



In Pursuit of Environmental Literacy:

Abernethy Elementary's Farm-to-School and School Garden Program

by Sarah Sullivan



In a quiet, residential, inner southeast Portland, Oregon street, a little elementary school is breaking new ground for the farm-to-school and school garden movement.

At Abernethy Elementary, students enjoy freshly cooked breakfasts and lunches prepared on site by a trained chef. The meals are often prepared with local and seasonal ingredients harvested from the school's Garden of Wonders. The garden itself is entirely planted, tended and harvested by the students, who use it throughout their school day as a "learning laboratory."

The garden program and scratch kitchen are parts of a unique wellness policy at Abernethy. A full-time physical education teacher encourages the students to enjoy physical activity. Enthusiastic parents walk and bike their kids

to school rather than driving. Parents and staff organize a yearly bike-a-thon to raise money for the school that allows Abernethy students to ride bikes and scooters on car-free streets. Chef Nicole and Garden Coordinator Sarah Sullivan run five weeks of summer camps at the school, where they teach everything from pickling to pasta making, permaculture and organic bio-intensive gardening.

Founded in 2000 by a dedicated group of parents and teachers, the School Kitchen Garden program began as just a community garden plot. Teachers agreed to add garden class as an additional extracurricular class for students. In the past

11 years, the program has grown to include a rigorous garden curriculum aimed at supporting state standards in math, science, English, health and social studies. (Look for a free compendium of these teacher-friendly garden lessons for grades K-5 online this spring!)

Sample Curriculum: Integrating Benchmark Standards into the Garden

As part of the children’s graduation from the Garden of Wonders Program, 4th graders get to design and plant the garden and reap what they sow over the summer and into the fall of their 5th grade (final) year at Abernethy Elementary. During the winter small groups of students spend several weeks planning out a small garden plot collaborative, determining what crops grow when, how far apart they like to be spaces, how to maximize yield, make the garden beautiful, and design the garden with diversity in mind. Then they get to carefully measure, plot, and map their garden bed using math, language, and conceptual skills carefully aligned with the lessons that they are learning in their homeroom class. Soon string is laid out to carefully map out the garden beds into 1 x 1 foot plots and the children start planting greens and cool-loving plants in the garden classroom as early as January, examining the little seeds, carefully reading seed packets, then planting them in little pots in the window.

Students also take soil samples and determine how their soil quality is by analyzing how much silt, sand, loam, and clay is in their assigned garden bed. In March they turn all of the winter cover crops into the soil, add compost, and carefully dig and rake the garden to get it all ready for seeding and transplanting.

Time and time again we see that some of the students that

struggle in the classroom excel in the garden. As kinesthetic and visual learners, those students often become leaders in the outdoor classroom. The most gratifying part of our work is to see the “aha” moments in the garden: suddenly the spark for a love of learning is lit and here, in the garden, students may reap what they sow.



“I like the garden because I learn about plants and animals. We learn the names of plants vegetables and fruits. I also like helping out at the Garden because it’s fun and I get dirty. “

Chelsea, 4th grade

The garden curriculum at Abernethy gives students the opportunity to learn about native plants, the origin of the foods that we eat, the interconnected relationships of micro-organisms in soil, the importance of food security, the art of cooking and much more. Students leave Abernethy with a deep sense of the interconnectedness of human and planetary healthy, and a full understanding of where their food comes from.

Portland Public School’s Test Kitchen for Higher Quality Food: Abernethy serves as the “test kitchen” for Portland Public Schools and has created many recipes and menu items that have moved into schools across the district. Interestingly, though average percentage of students buying hot lunch daily at Portland schools is about 30 percent, over time lunches from the Abernethy kitchen attract at least 60 percent of the school’s children.

School Chef Nicole Hoffman is working closely with Nutrition Services (NS) to create interesting recipes that still meet USDA standards with only \$1.07 per meal to work with. Together Hoffmann and NS have focused on sourcing better staple ingredients to institutionalize wide-sweeping change: All wheat used is Portland Public Schools, for example, is grown sustainable and locally by Shepherds Grain flour. All chicken is raised locally and hormone-free by Draper Valley farm. Beans and grains are grown by farmers in the Willamette Valley. Yogurt is made in Eugene, Oregon. At this point Portland Public Schools are serving about 40% locally-sourced food.

