Gardening® for grades

Florida Agriculture in the Classroom, Inc.

A comprehensive guide for Florida teachers
to help plan, fund, create and learn with a school garden

Florida Agriculture
in the Classroom, Inc.
AGRICULTURE KEEPS FLORIDA GREEN

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ISBN 978-0-615-41694-6

http://www.flagintheclassroom.com

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Getting Started

The Benefits of School Gardens

Teachers throughout Florida are helping students build gardens of all shapes and sizes in their schoolyard; whether they grow herbs in a sunny windowsill, a butterfly garden in containers along the hallway, or beds of vegetables and sensory garden plants on the school grounds. A school garden allows students to apply their standards-based education in unique, innovative and engaging ways. Every grade can discover a component of gardening that correlates with curriculum, from observing plants grown from seed, to measuring their growth, to designing experiments, to growing plants from historic novels, to creating a school market with the vegetables or flowers they've grown. This green farmers' guide helps teachers discover the applications of school gardens within their own classrooms and schoolyards and gives them techniques and resources to grow successful gardens.

Florida is unlike any other state in its climate and growing conditions; many other school gardening guides suggest plants that cannot take Florida's heat and humidity. Unlike northern and western regions of the United States, Florida has two growing seasons that are ideal for supporting school gardens; the cool season begins as school starts, and the warm season begins in early spring. This guide addresses Florida's unique gardening cycles and gives Florida teachers a comprehensive guide to helping plants thrive in the Sunshine State.

The first official school garden in the U.S. was planted in Roxbury, Mass., in 1890, using wildflowers and vegetables to teach students important concepts. Schools across the country began to develop school gardens as teaching and community outreach tools. World War I, The Great Depression and World War II encouraged and/or revitalized those efforts. Surveys taken during World War II indicated that 40 percent of all U.S. citizens had Victory Gardens, and that number rose to 53 percent in urban areas. Today, teachers (increasingly interested in school gardens to improve academic achievement and promote healthy lifestyles) are using gardens as a tool to engage all students in an active learning process. Gardens also connect students to the environment in the most direct manner possible.

Research has shown that gardening in school positively influences students' environmental attitudes, nutritional attitudes, self-esteem, test scores, school attitudes, interpersonal skills, social concerns and behavior. For example, students in third and fifth grade classrooms who learned science through gardening scored higher than classrooms that did not use the garden (National Gardening Association, 2002). A summary of National Gardening Association grant evaluations from 253 teachers across the country confirmed that their school gardens improved their students' environmental attitudes, self confidence, school attitude and leadership skills, among other improvements (National Gardening Association, 2009).

In Florida, student achievement scores have improved after implementing gardening programs that reinforce important FCAT concepts. Overall, school gardens improve academic achievement, healthy lifestyles, environmental stewardship and social development (California School Garden Network, 2006).

Florida Agriculture in the Classroom, Inc.'s *Gardening for Grades* activity booklet was designed to help teachers educate students about the importance of Florida agriculture. The booklet highlights several kinds of school gardens and the resources to create them. Florida produces more fresh vegetables than any other state except California; this guide introduces teachers to a few of Florida's fruit and vegetable success stories (Olson and Simonne, 2006).

Teachers who have created school gardens in Florida offer the following advice to those just getting started:

1. **"Start small. It's best to test the basics before incorporating a whole curriculum!"**
2. **"Relax: You don't need a green thumb! You and your students will learn important lessons together – even the failures are teachable moments."**
3. **"Projects look great for a few years, but if you don't get others involved, they could get overwhelming (or, when you leave, who will care for them?) Remember to involve other teachers, parents, your extension agents, community partners – everyone will contribute something important to the project, and it will keep you from getting overwhelmed."**
4. **"Let students eat what they grow, if you can – students will eat things they never would have otherwise, and it really builds their excitement!"**

— Teachers at Lake Silver Elementary School – Orlando, Fla.

School Gardens Across the State: Case Studies

Goldsborough Elementary, Sanford, Florida: Discovery and Sensory Garden

What did they create?

Goldsborough Elementary is a public magnet school in Sanford, located in an underserved neighborhood. The school had an unused courtyard between two buildings, the size of a tennis court, that had full sun all day and a water spigot along the wall.

The president of their PTA and the magnet resource teacher teamed up and thought, "Wouldn't some sort of sensory and butterfly garden work well with our curriculum?" They applied for a Lowe's Toolbox for Education grant and won $2,000 to design their garden — then, they asked for help.

