

SCHOOL GARDEN TOOL-KIT



**OKLAHOMA STATE
DEPARTMENT OF HEALTH**

**CENTER FOR THE
ADVANCEMENT OF WELLNESS**

2015

TABLE OF CONTENTS

Why Start a School Garden?	3
School Gardening 101	4
School Garden Design	11
Classroom to Garden Lesson Plans	17
Funding Sources	22
Helpful Contacts	29
School Garden Frequently Asked Questions	30

Why Start a School Garden?

❖ *Nature as Teacher*

- Students will have the opportunity to learn the value of nature. Observing a tiny seed transform into something grand is one of life's greatest wonders. A school garden allows children to experience that wonder and interact with their natural environment. This introduces an appreciation for and a desire to protect the environment among the students.
- Children display an improved interest in nutrition, fruits and vegetables, and overall health.
- Students can apply the lessons learned in the classroom to the outside world. For example, the math concepts of perimeter, area, and circumference can be used to map out the garden area.
- Students find a renewed interest in history as they plant the Native American Three Sisters garden of corn, beans, and squash. A school garden is a valuable resource to engage students to learn in new and creative ways.

❖ *Nature as Healer*

- "Research has shown that viewing natural scenes can aid in relieving stress and improving well-being (Kaplan, 1992). "
- Spending time outside raises levels of Vitamin D among children. Vitamin D consumption promotes healthy teeth and bones, and protects against such diseases as cancer, type 1 diabetes and multiple sclerosis.
- Nature leads to an improved ability to concentrate and improved self-esteem among children (Maller, 2009 p. 523).

❖ *Nature as Nurturer*

- Children develop positive social skills: teamwork, personal responsibility, decision-making, and self-confidence.
- Gardens are associated with improved social networks among youth and between youth and adults (Pothukuchi, 2004).
- School gardening offers more withdrawn students the chance to find an outlet and express themselves in their own unique way.

Kaplan, R. (1993). The Role of Nature in the Context of the Workplace. *Landscape and Urban Planning*. Vol 26 193-201.

Maller, C. J. (2009) 'Promoting Children's Mental Health through Contact with Nature: A Model', *Health Education* Vol 109 (6): 522-543.

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

SCHOOL GARDENING 101

STEP 1: Form a Garden Committee

Beginning a school garden requires the collective effort of individuals committed to the success of the garden. A team is needed to prevent one individual from being overburdened with the task and responsibilities of building and maintaining the garden. The team should consist of individuals with knowledge and experience in the field. Potential volunteer sources may include:

- Parents
- Master Gardeners of Oklahoma
- Local garden club members
- Future Farmers of America (FFA) students
- Local food bank
- OSU Extension Service
- American Indian Tribes
- 4H students
- Retired community members
- Faculty or staff
- Students
- Local business owners
- Local community leaders

Step 2: Define Purpose and Objectives

Each school garden is unique and has its defining characteristics, just as each school is distinctive. The basics of the garden (soil, plant, water, sunlight, potting, or raised bed) will be the same, but the purpose and design of the garden will be specific to the school. The committee must then address certain key questions:

- What to plant
- Where to plant
- What will be the focus (human health, environmental science, school meals, community service, personal development)

Gardens are a benefit to schools because they provide opportunities to connect actual lessons learned in the classroom to the real-world. Students will develop critical thinking, communication, civic responsibility, mathematical reasoning, and a host of other vital skills. Most importantly, children will learn about new, healthy foods and where they originate. Students will also develop the invaluable skill of growing food for themselves.

Step 3: Garner Funds & Gifts

Naturally, a garden will not build itself. A steady supply of resources will be required in order to build and maintain one. The purchase of tools, seeds, plants, mulch, and other materials are

all necessary expenditures. Fortunately, there are donors who are willing to contribute in support of school gardens.

Some donors include: private foundations, local businesses, granting agencies, and individuals. When soliciting support, consider the reasons why donors give to a project: the donor 1) supports the community and the school system, 2) believes that your goals and curricula support the need for the project, 3) has a respect for the teaching profession, and 4) considers the tax benefit of the gift.

Examples of Funding Sources

- ❖ Environmental Protection Agency (e-mail: education@epa.gov; website: www2.epa.gov)
- ❖ Oklahoma Dept. of Agriculture- Forestry Services (405-521-3864, ok.gov/sde/science-environmental-funding) Urban and Community Forestry Challenge Grants
- ❖ Oklahoma Department of Environmental Quality (405-702- 7122, <http://www.deq.state.ok.us/>)
- ❖ National Gardening Association (<http://grants.kids-gardening.org>)
- ❖ USDA Farm to School (405-522-2106, <http://www.fns.usda.gov/farmentoschool/farm-school-grant-program>)
- ❖ OKC Harvest (<http://www.okcharvest.org/>)
- ❖ Plasticulture program, Oklahoma Dept. of Agriculture (<http://www.ag.ok.gov/mktdev/plasticulture.htm>)
- ❖ Local food banks

Step 4: Choose a Garden Site

The garden site must be placed in a sunlit area. Most plants need at least 6-8 hours of sunlight each day. If sunlight is limited or unavailable, growing shade-tolerant plants is desirable. Water is also a key factor which should help determine the location. The garden should be located close to a water source and watered regularly. Hand-watering is best for smaller gardens; however, a water line could be installed for larger gardens. Drip irrigation, conventional irrigation, and soaker hoses can all be timer activated to make the watering process easier. Drip irrigation is a watering method that allows water to drip slowly onto the roots of the plants. This conserves water and supports the environment. Lastly, the garden must be placed in an accessible area for students, volunteers, and teachers. A key recommendation would be to begin with a small garden in an area that allows room for the garden to grow, as resources accumulate. The gardening area should also be equipped with access to a storage area for tools and accessories.

Step 5: Garden Design

There are a few steps needed in order to implement a successful garden design. First, observe

the potential garden space and take note of existing elements. Note where trees and shrubs are located and determine if the plants will receive an adequate amount of sunlight. Consider any possible physical hazards in the area: waste, foot traffic, vandalism. If the risk of such hazards is high, then the use of fencing and added lighting may be recommended.

The second step is to determine the garden's design structure. Will the garden consist of potted plants, raised beds, or soil? What artistic items will be included such as bird houses, water features, potting benches, shrubs? It would be helpful at this point to actually draw out the garden design on paper or through a computer aided design program. Based on the garden design, a seating area may be beneficial. If the garden structure is a raised bed, benches would be preferable to allow individuals to sit while tending to the garden. A sufficient walking area in between beds or pots is important to provide space for large groups of children to work in and enjoy the garden. Walking areas can be composed from inexpensive materials such as hay or straw, or more expensive materials such as brick or stone.

