VERMONT
AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Getting Started With
School Composting

Getting Started

Starting a school composting program is really exciting. It's an opportunity for your school to be more sustainable and participate in a closed loop food system. Creating your program and getting the learning community involved can be a lot of fun, but it's hard work and requires planning and preparation. This resource is designed to give you an overview of the things you will need to think about and decide as you create your composting program. Programs can vary depending on a range of factors, but there are some basic elements that will ensure your school's program is successful. This resource covers the core elements of a school composting program and provides guidance to help you decide what will work best for your school.

What Is Composting?

Composting is a simple natural process that takes organic materials and decomposes them to a point where it is stable like dark forest soil. In order for organic (once living) material to decompose properly the right proportion of nitrogen rich and carbon rich material is combined following a recipe. Collecting food scraps is the first step in creating compost.

When food scraps, which are rich in nitrogen, are collected they are mixed with materials rich in carbon such as dried leaves, wood chips, and hay. The next step is to monitor and "turn" the compost pile periodically to introduce fresh air. Oxygen is essential for the billions of microorganisms in the compost pile to aerobically decompose the material. As they metabolize the compost they create heat, which speeds decomposition and kills weed seeds and pathogens. It generally takes 6-12 months for all the material to decompose into compost that is ready to be applied to farm fields and gardens.

Why Compost?

Our current food system is "Linear." Food is grown using fertilizers imported onto farms from far away (often from fertilizer factories) while food surplus and scraps are sent to the landfill. The nutrients in the food sent to the landfill are lost and farmers replace nutrients in their soil with artificial fertilizers. In a "Closed-Loop" system nutrients are recycled back into the soil through composting. Food scraps are collected and turned into a nutrient rich organic fertilizer that farmers can use to grow more food for us to eat. There is less need for imported fertilizers because nutrients are recovered, and food is grown as nature intended!

Also, when food scraps are buried in a landfill, they cause dangerous problems. They release methane, a powerful greenhouse gas, into the air, and when foods mix with trash, they create a toxic liquid sludge called leachate that can pollute groundwater. Landfilled food scraps take up limited space and their valuable nutrients are lost.

Recognizing the need for resource recovery and environmental protection, the VT Legislature passed The Universal Recycling law in 2012. The law is designed to prevent recyclable materials from going into the landfill. Food Scraps are covered under the "Organics Recycling" portion of the law and after 2020 will no longer be allowed in landfills. Under the law, many businesses and institutions are starting to keep their food scraps out of the trash. Soon it will be against the law for your school to throw your food scraps in the trash!

Contents

Program Development

The success of your composting program depends on how well you plan your program and how well the learning community understands it. The accompanying educational resource "School Composting: An Introduction," will help you educate and train members of your learning community, but you will need to develop a strategy for collecting food scraps and decide if they will be composted on-site or off-site. Forming a committed and representative Compost Crew will ensure that your program is well planned and successful.

Assessing Options

On-Site Composting

On-site composting is often difficult for Vermont schools due to cold winter temperatures, the large volumes of food scraps they produce, and the labor and materials involved in proper on-site compost system management. That said, there are several schools in Vermont with active on-site compost systems and a complete set of resources for developing an on-site system accompany this manual. Smaller schools that generate a manageable amount of food scraps are best suited for on-site composting using a bin system. In this case a simple 2 or 3 bin composting system may be adequate to handle and compost the material generated.

Pros

- Minimal cost after building system
- Simple system for students to understand
- Students experience composting first hand
- Creates opportunities for extended learning

Cons

- Slow to launch composting program - often >1 yr. to plan, fund, design and build an on-site system
- Requires long-term commitment from the learning community - systems often neglected after 3-5 yrs.
- Requires diligent ongoing maintenance
- Requires carbon materials, which can add cost
- Requires significant training and usually outside technical assistance
- Potential for critter problems if not built and maintained properly

Off-Site Composting

Having your food scraps collected regularly for composting off-site at a farm or compost facility is a great way to establish a sustainable composting program at your school. Most Vermont schools work with a hauler who picks up their food scraps and brings them to an off-site compost operation. Haulers will charge a fee for their service, but many schools are able to cover the cost with the savings they get from reducing their trash bill. See "Off-Site Composting." Food scraps will need to be properly stored in a location the hauler can access.

