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For more information about the Center for a Livable Future,  
please see our website at [www.jhsph.edu/environment](http://www.jhsph.edu/environment) or contact us at 410-502-7578

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## Picture your garden.

Roots grow. Worms crawl.  
Flowers bloom. Insects pollinate.  
Beetles buzz. Compost decays.  
Sunlight shines. Seeds develop.  
Rains fall. Nutrients cycle.

These are some of the activities that occur every day within a garden. A garden is a dynamic environment that captures the attention of those who spend time there. The biological diversity of a garden provides an opportunity for exploration and learning in a hands-on outdoor classroom.

A school garden can be a valuable educational resource and an important educational tool. A garden provides a rich, multi-sensory learning environment for students to investigate. Teachers can nurture students' natural curiosity and their desire to explore and understand the things they'll experience in a garden.

*"One of our major tasks as educators is to expand the imagination about our possibilities."*

-Wes Jackson, Becoming Native to This Place

In these times of fund-strapped schools and standardized testing requirements, you might ask, "Why should we have school gardens in our communities?"

1. Successful school gardens demonstrate that children learn science, social skills, arts, math, writing, nutrition and reading when taught through the hands-on work of a garden.
2. Children can get back to nature and straight to the source of our healthiest foods: fruits and vegetables! Especially in urban schools, where the children are surrounded by asphalt and blacktop, exposure to these learning opportunities is increasingly important.
3. School gardens can teach children, families and communities how to grow vegetables together. This is especially important in Baltimore area neighborhoods that lack adequate stores for families who want to prepare healthy foods.
4. The school cafeterias can be supplemented with healthy, self-grown food.

**So, why wait any longer? Let's get started on your school garden...**

It's daunting to think about the number of steps it will take to get a garden up and running, but there are an incredible number of resources out there to help you with everything from planning to ways to incorporate the garden into your curriculum.

## HISTORY OF GARDENS

School gardening efforts in the United States date back to the 1890's, and are linked with the development of community garden efforts. The U.S. school garden pioneer was Mrs. Fannie G. Parsons, Director of the First Children's School Farm in New York City, and President of the International Children's School Farm League.

During the first decade of the twentieth century schools and gardens became associated as educational reformers and philosophers began to stress the correlation between learning and personal, active experience. Gardens were conceived as a means of bringing children into closer relationship with their environment.

This type of experiential learning developed momentum across the country; in 1910 there were approximately 80,000 school gardens maintained in the United States. Gardens, and in the larger context, nature, have long been a component of what educational progressives have associated with "real life" or "hands-on" learning.

## HOW CAN A SCHOOLYARD GARDEN BE A VALUABLE EDUCATIONAL TOOL?

**It engages students in learning...**

A garden is a dynamic, living learning environment that engages students' curiosity and encourages them to investigate its diversity. A garden provides students with a multi-sensory learning environment where they can see, smell, taste, touch and move the educational tools they are using. In a garden, students learn through many of their senses, and this enhances their education and motivation to learn about nature, nutrition, and other subjects.

**It extends meaning in a unique learning environment...**

A schoolyard garden expands traditional learning and teaching opportunities for students and teachers, and it provides students with a place to apply many of the lessons they learn in the classroom. A schoolyard garden provides an educational setting that can engage students with many different learning styles. It involves hands-on activities that encourage students to move, to observe, and to work in groups to solve problems. In addition, a garden gives students the opportunity to integrate the lessons they learn in the classroom with the knowledge they gather from the garden.

**It can be used to explore specific content areas...**

In science, a garden can help to teach and reinforce a host of skills, including observation, measurement, data collection, generating hypotheses, and comparing and contrasting. A garden can help teachers address specific topics in nutrition, classification, ecology, habitats, conservation, food chains, decomposition, plants,

photosynthesis, insects, life cycles, weather, seasonal cycles and changes, geology, and chemistry.

In mathematics, a garden can be used to develop and to apply skills in number and operation, geometry, measurement, and collecting, organizing, and displaying data.

In the language arts, a garden can be used to expand students' vocabulary and to explore various reading comprehension strategies, such as cause and effect, sequencing, predicting, and problem solving. A garden also provides the opportunity for authentic writing opportunities, including personal response paragraphs, poems, descriptive writing, observation essays, illustrations, and journal entries that chronicle plant growth, make predictions, or describe and respond to events in the garden.

**It develops school stewards...**

In addition to these educational rewards, a schoolyard garden can encourage in students an increased sense of pride, ownership, and responsibility for their school and for their education. A schoolyard garden invites students to become active stewards of their school grounds.

School gardens offer benefits to you and your students that go far beyond the classroom. School gardens provide the opportunity for students, teachers and members of the community to interact. This interaction may allow for an improvement of interpersonal social skills and can teach students how to work cooperatively with each other and their elders. Studies find that children who are allowed to learn in an outdoor environment such as a garden or outdoor classroom have improved environmental attitudes - a critical point, since these children will one day be responsible for caring for us and our planet (Dobbs 1998, Skelly 1998 & McGuinn 2001).