Finally, it is vital that the garden design be actually drawn out to scale. This requires precise measurements of the square footage of the gardening area. Determine the actual size of the raised beds (e.g., 4ft. X 4ft.), how many beds it will include, and what materials are needed to actually build the garden.

Costs of all materials should be outlined at this point. Some materials are more expensive, but last longer than cheaper items. The size of the gardening budget will determine where the bulk of the funds are spent.

Step 6: What to Plant

To promote healthy eating, a variety of fruits and vegetables should be planted in the school garden. Increased fruit and vegetable consumption is more likely to occur when children grow the fruits and vegetables themselves.

The decision for the types of plants to be placed in the garden depends on three factors: the life cycle, mature size, and cultural requirements. All plant material is organized into two categories: herbaceous (annual or perennial) and woody (shrubs and trees). An annual plant will complete its life cycle in one year and consequently, will need to be replaced the next year. Thus, a garden full of annual plants should be avoided because the yearly cost of replacing them may become a burden. Herbaceous perennial (3 years or more) and woody plants should be planted together with annual plants. A diverse garden is not only more attractive but also more cost effective.

Plants should also be selected based upon the climate they are intended to grow. Temperature tolerance, soil type, and moisture needs should all be considered. Also, information should be gathered relating to the mature size of the plants intended for the garden. Some types of plants grow on vines, such as tomatoes, and require a larger space to grow. Determining the mature size of plants will affect the garden design by directing where each desired plant will be placed. Much of this information can be found on the seed packets.

Lastly, the planned garden activities and overall purpose of the garden will influence plant selection. The theme, concepts, and general purpose of the garden will determine what is planted.

Theme gardens

- Persian Carpet Garden
- Friend's Name Garden
- Butterfly Garden
- Dinosaur Garden
- Water Garden
- Alphabet Garden
- Imagination Garden
- Sunflower House Garden
- Literature Garden
- Giant Garden
- Tall & Short Garden
- Chocolate Garden
- Native Plant Garden
- Sundial Garden Herb/Scent Garden
- Fiber Garden
- Prairie Garden
- Native American Garden
- Peter Rabbit's Garden
- Barnyard Garden
- Teeny Tiny Garden
- Companion Garden
- Root Garden
- Pizza Garden
- Safari Garden
- Lemon Garden

Concepts

- Plant Life Cycles
- Plant Form & Function Food Production in Plants Regeneration of Plants
- Biodiversity
- Seasonal Cycles

Quick-growing Vegetables

Vegetable Approximate Days to Maturity

Beet	50
Broccoli (transplants)	50
Bush Bean	50
Leaf Lettuce	45
Radish	25
Spinach	50

(Note: The number of days to maturity may vary with variety. Check the seed packet for each individual variety.)

Vegetables That Can Be Planted in the Spring to Mature Before School Is Out

Vegetable Spring Planting Dates and Approximate Days to Maturity

Cabbage(transplants)	Feb 15- March 10	60-90
Leaf Lettuce	Feb. 15 – March 10	40-70
Radish	March 1- April 15	25-40
Spinach	Feb. 15- March 10	50-70
Swiss Chard	Feb. 15- March 10	50-70
Turnip	Feb. 15- March 10	50-60

Vegetables That Can Be Planted in the Fall to Mature Before a Killing Frost

Vegetable Fall Planting Dates and Approximate Days to Maturity

Bush Bean	Aug. 10 – 20	50
Cucumber	Aug. 10-20	60-70
Cabbage (transplants)	Aug. 1-25	75-90
Mustard	Sept. 10- Oct. 10	40-50
Radish	Aug. 15- Oct. 10	20-40
Spinach	Sept. 5-25	50-60
Summer Squash	July 15- Sept. 1	40-50

Shade-Tolerant Vegetables (6 hours of sun or less)

Beets	Radishes
Carrots	Turnips
Green Onions	Arugula
Leaf lettuce	Spinach

*For greater detail about plant growth and cultivation, see the website:

<http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-389>

Step 7: Build the Garden

This is the time we have all been awaiting. All of your designing, budgeting, planning, and dreaming come together in this moment as you build a new and lasting addition to your school. The first step is to clearly mark out the garden space area. Small stones or string are readily accessible materials which can be used to define the space. Provide a copy of the garden design to any individuals involved in the building process.

The next and most important step is preparation for planting. All trash, rocks, and debris must be removed from the garden area. Moreover, any form of turf grass or weeds which are present must be promptly removed. Although Bermuda grass is frequently used in Oklahoma, it is recommended that the dead sod be removed prior to tilling the ground. Hand-removal or the use of a small spade should do the trick. If planting in a raised-bed, a foundation layer of cardboard or newspaper is also effective in preventing the development

of weeds. Preventing weed-growth is so important because weeds will compete with your plants for sunlight, water, and nutrients. After weeding the area, mark the spaces for planting, and label what will be planted there.

Lastly, pour in the potting mix or topsoil for the area. A healthy soil is important because it is necessary for plants to actually live and grow. The soil provides the plant with nutrients and water which are essential for plant life. Thus, a good soil is a key component of a successful garden. To make a soil fertile, some form of fermentation is needed. This can be accomplished by creating a soil mixture; a cow-manure/soil blend or including compost material are two common methods. See “Mulching” for tipson healthy soil. <http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-389>

Step 8: Plant and Maintain

If needed, an irrigation system can be installed prior to planting. This system will be based on the size and scope of the garden. A simple way to irrigate is to attach a garden hose to a sprinkler-timer device. This will allow the plants to be watered at a consistent time each day, eliminating the need for daily checks by staff. Once irrigation has been settled, planting may begin. Plants should be planted at the same level (height) of soil they were growing in the potting or soil area. Water the plants immediately after planting, always ensuring that the top of the soil is moist.

Maintaining a garden centers around two (2) basic processes: watering and weeding. Keep a watchful eye for all weeds and uproot them immediately. Water plants regularly, but be careful to avoid overwatering. Watering in the early-morning and late-evening is preferable because these are the best times for absorption.

Follow these simple steps and with good fortune, your school should have a bountiful garden!

**Adapted from the OSU Extension “Children’s Gardens in which to Learn and Grow.” David Hillock and Shelley Mitchell. <http://osufacts.okstate.edu>*

**Adapted from the OSU Extension “A Planning Guide for Edible School Gardens.” Doug Walton and Susie Shields. <http://osufacts.okstate.edu>*

School Garden Design

Every garden, much like every person, is unique. Gardens are creations of the vibrant and imaginative people who made them. As such, there is a wealth of design ideas and alternative methods for raising a school garden.

Some of these ideas will be highlighted in an attempt to spark further interest in school gardening and provide images and practical suggestions for the reader.

