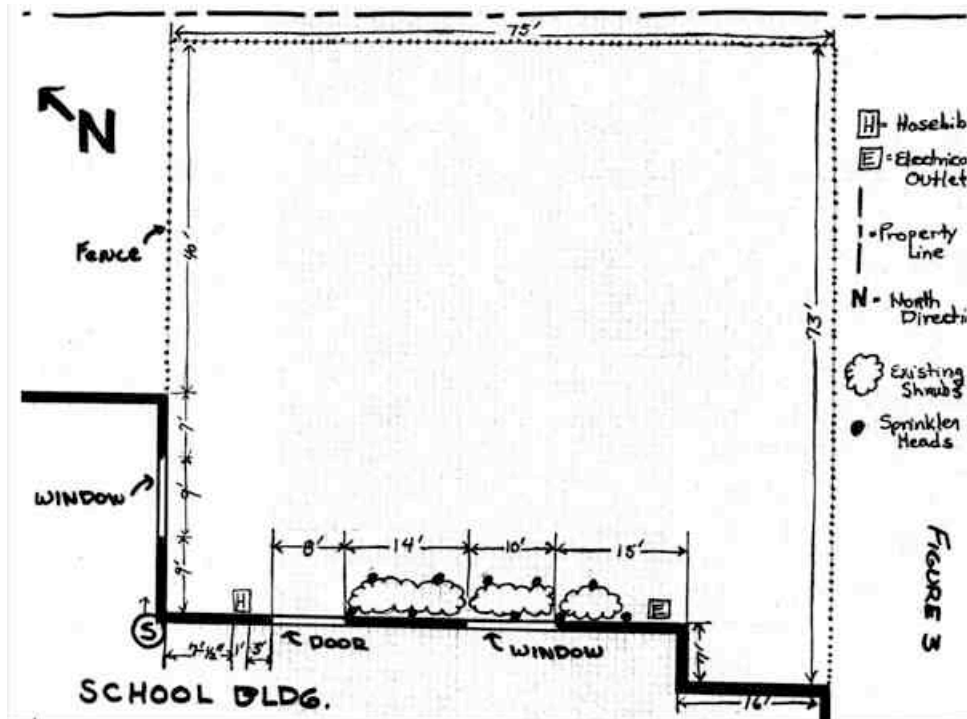


## GARDEN DESIGN

### Introduction

The future school garden must be designed to meet school and community expectations. Just as the school was planned in advance of construction, this outdoor classroom should be carefully arranged to meet the needs of those who will use it. Create a planning team consisting of students, teachers, school administrators, groundskeepers, parent volunteers, and community representatives as a resource for suggesting ideas to be incorporated into the design.



Once the garden location has been determined the team should begin the design process with a layout of the area that will become more detailed as the planning process progresses.

The designated team chairperson will coordinate activities and record ideas. The team will research additional sources for garden ideas and visit other school gardens. [Click here to link to School Garden References for several books on school gardens that can be reviewed for ideas.](#) The team's recommendations will provide the guideline for those responsible for completing the design. The balance of this chapter suggests areas for the planning team and the garden designers to consider during the planning process.

## Garden Design

### Size

Once a garden site has been selected the appropriate size should be planned. Some schools have a limited amount of space for a garden and size has already been predetermined. In this situation, careful planning will insure that every square foot is allocated for the best possible planting advantage.