## GETTING STARTED

How do you begin planning a school garden? What if you have little or no gardening experience? School gardens can be large or small, in containers or in the ground, inside or outside the school, contain many diverse plants or just a few - basically, they can be created to fit your school's resources and needs.

### **PLANNING:**

1. Get Permission - Before beginning, get official permission from your school's administration. Ask what space is available for a garden.
2. If your school is in Baltimore City, please contact Mr. Willford at (410)396-8670 for facilities issues and Mr. Taylor at (410)396-0851 for grounds issues at the Department of Education. They must know about your plans; they have responsibility for the green areas of all city schools. Also, call Miss Utility at

1-800-257-7777 before you start digging, to make sure that any blacktop removal or deep digging does not hit buried utility lines.

3. Get Organized - Purchase a large binder with paper and pockets to record your efforts, jot down ideas, and keep resource materials and receipts. This "master binder" can be passed along from year to year to provide necessary information for future school gardeners.
4. Put it on Paper:
  - Be Conservative - Create a garden only as large as your school and its resources can maintain easily. A garden can always be expanded in years to come.
  - Sketch it Out - Prepare a basic drawing or diagram on paper. Include the garden location, dimensions, walkways, water source, tool storage, and fencing/gate specifications, if applicable. List tasks necessary to construct the garden.
  - Pick your Crops - Prepare a list of fruits, vegetables, herbs and flowers that can be successfully and easily grown during the available growing seasons. Determine how much can be planted; planting, harvesting and blooming dates; row spacing; water and sunlight needs; and where to grow each in the garden.
  - Keep Records & Photos - Record all dates, activities and expenses in the "master binder" as they occur to aid in planning for future gardens. Also, take a few photos each year to help document your activities.
5. Identify Volunteers - Identify and enlist the help of those who can work on a gardening project, particularly those with gardening experience. This can include teachers, parents, local volunteers, Master Gardeners or community groups (especially groups that offer after-school summer programs).
6. Get Ideas - Visit other school gardens in your area. Take note of different layouts, locations, water sources, tools, and storage areas. Ask about financial and local resources they may utilize.
7. Identify Financial Resources - For many schools, financial limitations may be the biggest challenge. A small amount of money and some creative partnerships can be enough to begin an effective school garden. Some ideas for funding include:
  - Ask your administration what is available from your own school budget.
  - Solicit donations from the PTA, local businesses, and parents. This can include mulches, seed, soil amendments/fertilizers, tools and supplies.
  - Identify funding or grant resources.

- Send thank you notes, updates, and/or pictures to show appreciation and encourage future assistance.
8. Work With Teachers - Find out who is interested in participating. Discuss the following options:
    - Possible garden location on the school grounds
    - Garden design - raised beds, containers, and/or level tilled earth
    - Communal sharing or dividing up of garden space
    - Construction & maintenance - garden responsibilities
  9. Communicate Your Ideas:
    - Talk to your colleagues, the principal, parents and students. When possible students of all grade levels should be encouraged to participate in the garden.
    - Talk to neighbors or people who run a summer camp in your area about watering the garden during the summer months. Or come up with a watering schedule that can be shared among the teachers and parents.

## GARDEN LOCATION

1. Nearby Water Source - source should be as close to garden as possible, and if it is off school property, make sure you receive permission to use it.
2. Good Drainage - location should not be in low spot where water collects.
3. Level Ground - sloping or hilly ground is difficult to work on.
4. Direct Sunlight - 6-8 hours of direct sunlight per day. Avoid shady trees and buildings. A garden can be set up on the south side of a building, however.
5. Accessible & Visible - children should have easy access to observe and work in the garden. Consider wheelchair accessibility.
6. Secure & Safe - avoid high-traffic play areas, areas adjacent to sidewalks or streets, and areas near ditches/waterways where snakes/rodents may invade the garden. Consider a fence or border planting and lockable shed for tools.
7. Permanent - location should remain fixed. Check future school construction plans.
8. Multiple - consider using multiple plots on school grounds to utilize more space.
9. Soil
  - Avoid areas treated with herbicides - potential plot should have existing weed and grass growth.

- Workable, loamy soil - remains crumbly, holds water & well aerated.
- Determine if the soil is contaminated with lead or other heavy metals! (see University of Massachusetts Amherst Cooperative Extension Service Soil Testing Laboratory in the “National Resources” section of this toolkit)

10. Availability of Storage Space - for tools, potting supplies, amendments (soil treatments), etc.

### WHAT KIND OF GARDEN SPACE DO YOU WANT?

*Communal Plots* - garden space and plants shared among all participants. Communal plots allow for crops that require more space, such as corn or pumpkins. Responsibility for the garden and the daily workload are spread among all participants.

*Individual Plots* - garden space divided up and assigned to groups/classes. This allows individual groups or classes to design and care for their assigned space. Responsibilities for care are clearly and easily defined.

#### *What type of garden should your school plant?*

Depending upon the interests of teachers and school administrators and the resources of your school (space, time for student instruction, funding), a schoolyard garden can take on many forms. Here are some different gardening techniques to think about when planning your garden. These techniques can be combined to create a successful project, and your garden can evolve from season to season to include a variety of these techniques.

