



School Garden Materials and Resource Guide

Monterey County Farm to School Partnership

A Program of the Watershed Institute at CSU Monterey Bay

"Inspiring healthy eating choices by promoting an understanding of agriculture through garden-based education and by linking local farms to school meals."

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This informational guide outlines specific building materials, estimated costs, and budgets needed to get a school garden started. This is a comprehensive list of supplies for school gardens and should be tailored to fit the size and need of your garden program. We hope that you can use this as a template to apply for garden funds, and as a reference during the construction and implementation phases of your school garden.

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Getting Started

(Adapted from Life Lab Science Program's *Getting Started* Garden Guide which is available for free to California School Teachers. Request a school garden resource packet by emailing Deborah Tamannaie at dtamanna@cde.ca.gov)

1 PLANNING THE GARDEN

- Form a steering committee of students, teachers, administrators, parents, and community members. Begin fundraising and seeking donations
- Select a garden site with at least six hours of direct sunlight, access to water, and visibility from classrooms
- Plan and design your outdoor classroom, indicating the location of the garden bed areas, the tool shed/storage area, the compost area, the outdoor instruction area, the greenhouse/cold frame area, and the water system
- Purchase tools and materials

2 BREAKING GROUND

Organize a community workday	Build garden beds
Do a preliminary soil test	Cultivate soil
Order seeds/plants	

3 MAINTAINING THE GARDEN

Plant seeds in containers	Cultivate garden beds	Weed and mulch beds
Add soil amendments	Plant and transplant	Maintain compost area
Water plants as needed	Prune plants	Plant cover crops
Test garden bed soil	Harvest crops	Watch for pests and harsh weather

4 MANAGING THE GARDEN

- Schedule class use of the outdoor classroom
- Post garden maintenance tasks
- Develop a work schedule for volunteers
- Plan a holiday and summer maintenance program
- Create a supply-ordering system

Garden Equipment and Supplies

Pages 5-8 show the estimated costs of building materials, tools and resources, and professional development needed to start a school garden. These prices are estimates or examples of costs from local stores and catalogues. Keep in mind the size of your garden program (and the number of students) while totaling up costs for tools and materials.

Raised Beds

Raised beds are a great way to garden on school grounds. The garden beds help keep out weeds and pests like gophers. Constructing these beds requires some power tools, labor and other materials. A skill saw will be needed to cut the boards down to the desired length (unless your lumber vendor will cut them for you). Non-pressure treated redwood is the best wood for garden bed construction, as it lasts a long time and is not treated with chemicals that could affect your edible plants. A box of screws, a good drill, drill bits, a tape measure, and an extension cord will be needed to construct these raised beds. For gopher proofing the beds, a roll of aviary wire (make sure it is wider than your garden bed-4 feet wide!), wire cutters/wire shears, a staple gun, staples, or u-nails and a hammer will be needed. These additional items (aviary wire, staple gun, staples) will cost about \$75, and can be used for gopher proofing multiple garden beds. Pages 9-10 show diagrams of different sizes of garden beds.

Note on Soils

Soil is the building block of a garden. Healthy soils make happy plants. For happy plants, a mix of 1/3 compost and 2/3 soil is ideal. The amount of soils needed for school gardens are measured in cubic feet and cubic yards. Bags of soil (like ones sold at nurseries) can be found in 1 cubic foot volume. There are 27 cubic feet in one cubic yard. Raised beds can need anywhere from 1-2 cubic yards of soil to fill them (look at the raised bed diagrams on page 9 for the cubic yardage needed for different sized beds). Some landscaping companies will deliver soil to school gardens, usually charging an extra delivery fee of \$50-100 and requiring a minimum cubic yardage per load. Delivery of five cubic yards of soil could cost between \$200-300. Research soil and delivery costs in your area. Be wary of donated soil as it could contain large amounts of weed seed. It is a good idea to figure out how many garden beds are in the garden, and how much soil is needed to fill them in the planning stage of the garden.