Pros

- Fast to launch where services are available
- Regularly scheduled removal of food scraps
- Supports local composting enterprises
- Low maintenance and more reliable over time
- Meats, bones, dairy and paper typically accepted

Cons

- Cost for the service
- Students are not involved in making compost

Stakeholder Meeting

Building the Compost Crew

Starting a school composting program requires planning and preparation. When building your program it's important to include representatives from the entire learning community. This will ensure that everyone has a stake in the program's success and will allow for collaborative planning and implementation. A preliminary meeting should be held with all stakeholders and a Compost Crew should be formed with the following represented:

- Students
- Maintenance, Custodial and Food-Service Staff
- School Administrators
- Teachers and Support Staff
- Parents and Community Members
- Solid Waste District Representative

The first goal of the meeting will be to ensure that all stakeholders understand what composting is and why the school is creating a program. The second goal will be to discuss the components of a school composting program and develop a strategy that works for your school. The third goal will be to assemble the Compost Crew and assign roles and responsibilities for planning and launching the compost program and managing it over time.

In subsequent meetings the following checklist will help the Compost Crew prepare for the launch of the composting program.

- □ Designate a student, teacher and administrator to lead and advise the Compost Crew
- □ Set a launch date
- □ Create a plan for educating and training students, administrators, faculty and staff
- □ Designate members of the crew to schedule and coordinate education and training
- □ Designate members of the crew to assist teachers with incorporating composting into their curriculum
- □ Create a plan for engaging the learning community and getting students involved
- □ Determine the best location in the cafeteria for the separation station
- □ Design your separation station and designate members of the crew to build and label it
- □ Designate members of the crew to schedule and coordinate monitoring of the separation station
- □ Determine how you will transport food scraps to your on-site system or hauler pick up area
- □ Designate members of the crew to schedule and coordinate the transportation of food scraps to your on-site system or hauler pick up area
- □ Determine what your program can accept and print the appropriate separation poster
- □ Designate members of the crew to post separation posters and create additional signage
- □ Create a plan to recruit more members of the crew to ensure the program is sustainable
- □ Create a plan to track and report the amount of food scraps your school prevents from going into the landfill

Separation Station

A separation station is where food scraps, recycling, and trash are sorted; it is **essential** for a successful composting program. It must be functional, clearly labeled, and located in a convenient part of the cafeteria. Separation stations can be fixed or mobile, simple or elaborate, but they **must** include separate containers for food scraps, recycling, trash, and dishes. Most schools design their separation stations using a trash can, a recycling bin, and five gallon food scrap buckets. These containers are easy to find and most schools already have them. Five gallon buckets are ideal for food scraps because they are durable, light enough for most students to carry, and can be cleaned in the commercial dishwasher at your school.

Once you have assembled or built your separation station you will need to make sure that all containers are clearly labeled and that you have posted separation guidance posters in a visible location. Different versions of the "School Composting Separation Guide" accompany this resource; use the one that matches the materials your program can accept. You can also create personalized signage and attach examples from your cafeteria of what can and cannot be composted.

Monitoring

The Compost Crew will need to assist with food scrap separation for the first 6-8 weeks of the program, and at the beginning of each school year. They should monitor the separation station and if students are unsure of what to put in each of the containers they should encourage them to use the "Separation Guide." Monitors should know what can and cannot be composted so they can help with items not listed on the separation guide.

The compost crew will need to monitor the food scrap containers during all meals and at the end of the day, and should remove any contaminants before the food scraps are added to the on-site composting system or stored for the hauler to pick up. Monitors should have protective gloves and should wash their hands after helping students separate their food scraps. A large rubber spatula is helpful for scraping food off trays.

Food Scrap Handling

Another crucial aspect of school composting is dealing with the food scraps that you collect each day. Advisors or designated members of the Compost Crew will be responsible for scheduling and coordinating food scrap logistics at the end of meals and at the end of the day.

