Designing and Placing the Garden

Now comes the fun part – it's time to plan and design the garden itself! Here's a very important tip: Plan big, but start small. A large project initially may be overwhelming and exhaust the enthusiasm of your students and volunteers. Let them get excited about the success of a bountiful, enjoyable, small garden; then expand as confidence and experience increases.

OUTDOOR GARDEN DESIGN

There are many different garden design options, depending on the space you have available, the goals for your garden program, and the amount of time and labor that can be devoted to the program. Including the children who'll be gardening is crucial to every phase of the design process. For them to feel a sense of ownership of the garden, their ideas must guide the overall project. If you tell students, Here is where we're going to have a vegetable garden, what is left for them to envision? If you ask students, What kinds of garden spaces would help you learn more about food and nutrition? you have presented a whole different level of interaction. Now students must investigate what kinds of food plants they can grow in their region, what environmental conditions those plants need to grow, what connections those foods then have to their diets, and so on. You don't need sophisticated designs to build a successful youth garden, but creating a physical plan helps you organize your plans and communicate your to-do list. Just don't cast your plans in stone and remain open and flexible to spontaneous, creative suggestions from your young gardeners.

VISIONING

School and youth gardens can encompass everything from beds of vegetables and fruit plants to sensory gardens for touching and smelling, flower gardens to nurture pollinators, native plants to feed birds and butterflies, or rain gardens to help protect the watershed. Youth gardens might include seating areas, outdoor classrooms, or areas for creative play and exploration. Begin with **visioning** exercises with everyone involved in the garden project. Finding out how teachers will use the garden, how students will actively participate, and how the community will be welcomed can help you set the goals and mission of the project.

You may choose to conduct visioning sessions in individual classrooms or in an open forum such as an after-school or community meeting. A facilitator should lead the session and keep a running list of everyone's ideas.

No school garden should be developed without active participation from as many students as possible. You can certainly establish boundaries (e.g., We're going to consider what might go into a garden to grow food) but leave as many of the details as possible for the children to define. They ask to grow oranges and bananas in Chicago? Talk about why this isn't typically done, and ask for them to figure out what kinds of fruits they might be able to grow. Let the group know that, though all contributions are welcome, some may be modified or eliminated based on practical constraints.

The bottom line is that no matter how well you plan and how beautiful a place you create, if the garden is not kid-generated, then kids will lack ownership. If kids lack ownership, they will lack a sense of stewardship. Sustainability requires stewardship. If the garden is to be used, respected and cared for, then stewardship is the key.

Be sure to invite teachers, parents, and community members to brainstorm ideas, too. Teachers might want space for an outdoor classroom or various beds to use for experiments. Parents might ask that part of the garden be devoted to use by very small children so they can bring younger siblings when they come to volunteer. The ideas people generate will fall into different levels of detail; cultivate a planning committee that is willing to take the ideas and develop an overall description.

For instance, if the visioning list includes the goals to teach history and geography, they might be united under the banner of a multi-cultural garden zone, which also could lead to discussions about ethnic and minority contributions to our culture and diet. Serving younger children may be accomplished through an area based on colors, shapes and senses.

SITE ANALYSIS

Next investigate the neighborhood context and features of the intended garden site. The formal process of assessing these issues is called **site analysis**, and will help determine where the actual garden will be located within the school campus or neighborhood, and what physical constraints it will face. It's best if students can be involved in helping determine the location, but if there is only one available space, at least have them assess the space to develop a base map. This is simply a drawing that shows how big the space is and where existing features are located. Here are some examples of the kinds of things students should note for the creation of the base map:

Next, have students conduct a site analysis. They can analyze the whole campus in order to help determine where the garden might best fit. Have students make an inventory of existing features, summarize the site conditions, and brainstorm a list of needs. Ask them to also consider the surrounding neighborhood and what effects it has on the garden site, and vice versa. Ask students consider what else they should investigate to truly understand their site.

1. Inventory Existing Features

2. Start by sketching your garden space from a bird's eye view by outlining the property lines and all of the existing features (e.g., shrubs, sidewalks, fences) on a piece of blank paper. Organizing students into teams to investigate certain parameters like size, soil type and drainage, light exposure, traffic flow (vehicular and pedestrian), and water (standing, flowing, and source for irrigating plantings) works well for this exercise. Have the teams develop maps of their research, all using the same scale. Choose a simple scale like 1/8 or 1/4 inch for each foot so they can use a regular ruler and graph paper with corresponding scale. This will help students visualize the scale as they draw.

3. Use a large tape measure to take accurate measurements of the site perimeter and each existing feature noted on your sketch. Record the information in the appropriate places on the site sketch.

4. Note the location of and distance to a water source.

5. Plot the location of existing plant materials and landscape beds. Identify and label the existing plants and make note of their approximate size (height and width).

6. Locate features you may not be able to see, including underground electricity, sewer, and water lines. You don't want to dig into or otherwise interfere with these lines! Contact school maintenance staff or utility companies for assistance.

7. Summarize Site Conditions

8. Next, take time to observe your space. Answer the following questions to get started.

9. How do people use the space now? If the proposed garden space is near a play area or high-traffic zone, will people run through the garden?

10. Does the soil appear to drain well, or is it hard and compacted? Are there signs of drainage patterns or areas of poor drainage (e.g., standing water)?

11. Where is the sun? Use a compass to determine the cardinal directions – east, west, north, and south – and note it on your sketch. Southern and western exposures typically receive the most sunlight. What path will the sun take across the space?

12. Are there any trees or buildings that will shade the garden? If so, at what time and for how long?

13. Does the ground have any unusual dips? Determine the slope of the land. Do you need to take measures to prevent erosion?