A four-section garden was envisioned, with plants to attract butterflies and song birds, and two sensory gardens to explore smell, touch, sound and taste.

Who helped?

A community volunteer trained by the University of Florida Master Gardener program worked with teachers and the PTA president to select which plants were appropriate and created the design (see the Sensory Garden page 86). During art class, each child at the school created a unique stepping stone, which created the borders of the pathways.

Who takes care of it?

The school's after school Environmental Club weeds the garden, and a sprinkler set on a timer waters the area.

Who uses it?

The magnet resource teacher gives enrichment lessons regularly in the space. Other teachers bring their classes out during reading time, and some use the garden in their curriculum.

How much did it cost?

Twenty-five hundred dollars to build, and an additional $250 to maintain a few years later (second place winner of UF/IFAS School Gardening Competition). Materials were also donated.

What advice would they give?

The PTA president who started the garden and volunteers with the Environmental Club will move on when the children are out of the school. "Be sure a team of teachers is involved from the beginning, so they feel they have ownership of it, and if one moves on, the others can continue the project," she said. Other key elements were administrator and staff support: "Our administrators helped us work out issues with our grounds keeping staff, and our resource teacher makes sure the area is integrated into the curriculum."

Dayspring Christian Academy, Marianna, Florida: Fourth Grade Garden

What did they create?

Fourth graders at Dayspring Christian Academy in Marianna, in Northwest Florida, planted a school garden and each student had his or her row of vegetables in the garden. They each kept a journal and documented changes in their rows of vegetables.

Who helped?

A member of the community plowed the ground, and another member of the community spoke to the class about gardening-related topics. Students spread fertilizer and mixed it into the soil. Students planted the carrot and onion seeds and the potato eyes themselves.

Who takes care of it?

Each student had his or her row of vegetables so each one was responsible for hoeing, planting, weeding, watering and harvesting. The teacher demonstrated how to do these tasks.

Who uses it?

Fourth graders and their teacher used the garden.

How much did it cost?
The project only cost $80.

What advice would they give?
Students were thrilled to see their vegetables come up and realize they completed the whole process. They took their vegetables home to eat and some were so excited they took the tops, too. This project was a wonderful way for students to get 'hands on' experience with the unit on plants. To see the gleam in their eyes, the excitement in their voices and the pride in their work, made everything worthwhile.

St. Paul Lutheran School, Lakeland, Florida: Environmentally Friendly Gardening

What did they create?
St. Paul Lutheran has created a hydroponics gardening system, an in-ground vegetable garden, a native garden, a butterfly garden and a turtle garden housing native box turtles on their schoolyard. Pre-K through eighth grade use the gardens in different capacities, and the after-school Environmental Club maintains it. Students served food from the salsa and pizza gardens to a local nursing home and donated produce to the church food pantry. The school hosted an "Ag Day" with local F.F.A., Extension and other personnel to support students' gardening efforts. Subsequent grants helped establish a vermiculture system to help keep the garden soil healthy and teach students about recycling.

Who helped?
A local hydroponics grower helped advise on setting up the school's hydroponics system, while community volunteers helped design and build the in-ground gardens. A local blueberry farmer helped advise on the school's blueberry and strawberry plants.

Who takes care of it?
The Environmental Club, teachers and community volunteers.

How much did it cost?
Setting up the hydroponics system was approximately $400, and installing the literature garden was $300. The hydroponics garden is now used to grow new plants for the butterfly and literature garden so the garden maintains itself.

What advice would they give?
There are many training opportunities through Florida Agriculture in the Classroom and others; use these opportunities to learn more, and be sure to lean on the resources in your community.

"A sense of comradeship is created. Students of different ages and educational levels all work together toward a common goal."

Teachers from Sculptor Charter School, Titusville, Fla.

Site Checklist

Use this checklist to help determine what resources are available to create the garden.

1. Sun

- ☐ Plants make food from sunlight, and certain plants have adapted to "need" a certain amount of light to grow. Indoor plants can thrive with very low light levels, but most vegetables, fruit, herbs and flowers need six-to-eight hours of full sun to grow properly (typically between 9 a.m. and 4 p.m.). Gardening under trees, or in the shade of trees and buildings, can be done with certain types of plants. Teachers should consult their local master gardener or extension agent for direction about the types of plants that can grow in shady areas. Seed catalogs and packages will also provide this information.

