



# Module 5: Designing the Garden

## Garden Building

### Objectives

Students will be able to:

- take measurements and create a garden plan/map;
- build a simple garden bed

### Oregon Content

#### Standards:

*K-8.MP Mathematical Practices*

*K.4 Engineering Design: Engineering design is used to design and build things.*

*K.MD.F Describe and compare measurable attributes.*

*1.MD.H Measure lengths indirectly and by iterating length units.*

*1.4 Engineering Design: Engineering design is used to design and build things to meet a need.*

*2.MD.F Measure and estimate lengths in standard units.*

*2.4 Engineering Design: Engineering design is a process used to design and build things to solve problems or address needs.*

*3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.*

*3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).*

*3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.*

*ET.3.C Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.*

### Background

Expanding an already existing garden and/or building a completely new garden can be a daunting task. Here are some key things to think about as you plan.

### Establish support

- Before starting the garden, gain the support of the principal and administration, teachers, custodial staff, district grounds staff, kitchen staff, parents and community members. Before the garden is built, address their concerns and listen to their ideas.
- Develop a long-term plan for your garden before you build. How is it going to be used and by whom? How does the garden fit into the school's broader goals?
- Establish a garden committee that meets at least three times a year. Include people from at least three of the groups in the first bullet point. Have a 'term' for the leadership position so that everyone knows that leader will not be around forever.
- Create garden team 'jobs', e.g. summer care coordinator, fundraising coordinator, work party coordinator and define those jobs so people who accept the responsibility are clear about what is expected of them
- Have a presence at PTO meetings, e.g. a report from the garden committee at each meeting.
- Have a poster board near the office with information on garden 'happenings'.

### Garden Design

- Involve a team of students, parents, school staff and district staff in the planning process.
- Location- Choose a flat, sunny spot that does not flood. Are there any water or utility lines that you need to work around? Think about vandalism issues. Do you want or need a more secure or a more open and inviting location?

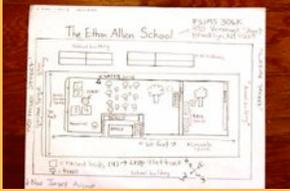
### Vocabulary

Design, raised bed, boxed bed, irrigation,

### Garden Tasks

- Build the garden or new beds
- Clear weeds in the new area to prepare
- Lay out where things will go in the new garden space using twine and stakes
- Mow tall grass
- Sheet mulch the area

### Example Garden Plan:



<http://www.leaveitbetter.com>

### Fundraising Ideas:

Raising funds for building projects can seem like an almost impossible task, but all it takes is a little creativity. One school was able to make hundreds of dollars for their garden by having the students make and sell ductape wallets right before winter break. It was the perfect holiday gift! If you're doing a garden expansion, you can use the garden itself to generate funds. Braided garlic and winter squash are always popular.

- Access- Will the garden be easily accessible to students? Is there a loading zone nearby for trucks when you want inputs of soil/compost? Will the district lawn mowers be able to navigate the garden?
- Manageable size- Remember that starting the garden is the easy part, ongoing maintenance is what's going to take most of your time. It's okay to start small and plan for future expansions.
- Gathering and teaching spaces- Your garden isn't just about bed space for plants. You want it to be set-up so that it works as a teaching space as well.
- Plan for eliminating grass and pervasive weeds (sheet mulching, ground cloth, wood chips, etc.)
- A functional irrigation system and access to water is critical.

Have a specific project that people can get involved in (e.g. building wheelchair accessible beds or leading a garden lesson on something they're an expert in). People are more likely to get involved with a one-time project, initially.

## Two models for garden construction

### Option 1: Formal

- Landscape fabric underneath
- Boxed cedar beds
- Imported soil and compost
- Timed drip irrigation system
- Pollinator hedgerow created w/ sod cutter



**Pros:** no grass, low maintenance, well-irrigated, easy access, clearly defined bed space, seats for kids

**Cons:** expensive, long term- wooden boxed beds with eventually rot and need to be replaced

### Option 2: Informal

- Newspaper/burlap pathways
- Mounded beds
- Sheet mulching
- Overhead watering and soaker hose system on battery-operated timer
- No sod removal

**Pros:** minimal expense, good fertility from sheet mulching

**Cons:** ongoing grass removal, kids step in beds, issues with watering system



## Project

### Garden Building

**Length-** three or four 30 min-1 hour sessions

**Materials-** paper, pencils, graph paper, clipboards

**Preparation-** set up a work party day where parents and volunteers can come help do the actual building, depending on what you're doing, you may want people to help pre-cut wood for boxed beds/mow down high grass/till the soil, gather materials

1) Students will be helping to design and build either a new garden or a garden extension. The first thing to do is to get them to help come up with plan for the garden. Go out to the garden space. (This will have already been chosen with input from teachers, facilities, and principal. Make sure that there are no underground lines that you'll need to worry about in the garden space.) Have the students draw their most ideal garden. What would they want in the garden? What do they think the garden should look like? They will show their ideas in a drawing. Then bring the group together and have everyone share their picture and ideas. Use this to come up with a collective vision for the garden. (Any garden plan will need to be Okayed by facilities and administrative staff.)

You can also have the students do some on-line research into various gardens to give them ideas before they make their whole group garden plan.

2) Next you'll need to make a formal garden plan. Students will need to measure the future garden space and decide on the dimensions of the garden beds, the rows between the beds, and make up a materials list. This list will be dependant on whether you're going to build a formal or informal garden or a mix of the two.

3) If you don't already have the money set aside for the garden, students can help be part of fundraising efforts. Fundraising ideas:

- use materials you can get for free (some cities have free wood chips, leaves or compost you can get)
- ask local businesses to donate materials to your garden (garden shops, wood shops, hardware stores, soil distributors, landscapers are all great resources)
- do a fundraiser a local restaurant
- have the students make something to sell

4) Figure out how the garden is going to be used. Students can help put together a garden committee. The more people you involve in this, the more the whole school will be excited about the garden. You want to know how the garden is going to be used and have a plan in place before the garden is built.

5) Set-up a work party to build the garden. Student can be involved in getting the word out about this work party. They can help brainstorm how to get people to come and then help with a marketing of the work party. They can also help clean up the garden space and get it ready for the work party.

6) Do that actual garden building! Students can be involved in the building of raised beds, moving soil and compost, etc. Older students can probably do a lot of this themselves, especially if you're doing a smaller expansion. But having some parents and community members involved can be a great way to build excitement along with the garden, so a large work party might still be a useful part of this project.

7) Start using the garden!

**STEM Professional Connection:** Having a landscaper who specializes in building gardens come talk to the students while they are doing their garden plan would be really helpful in giving them ideas of what they want the garden to look like.