Use rolling raised beds



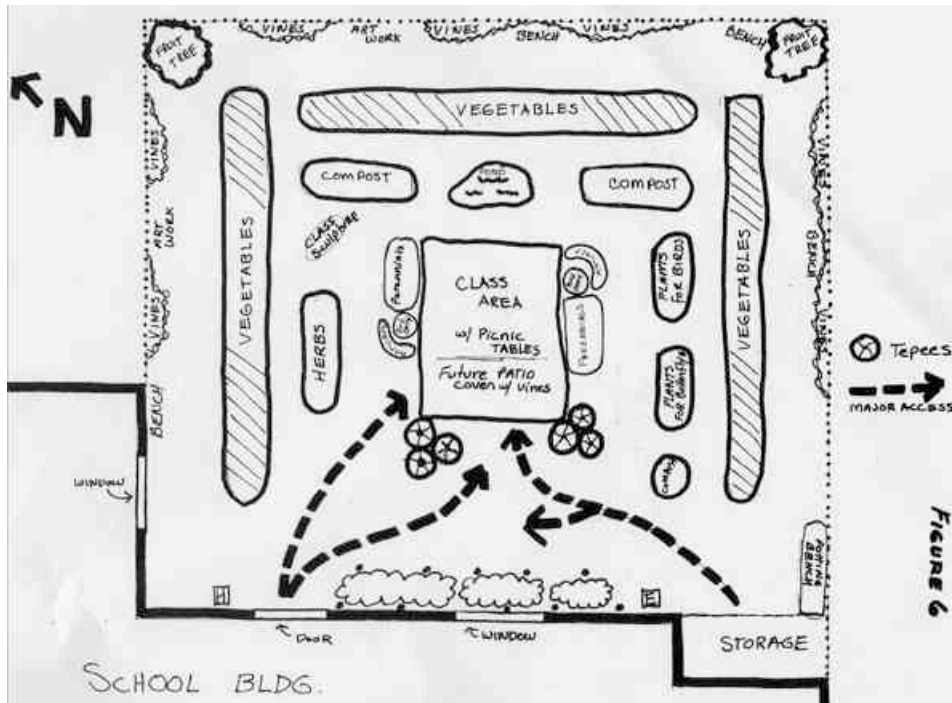
Good use of a small space

At other schools the amount of space for a garden may be abundant. These gardens must also be carefully planned. Consider garden development in several stages. Starting with a large garden may over-tax available time and funds. [Click here to link to Garden Design Planting Beds for examples of bed sizes.](#)

Consider and address the following elements when planning the size of a garden:

- Numbers of teachers and students who will use the garden
- Kinds of plants to be included and their space requirements
- Size of pathways
- Space for storage to hold tools and supplies
- Area for composting
- Room for greenhouse or cold frame
- Spaces for permanent plantings such as vines, trees, and shrubs
- Areas to place tables for class instruction and for potting benches
- Number and sizes of beds
- Resources and materials available for construction and startup costs
- Start up money and annual budget available for garden expenses

## Garden Design



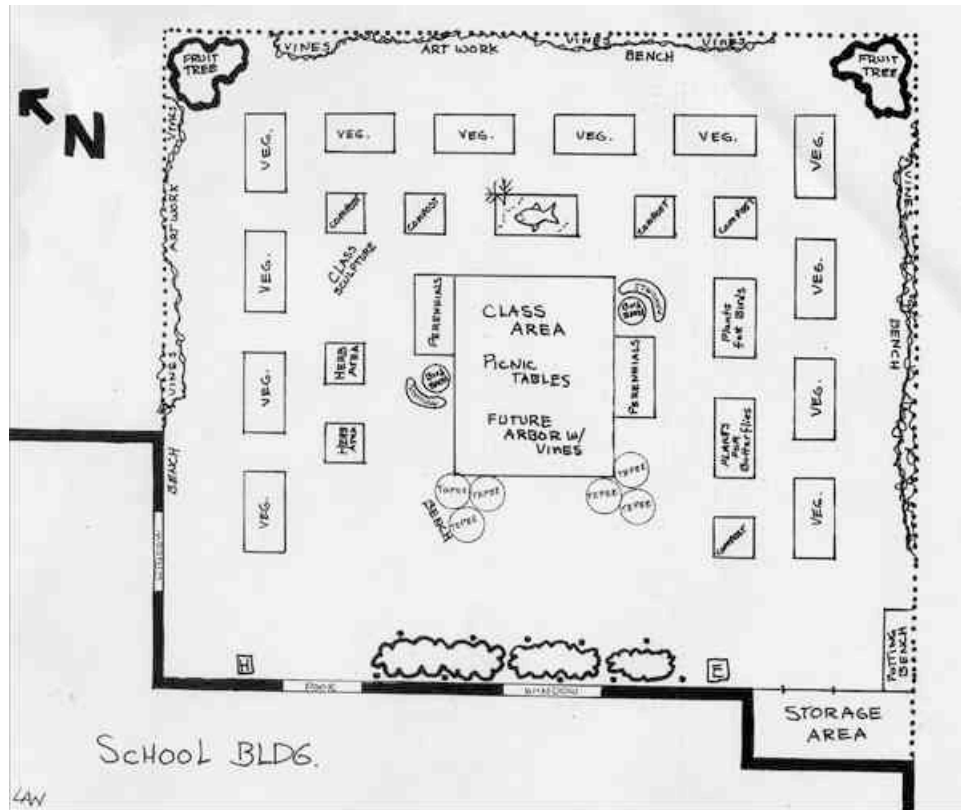
Take all of these considerations into account as you further develop your garden plan.