- ☐ The sun's position moves from spring to summer to fall to winter, and an area that's in full sun one season, but surrounded by tall trees or buildings, may not have full sun the rest of the year. If the schoolyard is large enough, try to choose an area that is free from trees and away from buildings to minimize the chances of this happening. In Florida, vegetables grow best on the south side of a site, and in rows running north to south.

- ☐ Use the expertise of your schoolyard caretakers – they may know whether an area remains sunny year round!

2. Water

- ☐ Every type of garden will need easy access to water. Once you've found a sunny site, determine:
  - i. Are there water spigots outside, near the site?
    - 1. If not, can they be installed?
  - ii. It will be tedious to bring water from the classroom out to water plants. If classroom water is all that's available, think of creating small container gardens right outside the classroom.

- ☐ Melissa Watford, a coordinator of school garden programs in North Carolina, advises installing an automatic watering system for the garden. "The first summer we started, we had our kindergarteners watering every day – it pretty much burnt them out! Getting an automatic watering system is the way to go." Systems can be simple or complex, from soaker hoses, to automatic sprinklers, to low-flow irrigation systems.
  - i. Look for community partners to design the plan and install the irrigation system.

- ☐ If an automatic system is not possible, students can use the "cup of water" method, and dip a margarine tub (or other cup-sized container) in a bucket to individually water plants, or use a watering can. If using a hose to water, be sure to purchase a water wand, adjustable nozzle or other ways to soften the flow of water from the hose. Also, be sure to look for a camper or recreational vehicle hose that is labeled drinking water safe.

3. Space

- ☐ What space is available to garden?
  - i. Be creative. Look for raised planters around walkways, courtyard areas, and larger pieces of unused land.
    - 1. Important: Be sure the space is not used by any grade already; if it is, check with other teachers to reach a compromise about site usage.
  - ii. If space is tight, container gardening may be a good solution.
  - iii. Consideration should be made to avail all students equal access. For example, beds raised high enough will enable children in wheelchairs the same access as those not in wheelchairs.

- ☐ How many classes will be using the garden?
  - i. Ideally, each child would grow his or her own plant. An entire grade growing beans will need four inches of row per child, for example — 80 students will need two 14-feet-long rows of space for their bean seedlings. Hydroponics gardening allows plants to be grown vertically, maximizing space, but is limited as to the kinds of plants that thrive in these systems. See the Hydroponics growing section, on page 16 for more information.

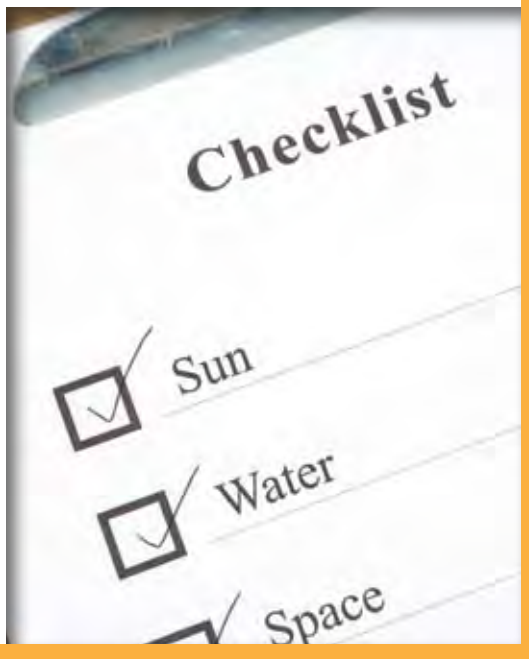
4. Time

- ☐ Planning
  - i. Which teachers and staff may want to assist in planning the garden?
  - ii. When will you create your garden plan and curriculum? (Most school gardens are planned in the summer and started in the fall season, to maximize growing during the school year.)
  - iii. How will you ensure that support staff and administration are involved in the plan? (See the following section for tips on winning administrator support.)

- ☐ Budgeting
  - i. List some local business and parent partners who could assist in gathering the supplies and expertise needed (garden centers, botanical gardens, irrigation and landscape companies, etc.)
  - ii. Who will be in charge of gathering current and future funds?

- ☐ Creating
  - i. Will the garden be created by parent volunteers, teachers, students, or all three?
  - ii. Are there volunteer organizations that can assist with the workday?