Aquaponics:

A wave of interest has flourished around the new concept of aquaponics. Aquaponics is simply the joining of aquaculture (raising fish) and hydroponics (the soil-less growing of plants) into one combined system. Fish waste provides a consistent source of nutrients for the plants, while the plants offer the fish a natural filter for their environment. The design centers around plants placed directly on top of or near an aquarium, rather than soil. A media bed or some type of filter is needed to allow for solids removal, mineralization, and bio-filtration. One of the many benefits of an aquaponics system is that it allows plants to grow indoors, away from severe weather. Also, plants grown in this system appear to grow not only better, but faster. Gardening the aquaponics way is trending in schools across the nation. Although, the cost may appear high, there are agencies willing to provide support to schools who desire to implement aquaponics.



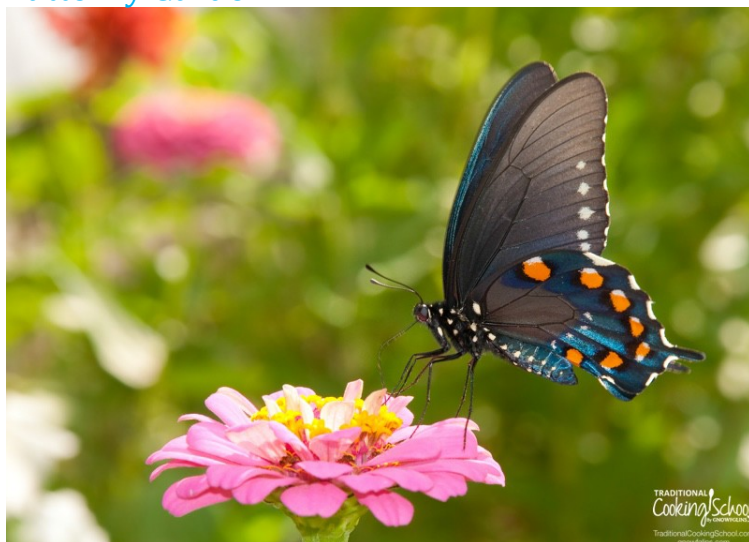
Image Retrieved from:

http://www.petco.com/assets/product_images/7/792382322077C.jpg

<http://grantsforplants.org/grants/>

Theme Gardens:

1. Butterfly Garden



“Butterflies, moths, and skippers are some of the most beautiful of all insects. Their striking appearance adds both color and activity to the most pleasing of landscapes. They may be observed more easily and closely than other species of wildlife. Moths expand the enjoyment time of your garden because they are active primarily during the night, while butterflies and skippers are active during the day.

Butterflies, moths, and skippers belong to the Lepidoptera Order and are instrumental in pollinating plants. Lepidopteron should be conserved and managed as they are an essential component of both the animal food chain and the reproductive process of plants.

Review this source to select plants to attract butterflies to your garden.”

<http://botanicgarden.okstate.edu/gardens-and-grounds/butterfly-garden>

2. Pizza Garden

Pizza! Kids love it! One of the best ways for them to fall in love with gardening is to plant a pizza garden. A pizza garden consists of herbs and vegetables often found on pizza. The plants include: basil, parsley, oregano, onions, tomatoes, and peppers organized into a round shape and divide it into six sections. Just like you would for a pizza! These plants will need around 6 to 8 hours of sunlight each day. Grow and enjoy!



Image retrieved from:
<http://mysticalmagicalherbs.com/2013/06/12/pizza-garden-for-kids/>

3. The Three Sisters Summer Garden

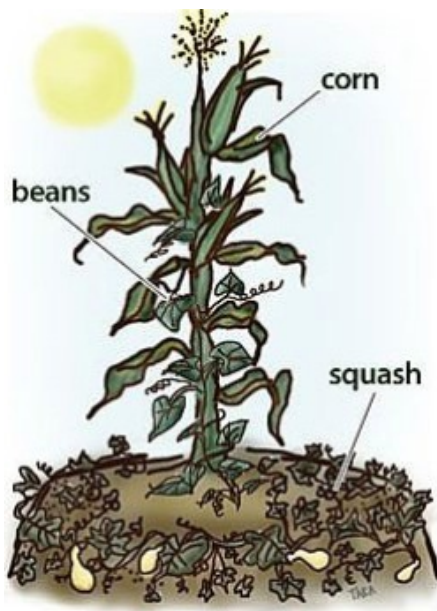


Image retrieved from:
<http://intersectingart.umn.edu/lesson/16>

In a Three Sisters garden, corn, beans, and squash plants are grown together so that each plant benefits from the others. Tall corn is grown in the middle. Climbing beans grow up the corn stalks. Squash spreads across the soil providing the ground cover. Native Americans were genius to plant these crops together. The Three Sisters garden makes for an excellent way to incorporate history into the school garden.

<http://www.diynetwork.com/how-to/outdoors/gardening/how-to-plant-a-three-sisters-garden>

4. Peter's Rabbit Garden

Though prone to mischief, Peter Rabbit had a love for vegetables. An excellent way to pair the literature read in the classroom with the school garden is to create a Peter Rabbit Garden! Pick any book in the Peter Rabbit series and plant a few of those vegetables from that story.

In *The Tale of the Flopsy Bunnies*, lettuce, 'Paris White' roses, pansies, and French marigold are all planted. Imagine a child's pleasure as he nibbles on some of the same veggies Peter Rabbit did!



: Image retrieved from: <http://www.hop-skip-jump.com/explore/peter-rabbit-garden>

5. ABC Garden

General ABCs – “ Most alphabet gardens are simply created by incorporating plants that begin with each letter of the alphabet; that’s 26 alphabet garden plants. For example, plant some asters for “A,” balloon flowers for “B,” cosmos for “C”, and so on. For best results, make sure the plants that your child chooses share the same or similar growing conditions. Hint: If they do not share growing requirements, some can be grown in containers.(Nikki Phipps, www.gardenignknowhow.com)



ABC Names – “With this alphabet theme, choose plants that begin with the first initial of each student’s name. Students may be assigned to care for the corresponding plants. Forming a link between the child’s name and the plants may spark a sustained interest in gardening for the child.(Phipps)

ABC Shapes – “ Similar to names, this design uses a child’s first initial for the overall shape of the ABC garden. For instance, a garden shaped like a large letter “N” would be used for Nikki. Fill the garden letter with plants that begin with the corresponding letter, or you could opt for plants that spell out the name. If space provides, throw in a mix of all 26 letters of the alphabet using a combination of both plants and garden ornaments. (Phipps)

See more at: <http://www.gardeningknowhow.com/special/children/alphabet-garden-plants.htm>

Other Theme Gardens

- Persian Carpet Garden
- Water Garden
- Sundial Garden
- Fiber Garden
- Barnyard Garden
- Lemon Garden
- Dinosaur Garden
- Literature Garden
- Chocolate Garden

Oklahoma School Gardens:



"The Shire." Prairie View Elementary School Carton2Garden contest regional entry winner. A school garden made entirely from recycled milk cartons from the school lunch program.



