHS), National Toxicology Program (NTP) listed styrene as “reasonably anticipated to be a human carcinogen” in the Report on Carcinogens, 12th Edition, released on June 10, 2011. The International Agency for Research on Cancer (IARC) has determined that styrene is a possible human carcinogen.

According to the Breast Cancer Fund, polystyrene is particularly harmful

in lunch trays because styrene and benzene can leach out due to the high temperature as well as the high fat content of food served on the trays. Physical damage to polystyrene trays, due to the scraping motion of utensils, may also increase our children’s exposure to styrene from polystyrene containers.

Environmental Concerns

In broad terms, waste diversion practices reduce landfill costs and acreage. It is generally not profitable to recycle polystyrene trays from the lunchroom because they are lightweight and contaminated with food debris. Plastic, including polystyrene, comprises 90% of floating marine debris.

Cost Lowering Potential

Polystyrene is less expensive per tray relative to compostable trays at the time of purchase. However, higher per tray costs for compostable trays and compost hauling can often be offset by reductions in dumpster pick-up frequencies, as was the case for the Chapel Hill-Carrboro City School District.

Educational Benefits

A sustainable lunchroom offers opportunity for project-based and place-based learning, providing the chance for teachers to derive hands on lessons in mathematics, biology, social studies, and environmental science.

Daily participation in a sustainability program empowers students and gives them a sense of belonging to a local and a global community and ecosystem. Student conscious participation in the “food-waste system” process instills empathy and a sense of responsibility towards lowering environmental impact.

This coordinated effort teaches students the value of teamwork and has inspired students and teachers to go further and form green clubs and teams such as the “Trash Terminators” in Chapel Hill.

By forging a relationship between the school and the compost facility and hauler, we open the door for real life educational opportunity. Students will be able to witness the fruit of their efforts—first as compost then as vegetables and fruits in their school gardens.

The most important lesson students will learn is that sustainability is achieved easily and can be maintained outside of the lunchroom and throughout their lives.

Why not use trays that can be cleaned in dishwashers and reused?



Many schools do not currently have dishwashers installed; they lack the plumbing infrastructure and/or budget to retrofit school buildings to accommodate dishwashers.

The cost of purchasing and maintaining dishwashers can pose a significant challenge, and the high temperature needed to kill bacteria and to ensure clean dishes can translate to an enormous daily water and energy usage.

However, we do advocate that reuse in each school is evaluated and considered as a valuable option.

Who Are the Stakeholders?

Stakeholders are needed to develop, maintain, and support your school lunchroom sustainability program.

Keep in mind that stakeholders will most likely change over time as your goals, how your district functions, and interest within the community, change.

ETC's model identifies two types of stakeholders: the primary stakeholders within the school and the secondary stakeholders within government and the community.

Primary Stakeholders

- **The Principal:** The support and enthusiasm of the principal is paramount to the success of a lunchroom sustainability program.
- **Teachers/Teacher Assistants:** The teacher's strongest role within this program is as a sustainability educator in the classroom, while the teacher assistant's strongest role might be in the lunchroom.
- **Lunchroom/Kitchen Staff:** Your biggest advocates. They will initially work side by side with lunchroom volunteers, and will eventually take over some of the line duties when the system is in place; they order the trays and coordinate with the compost hauler.

- **The PTA/Parents/Community Volunteers:** Recruiting a passionate parent to become a parent liaison or encouraging the PTA to develop a sustainability chair would further strengthen this program and will ensure its persistence.

Secondary Stakeholders

Smart and attainable sustainability reaches beyond the school lunchroom walls. Secondary stakeholders are the support system outside the school who will help spread the message and help investigate and clarify critical financial information. Permanent stakeholders will eventually encompass a strong network of local leaders, parents, volunteers, local government agencies, and non-profits. Compost haulers are also within this group.

What Are Your Goals?

What Is the Best Program for Your School?

The school kit is specific to North Carolina schools and provides options to help you reach your desired environmental goal. It addresses and dismantles barriers such as lack of information, lack of coordination among schools, varying waste diversion capabilities within a town, city, or county, and availability of private waste hauling businesses.