### A Garden for All Seasons

If the garden laboratory is a pleasant place, student gardeners will be eager to return to learn more about plants. One definition of a garden is “grounds adorned with flowers, shrubs, and trees for public enjoyment”.

When children are in their garden they should be able to see beautiful plants in every season. San Diego County’s climate offers opportunities for schools to develop a garden that will include blooming plants year-round as well as vegetables that will grow in all seasons. Spaces allocated for annuals, biennials, and perennials will result in a beautiful year-round garden. Vines growing on perimeter fences will add to the attractiveness of the garden. Some schools design spaces for plants that will attract birds and butterflies. Permanent plantings of shrubs and trees will make the garden more attractive. Shrubs, trees, and vines may also shade growing areas and will, therefore, influence what plants are selected for these areas.

## Garden Design



The final design reflects the location of each item in the garden.

Art in the garden adds to the beauty and provides an ideal place to display students' projects. Sculpture, murals, and other art forms will add beautiful elements. Allow sufficient space to place art projects throughout the garden.

### **Pathways and Common Spaces**

School gardens typically will have large numbers of students working for short periods of time. Paths must be wide enough to accommodate the largest class and sometimes multiple classes at one time. The size of pathways can also be determined by the width of the largest piece of equipment to be used in the garden. Locate paths on all sides of beds to provide easy access and reduce stepping into planting beds.



Example of well designed pathways

The surface on pathways may be native soil compacted to a hard density for ease of maintenance. Plain dirt has the advantage of easy weed removal. However, weeds sprout more abundantly and the paths become muddy during hand watering and rainy weather. Tree bark or chips are inexpensive additives to control weeds and mud, but must be replaced periodically. Permanent paths of brick, stone or concrete provide an effective weed and mud control and add to garden décor, but are the most expensive alternative. [Click here to link to Design Accessibility for Physically Challenged Children and Adults for information on pathways for the physically challenged.](#)

The entrance to the garden should have a large reception area where bulk materials such as mulch and compost may be unloaded. This area will also serve as an instructional space where students receive information before entering the main garden. A space twenty feet by twenty feet would be ideal.

### **Planting Beds**

Many elementary school gardens are designed so that each class has a space allocated for planting vegetables and flowers.

Size and shape of beds may vary according to space available and the number of students using each bed.

In junior high schools and high schools gardens are often assigned to a club as an extracurricular activity or to science classes as an outdoor laboratory.

Small numbers of students may have a bed assigned for an experiment.

## Garden Design

Sizes of beds and walkways may be adjusted to fit space available. Bed sizes can be adjusted to 3-4 feet wide and 6-10 feet long. Paths can be 4-6 feet wide for center and 3-4 for laterals. [Click here to link to Building the Beds for more information on raised beds.](#)

### **Sun Exposure**

The relationship of the sun to the garden beds is important to consider when designing the garden.

For rectangular beds the long dimension should run east to west. Determine if nearby buildings or trees will shade the plots, especially in winter when the sun's arc is low in the sky.

Sun loving plants may have to be dropped from the planting list in autumn and winter in favor of those that will grow in shady conditions. Grow sun-loving plants in full sun in spring and summer when the sun's arc is high. Painting nearby walls white can also increase the effects of the sun.

### **Watering Systems**

Easy access to running water is essential. This can be as simple as a single hose faucet located in a convenient spot. Teachers may prefer to teach watering methods by use of watering cans or hoses. This gives students experience on how much and how often to water to obtain healthy crops. Hand watering is difficult during weekends, holidays, and vacations. Automated systems assist the teachers by eliminating the drudgery of hand watering when students are not available.