Figure 1: Oklahoma's own Aquaponics System. FlowerMound Elementary in Lawton, OK.



Figure: 4TH grade teacher Ray Kimbrell's aquaponics garden grows lettuce, basil, and strawberries.



Figure 3: Lincoln Elementary Vegetable Garden. Norman.



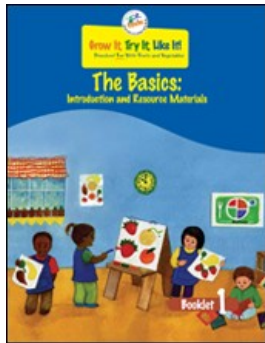
Figure 2: Lincoln Elementary Vegetable Garden, Norman.

Classroom to Garden Lesson Plans

Resources: The following document includes a list of resources, learning materials, and creative solutions for providing instruction within a school garden.

[USDA TEAM NUTRITION:](#)

Grow It, Try It, Like It! Nutrition Education KIT (Preschool)



“Grow It, Try It, Like It! Nutrition Education Kit featuring MyPlate is a garden-themed nutrition education kit for child care center staff that introduces children to: three fruits - peaches, strawberries, and cantaloupe, and three vegetables - spinach, sweet potatoes, and crookneck squash. The kit includes seven booklets featuring fruits and vegetables with fun activities through the imaginary garden at Tasty Acres Farm! It also has a CD-ROM with Supplemental Information and a DVD with Cool Puppy Pup's Picnic and Lunch Parties. Each set of lessons contains: hands-on activities, planting activities, and nutrition education activities that introduce MyPlate. Use the kit to promote learning at home with fun parent/child activities and family-sized recipes that give tips for cooking with children (USDA Team Nutrition, 2015).”

Available: in PDF and upon request from [Team Nutrition](#).

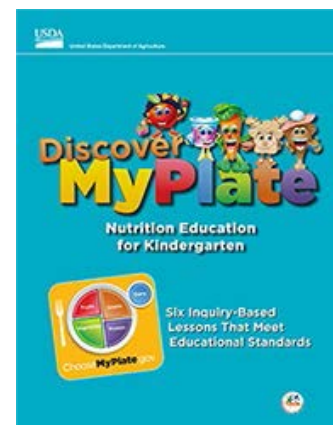
<http://www.fns.usda.gov/tn/grow-it-try-it-it>

Discover MyPlate: Lesson 4 Planting the Seeds for Healthier Eating (Kindergarten)

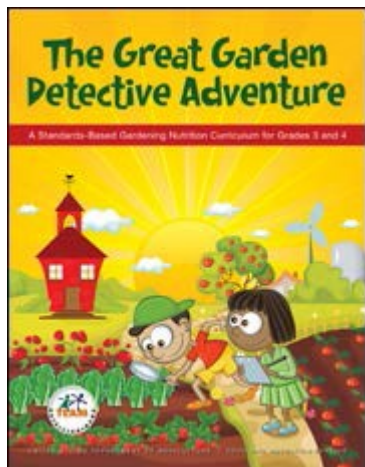
“The [Discover MyPlate](#) Teacher’s Guide includes six standards-based, inquiry-led, student-centered and teacher approved lessons for kindergarten.

Available: in print, upon request from [Team Nutrition](#). Also available in PDF, for download. If you have difficulty opening any of these files in your Internet browser, please right-click on the link and ‘save target as...’ to download (USDA Team Nutrition, 2015).”

<http://www.fns.usda.gov/tn/discover-myplate-teachers-guide>



The Great Garden Detective Adventure: (Grades 3-4)



“Discover what fruits and vegetables are sweetest, crunchiest, and juiciest through a series of investigations and fun experiences connecting the school garden to the classroom, school cafeteria, and home. This eleven-lesson curriculum for 3rd and 4th grades includes bulletin board materials, veggie dice, fruit and vegetable flash cards, and ten issues of Garden Detective News for parents/caregivers.

Print Availability: Elementary schools participating in the National School Lunch Program or other Child Nutrition program may request a free print copy of the curriculum. The curriculum comes with 35 of each of the 10 parent newsletters. Additional newsletters may also be requested (USDA Team Nutrition, 2015).”

<http://www.fns.usda.gov/tn/great-garden-detective>

Dig In! Standards-Based Nutrition Education from the Ground Up (Grades 5-6)

“Explore a world of possibilities in the garden and on your plate using ten inquiry-based lessons that engage 5th and 6th graders in growing, harvesting, tasting, and learning about fruits and vegetables. More information is also available at Dig In! At Home Parent Booklet and Dig In! Posters.

Available: Printed materials are available only to schools, childcare providers and summer meal programs participating in one of [USDA’s Child Nutrition programs](#). To request printed materials, use our [online order form](#) and allow 2-4 weeks for delivery. All are welcome to download these materials and make copies.



Schools participating in the National School Lunch Program or other Child Nutrition program may request a free print copy of the curriculum. The curriculum comes with 35 copies of the Dig In! At Home parent handout (English Version) and the six Dig In! posters. Order the Eat Smart To Play Hard With MyPlate poster separately. Additional print copies of the Dig In! At Home parent handout in English and in Spanish are available, upon request, from Team Nutrition (USDA Team Nutrition, 2015).”

<http://www.fns.usda.gov/tn/dig-standards-based-nutrition-education-ground>

Plant It, Grow It, Eat It!; Healthy Habits Take Root (Grades K-8)

The Event



“The project starts in the classroom, where students discuss the basics of gardening and the nutritional benefits of fruits and vegetables. A teacher or a volunteer with a green thumb can talk with students about the different ways students can tend to a garden. Team Nutrition offers two

garden-related nutrition education curricula for elementary schools (see appendix, pages 94-95), which can be used to connect garden, classroom, and cafeteria experiences together with nutrition.

Student volunteers break into groups and tend to the garden during specified times. Ask student volunteers to monitor the garden’s development and report back on its progress. As the food grows, talk about the produce and how it can be prepared (USDA, 2015).”

http://www.fns.usda.gov/sites/default/files/TNevents_plantit.pdf

UGA Extension

“These garden-based lessons are all aligned to the educational standards for the State of Georgia. They are listed by grade level, and in grades K-5 are further subdivided into earth science, life science, and physical science topics. Grade 6 lessons are aligned with the earth science topics required at that level, grade 7 has life science lessons, and grade 8 has physical science lessons (University of Georgia Extension, 2015).