Here is small sample of how benchmark standards are addressed in third grade garden class:

BENCHMARK	GARDEN CLASS COMPLIMENT
3 rd graders should know how to design an experiment	Students design a plant experiment with one variable and track the growth over several weeks
3 rd graders study the city/town that they reside in	Students study Portland’s urban agriculture movement
3 rd graders need to know the basic biology of how plants grow	Most lessons in spring touch on how plants grow and experiment set-up lessons also provide observation of plants’ growth.
3 rd graders need to know how to write letters	Students write letters to local farmers, then interview those farmers during a classroom visit
3 rd graders need to learn how to read food labels and make informed decisions about food	Students learn all about serving sizes, food groups, and they harvest and make several dishes from the garden together

Abernethy Farm-to School Program

(continued)

Slowly but surely Abernethy's students are even fans of the more "creative" dishes from the kitchen like chef Nicole's chicken Panang curry, falafel with riata, hummus and pita, and garden-harvest veggie soup.

Community Involvement:

Abernethy has become an hub for community outreach and education: students and neighbors unite to study why growing organic food is so important, how to best utilize urban-green space and successfully grow edible natives, low-maintenance landscapes and vegetables in our unique climate and soil. We see bridging the gap between the school and neighboring community in collaborative projects and stewardship as absolutely essential for city-wide sustainability.

For example, forth graders decided to reach out into the community in hopes of finding nearby garden space to grow more food in a public area as a demonstration plot for local food security and organic gardening. The local hardware store responded, offering four raised garden beds on busy Hawthorne Boulevard for students to steward. Forth graders planned the plots entirely, planting a diversity of crops important in different cultures like Thai basil and Mexican chili peppers.

Students took pride in their garden plots, and gained a sense of stewardship in knowing they were bettering our neighborhood

and sharing their skills and the bounty with others. Much of the produce grown by the children was donated to the local Loaves and Fishes, supplementing food served to housebound elders.

Research shows that school gardens:

-Improve social skills and behavior.

DeMarco, L., P. D. Relf, and A. McDaniel. 1999. Integrating gardening into the elementary school curriculum. *HortTechnology* 9(2):276-281.

-Improve environmental attitudes, especially in younger students.

Skelly, S. M., and J. M. Zajicek. 1998. The effect of an interdisciplinary garden program on the environmental attitudes of elementary school students. *HortTechnology* 8(4):579- 583.

-Instill appreciation and respect for nature that lasts into adulthood.

Lohr, V.I. and C.H. Pearson-Mims. 2005. Children's active and passive interactions with plants influence their attitudes and actions toward trees and gardening as adults. *HortTechnology* 15(3): 472-476.

-Improve life skills, including working with groups and self-understanding.

Robinson, C.W., and J. M. Zajicek. 2005. Growing minds: the effects of a one-year school garden program on six

constructs of life skills of elementary school children. *HortTechnology* 15(3):453-457.



"My third grade classes and I have had a wonderful experience with the school garden program. The classes we have are informative for both my students and I. Many of the lessons include making different salads, roasting vegetables and tasting delicious food. I love the rich experiences we have planting in the garden and the greenhouses through the garden program."

-Helene Siegfried (3rd Grade Teacher)

Edible Corvallis

by Sara McCune

As the Farm to School movement breezes across the country, the community of Corvallis, Oregon has wasted little time in becoming involved. This school year marks the fourth year that the Corvallis Environmental Center has been implementing Farm to School related programming in the Corvallis School District through its Edible Corvallis Initiative. What began as monthly taste tests of seasonally available produce at one school has grown into a full-blown farm to school program: Tasting Tables at all 11 elementary and middle schools in Corvallis, science curriculum-based farm field trips, classroom cooking lessons, and an ever increasing amount of local food purchased by the school district itself. The Corvallis Farm to School program is primarily funded by an Oregon Department of Agriculture Specialty Crop Block Grant with additional support from Slow Food Corvallis, the Consumer Wellness Center, Pacific Source Health Plans, and individual donors.

The Tasting Table program allows upwards of 4,000 elementary and middle school students to have a connection with the Farm to School program. Each month, the students have a chance to taste a local "Harvest of the Month" while

learning about the farm where the produce was grown and the nutritional benefits of that fruit or vegetable. Increased exposure to local, seasonal produce will give a boost to local farms while expanding the palates of Corvallis youth.

