

LESSON 3

Garden Planning and Design

In this lesson we go over the details of planning and building the school garden space and setting up policies to ensure that the garden is maintained over time. The general purpose of this course is to teach you how to build a school gardening program, so this lesson focuses on how to build the physical garden for the gardening program. It also emphasizes that sustainability should even be considered in the design of a garden so that it can keep serving the school and community for many years despite changes in personnel and volunteers.

Learning Objectives

1. Understand guiding principles to aid in the garden design and planning.
2. Learn ideas for creating an effective and inclusive design process.
3. Learn common school garden design elements.
4. Learn strategies for effective ongoing maintenance of the garden and information on safety requirements.

Guiding Principles

- Create realistic expectations: Planning a school garden program takes time, patience, and compromise. Try not to expect too much too fast; personnel and volunteers can burn out if too much is expected of them. A good example of this approach in practice is to keep the garden small to start. Plan to build it in phases with room to grow as the garden gathers interest and support. Expecting success out of a small, more manageable garden at first will likely create more satisfaction with the project from teachers, administrators, and planners. Especially when money and resources are time-sensitive, it's tempting to build too big too quickly, without the necessary relationships and plans in place, but keeping this in mind and resisting fast growth will help prevent difficulties in the future.
- Document all agreements: Keep good records of all agreements between the school, school district, community groups, gardeners, etc. This can help solve disputes later and avoid liability, especially if there is turnover in the management of the garden. A school garden is unique in its need for care and clarity in documentation, in order to ensure a safe environment for the children it serves.
- Seek input from all relevant stakeholders: As discussed in Lesson 2, it's important to actively involve all interested stakeholders in the planning process. This helps people feel connected and responsible for the garden and can prevent challenges in the future due to people feeling ignored or unheard.

Design Process

We recommend that the design of the garden be a collaborative process between the garden leadership team and the members of each stakeholder group. The garden design is also a great time to get students who will benefit from the project excited and engaged. One possible idea is that each class creates a design for the garden, and the elements of these are melded together in the final design. The design process can be a learning opportunity for practicing math, geography, science, drawing, and overall problem solving techniques. Look for every opportunity to meet California's curriculum goals and standards with garden planning and activities (more on this in Lesson 6). In doing this, you will make the gardening program, including its design, a key part of school instruction, not an additional burden for teachers. Local colleges or universities may be able to point you to additional resources or students who can help you with the design process and provide greater educational support for teachers- a school garden might be an interesting case study for design students, and their ideas might be right for your garden.

Garden Elements

The following are elements to consider in the design of the garden (adapted from LifeLab's "Getting Started: A guide for creating school gardens as outdoor classrooms"). Remember, it's often a good idea to start small and expand later. The design can always allow for growth of the garden in the future (more beds, an orchard, etc). Also, keep in mind the various garden participants while you're designing, so that the garden incorporates



components that are appealing to all of them. For additional ideas, check out the garden design section of the Master Gardeners' "Plant a Seed, Watch it Grow" guide (available at: www.mastergardenerssandiego.org/schools/gardenbook/index.html), or consider signing up for the Mother Earth News Vegetable Garden Planner, which is \$40 for 2 years.

Available at: www.motherearthnews.com/garden-planner/vegetable-garden-planner.aspx

- Outdoor classroom and meeting area: The garden is an outdoor classroom and should have many of the same elements as an indoor classroom (seating, place for writing, whiteboard/blackboard). This area should be shaded.
- Plot for each classroom: School gardens often have a bed/plot for each classroom and common garden space. Typically, beds are 4 feet across to allow gardeners to reach from both sides without stepping on the bed. For younger children, you may want to consider building them 3 feet across, or have a mix of 4-foot and 3-foot wide beds. Your choice of in-ground versus raised beds will depend on various factors such as quality of your soil, drainage, water availability, and aesthetics (See Gardening 101 and 201 for more detail on these soil considerations.)
- Planting containers: You might have an area of container gardening, to add diversity of learning and accessibility to the garden. Container gardening is an opportunity for creativity on the part of students designing the space, because all kinds of things can be used as containers. Containers might also be used for experiments, allowing comparison of growth in and out of containers.
- Shared growing area: This might be an area where the entire school works together to grow something, like flowers, herbs, pumpkins, or plants to attract beneficial insects. This type of space allows for a variety of learning and interaction with the garden and an extra space to practice teamwork and collaboration
- Student experimentation space: This would be a space for older students to conduct individual or group experiments. They could label their spaces with information about what is being tested in each small portion of this space.
- Pathways: Pathways between beds should be at least 3 feet wide to accommodate wheelbarrows. The paths should be covered with a recognizable substance, such as large wood chips, to make sure children can differentiate the pathways from the garden beds. This is especially true if you're going to use in-ground beds rather than raised beds, since in-ground beds don't have walls around them.
- Compost area: The compost area is vital to reusing garden and kitchen scraps, teaching about decomposition and soil, and creating a soil amendment that can improve the garden. Your compost area, depending on size, might use a variety of techniques (e.g., hot-pile, enclosed bin, vermiculture bin) to increase teaching opportunities. Compost should generally be located in a shaded area without too much debris so that critters can't hide in it. To learn more about composting, see Gardening 101 and/or Building Fertile Soil, referenced below.
- Tool shed: This area is used to store tools and post information on proper tool use so that users can avoid injuries and maintain the tools. Post rules for use on/in the tool storage area, with particular attention to how tools are shared between school and community members, if applicable.
- Greenhouse or cold frame: A greenhouse or cold frame (or even an indoor space inside the school) is a great place for starting seeds to be used in the garden, even in our mild San Diego climate.