**Direct Planting:** Where the layout of the schoolyard and the soil conditions allow, a part of the schoolyard can be turned over for planting directly into the ground. The soil can be prepared by hand, with shovels and digging forks, or by a power tiller that can be rented from most large hardware stores. Also the Parks and People Foundation has some power tools you may be able to borrow and lots of knowledge. At schools adjoining parks or recreational playing fields, it may be possible to coordinate the garden tilling with the maintenance of these fields. Tractors with special tilling equipment are often used to groom baseball fields; this equipment can also be used to till a garden.

**Raised Beds:** If the soil in the designated garden lacks nutrients, is too tightly compacted to turn over, or contains lead or other contaminants, gardeners will often build raised beds to make the gardening easier, safer and more productive. In a raised bed system, gardeners use wooden boards (NOT boards treated with arsenic or creosote!) or other barriers to build a square or rectangular frame that is placed on the garden site, creating a box about 6” to 10” high. The box is then filled with soil or compost, and seeds and plants can be grown directly in this bed.

**Important Note:** if it has been determined by University of Massachusetts Amherst Cooperative Extension Service Soil Testing Laboratory that your soil is contaminated, raised beds will need to be 3' deep, since the roots of vegetables can extend more than 10" deep.

Both soil and compost can be purchased at hardware stores or from garden centers; gardeners can request free deliveries of leaf compost from the Horticulture Division of the Baltimore City Department of Recreation and Parks. A series of these raised beds placed throughout the designated space can create a garden with easily defined growing areas and walking pathways. If soil contains contaminants contact a Master Gardener for additional advice.

**Container Gardening:** If your schoolyard has little or no open, unpaved space, or if the soil is unsuitable for gardening, consider starting a garden in containers. Pots, barrels, and buckets made of plastic, clay, or wood can be placed outside in a designated gardening area. A wide variety of plants can be grown in containers, depending on the depth of the container. Container gardening is a practical way to garden when planting into the ground may not be an option.

**Indoor Gardening:** Many schools have developed successful gardening projects that are located entirely within the walls of students' classrooms. Indoor gardening projects can vary from plants in containers situated in a sunny windowsill, to more elaborate configurations involving grow lights and planting trays. An indoor garden can also be a way to raise plants that will soon be planted outdoors. It can also be a way to give students the experience of working with plants before an outdoor gardening space is established. An indoor garden can also be used with a science program to explore important concepts in life science and scientific experimentation. If your school can't grow plants outdoors, consider raising seedlings for another school, community garden or environmental organization.

## GARDEN THEMES

Some schoolyard gardens are similar to home gardens containing vegetables, herbs, and flowers. But many creative educators have developed schoolyard gardens that are built around a particular theme. These garden themes are often coordinated to provide classroom teaching opportunities. Examples of some garden themes are listed below, but feel free to let your imagination and your curriculum guide you toward other gardening ideas.

- ***Three Sisters/Native American Garden...*** The planting of corn, beans, and squash (called the Three Sisters in Native American agriculture) is a traditional Native American planting. Teaching opportunities include Native American stories and culture, plant adaptations and parts, and the environmental and health importance of growing these three crops together.

- ***Salad Garden...*** Planting some ingredients for a salad (a variety of lettuces, spinach, carrots, beets, celery, herbs, etc.) gives students the opportunity to create a healthy, edible treat from scratch. Teaching opportunities include nutrition information and the vegetable and fruit food group, and planning the layout of a garden.
- ***Pizza Garden...*** Almost all students (and teachers) love pizza! Imagine everyone's delight when the students' garden provides a delicious pizza for a classroom feast. By planting tomatoes, peppers, onions, basil, oregano, and other plants, students can grow the ingredients for a satisfying treat. Students can even plant a small patch of wheat to develop an understanding of the source of the flour used to make a crust.
- ***Tops & Bottoms Garden...*** The edible parts of plants come from a variety of different places. For some plants, we eat the leaves of the plant which grow above ground. For others, we eat the roots that grow hidden from view. A garden of crops that produce edible tops (a variety of lettuces, colorful Swiss chard, collard and mustard greens, spinach) and edible bottoms (carrots, beets, radishes, potatoes, peanuts) provides an opportunity for students to explore the parts of plants they eat and the nutrition stored in different plant parts. Teaching opportunities include nutrition information and plant adaptations and parts.
- ***Nutrition Garden...*** Your garden can highlight nutritious food choices and can help students develop an understanding of seasonal produce that is locally grown. Learning where food comes from can link your garden to geography and history. Developing a class cookbook can collect favorite recipes from the crops you've grown.
- ***Non-Edible Gardens...***
  - ***Dyers garden:*** Contains plants that were cultivated for their natural dyes. Plants include indigo, madder, marigold, cosmos, and others. Kids can actually "wear" their garden if one of their projects is to dye t-shirts!
  - ***Butterfly Garden:*** The beauty of a garden of showy and colorful flowers and herbs is appealing to humans as well as to butterflies. Planting certain flowering species (Zinnias, Marigolds, Cosmos, Alyssum, Bachelor's Buttons, V, Mexican Sunflowers, Black-Eyed Susans, and Butterfly Weed) can create a habitat suitable for attracting butterflies. Butterflies are an exciting insect for observation and study in the garden and in the classroom.
- ***Others...***
  - Worm composting garden
  - Heirloom seed gardens

