

Overview The NYAITC's generous 2009 \$500 Kids Growing Food grant in support of P.S. 107's Sunshine Garden (formerly the Edible Garden) was an integral contributor to the garden's success during the 2008-2009 school year. We used the grant to buy originally budgeted the items: organic loose soil, gardening tools (some child friendly), organic compost, and stepping stones.

Although P.S. 107, an urban public elementary school in Park Slope, Brooklyn, is two blocks from Prospect Park, most of its students live in apartments and don't have access to hands-on gardening opportunities. The school's Sunshine Garden (www.ps107.org/ediblegarden.htm) has changed that! Envisioned and created by parents students, teachers, other school personnel, and dedicated community volunteers, this edible garden, sitting in the school's sparse concrete courtyard, is a rather humble yet influential fruit and vegetable garden, designed to enhance over 480 Pre-K-5th graders' engagement with science, nutrition, and the environment.

The PTA-initiated garden (named by a 1st grader), built in November 2008, is a grassroots project. The result is Phase I (of a three-phase initiative) of the project: 18 Earth Boxes, six hand-constructed raised beds (made of recycled plastic lumber and filled with organic compost and soil) and a variety of other terra cotta pots and half whiskey barrel planters pots in which have grown (and continue to grow) diverse fruit and vegetables.

Students "get their hands dirty" in the garden while learning about plants, the natural environment, and healthy eating. The garden is the cornerstone of Harvest Day, P.S. 107's celebration of gardening, fresh produce, and good, nutritious food, culminating in a school lunch that includes garden bounty. Students use the garden to examine local environmental issues, a project that two environmentally focused community-service grants support.

And, it is a model for other schools bringing gardening, hands-on learning, and improved nutrition into students' lives. In fact, *The Daily News* cited the garden among 15 reasons Brooklyn can't be beat! (http://www.nydailynews.com/ny_local/brooklyn/2010/01/03/2010-01-03_untitled__love03k.html)

Since its fall 2008 inception, the Sunshine Garden has successfully:

- Heightened student understanding of food's origins (not the supermarket!) and the value of freshly grown produce
- Improved the way students eat at home and in school
- Shifted students from a curriculum that doesn't offer much project- and inquiry-based science learning. (This year, the principal wants teachers to lead two inquiry projects: the garden meets that request head on.)
- Provided a green space at school, where the grounds are concrete and without a grassy yard or trees
- Broadened students' agricultural and environmental literacy

The Sunshine Garden is an official garden of the New York City Department of Parks & Recreation GreenThumb, and a member of the Brooklyn Botanic Garden's Project GreenBridge Community Garden Alliance. In 2009, the Sunshine Garden was selected as PTO Today Parent Group of the Year for Outstanding Job on a Completed Major Project (<https://www.ptotoday.com/pto-today-articles/article/870-edible-garden-enriches-students-and-learning>).

Student numbers, involvement, roles, impact, and expectations met It is fair to say that all 480 students (representing 23 classes) had gardening opportunities last year, a result of the then two science teachers who used the garden to address academic topics found in the New York City K-8 Science Scope and Sequence. Last year, there were two science teachers: Mr. Tomsik, who taught science to grades 3-5, and Ms. Dowd, who taught science to the Pre-K through second grades. In addition, individual teachers brought their students to the garden in the spring to harvest the produce, as well as to plant for the summer. The Sunshine Garden has had terrific impact and met most expectations, as noted below.

Nurturing students' science knowledge/skills and plant discovery/agricultural literacy Last year, in square foot plots, students grew shade-tolerant plants (the courtyard rests in partial shade). Over the summer, students transferred the Earth Boxes to the larger, sunny courtyard. In all...during the spring and summer of 2009, the garden grew peas, radishes, spinach, corn, raspberries, gooseberries, lettuce, kale, leeks, cabbage, arugula, corn, pole and beans, sweet peppers, eggplant, sunflowers, calendula, oregano, chives, three types of basil, parsley, sage, rosemary, thyme, tomatoes, onions, carrots, and gorgeous heirloom potatoes. And briefly, before devoured by squirrels (or other city rodents), there were lovely nasturtiums.

Students participated in garden-linked tasks that heightened their scientific and plant knowledge. P.S. 107's science teachers used the garden as an outdoor classroom where students undertake all of the gardening tasks, as well as study the life and physical sciences (everything from weather to water to soil). For example, students in grades 3-5: planted, maintained, and harvested a variety of produce; observed and documented plant growth to study plant systems; determined water levels required for garden plants to grow; and worm composted (nine classrooms, to be exact).