- Irrigation setup: It's important to think about the availability of water early in the design process, to avoid having the only spigot be too far away for easy use. Irrigation can be anything from a nearby spigot for filling bins/watering cans, to a drip system set up in beds. Either way, make sure you consider where the closest water source is located.
- Sink: It can be useful to have a sink in the garden for washing hands and rinsing vegetables. Remember to think about the height of the children who will be using it, and plan appropriately.
- Community space: If you're planning a joint-use garden (discussed in detail in Lesson 5), you'll need dedicated garden plots for community members in addition to students. The size of the garden space will determine both the number and size of the plots. Community garden plots range in size, with plots 4x8 to 20x20 and everything in between. Lesson 5 touches on other considerations you will want to take into account if the space is open to community gardeners.



ACTIVITY 1

Take a field trip to a school garden or two during course class time or between classes. There's no better way to get ideas for your school garden than by visiting others, especially for elements of the garden itself.

Ongoing Maintenance

A thoughtful plan for maintenance of the garden, with attention to summer and other school breaks, will help ensure the garden is always a beautiful and positive learning space. Regular use of the garden in the school day and after-school program (discussed in detail in Lessons 6 and 7) will go a long way toward a well-maintained garden as classes and students develop ownership and pride in their garden. Summer vacation requires careful planning to ensure the garden is in good condition when school starts again. A joint-use garden where community members are allowed to maintain personal plots and common areas can help immensely with summer maintenance.

At all times, extra care should be taken to work with maintenance and landscape staff. Treat them with respect, communicate regularly, and respond to their requests. Landscape staff who feel their advice and opinions are valued are much more likely to support the garden program. It should be noted that in some districts landscapers are limited in the support they can lend to gardens, even if they want to, due to their labor contract. This problem can often be worked around if the construction and maintenance of the garden follow district protocol. Talk with the landscape staff to gain an understanding of contractual limitations and to work around misunderstandings and problems.

The following is a list of suggestions for developing a maintenance plan for your garden:

- For any type of garden, recruit help from parents and families for garden maintenance during vacations, especially the summer. The garden could sign up volunteers for a week or two of maintenance or monthly visits staggered throughout the summer so someone is at the garden regularly. A system will have to be set up to ensure volunteers have access to the garden during the summer.



If the garden is not being used over the summer, prepare the space at the end of the school year to minimize weed growth and reduce the hours needed for summer maintenance. Here are a couple approaches:

- Mulch the ground and/or beds with materials such as woodchips or plastic that keep weeds from getting sun to grow. You'll still want to periodically check-in, and weed.
- Sow cover crops such as clover, vetch, fava beans to improve the soil passively. You'll still want someone checking on growth and maybe cutting back cover crops to keep the garden well groomed.
- Schedule volunteer work parties for times when you expect to need additional maintenance, like at the beginning of the school year. Schedule in advance, advertise well, and make it a fun event by incorporating music, food, etc.

A couple notes on safety requirements for maintaining the garden:

- Recycled water, or "purple pipe" water, is allowed for irrigation of the garden, but it is prohibited for students to come in direct contact with this water. Therefore, it should not be used for student activities or immediately prior to being in the garden. It can be used at other times, like school breaks or when only a teacher or coordinator is watering.
- According to the California Healthy Schools Act, schools must label with signage that pesticide use will take place on school grounds 24 hours in advance and 72 hours after it is applied. In addition, annual written notification of expected applications must be sent to parents and teachers. You can avoid these issues in the garden entirely by not using sprays, but if that's not a possibility, be sure to review the FAQ available at: apps.cdpr.ca.gov/schoolipm/overview/faq2000.cfm.

References

1. **Healthy Works-VGSD.**
"Gardening 101: How to Grow Your Own Food."
Available at: www.victorygardenssandiego.com
2. **Healthy Works-VGSD.**
"Gardening 201: How to Start and Maintain a Community Garden."
Available at: www.victorygardenssandiego.com
3. **Life Lab Science Program. 2007.**
"Getting Started: a guide for creating school gardens as outdoor classrooms." Center for Ecoliteracy.
Available at: www.lifelab.org/wp-content/uploads/2010/06/GettingStarted.pdf
4. **San Diego Master Gardeners.**
"Plant a Seed, Watch it Grow."
Available at: www.mastergardenerssandiego.org/schools/gardenbook/index.html
5. **UC Santa Cruz Center for Agroecology and Sustainable Food Systems.**
"Building Fertile Soil."