



# SCHOOL GARDENS

## Using Gardens To Grow Healthy Habits in Cafeterias, Classrooms, and Communities

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**TEACHING GARDENS** in Tennessee, aquaponics systems in Montana, salad bars in New Mexico, garden-based curriculum in Guam...across the Nation schools are growing gardens to provide food for child nutrition programs, connect children to the source of their food, and create hands-on interdisciplinary classrooms.

School gardens pre-date the National School Lunch Program; the Federal Government has been encouraging school gardening since the early 1900s, even building a "School Garden Army" during World War I and supporting victory gardens at schools during World War II. USDA encourages school gardens by providing grant funding, guidance and resources, and support for food service personnel who are interested in purchasing products from a school garden. For additional information on school gardens across the nation, check out the latest findings from the USDA Farm to School Census ([farmtoschoolcensus.fns.usda.gov](http://farmtoschoolcensus.fns.usda.gov)).

### Space for Gardens in All Seasons

School gardens come in all shapes and sizes, and districts with varying amounts of land are finding ways to establish gardens both within and outside of school grounds. Gardens can be as simple as a few containers on a windowsill or can cover many acres, and gardens can thrive in all climates. Program operators find that even small gardens help children gain familiarity and comfort with the fruits and vegetables they are seeing more of at meal times.

Districts are also overcoming growing season challenges in creative and innovative ways. Even in Montana, where the traditional growing season just barely overlaps with the school year, season extension techniques make it possible for students to garden all year long.

*In rural Montana, the growing season is short, but that doesn't stop the team from Farm to School of Park County in Livingston, MT, from growing food year-round. High school students manage an aquaponics greenhouse, growing a nutrient ecosystem that combines fish and plants. The students learn rich lessons in chemistry and biology, as well as the business skills needed to sell the fish to local restaurants.*

### Using School Garden Produce in the Cafeteria

Food service directors use school garden products in the cafeteria every day, from herbs to spice up a pizza, to serving garden-grown lettuce on the salad bar, to roasting vegetables as part of a reimbursable meal. Foods produced in a garden operated or funded by the food service account can be used in the meal service and can be used for educational purposes. Produce can be procured from school gardens not funded by the food service account using a variety of procurement methods such as through an interdepartmental agreement, informal (small or micro purchase) procurement methods, or via a donation to the school meal program.



For more information on procuring from school gardens and using school food service funds to support garden activities, please refer to **Farm to School and School Garden Expenses Memo (SP 06- 2015)**, ([www.fns.usda.gov/cn/farm-school-and-school-garden-expenses](http://www.fns.usda.gov/cn/farm-school-and-school-garden-expenses)), as well as, **School Garden Q&As Memo (SP 32-2009)** ([www.fns.usda.gov/cn/school-garden-qas](http://www.fns.usda.gov/cn/school-garden-qas)), and the school garden section of the **Procuring Local Foods for Child Nutrition Programs Guide** ([www.fns.usda.gov/cfs/procuring-local-foods](http://www.fns.usda.gov/cfs/procuring-local-foods)).

*The Guam Department of Education (GU DOE) launched a program to increase access to locally grown produce through school gardens and integrate agriculture and nutrition education activities within existing curriculum throughout the school day. It developed a school garden training program for teachers, matched teachers with garden mentors, and provided resources for schools to build or enhance school gardens.*

*Students at Magdalena Municipal Schools in New Mexico grow their own salad bar! This small but mighty district uses its school garden as a tool for education, and a practical way to bring high-quality produce into its cafeteria. Students grew a mixed lettuce, tomatoes, cucumbers, dragon tongue beans, squash and more! Investing in their school garden and garden program even helped the schools reduce their food costs. Students in the middle and high school gardening clubs, as well as pre-k through eighth grade summer school students, maintain the garden under the direction of the school's local farmer partner. The garden program doubled its production in just 2 years – from over 400 pounds produced to over 850 pounds in the second year! In addition to bringing that bounty into the cafeteria, culinary arts classes also made a range of dishes from garden produce including calabacitas, pesto, quiche, salsa, soups, and stews to use in class, catering, taste tests, and even to impress school board members.*

## Gardens as Classrooms

School gardens are living laboratories that create teaching opportunities ripe for nutrition and agriculture education and experiential education across all disciplines. USDA has free resources for nutrition education lessons in the garden through **Team Nutrition** ([www.fns.usda.gov/tn/team-nutrition-garden-resources](http://www.fns.usda.gov/tn/team-nutrition-garden-resources)), and lists garden-based curricula on the **USDA Farm to School Resources** page ([www.fns.usda.gov/farmtoschool/farm-school-resources#SchoolGardening](http://www.fns.usda.gov/farmtoschool/farm-school-resources#SchoolGardening)).

