

Planning and Development of a Garden

Basic Guidance for School and Community Gardens



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UCCE Master Gardener Program of Riverside County
Vetted by Riverside County Office of Education-STEM

Master Gardeners

The University of California Cooperative Extension (UCCE) Master Gardener Program (MGP) is an educational program designed to teach and effectively extend information to address home gardening and non-commercial horticulture needs in California.

UCCE is the outreach arm of UC's division of Agriculture and Natural Resources (ANR). Master Gardener volunteers (MG volunteers) promote the application of basic environmentally appropriate horticultural practices through UCCE-organized educational programs that transfer research-based knowledge and information.



University of California

Agriculture and Natural Resources

UCCE Master Gardener Program



Learning Goals

Educators will:

- Become familiar with the basic principles of designing a garden, including practical considerations.
- Understand that Riverside County Master Gardener volunteers are available to help guide a school or community garden team through this planning process.

Why is This
Important?

Outdoor Learning
Spaces Enhance
Education!

California Department of Education Guidance:

- Outdoor learning is integrated with standards-based academic subjects and should be utilized as more than a stand-alone option.
- Outdoor learning increases academic learning and environmental literacy.
- Exposure to nature has social, emotional, and physical benefits for students and can provide alternative safe spaces for teaching and learning.

School Design for Optimal Learning Environments

School design can impact learning in many ways. Comfortable, healthful, and safe environments allow children to focus on active learning. The ability to move with ease between one learning environment and the next minimizes seat-time while allowing educators to utilize the facilities as a learning tool.



Biophilic Design

This design concept incorporates elements of nature into the built environment in order to foster student well-being. Studies indicate that student performance is improved by an even distribution of daylight and expansive views of the outdoors. Adding planters, mobile gardens, and living walls can help bring the outdoors into the classroom. Uncovering windows and opening curtains allow students to have more exposure to daylight and the natural elements outside.



Universal Design for Learning (UDL)

In architecture, Universal Design provides physical access to inclusive environments that can be used to the greatest extent by all people. UDL teaching and learning methods provide multiple means of engagement, representation, and action (including technology) to facilitate asset-based learning. UDL enhances in-person learning as well as distance learning, and flexible learning spaces facilitate UDL.



Indoor Air Quality (IAQ)

Ensuring that all indoor spaces have adequate ventilation is critical to the health of all students and staff. Research has shown that improvements to ventilation result in increases in student performance. The United States Environmental Protection Agency's Indoor Air Quality Tools for Schools Action Kit offers school resources, activities involving school staff, and tools to improve IAQ problems with little to no cost.

Flexible Learning Environments

Learner-centered spaces are designed to accommodate different teaching and learning formats, styles, and needs. Flexible learning environments and flexible furniture arrangements allow multiple learning activities to occur simultaneously and invite student choice in where and how to learn. Research supports that alternative seating arrangements can also facilitate social interaction and student inquiry.



Outdoor Learning Spaces

Outdoor learning is integrated with standards-based academic subjects and should be utilized as more than a stand-alone option. Outdoor learning increases academic learning and environmental literacy. Exposure to nature has social, emotional, and physical benefits for students and can provide alternative safe spaces for teaching and learning.



Indoor Air Quality Tools for Schools Action Kit | Creating Healthy Indoor Air Quality in Schools | US EPA



Best Practices and Resources School Facilities (CA Dept of Education)



Developed in partnership with the University of California Cooperative Extension, the UCCE Master Gardener Program, and the California Department of Education. April 2021

It's All About Planning Before Planting

Master Gardeners are here to help guide you through this process!

- To receive our free consultation services this form must first be completed and submitted. It does not have to be a detailed description of your garden plan. Just enough information to give Master Gardeners a general idea of what you want for the garden.
- This form is available at the Riverside County Master Gardener [website](#).

The form is titled "Request for Master Gardener Consultant" and is from the University of California Agriculture and Natural Resources, UCCE Master Gardeners of Riverside County. It includes fields for School Name, School Address, School Phone, Contact Person, Phone number, Email, City, District, Position, Date, and Zip. It also contains several open-ended questions: "Are you starting a garden or need help with an existing garden?", "What are your goals for the garden?", "What age are your students?", "What space is available for the garden?", "What resources are available to you?", "Do you have irrigation?", "What support do you have already at your school?", "What organizations can you partner with? (Boy/Girl Scouts, 4-H, Valley Beautiful, etc.)", "Has funding been secured?", "Have you applied for a grant?", and "What assistance would you like from Master Gardener Volunteers?". At the bottom, it provides the return address: UCCE Master Gardener Program, UCCE Riverside County, 21150 Box Springs Road, Suite 202, Moreno Valley, Ca. 92557.

Example of a Completed Request Form

Are you starting a garden or need help with an existing garden? Starting new

What are your goals for the garden? A garden at [redacted] would be used to teach plant life cycles and pollination teach sustainability, build responsibility, instill interest in environmentally friendly practices, and even has the potential to inspire [redacted] families and community members to start their own home gardens.

What age are your students? Kindergarten through 5th grade

What space is available for the garden? An estimated ^{38' x 12'} 3' x 48' open space that is now an unused planter.
Additional space is throughout our campus to assess potential for future garden spaces.

What resources are available to you? [redacted] has had a strong PTA presence with successful fundraising events to support the needs and interests of our school and students.

Do you have irrigation? No Yes

What support do you have already at your school? Our school has built an amazing family-focused community over time. We have supportive parents as well as programs like Student Council to help initiate and lead upkeep of garden.

What organizations can you partner with? (Boy/Girl Scouts, 4-H, [redacted], etc.)
As this is our first endeavor to build a school garden, we will need to research community support groups available to us.