<http://extension.uga.edu/k12/school-gardens/curriculum/index.cfm>

[Garden of Learning Curriculum](#) (Available for Purchase)

A Year in the Garden – K-1, 2-3, 4-5, 6+ curriculums that include a school year of lessons presented in sequence of a typical school year.

- “143 pages of lessons in science, math, language arts, fine arts, nutrition, humanities, history, social & environmental studies and agriculture.
- Included are grade level worksheets requiring students to write, calculate, record observations, collect data and use a microscope. Other lessons are labor intensive getting the jobs of a real organic garden done!
- Get your gardens planted, weeded, soil amended, mulched, harvested, vermicomposting started, beneficial insects introduced, and more.
- Students approach their work as Scientist, Ecologist, Entomologist, Biologist and Botanist (Garden of Learning, 2015).”

Year Two in the Garden - K-1, 2-3, 4-5, 6+ curriculum that includes a school year of lessons presented in sequence of a typical school year.

- “Build on your program and keep it fresh with new lessons in planting, soil, insects, vermicomposting, scientific method, microscopic studies, and more.
- 154 pages of lessons in science, math, language arts, fine arts, nutrition, humanities, history, social & environmental studies and agriculture.
- Included are grade level worksheets requiring students to write, calculate, record observations, collect data and use a microscope. Other lessons are labor intensive getting the jobs of a real organic garden done!
- Get your gardens replanted, weeded, soil amended, mulched, harvested, vermicomposting started, beneficial insects introduced, and more (Garden of Learning, 2015).”

<http://www.gardenoflearningk6.com/curriculum.htm>

[USDA People’s Garden:](#)

“There are a lot of great gardening resources available online for gardeners of all levels - whether you are a beginner or have decades of experience. The People's Garden initiative has put together a collection of resources - ranging from financial



and technical information to garden-based curricula - to help communities find the information they need to start and sustain their People's Garden (USDA People’s Garden, 2015).”

http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=peoples_gardenin_g_resources.html

[Wasatch Community Gardens:](#)

Provides two full years of garden curriculum for grades K-3. <https://wasatchgardens.org/youth-programs/school-gardening-program-0/curriculum>



[Life Lab Science Program](#)

“The Life Lab Science Program distilled their years of world-wide school garden experience into a concise 50-page guide that asks and answers most questions you need to consider for creating an outdoor classroom garden. Items covered include your garden’s purpose; school staff, volunteers, and students; connecting with curriculum; site selection and design; theme gardens; fund-raising; public awareness; and more. Get



this guide if you are thinking about starting a garden for your school or program, then move on to The Growing Classroom and Life Lab Science. This publication is available free as a PDF download, see links above (Life Lab Science Program, 2012)” - See more at: <http://www.lifelab.org/store/curriculum/#seu>

Funding Sources

(Resources for Edible School Gardens, Oklahoma Department of Agriculture Farm To School)

STATE SOURCES

Ag in the Classroom Oklahoma Ag in the Classroom is pleased to request grant proposals from educators to expand agricultural literacy in Oklahoma schools. Funding for these grants has been made available through the Oklahoma Pork Council. Grants will be awarded in amounts from \$100 to \$300 each. Proposals are received on a perpetual basis and funded based upon project merit and the availability of funds.

Grants are available to K-8 educators in Oklahoma working in public or private schools and to educators who work with students, grades K-8, in nonformal educational settings, e.g., after school programs, alternative education programs, 4-H clubs, etc. Website: www.clover.okstate.edu/fourh/aitc/grants/grantap.doc

Environmental License Tag Grants. Sponsored by the Oklahoma Environmental Quality Education Committee, \$500 grants to promote new enthusiasm for the practice of environmental education for Oklahoma teachers or youth leaders and \$200 grants for high school field trips are awarded annually. The program must benefit the youth of Oklahoma through the programs developed or enhanced by the grant. Five \$1000 outdoor classroom grants are also available through the same application. These proposals are generally due the end of October or November, with the winners announced in January. Funds may be used for classroom education materials, supplies for specific lesson plans, films and videos, continuing education, resource trunks, outdoor classroom setup, etc. Annually 22-25 grants have been awarded since 1996. Funds are distributed through the DEQ. Website: www.deq.state.ok.us Contact: Susie Shields at (405) 702-5166 or susie.shields@deq.state.ok.us

Learn and Serve America Program. The program awards grants to schools for efforts that engage students in environmental and other community activities. School projects meeting specifications may be eligible for grants ranging from \$1,200 to \$15,000. In addition to funding, schools receive access to training and resources and have opportunities to learn from each other at more regular network meetings. Some outdoor classrooms and habitat programs have been started through this program. These funds are appropriated by Congress and amounts awarded may shift from year to year. Contact: Charles Mohr or Robert Bush, Learn and Serve America, Oklahoma State Department of Education, 2500 N. Lincoln, Oklahoma City, OK 73105 (405) 521-4795 or charles.mohr@sde.state.ok.us.

<http://www.nationalservice.gov/build-your-capacity/grants/funding-opportunities>

Urban and Community Forestry Challenge Grants. Sponsored by the Oklahoma Department of Agriculture Forestry Services in cooperation with the U.S. Forest Service and the Oklahoma Urban and Community Forestry Council, this grant program is designed to establish, expand and promote urban and community forestry in the State of

Oklahoma. Grants may be awarded to state and local units of government, approved non-profit organizations, neighborhood associations, civic groups, educational institutions or other tree volunteer groups. All projects must occur in Oklahoma. The amount available ranges from \$1,000 to \$10,000 per grant and is a 50% matching program. However, in-kind matching is acceptable. Contact: Mark Bays at (405) 521-3864 to request a grant package.

U.S. Fish and Wildlife Services Outdoor Classroom Grants. The U.S. Fish and Wildlife Services' (FWS) Partners for Fish and Wildlife Program provides project development grants up to \$5,000.00 for Outdoor Environmental Classrooms. These Outdoor Classrooms must emphasize wetlands and/or endangered and threatened ecosystems in Oklahoma. Funds are to be used for project development, such as, wetland construction, walkways, gazebos, plant material, etc. For more information on wetland development and how to get a wetland classroom going at your school, call Jontie Aldrich or Ken Williams at (918) 581-7458.

Weyerhaeuser Excellence in Recycling Award. Ten \$1,000 awards are given in Oklahoma annually. Awards are available to public/private schools (K-12) in Oklahoma. Existing, expanding or start-up recycling and/or composting programs are eligible. Requests for proposals are distributed through the Department of Environmental Quality. Applications will be solicited in the spring, with awards made by Weyerhaeuser in the fall. Contact: Bryce Hulsey at (405) 702-5170 or bryce.hulsey@deq.state.ok.us.