Suggested Garden Equipment, Supplies, and Resources with Cost Estimates

<u>Lumber for Raised Beds</u>	<u>Dimensions</u> (in inches)	<u>Length</u> (in feet)	<u>Estimated Cost</u>
Non-Pressure Treated Redwood	2"x6"	16'	20
	2"x6"	12'	15
	4"x4"	8'	15

(Larger size cuts of wood available at higher cost)

<u>Building Materials for Raised Beds</u>	<u>Description</u>	<u>Where to find it</u>	<u>Estimated Cost</u>
Staple gun		OSH	14
Staples	1 box	OSH	10
Galvanized deck screws (3 inch)	1 box	OSH	3.00-5.00
Nails (2 inch)	1 box	OSH	3.00-5.00
U nails (poultry staples) 3/4 inch	1 box	OSH	4
Aviary Wire (for gopher proofing)	1/2 in. holes, 48 in wide 100 ft long	OSH	65
	<i>(make sure the wire is wider than the boxes--48 inches)</i>		
Hardware Cloth (for gopher proofing)	1/2 in. holes, 48 in wide 100 ft long	OSH	160
	<i>(this is more sturdy than the aviary wire, but more expensive)</i>		

Total:

<u>Fencing Materials</u>	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Non Pressure Treated Redwood posts	4"x4" posts, 8 ft tall (need posts about every 6-8 ft)		13
Wire for fence	6 or 8 ft tall 4" wide holes	OSH	80/ 100ft roll
Cement (Quickcrete)	1 bag	OSH	4/ bag
Gravel to mix with cement	1 bag	OSH	4/bag
U nails (poultry staples) 3/4 inch	1 box	OSH	3.00-5.00

Total:

<u>Other Planting Containers</u>	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
1/2 wine barrels	Ask wineries for donations or	buy at OSH	25
Window sill planter		Seeds of Change	20
Grow tubs		Seeds of Change	20
Black Plastic Pots			
	1 gallon pots	Peaceful Valley/OSH	0.60-.80
	3 gallon pots	Peaceful Valley/OSH	1.60-2.00
	5 gallon pots	Peaceful Valley/OSH	2.00-4.00
	4 inch small pots	Peaceful Valley/OSH	0.35
6 pack seedling grow tray	(sheet of 12)	Seeds of Change/OSH	1.50-3.00
Tray holder for 6 packs		Seeds of Change/OSH	1.70-2.00

Total:

Soils and Fertilizers

(see diagrams for estimated volumes needed)

	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Sunland Organic Potting and Planting Mix	1 bag=1 cubic foot	OSH	6
Sunland One Earth Organic Compost	1 bag=1 cubic foot	OSH	3.5
<i>1 bag = 1 cubic foot, 27 bags=1 cubic yard</i>			
Soil Delivery (check local companies)	Depends on cubic yards & delivery costs		200-300 (for 5 yards)
Generic soils and/or compost		any nursery	6.00-10.00/bag
Hand Pump Sprayer for fertilizer		OSH	7
5-5-5 Biolizer Organic Liquid Fertilizer	1 quart	Peaceful Valley	10
<i>(Non-fishy liquid fertilizer)</i>	1 gallon	Peaceful Valley	26
Composters (compost maker)			55-100
Stacking Composter		Seeds of Change	100
Compost Bin		pick up at MRWMD	55
Vermi-Composter (worm boxes)			50-150
2 tray "classroom" version		Seeds of Change	50
4 tray with spout		Seeds of Change	150
Compost Thermometer		MRWMD	15
Worm-A Way Starter Kit	(includes book)	pick up at MRWMD	55
Wiggly-Ranch Worm Bins (Multi-layered bins)		pick up at MRWMD	75
Red Worms for Vermicomposter	500 worms	Peaceful Valley/Seeds of Change	30

Total:

