

## Food Stamp Nutrition Education Youth Program UC Cooperative Extension- Alameda County

### School Gardening with Raised Beds

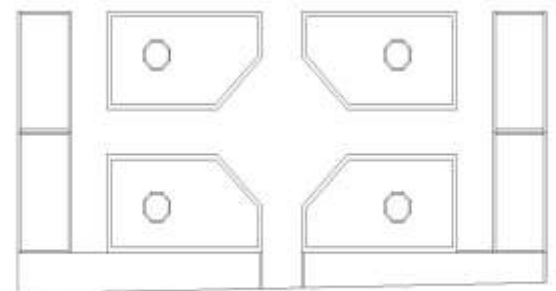
#### Reasons for Raised bed gardening:

- They allow gardeners to water, weed, and harvest vegetables where they are growing without stepping onto the soil.
- Gardening in raised beds is one way to overcome the problem of poor soil.
- The worked beds will be a few inches higher than the surrounding compacted soil allowing for better aeration and drainage.
- Organic amendments and fertilizer used to improve the soil go farther because they are applied only where plants will be growing.
- The raised soil will drain better during the winter rains and will warm faster in spring, resulting in an earlier, more abundant and healthier crop.
- The added soil depth allows more room for crop roots.
- Enclosed raised beds are aesthetically pleasing and lend an architectural element to the garden.  
Raised beds provide less stooping as you water, weed, plant and cultivate. Once built, raised beds are never walked on; plants are tended from adjacent pathways.
- Soil compaction is reduced.
- Ample pathways are a must.



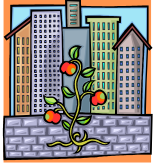
#### Size and Layout :

- Limit actual bed width to between 3-4 feet. The objective is to be able to reach comfortably into the bed's middle from either side. A popular length is 8 feet but can be any length you want it to be.
- If each classroom is to be assigned their own garden plot, divide the space accordingly. A 4 x 4 foot square bed is great for square foot gardening.
- Planting corn in several small, adjacent square beds will help assure good pollination since corn should be planted in blocks, not long rows.



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- A triangular raised bed may make the best use of an out-of-the-way corner. An arc-shaped bed of herbs, flowers or salad greens makes an attractive mini-garden.
- Run rectangular beds so plants receive full sun most of the day. This is most important during the winter when the angle of the sun is low.
- Consider a bed 24-28 inches high for students in wheelchairs.
- To grow well, vegetables need at least eight hours of sunlight each day. A garden should be located where it will be shaded as little as possible by trees, shrubs, walls or fences. Remember that shadows will be longer in winter when the sun is lower in the sky.
- When using grass clippings for mulch use a thin layer less than 2 inches to discourage flies from laying eggs. **Do not use Bermuda grass clippings** as they will root and grow.
- Soak the bed before planting as the soil will settle to 2-3 inches below the top of the bed.
- Remember to replenish organic soil amendments each time you replant the bed. Soil continually enriched with organic matter becomes loose and friable.
- To discourage weeds underlay paths with black plastic before covering with mulch, chips or bark.



### BUILDING THE BEDS

- Select 2 x 6 or 2 x 12 inch construction grade redwood or cedar lumber boards.
- Fasten one above the other to 4 x 4 posts to make the bed 12 to 24 inches high and whatever length desired.
- Use bolt hardware 6-8 inches long to secure boards to posts that have been set at least every 4 feet.
- Set boxes with their tops level in a shallow trench for more secure positioning.
- Amend soil as required and fill boxes. Irrigate beds to settle the soil.





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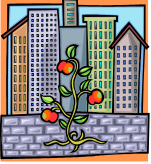
## Soil Mixture

- One of the greatest advantages to raised bed gardening is the ability to amend the soil. For instance, soils in some areas tend to have high clay content, which drain poorly and are hard
- to till when either too wet or dry. Soils in newly constructed areas are not always adequate. Raised beds are wonderful in this situation.
- Several types of amended soil mixes can be used, but usually include good topsoil and organic matter often in similar portions. This gives you a planting mix that drains well and is easy to till.
- Some soil recipes call for perlite or vermiculite instead of sand. The disadvantage of these materials is they are so light; they tend to float to the top where they are washed away.
- When incorporating the soil mix, several guidelines should be followed. It is best to loosen or spade the existing soil. This will improve drainage from the bed and prevent water logging. Spade or till 6-to 8-inches deep.
- Next, blend a small amount of the amended soil mix into the existing soil. This will help avoid the problems that can arise from having two different soil layers. Incorporate about 2 inches of mix into the upper few inches of existing soil. You are then ready to begin filling the raised bed. The result will be 10-to 12-inches of rich soil for plants to grow in.



Reference: UC Cooperative Extension, San Diego County

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### Compost in school gardens....

Compost is a wonderful soil amendment for use in vegetable gardens and in the landscape. Compost is usually yard and kitchen waste that has undergone a controlled decomposition resulting in an organic material that breaks down quickly in the soil to provide some nutrients, but primarily serves as soil conditioner to improve soil characteristics such as water holding capacity or aeration. Proper composting gets to a temperature of 160 degrees Fahrenheit and effectively pasteurizes the material, killing most pathogens.

Because compost is an organic material it continues to decompose under certain conditions. If the compost is too damp, anaerobic fermentation occurs causing a foul smell. This can be remedied by aerating the soil (turning the pile) and reducing moisture.

Compost is best used as a soil amendment, top dressing, or mulch in most garden applications. I do not recommend compost as a growing medium. It is difficult to manage moisture and encourages fungal and insect activity.

Health issues about compost are dependant both on the individual and on the material being composted. While few human pathogenic organisms are found in vegetative wastes or farm animal manures, normal sanitary measures (i.e., washing hands before touching food, eyes, etc.) are important. While the use of compost in school gardens poses minimal health risks there are some unique concerns in composting of which teachers and parents should be aware.

Just as individuals vary in their resistance to disease, a few individuals may be particularly sensitive to some of the organisms in compost. The high populations of many different species of molds and fungi in an active compost process can cause allergic reactions in sensitive individuals, though most experience no adverse reaction.

Young children working in compost have minimal health risks if the compost is not in an anaerobic state. Wearing gloves, proper hand washing, and avoiding working with open wounds minimize risk substantially. Children with known allergies to mold and fungus should avoid working in compost.

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