We understand that schools and communities across North Carolina have different priorities, goals, and capabilities. Some might prioritize the replacement of polystyrene trays with compostable ones, while others might want to gradually build up to the full lunchroom program including compostable trays, student engagement through education and participation, and food waste composting.

The feasibility of your goals will be determined through surveys, networking, and meetings between the initial group of administrators, parents, and teachers. Once your goals are clear and a plan to achieve them is in place, you will find support from the community around you.

Here are the four available programs:

Full Lunchroom Pilot Program:

This is ETC's complete program; it adds an educational component, which brings together the lunchroom, the classroom, and the school garden.

Students learn how to separate their lunchroom waste (liquids, trash, and compost), learn lessons about the importance of living and thinking sustainably, and become part of the solution.

The following three programs offer options in case the full program is unattainable at this time.

Kitchen Waste and Trays Only:

The increasing awareness of the need for waste diversion opens doors for financial support. ETC calls this the "Adopt-A-School" program, which can be funded by the school district, a business nearby, a family, civic groups, or any combination. The "Adopt-A-School" program supplies funds that would cover the difference in tray cost and also pay for the services of a compost hauler.

Trays Only:

This program allows you to eliminate the use of polystyrene trays. It does not require the participation of a compost hauler, and thus does not divert food and paper products to a compost facility.

You can request compostable trays by contacting the Child Nutrition Supervisor in your school district. It will be up to you to either advocate that your school district absorb the cost difference, or find a local business or family that would be willing to sponsor this effort.

To review available compostable trays in your area, see the NC Procurement

Alliance's (NCPA) supply list. For more information on the NCPA please refer to the "Changing the Financial Picture" section.

Liquids Only:

This program allows you to reduce the amount of liquid waste going to the landfill by weight and volume, which in turn reduces leachate and the frequency of dumpster tipping. Liquids can comprise up to 30% of the weight of generated lunchroom trash.

This is a good way to get started if you have the support of the custodial and kitchen staff but have minimal donations of time and money.



Rolling Out Your Program

In this section we provide instructions and definitions for the different programs. Please visit www.everytraycounts.org to download, print, and complete forms corresponding to each program. We recommend that all four programs begin by downloading the Start Up Form: Goals and Contacts.

The Full Pilot Program

The full pilot program is the most comprehensive and it entails five phases. Each phase depends on using the **Full Pilot Checklist** as well as a downloadable form specific to each phase.

Phase 1- Collection of general information.

Phase 2- Audits of the school dumpster schedule and lunchroom practices.

These audits must be done before you begin to change your lunchroom procedures.

Phase 3 – Pre-pilot lunchroom setup and requirements for one-month pilot.

This is the time to train everyone involved and to identify and resolve your unique needs. Please use the Insurance Waiver form, if needed.

Phase 4 – The one-month pilot in action.

This is the start of the program in the lunchroom.

Phase 5 - Review of pilot and establishing permanent daily operations.

What is an Audit?

1. The lunchroom waste audit is a one-day simple and structured process used to quantify the amount and types of waste being generated by your school lunchroom as follows:
 - Food and other compostable waste
 - Trash or landfill waste
 - Recyclables
 - Liquids

Another objective of a school waste audit is to introduce the idea to your

students and staff that garbage doesn't just disappear once it is collected in your garbage can. Please use the **Lunchroom Audit form**.

2. The Dumpster Audit is a 2-week audit that gives you a snapshot of the usage and collection data of the dumpster(s) for your school at the beginning and at the end of the pilot. The difference in the dumpster amount, and therefore the cost reduction, will be entered into a cost formula at a later date. Please use the Dumpster Audit form.

Volunteers remain in the lunchroom as you evaluate your program.

Rollout of the Kitchen Waste and Tray Program

This is also known as the Adopt-A-School model. Please use the **Adopt-A-School Checklist**.

Rollout of the Trays only Program

The trays only program requires some research that can be done by a volunteer. When completed, it often only requires a change in the vendor number (SKU#) of the tray on an order form. Please use **Tray Checklist**.

Rollout of the Liquids Only Program

If your time, volunteerism, and funds are limited, this can be done with a few changes to the lunchroom. Please see the **Liquids Only Checklist**.