In addition to Tasting Tables, the Edible Corvallis Initiative hosts first, second, and third grade classes at its Starker Arts Garden for Education for one-hour field trips. These field trips are designed to complement and enhance the science curriculum kits that are already used in Corvallis classrooms. Rain or shine, the kids and teachers love their time in the garden, nibbling on dewy bits of kale, planting garlic, or digging in the compost for bugs.

Because learning how to eat well involves food preparation, Corvallis' Farm to School program offers in-classroom cooking lessons as well as after school cooking clubs at several of the elementary schools. Through the course of these lessons, the



-Increase interest in eating fruits and vegetables and improve attitude toward fruits and vegetables.

Pothukuchi, K. 2004. Hortaliza: A Youth "Nutrition Garden" in Southwest Detroit. *Children, Youth and Environments* 14(2):124-155.

-Have a positive impact on student achievement and behavior.

Blair, D. (2009). The child in the garden: an evaluative review of the benefits of school gardening. *Journal of Environmental Education* 40(2), 15-38.

The increase in students' openness to trying new things, their passion for gardening and getting outdoors, the positive feedback we get from parents and teachers all speak to the great success of this program.

Accolades from Across the Nation:

Oregon Green School status

First Oregon Wellness Award

Kiwi Magazine Crusaders Award

Health Magazine 2008 Healthiest Schools Report

Subject of 2007 NPR story on school food (LINK TO <http://www.npr.org/templates/story/story.php?storyId=6515242>)

KPTV feature "Food Revolution" Link to <http://www.better.tv/videos/m/30671714/food-revolution.htm>

Oregon Live

Check out Chef Nicole and Abernethy's School Kitchen Garden Program on Facebook or on the website: www.gardenofwonders.org

More information: gardenofwonders@yahoo.com

Written by Sarah Sullivan, Abernethy School Kitchen Garden Program Coordinator

students become empowered to make healthy food choices by learning to cook delicious meals and snacks with locally grown produce. Children leave the classroom excited about green garden dip or butternut squash soup, dishes their parents may never have dared to serve.

A particularly exciting component of the Corvallis Farm to School program is its direct connection to the Corvallis School District's department of Nutrition and Food Services. For several years, Food Services has worked with the Edible Corvallis Initiative to facilitate Tasting Tables and the promotion of locally grown produce. Beginning this year Sara McCune, the Edible Corvallis Initiative's Farm to School Coordinator now spends half of her time working directly with Sharon Gibson, the director of Food and Nutrition Services. Together Sara and Sharon work to significantly increase the amount of local food purchased by the school district beyond the days that Tasting Tables are held and to turn the cafeteria into a healthy place where students can expect to learn about the food they are eating and the process it underwent before it arrived on their cafeteria trays.

Sara McCune is Farm to School Coordinator for the Edible Corvallis Initiative, Corvallis Environmental Center

CREST Farm to School

by Bob Carlson

CREST is an environmental education center operated by the West Linn-Wilsonville School District. One of the key CREST programs is the CREST Farm. The farm is located on surplus district property. Currently, a half-acre of land is producing vegetables for school cafeterias and other uses. Last summer, middle school and high school interns learned how to grow, maintain, and sell vegetables from a farm stand on site. Next summer, the students will operate a 20 family CSA in addition to running the farm stand.

The farm is also used as a field trip destination for K-12 students year round. Each season approximately 600 students visit the farm. Learning activities are tailored to the needs of individual teachers or teams of teachers. Many of the trips emphasize wellness and the benefits of eating fresh healthy fruits and vegetables. Other field trips focus on sustainable agricultural practices that help conserve resources and promote a healthy ecosystem. Lessons include biodynamic farming practices such as maintenance of soil health, natural pest management, crop rotation and wise use of water. Students participate in hands on activities including: planting, thinning, pruning, composting, amending soil, and harvesting.

All of the farm lessons promote ecological literacy by helping kids understand their connection to food and how the production of food can affect ecosystems. They gain an understanding of the delicate balance of ecosystems and the interconnected web of living things.

One of the goals of the farm is to give students a chance to make a difference in their community and the world by participating in service learning. Some students participate in projects that provide food to local food banks and support sustainable agriculture projects in other communities and other countries.

A number of CREST staff help run the farm and create meaningful educational experiences for students. A professional farmer lives on-site and provides technical expertise, a part-time grant-funded educator runs field trips and the internship program, and an AmeriCorps member recruits community volunteers and establishes systems for distributing the food to school cafeterias. She is also offering tasting programs to schools to promote increased consumption of vegetables and fruits.

Bob Carlson is the CREST Director.