- Native grass garden for organizations such as the Chesapeake Bay Foundation

## GARDEN RESPONSIBILITIES

- Regular Weeding, Watering, & Maintenance - gardens need at least weekly attention.
- Determine if volunteers need to be recruited or if students/teachers can handle the necessary tasks. Do not expect school maintenance or grounds personnel to maintain the garden.
- Vacation & Summer - ensure the garden will receive attention during vacation periods. Schools operating on traditional tracks need to determine if the garden will grow during the summer or be dug up and covered with mulch, plastic, or cover crops until fall. Team up with a nearby community group or summer children's program to see if they might be willing to help maintain the garden over the summer.

## TOOLS & SUPPLIES

### ESSENTIAL

Rake  
 Plant Tags  
 Scissors (for cutting twine)  
 Garden hoes  
 Garden shovels and spade  
 Wooden stakes  
 Rubber hoses/nozzles & sprinkler  
 Gloves (rubber & gardening)  
 Clippers (for harvesting)  
 Hammer or mallet (for pounding stakes)  
 Large trash & recycling containers with covers  
 Buckets, pails, bags, sacks, or baskets (to collect and carry garden items)  
 Indoor storage area (tool shed or other storage area near garden)  
 Wheelbarrow (not essential, but VERY helpful)

### EXTRA

Spading forks  
 Trowels  
 Twine or string  
 Watering cans  
 Thermometer  
 Broom

### **Tool Tips:**

- Get the best quality tools the budget will allow.
- Always clean tools after each use. Cutting edges need to be regularly sharpened.
- Teach children appropriate and safe use of all tools.
- Keep children safely away from all power equipment.

## DONATIONS, DONATIONS, DONATIONS

Plants, seeds, soil, mulch, and gardening tools are often available if you **ASK** for them. Talk to local garden supply stores, nurseries, home improvement stores,

grocery stores, etc. Have a letter typed on your school's letterhead that you can quickly give/fax/email to the store manager. Solicit donations several months before you will actually need them - they get LOTS of requests and donations are usually made on a first-come-first-served basis.

### WAYS TO INCORPORATE A GARDEN INTO YOUR CURRICULUM

A school garden can be integrated into the classroom in many ways. Typically, gardens have been used to enhance science lessons. Lessons pertaining to plants are the easiest to teach with a garden, but you should not limit your garden to these types of lessons. With enough creativity, the garden and garden activities can be applied to just about any lesson taught in the classroom. There are many supplements and resources available to help you incorporate the garden into your classroom, but again, your own creativity is your best asset.

Science and math have been the subjects most frequently taught with the help of the garden. At the most basic level, a garden lends itself perfectly to teaching:

- plant parts & plant growth
- life cycles
- nutrition/food groups
- biological diversity
- food web

Other science lessons that can be used with the help of the garden might include:

- soil composition
- composting
- weather
- insects (this is very easy if you have a butterfly garden)

When students help plan and design a garden the following math skills can be strengthened:

- measuring
- calculating
- budgeting
- planning ahead/prioritization skills

History and language arts lessons can also be enhanced with the garden.

- Students can learn about the history of Native American and early settler food production.
- They can compare the types of food eaten around the world and in their homes.
- Students can also read about Native American legends and early folklore that deal with gardening and crop production.

Artists and writers have been inspired by plants and gardens for centuries:

- Introduce students to poems or stories about gardens and have them compare their garden with that in the literature.
- Keeping a “garden journal” is an effective way to improve writing and speaking skills. Urge them to paint or draw pictures of the plants, fruits, vegetables, insects and birds that they will see in their gardens.
- Laminate seed packets or have them draw/paint their own row markers for the garden.

While a garden is custom-made to teach science lessons, a garden can teach much more. Studies are finding that the more actively involved students are in their learning, the better they learn. A garden is the perfect place for hands-on active learning, and the more it is used, the more your students will learn from it.

OK, now that you're fired up about starting a school garden, we've provided tons of resources to get your garden growing...

## LOCAL RESOURCES

### *Baltimore City Agencies:*

If your school is in Baltimore City, please contact Mr. Willford at (410)396-8670 for facilities issues and Mr. Taylor at (410)396-0851 for grounds issues at the Department of Education. They must know about your plans; they have responsibility for the green areas of all city schools.

A Baltimore City Department of Public Works program requires that builders who cover and seal ground have to open up another area of ground to assist water run-off to the Chesapeake Bay. Contact Norman Seldon, Engineer, at [Norman.Seldon@baltimorecity.gov](mailto:Norman.Seldon@baltimorecity.gov).

The Horticulture Division, Baltimore City Department of Recreation and Parks, will deliver truckloads of composted leaves and wood chips to garden projects in Baltimore City. To set up delivery, call (410)396-0180.

Leafgro®, a rich organic compost created from leaves and grass clippings, is also available by the bag at most garden centers or hardware stores. Harding & Sons, (410)242-0260, sells 50 pound bags for \$2.95 per bag and loose material for \$36.00 per cubic yard. Delivery of the Leafgro® is possible for an extra charge; please call Harding & Sons for details.