- ☐ Maintaining
  - i. How will the watering schedule, if needed, be decided? (A sign-up sheet for each weekend of the school year is helpful).
  - ii. When will the garden be weeded?
  - iii. Who will maintain the garden over the summer? (Many schools plant a cover crop, or a hot-weather crop like Boniato (Cuban sweet potato).



Writing a Winning Proposal

Administrative support is key for creating a successful garden. Administrators will help the maintenance staff, teachers and support staff work together to keep the garden growing and are useful in gathering resources and support for garden activities. Create a plan that incorporates:

1. Clear goals for addressing academic achievement through the garden
   - What do you hope the garden will accomplish?
   - Which standards will the garden activities address?

2. List of teachers willing to help with the design/implementation and who are committed to using it in their curriculum
   - A team of teachers is much more likely to implement a school garden than one alone

3. Proposed site design
   - Check with your county school board for a list of acceptable plants
   - See Chapter Three for details

4. Maintenance plan
   - Recruit parent volunteers, or use a teacher sign-up sheet, to water the garden on weekends; during the summer, many Florida schools put their gardens to 'rest', preparing them for a fall planting

5. Budget

6. List of potential supporters and funders

7. Steps needed to create the garden, and a proposed timeline

8. A sample liability waiver, and a plan to promote student safety

For help creating a school garden plan, visit the Gardening Wizard website:
http://www.schoolgardenwizard.org/
an effort of the U.S. and Chicago Botanical Gardens.

An enthusiastic principal can help gather resources, allow in-service training time, and help promote the garden to the larger community. Others to include in the planning process are:

- ❑ **Support staff, such as curriculum resource specialists, physical education and other extracurricular staff, and maintenance staff. These people often play crucial roles in keeping a garden project alive and functioning. Food service staff support can be crucial if lunch leftovers will be used to create compost for the garden.**

- ❑ **Community businesses could donate staff expertise and supplies; expert advice ensures a well-planned garden.**

- ❑ **County extension agents may be able to provide ongoing plant, pest management, soil testing and compost resources for the garden, as well as Master Gardener staff required to volunteer their time to assist community greening efforts.**

- ❑ **Parents can provide a host of resources, from volunteer labor to donations to expertise. Often, student involvement in a school garden translates into increased interest in gardening at home. Parents are a crucial link in this learning process.**

- ❑ **Students themselves should be involved in all stages of the process to maximize learning; from creating the site map, to measuring the area, to researching the correct plants, to creating the planting plan, and finally, to planting and maintaining the garden. Student leadership and ownership thrive when students help direct the process.**

A basic budget for a school garden includes the following considerations:

- ❑ **Plants**
- ❑ **Curriculum books and resources**
- ❑ **Compost**
- ❑ **Watering supplies**
- ❑ **Tools**
- ❑ **Fertilizer (needed to grow healthy plants, even with compost)**
- ❑ **Mulch (6 sheets of newspaper with a layer of straw over top works well to keep weeds in control)**
- ❑ **Peat moss (holds moisture in soil**
- ❑ **Perlite (adds oxygen to soil)**
- ❑ **Recycled plastic decking, untreated lumber or concrete blocks for garden beds**
- ❑ **Additional discretionary funds (this will help pay for unforeseen costs)**

Finding Funding

Many programs exist, both national and statewide, which provide funding for school gardens. Before searching for funding, make sure that a clear vision and plan is in place.

Many schools have had success with local or statewide sources of funding, depending on the size and scope of the project. Successful funding proposals build on the outline given for administrators and include realistic goals and timeframes. Before applying, be sure to research the grant program and make sure the garden fits the funder's priorities and that their resources meet the school's needs. A partial list of funding sources includes:

Local

Florida Agriculture in the Classroom: Funded through the Ag Tag, Florida Agriculture in the Classroom offers teacher grants and volunteer grants to assist teachers in building schoolyard gardens. Both programs strive to fund projects that teach Florida school children about the importance of agriculture and introduce them to agricultural producers and representatives in their areas.

Florida Agriculture in the Classroom Teacher Grants

Timeline

Grants due in October; final report due in April.

Eligible Applicants

Certified Florida teachers who integrate agricultural concepts into non-agricultural curricula.