Pre-K- 2nd graders explored, for example, the Native American Three Sisters and planted those crops in additional pots; these planters accompanied by student-drawn pictures depicting the plants. Ms. Dowd also used the garden to explore nutrition and plant growth study.

Last year, students spent as much as 50% of their garden time on student-led investigations and hands-on activities, and up to 20% of their time on independent science learning. (As a result, students have also improved their nutritional and environmental attitudes, and have demonstrated enhanced community spirit.)

Right now, in 2010, there are 13 teachers (note that one is the science teacher who is working with all grade 3rd-5th graders; thus, almost all of the students will be gardening) that are seed starting in the classroom. Students planted in standard seed starting mix, as well as in rock wool, a hydroponic medium. And, a few classrooms are using AeroGrow gardens. These different mediums allow for a terrific comparative science/environmental inquiry. Everything from carrots to tomatoes to marjoram to watermelon radishes is growing. In June, planting for the summer months will occur.

This year, the school has received two grants to support a garden-based environmental exploration project. Students will use the garden to examine environmental challenges that have an impact on gardening. Through research, interaction with specialists, and classroom study, students will fully examine the issue and then come up with ways to address it. It's a fine mix of gardening, greening, and environmental advocacy (which is much-needed civic engagement on the part of the students).

Promoting healthy eating The garden was not created without the notion that it would help children eat better. And that it has — through classroom studies, student involvement in lunch menu items, and the work of an amazing non-profit.

The science teachers used the garden as part of a food study unit. For example, one lesson had students examine the amounts of fat and sugar, "empty calories" in foods with little nutrition, as compared to vegetables, which are nutrient rich. Younger students delved into the study the food groups and the nutritional value of fruit and vegetables. Of course, at the heart of this learning is students tasting, literally the fruits – and veggies – of their labor. They have loved most everything from the garden...though the arugula, for some, did not top the list.

The second through 4th grade classes have participated in Greenmarket Meet Your Farmer Classroom Visits and Greenmarket School Tours, programs of the Council on the Environment for New York City that promote the concepts of sustainable agriculture.

In October 2009, the entire P.S. 107 student body, faculty, and parents participated in Harvest Day as part of the Garden to School Café program of the NYC Department of Education's SchoolFood and the N.Y. State Dept. of Agriculture and Markets. Garden herbs and vegetables were harvested for use in a special lunch (roasted basil chicken) and food tasting (herbed rice, which is now a regular menu item), *caponata*, and kale slaw. This special event also featured a vegetable and dip table, an apple table featuring NY state varieties, and a fresh juicing table. Students from most grades contributed artwork representing fresh fruit and vegetables and healthy eating.

Harvest Day was a huge success, with students eating things they had not eaten before! And they offered comments from “*This is the best food I ever ate!*” to “*Do you know why the pesto was so good? Because we grew it!*” The event jumpstarted the school’s current effort to improve lunch offerings, thanks in part to a partnership with an organization called Wellness in the Schools (<http://www.wellnessintheschools.org/>) that has facilitated this gradual change in lunch meals, as well as provided chef interns who work with existing cafeteria staff to prepare healthy lunches. It also runs an after-school cooking program. And, the school is also very lucky to have amazing food-related contacts.

The lunch menu now offers special healthy meals (which includes the prize-winning Harvest Day herbed rice) with a daily salad bar. Important here is that students are at the heart of what is called a Partnership Meeting during which grade representatives meet with parents, the principal, and the school food manager to inform lunch meals.

To further this effort, parents joined their children for lunch on March 15th and 18th, 2010. This so they could see how the lunch has improved, encourage their children to eat school lunch, and become part of the growing P.S. 107 wellness efforts, which have also become a model, especially for schools in the Brooklyn School District 15. In early June 2010, the school will hold Nutrition Detectives week, which will involve nutrition education, trips to edible gardens, presentations, Sunshine Garden harvesting and food prep from its edible treasures.

Successes and challenges The Sunshine Garden has fascinated and frustrated us, but we have drawn our successes and definitely learned from our challenges.

Successes

- Establishing multiple partnerships has been at the heart of the school’s success. Most important has been working closely with school administrators, custodial staff, and teachers. Without their consent and cooperation, the garden would not have been.
- Creating an urban school garden in a non-green and very small space. The garden is a model of possibility.
- Ensuring that teachers and their students take the lead, as much as possible, on all gardening elements, with the PTA Garden Committee providing support where needed.
- Connecting the edible garden with healthy eating and the improvement of school lunch.
- Delegating responsibility to a diverse garden committee: using strengths and expertise wisely.