### *State Agencies:*

Maryland Cooperative Extension Service, Baltimore City Office, provides technical assistance, printed gardening information, urban gardening workshops, and some volunteer help, including access to Master Gardeners. Contact (410)396-1888 or go to: <http://www.agnr.umd.edu/BaltimoreCity/>

The Master Gardener Program is designed to train volunteer horticultural educators for Maryland Cooperative Extension- the principal outreach education unit of the University of Maryland. Participants receive 40-50 hours of basic training from University professionals and then agree to work in their communities to teach Marylanders how to cultivate and sustainably manage garden spaces using research-based information. For more information, go to: <http://mastergardener.umd.edu/>

Consumers can get answers to questions about home horticulture problems by calling Maryland Cooperative Extension’s Home & Garden information Center at (800)342-2507 or go to their web site ([www.hgic.umd.edu](http://www.hgic.umd.edu)) to ask questions. Digital pictures of plants and insects may also be submitted for identification.

<b><i>Local Suppliers:</i></b>	
<p>Meyer Seed Company 600 S. Caroline Street Baltimore, MD 21231 (410)342-4224</p> <ul style="list-style-type: none"> <li>▪ <i>Sell seeds, transplant plants, soil amendments &amp; garden equipment</i></li> </ul>	<p>Valley View Farms 11035 York Road Cockeysville, MD (410)527-0700</p> <ul style="list-style-type: none"> <li>▪ <i>Sell flowers, plants, shrubbery, seeds, tools, aquatic-garden supplies &amp; trees</i></li> </ul>
<p>Harting &amp; Sons 2917 Hammonds Ferry Road Baltimore, MD 21227 (410)242-0260</p> <ul style="list-style-type: none"> <li>▪ <i>Sell building materials &amp; supplies, stone, sand, Leafgro, mulch, fill dirt, natural stone</i></li> </ul>	<p>Lowe’s Home Improvement <a href="http://www.lowes.com">www.lowes.com</a></p> <p>Home Depot <a href="http://www.homedepot.com">www.homedepot.com</a></p> <ul style="list-style-type: none"> <li>▪ <i>Check website for local locations</i></li> <li>▪ <i>Sell garden tools, wheelbarrows, carts, fencing, gardening gloves &amp; clothing, hoses, watering cans, etc.</i></li> </ul>

<b><i>Local &amp; Regional Non-Government Organizations:</i></b>	
<p>Civic Works 2701 St. Lo Drive Baltimore, MD 21213 (410)366-8533 <a href="http://www.civicworks.com">www.civicworks.com</a></p>	<p>Living Classrooms Foundation 802 South Caroline Street Baltimore, MD (410)685-0295 <a href="http://www.livingclassrooms.org">www.livingclassrooms.org</a></p>
<p>Chesapeake Bay Foundation Philip Merrill Environmental Center 6 Herndon Avenue Annapolis, MD 21403 (410)268-8816 (410)269-0481 (from Baltimore) <a href="http://www.cbf.org">www.cbf.org</a></p>	<p>Parks and People Foundation Stieff Silver Building 800 Wyman Park Drive, Suite 010 Baltimore, MD 21211 (410)448-5663</p> <ul style="list-style-type: none"> <li>▪ <i>“A Guide to Greening Neighborhoods”</i> <a href="http://www.parksandpeople.org/publications/special_reports/GTGN">http://www.parksandpeople.org/publications/special_reports/GTGN</a></li> </ul>

***Local & Regional Non-Government Organizations (continued):***

Maryland Agricultural Education Foundation (MAEF)  
 403 Oakington Road  
 PO Box 536  
 Havre de Grace, MD 21078  
 (410)939-9030 fax (410)939-9035  
[www.maefonline.com](http://www.maefonline.com)

Master Gardening Program  
 Maryland Cooperative Extension,  
 Baltimore City Office  
 17 South Gay Street  
 Baltimore, MD 21202  
 (410)396-1753  
[www.agnr.umd.edu/baltimorecity](http://www.agnr.umd.edu/baltimorecity)

***Local Nature Education Centers and Resources:***

Carrie Murray Nature Center  
 1901 Ridgetop Road (at Leakin Park)  
 Baltimore, MD 21207  
 (410)396-0808

Maryland Association for Environmental and Outdoor Education  
[www.maeoe.org](http://www.maeoe.org)

Irvine Nature Center  
 8400 Greenspring Avenue  
 Stevenson, MD 21153  
 (410)484-2413  
[www.explorenature.org](http://www.explorenature.org)

Oregon Ridge Nature Center  
 13555 Beaver Dam Road  
 Cockeysville, MD 21030  
 (410)887-1815  
[www.oregonridge.org](http://www.oregonridge.org)

***National Resources:***

Kitchen Gardeners International  
 7 Flintlock Drive  
 Scarborough, ME 04074  
 (207)883-1107  
[www.kitchengardeners.org](http://www.kitchengardeners.org)

National Gardening Association  
 1100 Dorset Street  
 South Burlington, VT 05403  
 (800)538-7476  
[www.kidsgardening.com](http://www.kidsgardening.com)