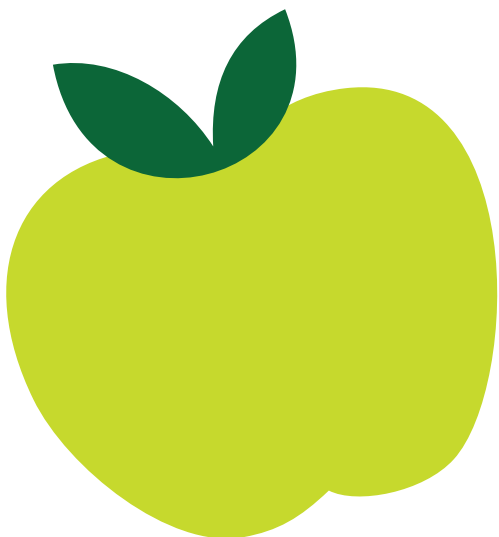




*Agriculture is a part of the Nebraska way of life, and almost every school district in the State has a greenhouse... but not many of these greenhouses are actually growing food! The Center for Rural Affairs works with schools to revamp their greenhouses as educational resources and sources of food for the lunchroom, often in partnership with Future Farmers of America and 4-H programs. Their **From Greenhouse To Cafeteria Toolkit** ([www.cfra.org/publications/greenhouse-cafeteria-toolkit-creating-and-revamping-greenhouse-programs-nebraska](http://www.cfra.org/publications/greenhouse-cafeteria-toolkit-creating-and-revamping-greenhouse-programs-nebraska)) covers everything from how to get started with a greenhouse project to production planning to curriculum integration.*

## Food Safety in the Garden

Food safety is a priority for all food served in child nutrition programs and products that come from school gardens are no exception. Food from school gardens has the shortest physical distance to travel from harvest to plate, so its safety can be managed with more direct oversight than food that travels long distances – a food safety benefit. While safe growing, harvesting and storage practices should be followed when implementing school gardens, there is no research that indicates produce from school gardens carries greater food safety risk than produce from other sources.



## Four Steps To Maintaining Food Safety in the Garden

**1. Garden Planning:** Below are basic garden safety considerations for planning a garden.

- **Soil:** Those planting gardens in urban areas are especially encouraged to have a qualified laboratory check for lead and other industrial contaminants in soil. Land-Grant Universities, Cooperative Extension Offices, and local health departments are great resources to learn about soil safety; for contaminated soils, schools can bring in soil from an outside source and plant in raised beds.
- **Placement:** Place the garden uphill from contamination sources or on level ground and away from streets and areas where wild or domestic animals have easy access to the garden.
- **Water:** Municipal water is safe; properly used and cared for rain barrels can also be water sources. Test all wells and ponds before use.

**2. Harvesting:** Follow safe food practices, including hand washing and using clean containers to harvest.

**3. Transport/Record keeping:** Keep a simple harvest log to record who was harvesting, what types of products were harvested, and when they were harvested.

**4. Storing:** Follow the same guidelines for storing school garden produce as other produce and products. Please refer to **Best Practices: Handling Fresh Produce in Schools** ([www.fns.usda.gov/best-practices-handling-fresh-produce-schools](http://www.fns.usda.gov/best-practices-handling-fresh-produce-schools)).



For additional information and resources for safely incorporating local food into school food programs, check out **Get the Facts About Food Safety** ([www.fns.usda.gov/cfs/community-food-systems-fact-sheet-facts-about-food-safety](http://www.fns.usda.gov/cfs/community-food-systems-fact-sheet-facts-about-food-safety)).

Good Agricultural Practices (GAPs) and Good Handling Practices (GHPs) are industry best practices that can be used. While USDA does not require GAP or GHP certification for school gardens, State or local departments of health, education or agriculture may have specific standards. [1] Dozens of districts and States have created comprehensive school garden food safety manuals and checklists. For examples of strong school garden safety guides, please refer to the **USDA Farm to School Resources Page** ([www.fns.usda.gov/cfs/farm-school-resources](http://www.fns.usda.gov/cfs/farm-school-resources)).

*As part of their USDA Farm to School grant project, IDEA public schools in Texas created a playbook outlining standard operating procedures and food safety production standards for their school farm! They voluntarily implemented Good Agriculture Practices and conducted self-audits to ensure that the food they grow and serve at scale in their cafeteria meets the highest food safety standards.*

*Murfreesboro City School District, TN, operates outdoor teaching gardens which allow students to participate in garden activities during the regular school day and also during the summer months. Its Farm Saturday program feature hands-on learning with parents and students through school gardens and the community garden. Families plant vegetables, help tend gardens, and participate in taste testing of fresh locally sourced food items.*

## Gardens and Summer Meals

School gardens are often in full bloom during summer months, but summer can be a challenging time to staff gardens. Volunteers and community organizations can help support gardens while schools are out; include summer maintenance in your garden planning by coordinating with summer meal program sites. Connecting gardens with summer meal programs is a perfect way to ensure that gardens receive upkeep during those months and garden produce can enhance Summer Food Service Program meals. Summer months are also a great time to freeze summer bounty to use garden produce throughout the school year. Make sure to follow food safety best practices and Hazard Analysis Critical Control Point (HACCP) guidelines when freezing or preserving your harvest.