NATIONAL SOURCES

Annie's Grants for Gardens. Annie's offers Grants for Gardens donations to schools and other educational programs that help build school gardens. Since 2008, they have directly funded more than 295 gardens, because they believe that gardens help connect kids to real food. The yearly Grants for Gardens application will reopen in October 2015. Website: <http://www.annies.com/giving-back/school-gardens/grants-for-gardens>

Butterfly Garden Grants. Available from Hasbro Children's Foundation where the focus is on gardens that have strong educational emphasis at schools located in economically disadvantaged areas. Deadline is in February, but proposals received sooner seem to have better chance. Contact: Jane Englehardt, Executive Director, Hasbro Children's Foundation, 32 West 23rd Street, New York, NY 10010, (212) 645-2400.

Captain Planet Foundation. Supports environmental projects for youth with grants from \$250-\$2,500. All projects must: promote understanding of environmental issues; focus on hands-on activities; involve children and teens 6-18 (elementary through high school); help young people develop planning and problem-solving skills; and include adult supervision. Web: www.turner.com/cpf or e-mail: captain.planet.foundation@turner.com

EPA Environmental Education Grants. Sponsored by the U.S. Environmental Protection Agency to support environmental education efforts at the grassroots level. Local educational institutions, state agencies and non-profit groups are eligible to apply. These grants cannot be used for structure construction and a 25% cash or in-kind matching donation is required. Amount: \$5,000 to \$250,000. The deadline for applications varies from year to year. The RFP (request for proposals) usually comes out sometime during the summer, with the deadline in the fall. Contact: Jo Taylor, EE Coordinator, U.S. EPA Region VI, 1445 Ross Avenue, Dallas, TX 75202 (214) 665- 2200 or 1-800-887-6063 or find lots of information on the web: www.epa.gov/epahome/grants.htm.

Global Releaf Fund. Sponsored by American Forests for tree planting and care projects and educational efforts which encourage local volunteer efforts and donations. Larger trees in urban settings are preferred to reforestation projects using seedlings. The program requires a fifty percent (50%) matching cash or in-kind donation. Amounts range from \$500 to \$2,500. Applications are due in January with funding awarded in February. Contact: Karen Fedor, Global ReLeaf Fund, 1516 P. Street, NW, Washington D.C. 2005
<http://www.americanforests.org/our-programs/global-releaf-projects/global-releaf-grant-application/>

GreenWorks! Community Action Projects. This Project Learning Tree's (PLT) environmental community action component encourages students to participate in community based partnerships by developing and implementing environmental action projects, such as graffiti paint overs, tree plantings, stream clean-ups and recycling projects. Applicants must be PLT trained, must establish a partnership to implement the project (i.e. school/PTA, school/local business, etc.) and must raise 50% project matching funds (may be in-kind services/time). Projects must be community/school based and have student/youth participation. The annual deadline is usually in April. A maximum of \$200 per project is available. Contact: Caroline Alston, GreenWorks! Grants, 111 NW 19th Street, #780, Washington, DC 20036, (202) 463-2461. caroline_alston@plt.org.

The Home Depot. Offers grants for Sustainable and Green Building Practices, Forestry and Ecology, Clean-up and Recycling, Lead Poisoning Prevention, and Consumer Education where they can do the most good. Environmental proposals are accepted and must be postmarked between November 1st and December 15th annually. There is no application form. Rather, The Home Depot prefers you tell them about your project in your own words describing its scope, budget, and any other details. Announcements of awards will be made in writing between February 15th and 28th and will be paid out between March and July of each year. Organizations requesting a grant are required to have a Federal Tax Exempt nonprofit status and must include a copy of the 501(C)(3) letter/form.
<http://www.homedepotfoundation.org/>

Jamba Juice Garden Grant program offers awards to schools and youth programs with a school garden. Winners will receive gardening equipment, curriculum, soil amendments, seeds, and plants to help build an attractive and healthy garden. The program is open to

schools with children between the ages of 3 and 18. A total of 30 awards will be given during the fall of 2015.

<http://grants.kidsgardening.org/spring-2015-jamba-juice-its-all-about-fruit-and-veggies-garden-grant>

Learn and Serve America sponsors Service-Learning Grants ranging from \$1,200-15,000 to schools for efforts that engage students in environmental and other community activities.

Some outdoor classrooms and habitat programs have been started through this program. See website for information: <http://www.nationalservice.gov/build-your-capacity/grants/funding-opportunities>

National Fish and Wildlife Foundation Grants. Emphasize innovative and effective wildlife conservation activities in an urban or rural setting. Governmental units, educational or non-profit groups are eligible to apply for amounts of \$10,000 and up. A 50-100% matching cash donation is required. Applications are due in January with funding awarded in May or in March with funding awarded in August. Contact: National Fish and Wildlife Foundation, 1120 Connecticut Ave., NW, Suite 900, Washington, DC 20036

http://www.nfwf.org/whatwedo/grants/pages/home.aspx#.VecH1_lVikp

National Geographic Society Education Foundation. The foundation's teacher grants are awarded to educators to facilitate their work in the classroom, school, district, and/or community. Projects that feature outreach to urban areas are particularly encouraged. In accordance with its mission, the foundation seeks to fund projects in either of two broad categories: 1) promoting geographic knowledge through education, and 2) promoting stewardship of natural and cultural resources. Applications are accepted from any current teacher or administrator in an accredited K-12 school within the United States.

Website: <http://education.nationalgeographic.com/programs/education-foundation/>

Newman's Own. Grants are awarded annually to organizations that focus on children and youth, health, education, the elderly, the environment, the arts, literacy, substance abuse education, and programs for the needy. U.S.-based 501(c)(3) organizations, schools, hospitals, and other public-benefit institutions are eligible to apply. Grant guidelines are available at: <http://newmansownfoundation.org/what-we-support/funding-guidelines/>

OGE Energy Corp. Offers K-12 public school teacher grants of up to \$1,000 to teachers in OG&E and Enogex service territories in Oklahoma and Western Arkansas. Any creative project, which deals with reading, mathematics or science, will be considered. Grants are available to public school teachers of grades K-12. Grant applications for the 2006-2007 school year must be typed and returned not later than 5:00 PM, May 31, 2006. Details online at: <https://oge.com/wps/portal/oge/safety-education/teacher-resources>

Outdoor Classroom Grant Program is a partnership of the Lowe's Charitable and Educational Foundation, International Paper and the International Paper Foundation, and NATIONAL GEOGRAPHIC EXPLORER classroom magazine. As part of Lowe's continued commitment to public education, Lowe's will provide more than \$200,000 in outdoor classroom grants to benefit public schools nationwide. Teachers may apply for grants up to \$2,000 by visiting www.Lowes.com/outdoorclassroom. For school districts with major outdoor classroom projects, grants may be awarded for up to \$20,000. All K-12 public schools in the United States (except Puerto Rico) are eligible to apply for a grant.