Center for Ecoliteracy  
 2522 San Pablo Avenue  
 Berkeley, CA 94702  
 (510)845-4595  
[www.ecoliteracy.org](http://www.ecoliteracy.org)

Community Food Security Coalition  
 P.O. Box 209  
 Venice, CA 90294  
 (310)822-5410  
[www.foodsecurity.org](http://www.foodsecurity.org)

Center for Environmental Education @  
 Antioch New England Institute  
 40 Avon Street  
 Keene, NH 03431-3516  
 (603)355-3251  
[www.SchoolsGoGreen.org](http://www.SchoolsGoGreen.org)

Seeds of Change - Seed Donation Program  
 (Organic & heirloom vegetable and flower seeds)  
 PO Box 15700  
 Santa Fe, NM 87592  
 1-800-957-3337 x546 or 1-800-762-7333  
[www.seedsofchange.com](http://www.seedsofchange.com)

***National Resources (continued):***

University of Massachusetts Amherst, Cooperative Extension Service

Soil Testing Laboratory

<http://www.umass.edu/plsoils/soiltest/>

- Soil samples can be mailed and tested for pH, soil composition, organic matter, and heavy metals, including lead. To obtain a sampling kit call (413)545-2311.

***Financial Assistance for School Garden Programs:***

**America the Beautiful Fund**

Operation Green Plant

Dept. C

1730 K St NW, Suite 1002

Washington, DC 20006

Phone: (202)638-1649

**The Green Guerillas**

625 Broadway, 9th Floor

New York, NY 10012

Phone: (212)674-8124

Fax: (212)505-8613

[www.greenguerillas.org](http://www.greenguerillas.org)

**Common Ground Garden Program**

USDA Extension Service

South Building, Room 3347

Washington, DC 20250-0900

Phone: (202)720-3513

\*Donations for servicing needy & neglected urban areas

**Lilypons for Youth Grant Program**

Lilypons Water Gardens

PO Box 10

Buckeystown, MD 21717

Phone: (301)874-5503

\*Match funds for youth to cultivate an aquatic environment

**The Foundation Center**

1001 Connecticut Ave., NW

Washington, DC 20036

Phone: (202)331-1400

**National Environmental Education & Training Foundation**

[www.neetf.org](http://www.neetf.org)

**National Science Teachers Award Programs**

1742 Connecticut Avenue, NW

Washington, DC 20009

Phone: (202)328-5800

\*Awards for innovative science projects, teaching performance, and plans

**Kidsgardening**

School Garden Grants

[www.kidsgardening.com/teachers2.asp](http://www.kidsgardening.com/teachers2.asp)

Youth Garden Grant

[www.kidsgardening.com/grants.asp](http://www.kidsgardening.com/grants.asp)

Resource Directory for Grants

[www.kidsgardening.com/resources/resource.asp](http://www.kidsgardening.com/resources/resource.asp)

**National Endowment for the Humanities**

Division of Public Programs

Room 426

110 Pennsylvania Ave, NW

Washington, DC 20506

Phone: (202)606-8284

**National Gardening Association**

Youth Garden Grants

180 Flynn Ave

Burlington, VT 05401

Phone: (802)863-1308

Fax: (802)863-5962

[www.garden.org](http://www.garden.org)

<i>Financial Assistance for School Garden Programs (continued):</i>	
National Wildlife Foundation <a href="http://www.nwf.org/schoolyardhabitats">www.nwf.org/schoolyardhabitats</a>	Environmental Protection Agency <a href="http://www.epa.gov/teachers/grants.htm">www.epa.gov/teachers/grants.htm</a>
School Grants <a href="http://www.schoolgrants.org">www.schoolgrants.org</a>	Parks & People Foundation Provides some technical assistance with gardening projects. Community grants program provides up to \$1,000 for greening projects in Baltimore City. Phone: (410)448.5663. <a href="http://www.parksandpeople.org">www.parksandpeople.org</a>
The Foundation Center <a href="http://www.fdncenter.org">www.fdncenter.org</a>	

These sites all contain additional resources and links that should prove helpful. Resourcefulness and networking within your own local community will also lead to supportive individuals, groups and organizations.

## INTERNET RESOURCES

### SCHOOL GARDENS:

Aggie Horticulture Just for Kids: Offers sections on Human Issues in Horticulture, Nutrition in the Garden, the Junior Master Gardening Program and Composting for Kids (<http://aggie-horticulture.tamu.edu/kindergarden/index.html>)

Aquatic Outreach Institute: ([www.aoinstitute.org](http://www.aoinstitute.org))

California Foundation for Ag in the Classroom: Offers a free, downloadable gardening workbook that walks you through the garden project process: (<http://www.cfaitc.org/GardenGuide/GardenGuide.php>)

City Farmer: Canada's Office of Urban Agriculture ([www.cityfarmer.org](http://www.cityfarmer.org))

Eco-Schools: ([www.eco-schools.org](http://www.eco-schools.org))

Evergreen: motivates people to create and sustain healthy, natural outdoor spaces and gives them practical tools to be successful through three core programs: Learning Grounds, Common Grounds and Home Grounds. Contact ([www.evergreen.ca](http://www.evergreen.ca))

Garden Mosaics: their mission is "to connect youth and elders... to investigate the mosaic of plants, people, and cultures in gardens, to learn about science, and to act together to enhance their community." Their three core programs include: a Youth Program, Inquiry Activities and a Database Project. Take a look at their website (<http://www.gardenmosaics.cornell.edu>) to see their Baltimore programs!