14. What direction does the wind blow? Is there a steady wind across the site?

15. Are there any views you wish to block, such as a busy road or a dumpster?

16. Do you need to take measures to secure the site (e.g., with fencing)?

17. Create a Needs List

Carefully consider how you plan to use the space, and then translate that into landscaping needs. Here are some examples:

1. Do you plan to take large classes to the garden? If so, you'll need enough space for them complete their tasks, and possibly a sitting area for demonstrations or class discussions.

2. Will you plan to grow vegetables for a nutrition program, or hope to plant a butterfly habitat? The site must have 6 to 8 hours of full sun for these plants to thrive.

3. Must the garden be handicap accessible? If so, plan for wide, level pathways.

CREATE A DESIGN PLAN

Create a Base Map
Finally, use the information from the visioning exercise and the site analysis to develop a conceptual garden design. By the time your site analysis is complete your initial sketch of the area will probably be cluttered! That's okay, because it's the 'draft' for creating a more orderly base map. Have each team transfer their drawings to tracing paper, and compile them into an overall site analysis by stacking the traced drawings. Ask students to discuss how the layers combine, and what additional information they derive from considering all the layers together rather than separately. On graph paper, use your measurements to create a correctly scaled drawing, including the property lines and existing structures and vegetation you plan to keep.

At the same time, summarize your needs list, observations, and other notes on one piece of paper for easy reference. Keep your original sketch just in case!

Brainstorm Using Bubble Diagrams
Once you have a base map, it's time to brainstorm. Many landscape designers brainstorm by using bubble diagrams. These define open spaces using roughly drawn circles and squares rather than trying to determine specific sizes for the different areas. The advantage is that you can draw bubbles quickly, experimenting with different configurations, and can use different colors for clarity. Start simply, just drawing big "bubbles" on top of the base map to show the different garden zones being proposed. For example, your food production area may be a large bubble in the sunny zone, while the habitat area might occupy a more linear space along the building where there is shade from existing trees. Keep refining this concept to include more detail, like paths and places to sit. An easy way to do this is by laying pieces of tracing paper over the original base map. Another approach is to make copies of the base map and ask students to each come up with a possible design. Classes can then critique the plans and develop a final version using their favorite ideas from many plans.Start by placing a piece of tracing paper over your base map, or copy your map onto a transparent overhead sheet and lay another over it for sketching. On the second sheet, draw bubbles representing each component of your garden (beds, sitting areas, pathways). Try different arrangements (such as placing the sitting area in the center versus the side), shapes (circular beds versus rectangular beds), and sizes (i.e., a few large garden beds versus multiple small beds) until you develop a general idea of where you want to place the different components.

Define Beds and Hardscapes
Now you can take it to another level of detail. Start by defining beds, walkways, and any other paved areas. Beds can be in ground or raised, depending on your needs and soil condition. Decide which type of bed you prefer before deciding the shape, since materials available for raised beds can potentially restrict the shape and size. Next, draw in other hardscape elements and prominent features such as sitting areas, ponds, and patios.

Be sure to draw the plan to scale so that you don't run into space problems later. Although you'll need to leave room in the design for flexibility, hardscape items define the underlying structure of the garden and have more permanence than other features.

Choose the Types of Plants
Now you can make some decisions about broad types of plant materials — in an edible garden, vegetables, fruits, and herbs; in a landscape setting, shrubs, trees, perennials, vines, and annuals. At this stage you don't have to know the specific plants you'll grow, just the characteristics of plants you are looking for in terms of size, shape,

growth habit, season of harvest, and so on. For example, maybe one bed is near an entrance and you want to plant something that blooms for everyone to enjoy. Perhaps the sunniest bed is destined for vegetables, and the sitting area needs a shade tree. You'll choose specific plants in the next step!

Identify Your Plant List
Choose plants that can grow successfully in your region, that you can easily maintain, and that are blooming, growing, and fruiting at a time when kids are on site. Consult your Summary of Site Conditions for the space, light, and soil available on the site, and find plants with matching requirements. Use books and the Internet to find this information, or seek advice from garden center employees, plant nursery workers, or your the Cooperative Extension office.

CREATE A CONSTRUCTION PLAN

The next phase is to look critically at the design and determine how it can be constructed. If the soil or drainage is poor, you may have to build raised beds to grow food plants. If paths are desired, will less expensive mulch suffice, or is it worth the investment to use gravel or flagstone? Find out if there are parents with design or construction experience who are willing to donate time to help. But don't worry if there aren't such resources - you'll be amazed at what students can do! Be sure to get student input about construction materials and approaches. Most students will gladly haul soil, compost and mulch - hard physical labor - to help achieve their vision. But it must be their vision.

To determine construction methods, look at landscaping books and magazines to see how others have built various features. Once the design and the construction approach are determined, you can start to calculate the kind and quantity of materials needed. A local landscape company or nursery may be happy to help with this for little or no fee for the sake of community involvement. You then can start the process of raising funds and securing in-kind donations to build the garden. Many schools seem to struggle with the fundraising phase, but having a defined plan and list of needs makes it much easier, for both fundraisers and donors. Potential supporters can see you are committed and have a plan that was developed with lots of student and community input.

While it's good to plan comprehensively for the whole garden, it's generally best to start implementation with one area. Create the habitat zone or the food production area the first season, and meanwhile build support for other zones. However, if students have worked hard on planning, be sure to do at least some construction during that school year as a reward. They need to see at least some of the vision come to life, and everyone should have the benefit of putting at least one plant in the ground.