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<sup>1</sup> School gardens that sell more than \$25,000 of produce may require GAP certification through the Food Safety Modernization Act (FSMA). Please refer to the **FNS FSMA Fact Sheet** (<https://www.fns.usda.gov/cfs/fact-sheets>) to learn how FSMA regulations impact your school farms and gardens.



## Gardens in Preschool and Early Child Care Settings

Early childhood is the ideal time to establish healthy eating habits. Studies have shown school gardens encourage preference and consumption of fruits and vegetables, increase parental support and involvement, and improve children's enthusiasm about preschool/childcare, teamwork skills and self-awareness.

*In Northern California, Farm to Early Childcare practices have been in place for more than 15 years. North Bay Children's Center Garden of Eatin' Program engages preschoolers in weekly indoor and outdoor, food and garden education. Students care for the gardens, and foods are used in meals and classroom taste tests.*

*The Detroit School Garden Collaborative is a farm to school initiative operated by the Detroit Public Schools Community District's (DPSCD) Office of School Nutrition. Detroit School Garden Collaborative partners with Drew Transition Center, a school where students with disabilities prepare for adulthood and work to provide healthy produce to hundreds of Detroit students. The 2-acre Drew Farm consists of greenhouses and field production space where fresh, organically produced food is grown for the school lunch program. Across the district, there are numerous community and non-profit partners that support school garden development and maintenance as well as direct education. A partnership with Keep Growing Detroit provides all school gardens with ample seeds and transplants in spring, summer, and fall which ensures the gardens are always producing. In the summer months, the Office of School Nutrition also provides a Farm to School Internship program for 30 DPSCD high school students who are paid to maintain school gardens and assist with food processing and production for school meals.*

## Staffing School Gardens

It takes more than one person to keep gardens growing strong. School nutrition directors can use program funds to help support garden personnel. Cooperation and partnerships between school personnel, teachers, students, non-profits, parents, volunteers (including AmeriCorps and FoodCorps members) and community members is essential for garden success.





## Funding Your Garden

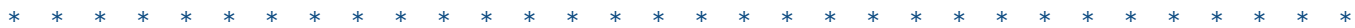
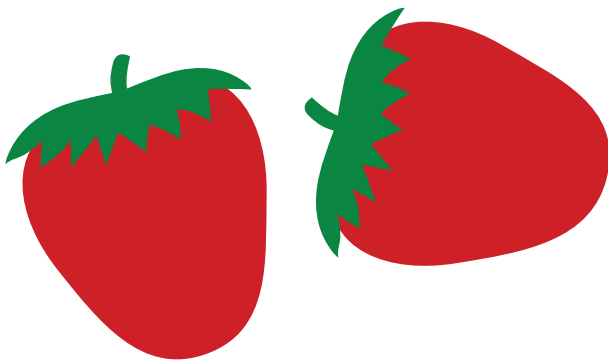
Funding diversity is key when planning a sustainable school garden. Here is some food for thought:

- Matching funding sources with needs is a good start. What is the primary funding need? Supplies? Construction? Staff? Once you know your needs, approach local hardware stores if you need supplies or consider looking for a volunteer agency, if your greatest need is staff.
- Think local! Parent associations, healthy fundraisers, local non-profits and public agencies have all supplied resources to start and sustain school gardens.
- Federal funds, including USDA Farm to School Grants and National School Lunch Program funds, can and have been used to support garden supplies, equipment, and staff. From a Federal perspective, USDA allows the purchase of garden products for use in child nutrition programs. Building a

temporary or movable structure such as a hoop house is also an allowable cost. Be aware, however, that building a permanent structure (such as pouring cement, significantly altering the footprint of a building, wiring, etc.) is not an allowable cost when using Federal funds to pay for garden expenses. For additional information on using school garden funds to pay for school garden expenses, see the SP 06 – 2015, **Farm to School and School Garden Expenses Memo** ([www.fns.usda.gov/cn/farm-school-and-school-garden-expenses](http://www.fns.usda.gov/cn/farm-school-and-school-garden-expenses)) (2).

## Learn More

The **USDA Farm to School Resources page** ([www.fns.usda.gov/farmtoschool/farm-school-resources](http://www.fns.usda.gov/farmtoschool/farm-school-resources)) hosts a curated list of school garden planning, funding, procurement, food safety and curricula resources from across the country. Read through OCFS’s **Fact Sheets** ([www.fns.usda.gov/cfs/fact-sheets](http://www.fns.usda.gov/cfs/fact-sheets)) as well to learn about tribal gardens, food safety in schools, and much more!



For more information and to sign up for *the Dirt*, the E-letter from the Food and Nutrition Service’s Office of Community Food Systems, please visit [www.fns.usda.gov/cfs/e-letter-archive](http://www.fns.usda.gov/cfs/e-letter-archive)  
Questions? Email us at [FarmToSchool@usda.gov](mailto:FarmToSchool@usda.gov)

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<sup>2</sup> Please note 2 CFR [Code of Federal Regulation] 225 is now found in 2 CFR 200.