Grant Requirements

- Must use agricultural concepts and directly involve students.
- Must incorporate Florida Agriculture in the Classroom curricula and materials.
- At least one farmer or agricultural industry representative must be involved in the project.
- Teachers must administer pre- and post-tests, and include results in the report.
- Community involvement, including a list of in-kind donations, is encouraged.
- A detailed budget spreadsheet must be included in the application.
- Because of food safety concerns, compost and/or animal waste is not to be used on edible plants.

For more information, visit: *http://www.flagintheclassroom.com/grants/grants.html*

Florida Agriculture in the Classroom Volunteer Grants

Timeline

Proposals due in March, winners selected in April or May, all funds spent by June of the following year.

Eligible Applicants

Agricultural non-profit organizations based in Florida that are interested in educating Florida students about Florida agriculture. Agri-science teachers who wish to expand agriculture beyond their classrooms are eligible for volunteer grants.

Grant Requirements

- Must have direct contact with Florida students in pre-kindergarten through 12th grade.
- Must expand an existing program or create a new program. (Not to replace existing funding.)

- Must include either monetary or in-kind matching contributions.
- Use of Florida Agriculture in the Classroom curricula and/or materials is encouraged and should be mentioned in the application and in the final report.
- Must include involvement of at least one local farmer or agriculture industry representative as a speaker or project helper.
- Must give students participating in the grant project pre- and post-tests and include the results of these tests in the final report. If needed, Florida Agriculture in the Classroom can provide pre- and post-tests.
- Because of food safety concerns, compost and/or animal waste is not to be used on edible plants.

Funding Guidelines

- Grants will be awarded in amounts up to $2,500.
- Grant projects awarded $1,000 or more may re-apply up to three times consecutively.
- Grant money cannot be used for transportation.
- Grant money cannot be used for consumables unless the food items are an integral part of the lesson plan and the end product.
- Grant checks will be made payable to an organization, not an individual.
- Grant checks not cashed within 60 days after receipt will become null and void.
- Half the money is paid up front. The other half is paid when the Final Report is submitted.

Florida Association of Science Teachers (FAST)

- FAST Mini Grants
  Open to FAST members or certified Florida teachers for projects that involve inquiring or hands-on science. Up to $500 available. Deadline is in September.
- For more information, visit: *http://www.fastscience.org/AwardsandGrants.aspx*

Florida Department of Education — Grow Healthy, School Garden Kits

- Start up school garden kits containing seeds, tools, curriculum books and resources, and classroom activities are available on a first come, first serve basis for schools.
- For more information, visit: *http://www.fldoe.org/bii/cshp/schoolgar.asp*

Florida School Garden Competition

Open to all Florida elementary schools (public, private and home). Grants are distributed to single-class gardens, multiple-class gardens and entire-school gardens. For more information, visit: *http://www.gardeningsolutions.ifas.ufl.edu/schoolgardens/*

F.F.A.

- Living to Serve Program Grants and Awards
  Focused on rural communities to develop, implement and evaluate community-based projects that meet an identified community need, using skills agricultural students are learning in their classroom. Up to $2,000 each, given to an F.F.A. chapter.
- Partners in Active Learning Support Program
  Matches high school and elementary school students in a mentoring program focusing on a community-based service project. Up to $1,000 each, given to an F.F.A. chapter.
- For more information, visit: *http://www.ffa.org*

Florida Farm Bureau

- Mini grants of up to $250 for all pre-K - 12 Florida teachers.
- For more information, visit: *http://floridafarmbureau.org/programs/teacher_mini-grants*
- Some County Farm Bureaus offer their own teacher grants. Use the resource guide at the back of this book to contact your County Farm Bureau.

"The students are having a great time in our outdoor classroom ... my favorite place to teach!"

Teachers from Elbridge Gale Elementary, Wellington, Fla.

Funding Links At-a-Glance

Florida Agriculture in the Classroom
http://www.flagintheclassroom.com/programs/grants/grants.html

FAST
http://www.fastscience.org/AwardsandGrants.apax

Florida Department of Education, School Gardens
http://www.fldoe.org/bii/cshp/schoolgarfund.asp

Florida School Garden Competition
http://www.gardeningsolutions.ifas.ufl.edu/schoolgardens/

FFBF
http://floridafarmbureau.org/programs/teacher_mini-grants

Florida Nursery, Growers and Landscape Association
http://www.fngla.org/community-programs/arbor-day

Lowes
www.toolboxforeducation.com

National Gardening Association
www.kidsgardening.org

National Science Teaching Awards
Visit http://www.nsta.org/about/awards.aspx

Sea World/Busch Gardens
Visit http://seaworld.org/conservation-matters/eea/index.htm

