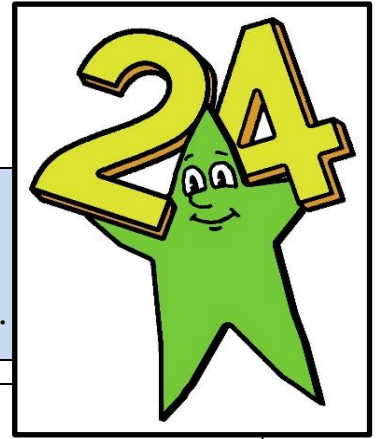


Backyard Composting at School



eco-cycle

Snapshot

When large-scale industrial composting programs do not exist in a community, an on-site compost pile serves as an alternative option for diverting organic waste from the landfill while engaging students.

<https://bit.ly/eco-cycle-zero-waste-schools-guide>

Objective: Students will understand what belongs in compost collection bins and be able to identify one or more reasons why composting helps the environment.

Age Groups: K-12th grade

Setting: School cafeteria/kitchen, classrooms, and school grounds

Project Duration: Ongoing

Materials:

- Collection bins for compostables (larger for cafeteria, smaller for classrooms and kitchens)
- Signage/labels for bins
- Outdoor compost bin
- Shovels
- Watering can or hose

Why This Project Matters:

On-site composting of a school's food waste, paper towels, tissues, and other non-recyclable papers can have a significant positive impact on the environment. It not only prevents these organic materials from producing methane while buried in a landfill (methane gas is a byproduct of anaerobic or non-oxygenated decomposition), it also adds nutrients to the soil, improving plant growth. In addition, the presence of compost in the soil increases moisture retention. It also sequesters (or stores) atmospheric carbon within the soil. Composting reduces the production of methane from landfills AND reduces the concentration of carbon dioxide in the atmosphere. Both are important to stabilize the world's climate.

Project Summary:

Schoolyard composting is similar to backyard composting. There are a variety of outdoor methods and bins available. Small-scale would utilize the food and non-recyclable paper waste from 1-2 classes only, whereas large-scale could utilize the same materials from the cafeteria and some, or all, classrooms. Maintenance of the compost bin or pile will be required, as well as a plan for how to use the finished compost.

Implementation:

1. Identify if the project will include the cafeteria/kitchen and classrooms (large-scale) or just a limited amount of material (small-scale).
2. Determine the types of compostable materials to be collected and where they will be collected from. Food waste from the cafeteria/kitchen and classrooms, non-recyclable paper from classrooms and/or the cafeteria, and yard waste (leaves) from the school grounds can all be included.



3. Estimate the volumes of compostables when deciding on the size and type of collection containers and the outdoor compost bin(s)/composting method to use. Coordinate with the principal and maintenance staff to choose the best location on the school grounds for the compost bin(s)/pile.
4. Using a map of the school, identify where compost collection containers should be located. Five-gallon buckets with lids (all the same color, if possible) make wonderful collection containers for classrooms. For larger areas like the kitchen and cafeteria, use 10-gallon or 20-gallon containers, or limit the amount or type of waste collected. Adhere labels to the containers identifying them as compost collection bins. If the containers are all the same color, that will also help distinguish them from trash and/or recycling bins. Establish “waste stations” in classrooms, kitchens, and/or cafeterias (each consisting of a recycling, trash, and compost bin). This cuts down on contamination and makes collection within the building much easier.
5. This type of composting should not include meat, dairy, or bones. Implement methods of keeping these materials out of the collected food waste through labels, signage, and other forms of education and maintenance.
6. Assign duties to students and staff regarding the compost collection system within the school, as well as the maintenance of the compost site. These duties can be performed by different groups. For example, a group of students may take care of in-school collection while a parent group could maintain the outdoor pile or bin(s). Make sure the custodial staff and classroom teachers affected by the program are made aware of the collection system routines.
7. Decide where the finished compost will be used. A compost pile is the perfect complement to a school garden.
8. If multiple grade-levels are part of the program, have a student group create announcements, posters, and signs to kick-off the beginning of the school’s compost collection and educate the school community on composting rules. If desired, encourage students to create a skit or short presentation for individual classes or a school assembly to explain how everyone can participate.
9. Hand out classroom compost bins to participating teachers, possibly during a school assembly, if that is part of the kick-off program.
10. To facilitate family involvement, send home a family letter explaining the merits of the project.

Extensions:

- Have students research the different types of compost bins and methods to decide which is right for your project.
- Coordinate a class, grade-level or school-wide event that features the harvesting and spreading of the finished compost.
- Have students research the science behind composting:
 - How do things decompose?
 - What decomposers are part of the compost and soil food web?
 - What other factors are necessary for decomposition?



Things to consider:

- If the school has a garden, work with the gardening group to establish the compost site nearby.
- For decomposition to work, the pile needs four elements: carbon (paper, leaves), nitrogen (food waste, manure, grass clippings), water (to the dampness of a wrung-out sponge), and turning (to add oxygen).
- Almost every community has a composting expert. Recruit a parent or community expert to help.
- Consider the project site, local climate, and estimated volume of collected compostables when choosing between a single-bin or a multiple-bin system. Bins can be constructed or purchased from hardware or garden supply stores.
- Classroom or cafeteria bins for collecting compostables should have lids and/or be emptied daily to deter pests.

Keeping compost clean:

When establishing a school compost program, be sure to promote easy-to-understand guidelines that highlight which waste materials are accepted, and which are not. Compost collection programs are growing both in number and in participation throughout the U.S. It has become increasingly important to ensure that the collected materials are truly compostable so that the finished compost does not distribute contaminants, such as plastic, into the greater environment.

- Collected compostables should consist only of food waste, non-recyclable paper, and yard waste. All metal, glass, and plastic must be kept out of the compost. Dairy, meats, and bones are not recommended for backyard/schoolyard composting.
- Plastic-coated paper products such as plates, cups, bowls, and cartons must be kept out of compost so that microplastics are not generated after the paper component of these products breaks down. Microplastics contamination is a major soil and environmental hazard.
- Uncoated paper products, even if they are labeled compostable, are not recommended for inclusion in backyard/schoolyard composting. Small compost piles do not generate the heat needed to break down these items.
- Compostable bioplastics, such as utensils made from corn plastic, are not recommended for inclusion in backyard/schoolyard compost piles because they will not break down.
- See Schoolwide Compost Collection, Chapter 25 for information on composting these materials.



Assessment:

Have the student group perform an audit of one or more waste stations one month before and one month after the program has been implemented. The comparison will help illustrate the success of the program. It will also indicate the level of contamination in the compost bin. (Ideally, less than 10% of the trash bin contents will be compostable items and 0% of the compost bin contents will be trash.) (See Conducting a Waste Audit, Chapter 30.)



When the audit is complete, have the student group report their findings to the school community, with reminders about the benefits of composting to the environment (healthier soil, less waste, reduction in methane production by landfills, etc.).

Repeat the trash and compost audit annually or semi-annually.

Related Activities:

- Take a Bite Out of Food Waste – Chapter 4
- Composting with Worms – Chapter 23
- Schoolwide Compost Collection – Chapter 25
- Conducting a Waste Audit – Chapter 30