Gardener's Supply Company: on-line catalog containing a wide range of garden supplies ([www.gardeners.com](http://www.gardeners.com))

Gardens for Growing People: ([www.svn.net/growpepl](http://www.svn.net/growpepl))

Kids' Gardening Catalog: an on-line catalog from the National Gardening Association containing children's gardening resources, supplies and tools that provides hands-on life science activities ([www.kidsgardening.com](http://www.kidsgardening.com))

Life Lab Science Program: With award winning curricula and programs, the organization helps schools develop gardens where children can create "living laboratories" for the study of the natural world. Life Lab has developed a variety of curricula to support school gardens from kindergarten through middle school. Contact (408)459-2001 or [www.lifelab.org](http://www.lifelab.org)

National Gardening Association: Provides classroom stories, advice, activities, a teaching theme library and links to gardening and environmental education conferences. Contact (800)538-7476 (800-LETSGRO) or [www.kidsgardening.com](http://www.kidsgardening.com)

San Francisco Green Schoolyard Alliance: ([www.sfgreenschools.org](http://www.sfgreenschools.org))

Sustainable Agriculture Research & Education (SARE): Since 1988, this program has helped advance farming systems that are profitable, environmentally sound and good for communities through a nationwide research and education grants program. They provide a 16-page (PDF) guide to sustainable agriculture-oriented educational opportunities for schoolchildren features more than 50 programs and curricula nationwide ([http://www.sare.org/publications/edguide/k12ed\\_guide.pdf](http://www.sare.org/publications/edguide/k12ed_guide.pdf))

#### ENVIRONMENT AND SUSTAINABILITY:

- Berkeley Horticultural Nursery: [www.berkeleyhort.com](http://www.berkeleyhort.com)
- Center For Ecoliteracy: [www.ecoliteracy.org](http://www.ecoliteracy.org)
- Community Food Security Coalition: [www.foodsecurity.org](http://www.foodsecurity.org)
- Occidental Arts and Ecology Center: [www.oaec.org](http://www.oaec.org)
- Sustainable Agriculture Education: [www.sagecenter.org](http://www.sagecenter.org)
- The Ecology Center: [www.ecologycenter.org](http://www.ecologycenter.org)
- The Food Systems Project: [www.foodsystems.org](http://www.foodsystems.org)
- The Garden Project: [www.gardenproject.org](http://www.gardenproject.org)

## BOOKS

### HOW TO START A GARDEN:

A Child's Garden. (1987). Compiled by Chevron Chemical Co: San Francisco, California.

A Child's Organic Garden: Grow Your Own Organic Vegetables. Fryer, Lee & Leigh Bradford. (1989). ACR Publishing.

Best Kids Garden Book. (1992). Sunset Editors: Menlo Park, California.

Digging Deeper: Integrating Youth Gardens into Schools and Communities - A Comprehensive Guide. (1998). Food Works, Montpelier, VT.

The Edible Schoolyard: Learning in the Real World. (1999). Center for Ecoliteracy. Berkeley, CA.

Garden Crafts for Kids: 50 Great Reasons to Get Your Hands Dirty. Rhoades, D. (1995). Sterling Publishing Co.: New York, New York.

Getting Started: A Guide for Creating School Gardens as Outdoor Classrooms. (1997). Center for Ecoliteracy and Life Lab Science Program. Available through the California Department of Education, Nutrition Education and Training program at 916.323.2473.

Greening School Grounds. Grant, T. & Littlejohn, G. 2001, New Society Publishers

The Growing Classroom: Garden Based Science. Jaffe & Appel. (1990). Addison-Wesley.

Growing Naturally: A Teacher's Guide to Organic Gardening. Brown, M. (1996). Southgate Publishers Ltd.: Devon, England.

Growing Up Green: Parents and Children Gardening Together. Skelsey, A. & Huckaby, G. (1973). Workman Publishing Co.: New York, New York.

Grow Lab: A complete Guide to Gardening in the Classroom. US National Gardening Association. (1988)

How Does Your Garden Grow? Be Your Own Plant Expert. Joly, Dominique & Philippe. (1996). Sterling Publishing Company.

How to Grow More Vegetables than you Ever Thought Possible on Less Land than you can Imagine. Jeavons, John. (1991). Ten Speed Press.

Kid's Gardening: A Kid's Guide to Messing Around in Dirt. Raftery, K. & K. (1989). Klutz Press: Palo Alto, California.

More than Just a Vegetable Garden. Kuhn, Dwight. (1990). Silver Press.

The National Gardening Association's Guide to Kid's Gardening. Ocone, L. & Pranis, E. (1983). Wiley Science Editions: New York, New York.

Planting the Seed: A Guide to Gardening. Winckler, Suzanne. (2002). Lerner Publications Company.