Quick Polystyrene Facts



- It is not a good candidate for recycling.
- It takes up a lot of space in landfills.
- Its production requires higher energy use than the production of alternatives.
- It is very harmful to our watersheds and to wildlife.
- According to Scientific American, in 2014 a total of 28,500 tons of Styrofoam was produced and 90% was used to make single-use cups, trays, containers and packaging products.

Funding Your Program

This guide shows you the way to begin as a single school with a dream of becoming sustainable. Financing any of these four programs is an issue that must be studied and resolved before you begin. Changing the Financial Picture in Section 3 shows you how to evaluate the financial structure of your school or district in the long term, but you will need initial funding sources. Here are some suggestions:

The **Full Pilot** requires funding for compostable trays and the compost hauler.

As a pilot program, it is likely that you would have to purchase compostable trays at their full price. You might find other options offered in your county. As an example, the Wake County Public School System agreed to continue paying the polystyrene tray price, and ETC paid the difference.

You will also have to acquire funds to pay for the compost hauler in your area. We recommend that you consider applying for grants and reaching out to environmental advocates and the school garden programs.

The **Adopt-A-School** program (Kitchen and Tray program) also requires funding for a compost hauler and the purchase and hauling of the trays.

This program can be funded by the school district, a business nearby, a family, civic groups, or any combination.

As an example, while working at a school in Wake County, it became clear that the school did not have the resources for a full program. That is how Adopt-A-School was created! A family with two children in the school was able to pay for the trays and hauling of the kitchen waste.

The **Tray Only** program, particularly for one school, can often be funded through Child Nutrition Services. You can request compostable trays and funding by contacting the Child Nutrition Supervisor in your school district. They may be able to change the order from a polystyrene tray to a compostable tray, and may have the funds to pay for the difference in price.

The **Liquids Only** program can be funded by the PTA or a company donation. It requires funding for a liquid collection station that may include one or more of the items below.

1. A 5 gallon bucket
2. A hardware store moveable sink with bucket
3. An existing sink in the lunchroom
4. A strainer

Please refer to the resources section of our website where we have listed possible sources of funding through grants. We constantly update the resources section as we receive suggestions from our supporters.

Biodegradable materials are able to decay naturally and in a way that is not harmful. However, it does not necessarily mean that a product is compostable.

Compostable materials are able to undergo complete degradation by biological processes, during which they are converted into organic compounds, carbon dioxide, and water at a rate consistent with the degradation of other known compostable materials. The end results of this process will benefit the soil.

Compostable products have to meet a composting standard such as ASTM D6400 or EN 13432.

Recycling is the practice of reusing items that would otherwise be discarded as waste.



Changing the Financial Picture

One of the biggest surprises we've encountered was the diversity of financial aspects relating to trash collection and disposal, and how these financial aspects vary widely from district to district.

The financial success of composting in public schools comes from cost-shifting. **Cost Shifting** is reducing the cost of trash disposal and using the savings to support a waste diversion program. Below are the terms you may see as you begin your research.

North Carolina Procurement Alliance (NCPA) - a voluntary purchasing organization formed by the Child Nutrition Services Section of the NC Department of Public Instruction. Its goal is to leverage the collective purchasing power of member school districts for measurable and cost-effective results.

Child Nutrition Supervisor - in most cases, the person in charge of purchasing your schools' food and lunchroom supplies and can provide you with information pertaining to availability and cost of all lunchroom items.

School Board and County Solid Waste Department - the local governance that can provide necessary information about your school's waste management contract. The contract

is public and may be available on the districts' website.

Budget Silos - a budget mechanism that prevents the use of any savings from trash bills to be moved towards the cost of compostable products and hauling. In this system, savings from one area of funding cannot be moved to another area of funding.

Tipping - a general term in waste hauling that refers to the number of times a truck comes to your school to empty, or "tip", the dumpster or bin and haul the trash away. Each "tip" has a cost. This information is in the school's waste management contract.

Please download the Data Collection and Stakeholders form and the Cost Shifting form to collect your specific financial information.

**Page is being updated as of
April 2019**

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April 2019**

Continuing Goals

The “School Kit for Composting”, available on ETC’s website, includes this guide, videos, power points, classroom activities, checklists, and signage. It provides the tools for any school or district to independently investigate, initiate, implement, and maintain a school sustainability program.