Challenges

- Working around school activities, curricular mandates, teacher time, etc. For example, scaffolding went up this school year for window replacement, thus hindering fall planting. Teachers often have to work gardening into their very busy schedules, and sometimes, gardening is not always top priority. Lessons learned: work with teachers at the level at which they are able to commit. Recruit teachers most likely to become involved and provide them with all of the resources and guidance they need. We are exploring garden-related professional development for the 2010-2011 school year that will help teachers connect gardening to the curriculum.
- While there is a committee, the garden committee chair often works most on gardening tasks. It is sometimes hard to delegate the day-to-day work required to keep the garden going. Lesson learned: make sure there two garden co-chairs and continually reach out to assistance to the broader parent community. And, sometimes cut back on certain activities that would be nice but perhaps not necessary for garden success.

Different groups and numbers of people reached The Sunshine Garden is a grassroots project, with PTA members, community volunteers, teachers, school administrators, custodians, students, local merchants, and garden organizations involved at various development stages. A 20-member parent Garden Committee has been at the core of the garden's development and growth. It has raised funds, generated organizational partnerships, garnered community support, and established a strong media presence. Thanks to the school principal, participating teachers, and the most amazing custodial team ever, the garden has continued school support. Students remain involved at every level gardening activity.

The garden primarily reached the P.S. 107 community. The school is not currently open during off-school hours, and so is not accessible to the general public. However, in terms of other the garden has reached...there have been partnerships that have broadened our visibility, as well as significant media coverage. The following highlights community partnerships/relationships:

One Nature Design, Bryan Quinn; Dan O'Leary: Brooklyn carpenter; Brooklyn Botanic Garden Education Department; NYC GreenThumb: technical support; Wellness in the Schools; CENYC (now GROW NYC); and the NY State Dept. of Agriculture and Markets: Garden to School Café program. Vendors include: Botanical Interests, Brooklyn 5 &10, Brooklyn Farms, Bussaco Restaurant, Colorblends, Cozen O'Connor, David Shannon Nursery and Florist, Dyke's Lumber, FEDCO Seeds, Food Network, Liberty Sunset Garden, Center, Olave, Red Jacket Orchards, restaurant chefs (Farm on Adderley, Egg, Palo Santo and Porchetta), Rose Red & Lavender, Samascott Orchards, Silver Heights Farm, Stokes Seeds, and Tarzian True Value Hardware. Media that has reported on our work include the Brooklyn edition of the *Daily News*, *Seventh Generation blogs*, and *Brooklyn Eagle* (log onto <http://www.ps107.org/ediblegarden.htm> for article links).

Summer maintenance As noted above, school administration and staff are so receptive to the garden that garden committee members had ready access to school grounds over the summer. There were 12 Earth Boxes (the planters had to be emptied in preparation for window replacement) were in the large courtyard over the summer. The Garden Committee chair keys to the courtyard gate and the hose (the custodian purchased a high end, long hose), and was able to water and maintain the garden during the summer. This will occur again this coming summer, but this time, in the main garden area.

Planting activities and celebrations The bulk of the planting was connected to the science teachers' classroom lessons. However, both garden development days had volunteers, teachers, and students busily engaged in constructing, drilling, filling planters with soil, etc. During National Gardening Month 2009, we held a weeklong garden launch during which we gave away seed packets, offered samplings of the fruit and vegetables that were growing in the garden, and distributed parent/student recipes that included produce found in the Sunshine Garden. Students also created artwork for National Gardening Month, as well as for greening efforts overall. And, as reported above, in October 2009, we held our first Harvest Day.

Other grants and funding support received During the 2008-2009 school year, and in this current one, the bulk of the funds have come from grants, individual parent donations, and two raffle sales. In 2009, we received grants from PTO Today, Lowe's Toolbox for Education, Kids Growing Food, NY Ag in the Classroom, Cornell Univ., Independence Community Foundation (now the Brooklyn Community Foundation), NGA Youth Garden Grant, Annie's Homegrown; and the Park Slope Civic Council. To date, in the current school year, we have received grants from the Brooklyn Community Foundation; Project Learning Tree Greenworks Grant, the Toshiba America Foundation, and Astor Medical Group, LLP. Several other proposals await decisions from additional funders.