Ready, Set, Grow: A Guide to Gardening with Children. Bales, S. (1996). Macmillan: New York, New York.

Rodale's Illustrated Encyclopedia of Herbs. Kowalchik, C. & Hylton, W. (Eds.), (1987). Rodale Press: Emmaus, Pennsylvania.

Roots, Shoots, Buckets and Boots: Gardening together with Children. Lovejoy, S. (1999). New York: Workman Publishing Co.

Terrarium Habitats. Hosoume, Kimi & Jacqueline Barber. (2000). Great Explorations.

The Victory Garden Kid's Book. Waters, M. (1994). Globe Pequot: Old Saybrook, Connecticut.

#### **WATER GARDENS:**

Catfish Ponds & Lily Pads - Creating and Enjoying a Family Pond. Riotte, Louise. (1997). Storey Publishing.

#### **CURRICULUM:**

Ancient North America: The Archaeology of a Continent. Fagan, B. (1991). Thames and Hudson Ltd.: New York, New York.

Beyond the Bean Seed: Gardening Activities for Grades K-6. Jurenka, Nancy Allen & Rosanne Blass. (1996). Teacher Ideas Press.

Flowers, Trees, and Other Plants. Stidworthy, J. (1991). Random House: New York, New York.

From Butterflies to Thunderbolts-Discovering Science with Books Kids Love. Fredericks, Anthony & Rebecca Fredericks. (1997). Fulcrum Publishing.

The Growing Classroom: Garden Based Science. Jaffe & Appel. (1990). Addison-Wesley.

How a Plant Grows. Kalman, Bobbie. (1996). Crabtree Publishing.

Junior Master Gardener's Health and Nutrition from the Garden. Texas Agricultural Extension Service. (2001).

People, Plants, and Places. Agyeman, J. (1995). Southgate Publishing Ltd.: Devon, England.

Terrarium Habitats. Hosoume, Kimi & Jacqueline Barber. (2000). Great Explorations.

Worms Eat Our Garbage: Classroom Activities for a Better Environment. Appelhof, Mary. (1993). Flower Press.

#### **CULTURE AND GARDENING:**

Keepers of Life. Caduto, M. & Bruchac, J. (1994). Fulcrum Publishing: Golden, CO.

Keepers of the Earth. Caduto, M. & Bruchac, J. (1988). Fulcrum Publishing: Golden, CO.

People of Corn, a Mayan Story. Gerson, Mary-Joan. (1995). Little Brown.

Rice: Grain of the Ancients. Eames-Sheavly, M. (1996). Cornell Cooperative Extension: Cornell, NY.

The Three Sisters: Exploring an Iroquois Garden. Eames-Sheavly, M. (1993). Cornell Cooperative Extension: Cornell, NY.

#### **LIFE IN AND AROUND THE GARDEN:**

Butterflies Abound! Beaty & Fountas. (1992). Addison-Wesley Publishers.

Discover Nature in the Garden: Things to Know and Things to Do. Conrad, J. (1996). Stackpole Books: Mechanicsburg, PA.

Monarchs. Lasky, Kathryn. (1993). Gulliver Books Paperbacks.

More than Just a Flower Garden & More than Just a Vegetable Garden. Kuhn, Dwight. (1990). Silver Press.

#### **FUN ACTIVITIES:**

A Child's Garden: Enchanting Outdoor Spaces for Children and Parents. Dannenmaier, Mollie. (1998). Simon & Schuster Publishing.

Down To Earth. Rosen, Michael. (1998) Harcourt Brace Publishers.

Dye Plants and Dyeing. Cannon, J. & M. (1994). The Herbert Press Ltd.: London.

The Plant and Grow Project Book. Dietl, Ulla. (1993). Sterling Press.

Sunflower Houses. Lovejoy, S. (1991). Interweave Press: Loveland, Colorado.

The Usborne Book of Paper Flowers. Gibson, R. (1995). Usborne Publishing Ltd.: London.

### BOOKS FOR CHILDREN:

The Carrot Seed. Krauss, Ruth & Crockett Johnson. (1993). Harper Collins Publishers. (Ages 4-8)

The Earth and I. Asch, Frank. (1994) Harcourt Brace Publishers. (Ages 3-7)

Earth Keeper. Anderson, Joan & George Ancona. (1993). Harcourt Brace Publishers. (Ages 8-12)

Eyewitness Explorers: Flowers. Burnie, David. (1992). DK Publishing. (Ages 9-12)

Eyewitness Explorers: Plants. Burnie, David. (2004). DK Publishing. (Ages 9-12)

Growing Things. Wilkes, A. (1984). Usborne Publishing Ltd.: London, England. (Ages 9-12)

Seedfolks. Fleischman, Paul. (1997). Harper Collins Children's Books. (Ages 11-15)

### RESOURCE BOOKS ON PLANTS:

The New Oxford Book of Food Plants. Vaughan, J.G. (1999). Oxford University Press.

Plants for Play: A Plant Selection Guide for Children's Outdoor Environment. Moore, Robin. (1993). MIG Communications.

Weird Things You Can Grow. Goldenberg, J. (1994). Random House: New York.