America the Beautiful Fund
http://america-the-beautiful.org/free_seeds/index.php

Florida Nursery, Growers and Landscape Association (FNGLA)

- Arbor Day – free tree vouchers to select 4th grade classes. For more information, visit: *http://www.fngla.org/community-programs/arbor-day*

Possible Cash, Materials or Service Donations:

- Local Chamber of Commerce
- Local community Partners in Education
- Local garden clubs
- Local service clubs (Rotary, Elks, Jaycees, Kiwanis, etc.)
- Local club chapters (Sierra Club, Florida Native Plant Society, etc.)
- Local home supply stores
- Soil and water conservation districts

National

Lowes: Toolbox for Education Awards

Open to all schools, nationwide. Grants of up to $5,000 are available per school. Preference is given to schools in underserved areas. Projects must be completed within a year of receiving funding.
For more information, visit: *www.toolboxforeducation.com*

National Gardening Association: Youth Garden Grants

Schools, youth groups, community centers, camps, clubs and intergenerational groups in the United States, working with at least 15 children ages three-to-18. Programs that emphasize integration into the curriculum, nutrition connections, environmental awareness, entrepreneurship or social development related to gardening will be given priority. Required to submit an impact report. Several grants available, ranging from $250-$1000. Grants due in November.

For more information, visit: *www.kidsgardening.org*

This site also contains links to a host of other gardening grant opportunities.

National Science Teaching Awards

- DCAT "Making a Difference" Award
  This award will recognize and honor excellence in a science program developed and implemented by middle-level science teachers, grades sixth-to-12. Entries must show innovative and effective teaching strategies combined with a science program that has influenced students to explore and investigate science and its application to global problems. Innovative middle-level science programs are eligible for $2,500 to be used to enhance or expand the winning science program; the winning school's lead science teacher and principal will be awarded coach airfare and two nights hotel accommodation to attend NSTA's National Conference.
- Teachers may be eligible for other awards. Visit *http://www.nsta.org/about/awards.aspx*

Sea World/Busch Gardens Environmental Excellence Award

Eight groups will be awarded $10,000 each, and one teacher from those groups will be awarded $5,000, based on their project to address an environmental issue. All schools (grades K-to-12) in the United States are eligible to apply. Projects must be sponsored by a formally recognized school group, such as a grade level, classroom or club. Public, private, and licensed home schools are all eligible to apply. Individual students (e.g., science fair projects) and previous award-winning projects are not eligible to apply.

- For more information, visit: *http://seaworld.org/conservation-matters/eea/index.htm*

America the Beautiful Fund: Operation Green Plant

- Distributes free surplus seeds to school and community garden programs.
- Request form and details available at: *http://america-the-beautiful.org/free_seeds/index.php*
- Note: some seeds may not be Florida-friendly varieties.

Food Safety

Garden Preparation:

Soil should be tested for contaminants before planting, especially if the school garden is near parking areas or other high-traffic zones. Consider purchasing soil meant for food production from an established retail entity to ensure soil safety and traceability. Water for irrigation needs to be potable and from a tested source. Soil and water testing kits are available through state agricultural extension offices or state health offices. Building materials for garden beds, containers, stakes or trellises should be constructed of nontoxic, non-leaching material (no pressure treated wood or used tires).

Growing Practices:

Consider the source when buying seeds for a school garden. Look for quality, certified pest-free seeds that come from companies that have taken a "safe seed pledge." Use natural and synthetic crop-protection chemicals cautiously and in accordance with label wording, as the label is the law. Any crop protection chemical will indicate the use limitations and required pre-harvest intervals. Coordinate with school grounds-keeping or custodial staff about school garden goals, protocols and maintenance plan, especially concerns about the presence of lawn or school crop-protection chemicals on or near the garden. Organic matter should be fully composted in aerobic conditions and at high temperatures for required time durations before application. Do not use raw manure. Limit composted manure to what can be bought from a commercial outlet to ensure traceability and to assure it has been properly treated. If your school has a composting program for cafeteria waste, use that compost for flowers, ornamental plants and trees rather than for garden beds where food is grown.