Has funding been secured? Not yet.

Have you applied for a grant? No, we are very interested in applying for potential grants!

What assistance would you like from Master Gardener Volunteers? Master Gardeners would be an asset to us in designing a series of beds that would be successful in our provided space as well as guiding us how our garden can expand over time. We would love to learn how to establish vegetables/herbs/fruits with native and water-wise plants.

This Begins by Clarifying Your Goals



Your completed Request Form provides some general ideas or even a “wish list” regarding grade levels or number of youth to be served and ideas on what to grow.

- A Master Gardener consultant will work with you to drill further down into the desires and needs of the students, staff, and/or community who will be using the garden.
- The Master Gardener’s input will be guided by the basic principles of garden design.

Garden Design Basics



- **Social Information:** Strive to understand the desires and needs of the people who will use the garden.
- **Climate:** Evaluate the overall climate, as well as microclimates on the site which influence the choices of suitable planting materials, the design of the irrigation system, and hardscape features.
- **Site Analysis:** Consider the nature of the site, its immediate surroundings, views, topology, and any natural or human made objects existing on the site.
- **Materials:** Determine the available materials and preferences.
- **Budget:** Establish the available resources of money, time, knowledge and skill.
- **Ordinances:** Know what is permissible per school district, city, or county regulations.

Consider a Variety of Options

The Master Gardener will share an overview of gardening options that address both the basics of garden design and meet the needs of your school or community.



Typical to Most School and Community Gardens Are Raised Beds



Move Beyond or Expand Upon Raised Beds by Growing a Layered Garden called a Food Forest



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Convert Traditional Landscape Areas to Pollinator and Vegetable Beds

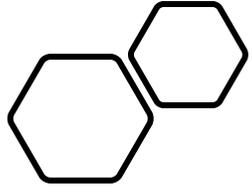


Extend Growing Options Across a Greater Area of a Campus with Container Gardening



Create Inviting Areas by Integrating Art into the Garden





Include Inviting Learning Spaces in the Garden

- Outdoor seating provides an area to introduce or provide closure for a garden activity.
- It also provides an alternative learning space for other academic learning.



Plan for a Service and Storage Area

This must be planned in context with the site area intended for the garden.

- This area will provide a place for tools, composting, and clean-up so it needs to be conveniently located for use.
- It can be designed and constructed to blend with the overall garden setting and could include an instructional area and provide tables for additional work zones.





Consider Including a Clean-Up Station and/or Garden Kitchen



Site Analysis is a Critical First Step!

- Observe carefully to determine whether site conditions will be a deterrent or if they can be easily incorporated into a final garden design plan.
- Consider preserving all the best natural and man-made resources on the site when possible.
- Also determine if the site has easy access to a water source.



Site Analysis Continued



This school chose two sites to develop into edible gardens.

- Lawn area close to classrooms was dug up and replaced with raised beds.
- Landscape plants were removed from the existing cement beds for additional edible gardening.
- A storage area was located under a tree canopy near the enclosed planting bed.

Microenvironmental Considerations Are Also Important

- These include:
 - Low places with cold air
 - Rate of water drainage
 - Exposure to or lack of sun
 - Wind
 - The soil's chemical and physical properties that affect plant growth

Tennis court cloth was added as a barrier to block strong afternoon winds



Video: School Garden Learning Spaces



Dive Deeper into Planning a School or Community Garden

Check out these websites:

- Designing a School Garden PDF, [California School Garden Network](#)
- Nutrition/Outdoor Kitchens, [Edible Schoolyard Project](#)
- Education Outside Resources, [Life Lab](#)
- Getting Started With School Gardens, [Center for Ecoliteracy](#)
- National School Garden Network [Webinar Series](#)
- Resources for Building a School Garden, [Nature Conservancy](#)

Explore Possible Funding Resources

Start with local organizations including your parent- teacher organization and other school partners. Other possibilities include:

- [California Farm to School Program](#)
- [Kids Gardening](#)
- [Metropolitan Water District of Southern California](#)
- [Project Learning Tree](#)
- [Seed Money](#)
- [School Garden Network](#)
- [Whole Kids Foundation](#)

Reach Out to Possible Partners to Provide Volunteers

**Start with local organizations
including:**

- Afterschool Programs
- Boy and Girl Scouts
- 4-H
- Garden Clubs
- Master Gardeners
- Parent -Teacher Organization

Resources

- California Master Gardener Handbook, Second Edition, 2015
- Designing a School Garden and School Garden Design Elements PowerPoint, [California School Garden Network](#)
- [UCCE Master Gardeners of Riverside County](#)
- [UCCE Master Gardeners of Orange County](#)
- Images: [California Department of Education, Facilities](#); Creative Commons; Google Maps; [MZTeachuh blog](#); [Sacramento City Unified School District](#); UCANR
- Video: Out Teach Education

California Standards For the Teaching Professions

Standard 1: Engaging and Supporting All Students in Learning

- 1.3 Connecting subject matter to meaningful, real-life context

Standard 2: Creating and Maintaining Effective Environments for Student Learning

- 2.2 Creating physical or virtual learning environments that promote student learning, reflect diversity, and encourage constructive and productive interactions among students

Standard 3: Understanding and Organizing Subject Matter for Student Learning

- 3.4 Utilizing instructional strategies that are appropriate to the subject matter
- 3.5 Using and adapting resources, technologies, and standards-aligned instructional materials, including adopted materials, to make subject matter accessible to all students

Gardening Questions?

- Email or Call the UCCE Master Gardeners of Riverside County
- Email Helpline
 - anrmgriverside@ucanr.edu
- [Riverside Master Gardeners Website](#)
- E-mail: mgschoolgardens@gmail.com



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