## Garden Design



Examples of a variety of hand watering systems

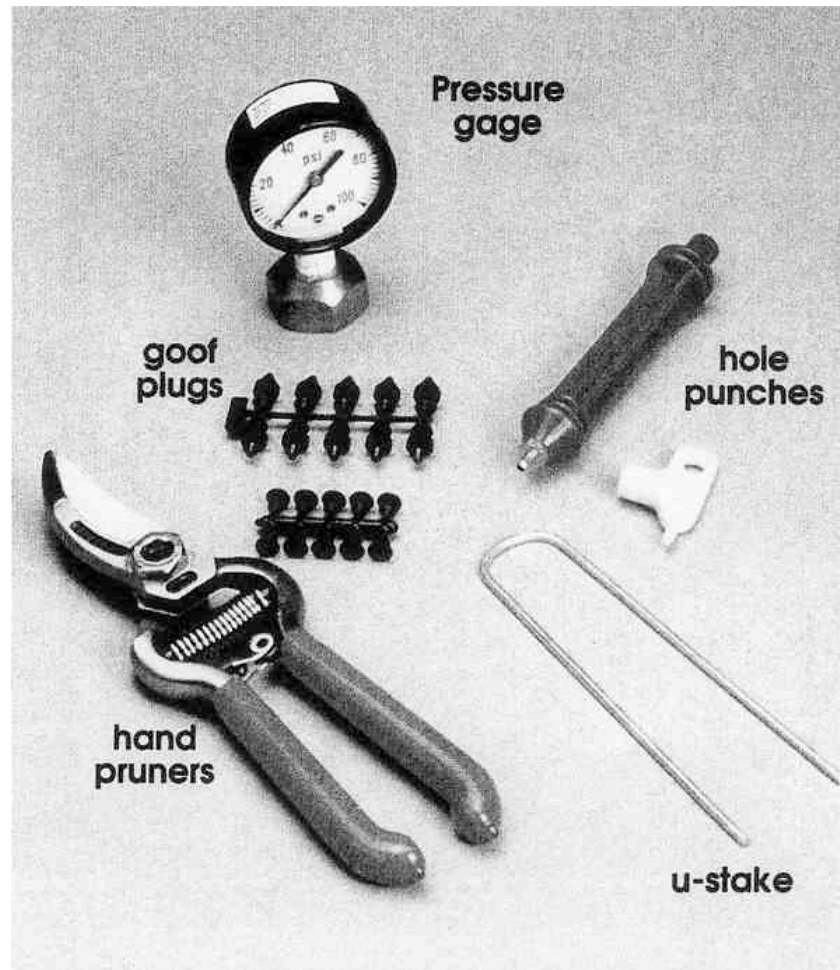
Seed starting can be improved through an automatic system that turns on several times per day during the germination period. Investigate both sprinklers and drip systems. Sprinklers have the advantage of being more permanent, but will probably use more water. Drip irrigation will provide a more flexible system that can easily be removed from the planting beds and reinstalled to fit different types of planting designs. A drip system may also aid in teaching water conservation methods.



Example of a drip system

## Garden Design

If an automated system is to be installed, consult with an irrigation specialist. Contact a parent volunteer knowledgeable in irrigation systems, or a local irrigation supply dealer to design and/or install a system. Free booklets describing irrigation system components are available from manufacturers and local retailers.



Useful tools for installing and maintaining a drip system

### **Tables and Seating for Children and Adults**

The garden is an outdoor classroom. Allow students time to observe and record important data in their journals while in the garden. Tables will facilitate recording information about facts gathered during garden exercises. Tables also provide workspace for planting seeds in containers. Garden benches, where students can sit and read or just enjoy the garden, will enhance the environment.

Seating also provides a gathering place for adults to interact with students, a teaching station for small group instruction and a place to observe the garden in action. A 2 inch x 8 inch cap on raised beds doubles as extra seating. Add an overhead shade structure for sun protection on hot days.



### **Work Benches for Potting Projects**

Incorporate a structure for potting plants, starting seeds, and repotting seedlings. This can be an old discarded table or a custom potting bench complete with storage bins for planter mixes and shelves for storing pots. Some garden centers and mail order houses sell potting bench kits.

Parent volunteers may also be able to construct custom benches for the garden. A bench that is 24 inches wide x 48 inches long x 30 inches high will accommodate two students.

All wooden surfaces should be painted unless a weather and termite resistant material, such as redwood or recycled composite board, is used. An alternative to the rectangular potting bench is a discarded wooden wire spool.

### **Compost Areas**

Composting is an excellent way to teach the complete growing cycle. Provide an area to incorporate the method of composting to be used. This can be as simple as layering garden waste on the ground to an elaborate set of bins to hold decomposing materials. [Click here to link to Composting for more information.](#)

### **Storage**

Every garden needs a storage facility for garden tools and supplies. This may be a homemade shed constructed on site, or a manufactured container of wood, metal or plastic. Design the unit large enough to store hand tools, wheelbarrow, hoses, and garden amendments.

Construct it to withstand weather, vandalism, and theft. Include a locking device to secure the facility. A practical size for a storage shed is four feet by eight feet by seven feet high. An alternative is to store tools and supplies in the classrooms.