Harvesting and Handling:

Students, staff, parents or volunteers involved in harvesting should wash hands thoroughly in warm, soapy water for at least 20 seconds before harvesting. Anyone with open cuts or wounds on their extremities, who has been sick or "under the weather" in any other way, should not participate in harvest until they have healed or recovered. All harvesting tools — scissors, bowls, tubs — should be food grade and/or food service approved and designated solely for harvest and food handling. The tools should be cleaned regularly with hot water, soap and sanitizing solution, and then dried. School garden produce delivered for use in a school cafeteria should be received by food service personnel upon delivery with the same system used to receive and inspect all other incoming products. If storage is necessary, produce should be cooled and refrigerated promptly after harvest. Temperatures vary

Fresh, Healthy & Safe Food: Best Practices for Using Produce From School Gardens:

School gardens, an important part of the Farm To School effort, are educational living laboratories. Produce from school gardens can be a part of school cafeteria meals, can be donated to the community, or can be used in classroom and after-school taste-testing activities to further educate students in the "seed to table" concept. When students are involved directly in the growing and harvesting of healthy fruits and vegetables, they are more likely to try those foods and incorporate them into a healthy-foods diet.

— Farm to School Program

on type of produce being harvested; specific post-harvest storage and transportation temperatures can be found at http://postharvest.ucdavis.edu/produce/storage/index.shtm/. School garden produce should be washed according to the standards in place for conventionally received produce. Staff with ServSafe or comparable food-safety certification should supervise students, parents, or staff who participate in any food preparation, taste-testings or special cafeteria events.

Other considerations and recommendations:

Review school district rules and regulations. Some plants that can cause serious allergic reactions (peanuts) may be prohibited. There may also be limitations on other plants (cotton) due to federal insect control programs (Boll Weevil Eradication) or invasive species restrictions. Align a school garden program with any relevant school district wellness policies, school procedures for receiving gifts and donations, working with parent and community volunteers, and district liability policies. Safe handling information should be provided to anyone involved in the growing, harvesting, and preparing of foods from a school garden. Consider using your school garden as an educational tool to teach students about food safety procedures and incorporate curricula that teach to these issues in your garden educational plan. The best practices outlined in this brochure are intended to serve as a framework and may be easily adapted to meet individual school settings and regional requirements.

"We are looking forward to continuing with our mission to make a perfect salad ... from the ground to the plate!"

Teachers from Croton Elementary, Melbourne, Fla.

Your Green Thumb Guide to Florida Gardening Basics

Completing the site inventory checklist will give an idea of what resources are available. School gardens can thrive in containers along a walkway (or even in the classroom), in boxes or rectangles of wood on the school grounds (raised bed gardening), planted in traditional rows directly into the ground, or even grown hydroponically. The key is choosing the right plan and plants for the resources available; plant characteristics facilitate a variety of growing techniques or limit the growing variations one may employ.

Container Gardening Basics

Many vegetables, herbs and flowers can be grown in containers, provided that the same spacing rules are followed and adequate fertilizer is applied. Importantly, a good potting mix should be purchased and used in the container — this provides the correct air and organic matter mixtures that plants need. Fertilize container plants more often, as they have less access to nutrients in their confined space. Here are some suggestions for inexpensive containers and the types of plants that can be adapted to that container size (Stephens, 1999):

- Pots, cans, milk jugs: chives, green onions, herbs, radishes, parsley and lettuce
- Concrete blocks: bush beans (two-to-three plants in each section), parsley, herbs, lettuce
- Large, black plastic bags: tomatoes
- Bushel baskets, five-gallon trash cans: tomatoes, eggplants, peppers, pumpkins, cucumbers, cantaloupes and smaller vegetables
- Foodgrade barrels: strawberries (Set strawberries in holes along sides of barrel and in top.)

Herbs, strawberries, squash and other vegetables can be grown in traditional window box or terra cotta containers — specific vegetables are included at the end of this activity booklet. Pre-fabricated systems such as EarthBox and GrowLab are available for purchase. EarthBox containers are used in many schools; this is a modified system that closely resembles hydroponics. Peat moss, not soil, is used to keep plants in place, a plastic sheet covers the peat moss around the plants, and a fertilizer strip (it is recommended to put fertilizer in a nylon stocking to keep it in a strip) provides nutrients. Water is added in a reservoir at the bottom, and an automatic watering system is available for purchase – keeping the reservoir full means the system is never over-watered. GrowLab is a product from the National Gardening Association, and is handy for classrooms without windows or access to outdoor growing spaces. Fluorescent lights are provided with the containers.