Continuing goals might include:

- Increasing student awareness for the need to recycle in general.
- Incorporating sustainability topics into the educational curriculum.
- Improving on savings in trash costs.
- Investing in sustainability improvements.
- Connecting the PTA with supportive organizations such as “Feed the Bin” and “Toward Zero Waste”.
- Creating a school sustainability champion or a Green Team.
- Empowering older students as ambassadors of sustainability who in turn teach and empower younger students.
- Looking critically at the lunchroom line for improvements and exploring sustainable products beyond lunchroom trays.
- Creating and maintaining a school garden.
- Pursuing and applying for sustainability grants to supplement and expand your program.
- Influencing policy and future initiatives to minimize waste generation and maximize sustainability in schools across the state.
- Connecting students with other green teams throughout their district, and at the state and national level.
- Using purchasing power to create more cost savings in compostable products and compost hauling.
- Creating permanent and positive relationships between schools, local farms, local businesses, and compost facilities.
- Continuing dialogue and inspiring action in the community.
- Moving the public school system toward zero waste - using resources more efficiently, through better organization and better education.

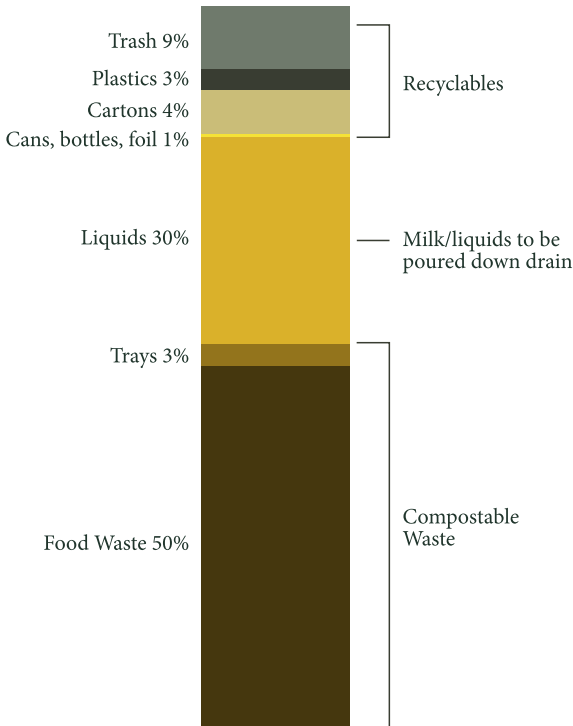
For more ideas and information, please visit www.everytraycounts.org.

A Model for Success

With support from ETC, the Chapel Hill Carrboro School system composting program was launched in 2013 in one school and continues to be a success districtwide. This program was able to:

- Divert over 13,300 pounds of trash from the landfill; an 87% reduction in cafeteria landfill waste.
- Reduce cafeteria lunch trash from 155 to 20 bags per day at 15 schools.
- Compost 3,370 pounds of trash during the first week.

**Adams Elementary
Wake County Schools**
220.68 lbs Collected
May 16, 2016



Acknowledgements

Every Tray Counts has many supporters who have written posts, emails, and suggestions to help make us better. We have blended your many voices into a guide that will help anyone who wants to improve the environmental footprint of their school.

We are a member of the North Carolina Conservation Network, and appreciate their dedication in coordinating the efforts of environmental groups across our state. We are grateful to Kate Fulbright and Mike Lento who have been a big part of the design of this guide. Thank you!

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Most of all, thank you to Luma Kennedy for helping to edit this pamphlet and keeping it on track.

Sue Scope
Executive Director



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8. Liquids Only Checklist
9. Cost Shifting worksheet
10. Data Collection and Stakeholders form

Please visit www.everytraycounts.org for lunchroom operations forms, flyers, signs, posters, and examples of timelines of operations.

E

Education: ingrain “reduce, reuse, recycle, compost” concepts in North Carolina schools

T

Trays: remove polystyrene trays from school cafeterias

C

Compost: engage community and governmental agencies to divert waste from landfills



www.everytraycounts.org