Pathways to Nature. Grants to enhance environmental education activities and bird/wildlife viewing opportunities at significant nature tourism destinations in the United States and Canada are being offered by the Pathways to Nature Conservation Fund. Projects of interest include, but are not limited to, boardwalks, viewing platforms and blinds, educational displays, and interactive exhibits. Grantees must match Pathways to Nature Conservation Fund awards with a minimum 1:1 ratio of third party cash or contributed goods and services. Wild Birds Unlimited stores in partnership with the National Fish and Wildlife Foundation sponsor the Fund. Application deadline: December 1st. For more information contact Peter Stangel at (404) 679-7099 or stangel@nfwf.org. Website: www.pathwaystonature.com/

PEW Charitable Trusts. Another large, national charitable foundation with interests in environmental education projects, totaling more than \$1 million. Contact: One Commerce Square, 2005 Market Street. Suite 1700, Philadelphia, PA 19103-7017, (215) 575-9050, website: www.pewtrusts.com

Prudential Spirit of Community Awards. Recognize outstanding community service by young people in grades 5 -12. To be eligible, a young person must be in grades 5 through 12 as of the last weekday in October during the applying year; have engaged in a volunteer activity that occurred at least partly during the twelve months prior to the date of application; and complete an application form and submit it to a school principal or the head of an officially designated local organization. Website: www.principals.org/awards/prudential.cfm

State Farm Good Neighbor Service-Learning Awards. Enable youth and educators to bring positive benefits of service-learning to more young people. This grant is for both young people ages 5-25 and teachers to implement service-learning projects for National Youth Service Day 2003. Grants from \$500 to \$1,500 each are available for young people and teachers to engage classes. <https://www.statefarm.com/about-us/community/education-programs/grants-scholarships>

Toshiba America Foundation Grants. The Toshiba America Foundation encourages programs, projects and activities that have the potential to improve classroom teaching and learning of science, mathematics and the science and mathematics of technology.

Funding is available for private and public schools, grades 7 - 12. Applications for small grants (\$5,000 or less) are accepted year round. Applications and guidelines are available online in PDF. Details on website: <https://www.toshiba.com/taf/612.jsp>

Town Creek Foundation. Support environmental programs that engage citizens in challenging the unsustainable use of natural resources and in protecting biological diversity. Strategies supported are grassroots activism, monitoring the enforcement of environmental laws, public policy advocacy, collaborative opportunities, media outreach, and model or demonstration projects fostering sustainable policies and practices.

Website: www.towncreekfdn.org

Toyota Tapestry Grant. A partnership program of Toyota Motor Sales, USA, Inc. and the National Science teachers Association (NSTA), this program offers grants to K-12 science teachers. Grants are given to innovative projects that enhance science education in the school and/or school district. Fifty (50) one-year grants, totaling up to \$500,000 will be awarded this year. The projects must center on either environmental education or physical science applications (applied physics, chemistry and technology). Projects should demonstrate creativity, involve risk-taking, possess a visionary quality, and model a novel way of presenting science. They should also involve hands-on activities, have an interdisciplinary approach and relate science to students' lives. To be eligible, middle and high school science teachers must spend at least 50% of their classroom time teaching science. Elementary teachers must teach some science in the classroom. Proposals must describe a project including its potential impact on students, and a budget up to \$10,000. Contact: NSTA/Toyota Tapestry, 1840 Wilson Blvd., Arlington, VA 22201-3000, (800) 807-9852. You may obtain an application form for next year's grants from NSTA's Fax on Demand service by calling (800) 400-6782 and requesting document number 591 or download it from NSTA's website: <http://tapestry.nsta.org/Content/GrantRegistration/Default.aspx>

WholeKids Foundation Grant. The School Garden Grant program offers a \$2,000 grant to a K-12 school to support a new or existing edible garden on school grounds. Application open September 1, 2015 and closes on October 31, 2015.

<https://www.wholekidsfoundation.org/schools/programs/school-garden-grant-program>

Youth Garden Grants. Cash is not offered, but tools, seeds and educational materials are provided by the National Garden Association for garden programs involving at least 15 children between 3-18 years of age. Each year 300 grants of about \$700 each are awarded, with the deadline generally being November 1. Contact: National Gardening Association Youth Garden Grant, 180 Flynn Avenue, Burlington, VT 05401, 1-800-538-7476, website: www.garden.org.

Youth in Action/Community Service Grants. Community service project grants of \$500 - \$1,500 will be awarded to youth who take leadership roles and work with adult 4- H volunteer leaders and/or county Extension agents. Grants require youth teams to

identify critical issues in their communities, develop activities to address these issues, and educate other young people and children on ways to model community service. Youth must be actively involved in writing the proposal and in program implementation. Collaborative efforts reflecting the diversity of the community are encouraged. Deadline usually in September: www.fourhcouncil.edu/programs/index.asp

LOCAL SOURCES--Oklahoma City Metro Area

Kirkpatrick Family Fund. Primary fields of interest are education, youth, culture, arts, neighborhoods and beautification. The Fund would be supportive of outdoor classroom gardens that have a strong educational component. Grants up to \$1,500 are reviewed monthly. Contact: Marilyn Myers, Kirkpatrick Family Fund, P.O. Box 268822, Oklahoma City, OK 73126, (405) 840-2882.

Margaret Annis Boys Trust Fund. Grants for butterfly and outdoor classroom gardens. The Fund encourages partnerships among schools, parents, neighborhoods and local businesses. Matching and in-kind contributions are important to successful grant applications. Grants are for perennials, trees, shrubs, soil, mulch and other plant material. Grant size range from \$1,000 to \$1,500 and can be partnered with other local and state funding sources. Contact: Oklahoma City Community Foundation, 1300 N. Broadway, Oklahoma City, OK 73103, (405) 235-5603.

Wal-Mart Stores (501-277-1905) awards **Make a Difference Day Grants**. Contact the local Wal-Mart store manager for information.

Helpful Contacts

- Sarah Rakowski, Farm 2 School Program Coordinator. (Oklahoma Dept. of Agriculture) Contact: Sarah.Rakowski@ag.ok.gov 405-522-2106
- Larry Heyman, OKC Harvest. Contact: larry@okcharvest.org
- Oklahoma Cooperative Extension Service (Oklahoma State University). Provides resources and information related to all things gardening. Contact: <http://www.oklahomagardening.okstate.edu/resources>
- Oklahoma Master Gardener Program. Provides up to date, research based information related to gardening. May also provide volunteer activity to promote community spirit.
Contact: <http://www.hortla.okstate.edu/research-and-outreach/programs/OK-master-gardener/extension-offices-with-mg-programs>
- Micah Anderson, Director of Plasticulture (Oklahoma Dept. of Agriculture) Contact: Micah.Anderson@ag.ok.gov 405-522-5595
- USDA Team Nutrition. Offers free resources and learning materials for school garden lesson plans for teachers.
Contact: <http://www.fns.usda.gov/tn/team-nutrition>, TeamNutrition@fns.usda.gov
- Center for the Advancement of Wellness (OSDH), Certified Healthy School Program. 405-271-3619

School Garden FAQ

What are the three (3) main barriers for schools starting a school garden?