Food scraps must be transported to the on-site system or the hauler pick up area and dumped in the proper bin or tote. Having a garden cart, wagon or some other way to transport your food scrap containers will save time and allow more students to perform the task. Students responsible for this task will need to be trained how to prepare the food scraps based on the specifications of the on-site system or hauler. If food scraps are being stored in a tote for pick-up, covering them with a layer of sawdust can help with the smell. After dumping the food scraps, the collection containers will need to be washed and returned to the separation station for the next day. It's best to use a container that can be washed in your kitchen's dishwasher or find a location inside to wash out the containers.

Educating and Training

Starting a composting program at your school is an exciting educational opportunity. It's a great way for students to learn about resource recovery and closed loop systems, and because it requires participation from the entire learning community, it can be a great way to bring the school together.

The success of your school's composting program will depend on how well the learning community understands the importance of composting and the system the school is using. If individuals in the learning community don't understand what they're being asked to do and why they're being asked to do it, the program will not be successful.

It is essential that everyone in the school community has a basic understanding of composting and their role in the school's program. Those wanting to engage further are encouraged to take advantage of the great opportunities to incorporate composting

into curriculum - see the curriculum resources available on the ANR website.

An introductory lesson with a power point presentation and teacher's guide, which provides a basic understanding of composting and how the school program works, accompanies this manual. Every member of the learning community should be educated and trained.

The best format for delivering the introductory lesson to students is in small classes of 20-30, which encourages more questions and student engagement. The teacher's guide has all the information needed to deliver the lesson using the presentation - no prior knowledge beyond a basic understanding of composting is required. One way to make the message about composting resonate better with students is to conduct an initial training of the compost crew and identify student leaders who can facilitate the introductory lesson with other classes. When students see that their fellow students are leading the initiative, they may be more likely to be invested in its success.

Off-Site Composting

If your school will not be composting food scraps on-site, you will need to arrange for a hauler to pick up the food scraps and bring them to a facility to be properly composted. Contact your solid waste district or go to ANR's Food Scrap Hauler Directory to see a list of haulers that service your area.

There will be a fee for food scrap pick up, however, the cost can often be offset by renegotiating your trash hauling contract at a lower cost. Trash hauling fees are based on a measure of either weight or volume, and both will be reduced when you stop putting food scraps in the trash. Sometimes the contract may be for a certain frequency of collection, in which case you should be able to decrease the frequency because of the reduced volume of trash. Contact your trash hauling service to discuss a rate reduction.

Your food scrap hauler will provide you with totes to store your food scraps and will pick up your food scraps on a regular basis (usually at least weekly) depending on the volume you generate. They will either empty (and ideally wash out) your totes or take your full totes and leave clean empty ones. You will need a place to store your totes outside where your hauler can access them with their truck. In many cases your hauler will provide you with sawdust, but if they don't, you should collect it from a clean source. Covering your full totes with 3 inches of sawdust will greatly reduce odor and flies, especially in the summer!

It is especially important to monitor your food scrap containers to prevent and remove contaminants when you are using a food scrap hauler or farmer. If food scraps are found to be too contaminated with trash the hauler or farmer may reject them, and then your school will have to pick out the trash or throw the food scraps in the trash. Good education and proper monitoring will help you keep a clean stream.

Compost facilities vary in what they can accept. Your hauler will provide you with a list of items that can and cannot be composted at the facility where they take your food scraps. Obtain this list before administering the introductory lesson so you can cover the right information. One of the three composting separation posters should be appropriate based on what your hauler will accept, but it is a good idea to supplement the poster with a larger installation that has real examples from your cafeteria of what can and cannot go in the food scrap containers.

Good luck with your composting program!

For more information contact

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References

"School Composting Manual." Highfields Center for Composting. Hardwick, VT. Web Resource: No longer available.

Photos

- Highfields Center For Composting

Acknowledgments

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Content and Design

Srise

www.srise.com

Compost Technical Services

www.CompostTechnicalServices.com

Companion Resources:

School Composting: An Introduction (K-5 Presentation)
School Composting: An Introduction (6-12 Presentation)
School Composting: An Introduction (K-5 Teacher's Guide)
School Composting: An Introduction (6-12 Teacher's Guide)
Compost Separation Guide
On-site Composting For Schools
Bin System Design Guide
Bin System Management Guide
Compost Recipe Guide
Compost Planning Checklist
Compost Bin Monitoring Log