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Composting at School: The Program at Thetford Elementary School

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Interested in a school composting program? The Thetford Elementary School has a system worth taking a look at. Vermont's recycling and composting law prompted the inception of the project eight years ago. Cat Buxton, a soil and ecosystem specialist of "Grow More, Waste Less," together with the school nurse, Joette Hayashigawa, crafted the project now operated by students. The direct benefits: Students buying into the concepts of sustainability and recycling, and teachers landing practical science and math opportunities for students while meeting the state's educational standards. Indirect benefits: Students working together and developing responsibility.

Food scrap disposal is an issue every school must address. The Environmental Protection Agency reports 22 pounds of food waste per year for each K-12 student. Food scraps in landfills are compacted in a way that doesn't allow air and water to get in or mixing of materials to occur. This results in anaerobic decomposition and the release of methane gas. In the United States, landfills are the third largest producers of methane gas. And methane gas is 84 times as potent as carbon dioxide in global heating capability.



Students at Thetford Elementary have been learning about the food waste problem. Sixth grader, Natalie describes composting, "It helps the environment because we aren't wasting the food." The EPA estimates that one-third of all excess food and food waste in the US ends up in landfills, and 6% of global greenhouse gas emissions result from food waste.

Thetford Elementary School uses an insulated compost bin system students can easily operate. During my visit, program director Cat Buxton laid down a 4" layer of horse manure and stalled bedding straw providing the first step in the compost process. "This is working out really well," Natalie describes the importance of adding diverse sources of nitrogen and carbon to the compost mix. At Thetford Elementary, Nigel and Milicent—on-campus goats whose shed is adjacent to the playground—contribute used stall bedding and manure. Food scraps are deposited in 5-gallon buckets throughout the school. Used brown paper towels and other compostable wastes are collected

by students pulling a wagon. Their first stop is outside the office of Principal, Chance Lindsley, who has collected his own bucket of compostables. Students layer the carbon-rich used paper products with the nitrogen-rich food scraps, goat and horse manure, allowing aerobic decomposition and thereby heading off methane gas formation. Natalie's classmate, Jacob, states his favorite part of composting is the "squeeze test" where he grabs a handful of compost and squeezes to assess moisture in the mixture. "You get to get right into the action with the compost," states Jacob. "It's hot but doesn't burn you." Students make and record measurements of temperature (155° F when I visited), moisture, weight, and volume. Asked about his least favorite part of composting, Jacob states, "I don't like doing the manure...If I drop a bucket and it gets on me, it stinks."

Students have strong opinions about the process. Composting "gives plants more taste...it's natural, not artificial. And it makes plants taste way better," Jacob describes. For Natalie, the squeeze test is her favorite part of composting also. It allows "getting your hands down and dirty." But she recommends starting students who might be squeamish with easier jobs at first, like adding the used paper towels to the mix.

While all students in the school contribute to the on-site composting program, the sixth graders are responsible for the day-to-day operations. A team of three sixth-grade students runs the program for a two-week period. Then students train and transfer responsibility for the program during a one week overlap with the oncoming team. "It's fun...you get to hang out with friends," said Natalie.



The school's main compost bin takes 3 to 4 months to fill. During that time, the decomposition process is well underway and ready for students to shovel the bin contents to a second bin for curing. The compost will have shrunk considerably from its original volume. It is then carried by wheelbarrow to an outside windrow, covered with a compost blanket (keeping weed seeds out but allowing ventilation) and left to rest and further cure. The following year, this compost is available for the student gardens – raised vegetable beds, fruit trees and a raspberry patch.

"Problem Solving, leadership skills and collaborative interaction with other students and faculty" are used in the composting program. "The kids are more aware of where things come from," described Cat. "They have a better idea of how and why water moves through the landscape and the impact of flooding or drought."

Prior to implementation of the program, the Thetford Elementary School filled one dumpster/week. "Now we are using one dumpster/month," Cat explained. "In addition to

decreased trash volume, there is a cost savings associated with not hauling away the food scraps students are composting. “

Sixth grade teacher, Ben LaRoche recommends other schools interested in composting, “just go for it. Don’t feel overwhelmed. Do what you can, start it up and work out the kinks as it goes. The hands-on curricular experience with planet health, soil, science and systems allows an avenue for students to understand what compost is and helps make the planet healthier and better. We have the support of teachers and the principal. Even if everyone does a small role, the more buy in from the team the better.”

Where is the program going? Principal Lindsley envisions students growing more of their own foods and student–run markets with construction projects to support the markets. But his favorite part of the program: Seeing kids excited about the hands on – measuring the temperature and shoveling the wood chips... while shifting our world to create a healthy habit of harmony with the environment...right in front of us.”

Stories from the Vermont Master Composter Program are written by and for Vermont Master Composter volunteers and interns. The Vermont Master Composter Program is a collaboration between the University of Vermont Extension Master Gardener Program and the Vermont Agency of Natural Resources.

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