Lack of time: Gardening is worth the time. Create a good team of health educators, gardening colleagues, multiple teachers, student government members, parents, administration, and interested community members. The spread of responsibilities and work among people makes the work easier. One way to spread the labor would be to include teachers who are known to arrive at school very early. Since it is best to water plants in the early-morning, early- arriving teachers may be willing to perform this task. If everyone gives a little time, no one will have a lot of work.

Lack of space: Gardens do not have to be large or elaborate. Plants only need a few things: sunlight, water, soil, and air. Therefore, only a few materials are needed to build the garden. A few raised beds or potting plants, soil, and a watering source are all that is required. Parking lots, courtyards, schoolyards, rooftops, and even enclosed areas in playgrounds are all potential sites. The key is not the size of the garden but rather placement. Gardens should be placed in an area where plants can get at least six (6) hours of sunlight, where water is nearby, away from hazardous pollutants, and protected from vandalism. Here are a few questions to ask:

- Is the site easy and safe for both students and teachers to access?
- Is there a nearby and dependable water source?
- Is the site protected from vandals, rodents or other potential threats?
- Is the area big enough to allow for future growth?
- Is the site exposed to sunlight *at least* 6 hours a day, if planting flowers, herbs and vegetables?
- Is the soil contaminated with lead or other heavy metals?

Lack of funding: Most schools have a very limited budget. Though there may be genuine interest in starting a school garden, the lack of funds can be restricting. Thankfully, there are plenty of generous agencies, foundations, and grants available to help turn a school garden dream into a reality. A complete list of funding sources is available in the Certified Healthy Schools Garden Toolkit. Additional funding sources are listed below. Keep in mind that local individuals and entities such as grocery stores, hardware stores, and other local businesses are great places to ask for donations. Most are eager and willing to be able to support the children in their community.

- ❖ United States Department of Agriculture
(http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=financial_resources.html)
- ❖ Environmental Protection Agency (e-mail: education@epa.gov; website: www2.epa.gov)

- ❖ Oklahoma Department of Agriculture- Forestry Services (405-521- 3864, <http://ok.gov/sde/science-environmental-funding>) Urban and Community Forestry Challenge Grants
- ❖ Oklahoma Department of Environmental Quality (405-702- 7122, <http://www.deq.state.ok.us/>)
- ❖ National Gardening Association (<http://grants.kids-gardening.org>)
- ❖ USDA Farm to School (405-522-2106, <http://www.fns.usda.gov/farmtoschool/farm-school-grant-program>)
- ❖ OKC Harvest (<http://www.okcharvest.org/>)
- ❖ Plasticulture program (Dept. of Agriculture)

How do I maintain a year round work force?

If partnerships are created during the school year, it will be easier to extend the work force through the summer. Creating partnerships with stable community fixtures is beneficial.

Workers may include:

- University/college students from horticultural programs looking to gain skills and experience
- Youth needing to earn community service hours
- Kids partnered with adults from local religious congregations
- Adopt-A-Week sessions set up for local business employees
- Social agencies (i.e. Boys and Girls Club, Girl Guides, Rotary Club members)
- Senior living facilities
- Local garden clubs

Local community center school break and summer camp programs could include a gardening component. This provides volunteers to help at the school garden during scheduled times. If funding is available, paid summer jobs for senior students is another option.

What is the value of kids gardening?

- ❖ Gardening offers hands-on, experiential learning opportunities in a wide range of disciplines, including the natural and social sciences, math, language arts and visual arts, and nutrition.
- ❖ School gardens offer children opportunities for outdoor exercise while teaching them a useful and lifelong skill.
- ❖ Students' preferences for fruit and vegetable snacks increase after completing a gardening program.
- ❖ By deepening children's understanding of their connection with nature, school

gardening can inspire care for the world around them.

- ❖ When school gardens are incorporated into the curriculum, students are more engaged in learning that can lead to higher scores on standardized achievement tests.
- ❖ Like a team sport or mascot, gardening can offer a symbolic focus of school pride and spirit.

Who do I include in the garden committee?

Starting a school garden is a large task, and therefore it is best to not begin it alone. A committee is needed to assist with fundraising, scheduling, designing, building, and maintaining the garden. Try to find teachers that are interested and support the vision for the garden. Teachers and staff with experience in gardening are preferred but not required. Parents, members of local garden clubs, Master gardeners, 4H students, and elderly community members are all potential members of the garden committee. The more responsible committee members you have, the easier the work will be.

How do school gardens relate to Certified Healthy Schools?

The Certified Healthy Oklahoma program provides recognition for schools who have taken positive steps toward becoming a healthy structure. The applicant's selection of certain criteria in eight different areas of wellness will determine the level of certification: basic, merit, or excellence. One of the areas is Family and Community Involvement (FCI), which includes a school garden criterion. The goal of this tool-kit is to provide tools and resources to empower schools to build a school garden. Obtaining a school garden will increase an applicant's score in the FCI section and potentially increase the overall certification level.

What do we do with the food that is grown?

Food grown straight from the ground is often the best tasting. So the first thing to do with the food is, eat it! Another option is to include the produce grown from the garden into the school meal program. This will add fresh flavor to the sometimes tasteless school lunch. Check with your local health department to ensure this practice is permitted. Some schools even use the food as a fundraiser for school events or for the garden itself! Fruit and veggie sales tend to be quite successful.

How do we garden without exposing kids to pesticides, herbicides, and fertilizers?

The best method of gardening is to garden organically, without the use of pesticides and herbicides. This can be accomplished by first starting with a healthy soil that includes organic matter: mulch, composts, or organic fertilizers. A healthy soil is vital in developing healthy plants. Strong, healthy plants tend to have fewer harmful pests. Still, some form of pest is likely to appear. In order to properly monitor pests in the garden, knowledge of

different pests is required. Some bugs are actually beneficial because they eat the more harmful pests which eat and destroy the plants. Riddance of these pests is sometimes as simple as hand-removal or blasting off with water. Also, watering less or in the morning hours allows the soil to dry before nightfall when humidity condenses on the leaves. Other methods include coating bugs in horticultural oils and insecticidal soaps which will suffocate them without a harmful effect on the environment.

For further information on sustainable gardening practices visit: The Kerr Center for Sustainable Agriculture <http://kerrcenter.com/organic-farm/pest-management/>