Mulch/Woodchips

Contact a local tree service or city arborist for free or low cost mulch

Gardening Tools (Children's and Adult tools)

<u>Children's Tools</u>	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Hand trowels	Red Handled "Corona"	Home Depot	7
Small Spading Forks	2 feet tall w/ "D" handle	Home Depot/OSH	10.00-15.00
Small Round Point Shovels	3 feet tall w/ "D" handle	Home Depot/OSH	10.00-15.00
Trash Picker Uppers		Home Depot	13
Kids gloves	(Rubber Fingered gloves are best)	OSH	2.50-8

Children's Total:

(Item price x 30 kids) Class set Total:

<u>Teacher's Tools</u>	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Round Point Shovel	Wooden Handle	OSH Brand	15
Flat Shovel/Square Point Shovel	Wooden Handle	OSH Brand	15
Spading Fork	Wooden Handle	OSH Brand	20.00-30.00
Pitch Fork	Wooden Handle	OSH Brand	20.00-30.00
Leaf Rake/Lawn Rake		OSH	10.00-15.00
Hard Rake (hard metal tines)		OSH	15

4 Tine Cultivator (Spading fork)		OSH	30
Hoe	Wooden Handle	OSH	15
Push Broom		OSH	15.00-20.00
Long handled loppers		OSH	30.00-60.00
Hand Pruners/Clippers		OSH	10.00-15.00
Wheel barrow (assembly required)	4 cubic ft, wooden handles	OSH	30
Wheel barrow (assembly required)	6 cubic ft, wooden handles	OSH	60
Utility Cart	5 cubic ft	OSH	40
Adult Gloves	Stanley brand, rubber fingered	OSH	4
5 Gallon Storage bucket w/ lid			7
Garbage can 32 Gallon	Good for tool storage	OSH	15
Foot Wear tread cleaner			25
Tool Cleaning Brush			5
Grey Plastic bus tubs	For seeds and harvest		3.00-5.00
Bamboo Teepee Trellis	5 feet tall	OSH/Peaceful Valley	15
Redwood trellis	3 ft tall, 3 ft wide	OSH	14
Bamboo stakes (4ft long, 1.5 inch round)		Peaceful Valley	3
Twine/String		OSH	3.00-5.00
5" Tee Stakes (plastic label for plants)		Peaceful Valley	0.25

Teacher's Total:

Tools Total:

Watering/Irrigation

	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Soaker Hose (1/2 inch wide with hose connectors)	50 ft	OSH	13
Soaker Hose (1/4 inch wide no connectors)	50 ft	OSH	6
Irrigation timer		OSH	45
Plastic Watering cans	Wide mouth for hose nozzle	OSH	10
100 foot Hose	Kink Free	OSH	50
Fan Sprayer (hose nozzle)	Yellow plastic	OSH	3
Water wands		OSH	20
Universal Water Key	Fits most water spigots	OSH	6

Total:

Seeds/plants/saplings/seedlings

	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Fruit trees	Bare root/ mature trees	Trees of Antiquity	25-150
Pack of Seeds		Peaceful Valley, Seeds of Change, OSH	2.00-4.50
Seedlings	4-6 packs		4.00-10.00
Cover Crop (fava beans) 1lb		Peaceful Valley	2.5

Total:

<u>Miscellaneous</u>	<u>Description</u>	<u>Where to Find it</u>	<u>Estimated Cost</u>
Season Extenders	Like green houses		70.00-200.00
Collapsible Row Cover		Seeds of Change	70
Collapsible Cold Frame		Seeds of Change	80
Garden House		Seeds of Change	175
Hard Framed Green House			1,000-3,000
Garden Sheds, Tool Sheds		OSH	100-2,000
Tables/Benches/Tree stumps		(get from school grounds)	
Landscape Fabric for weed blocking	3ft by 100 ft roll		30
Vehicle/Delivery/Rental expenses	Soil deliveries, tool rentals, truck use		50-300.00
Camera, film, processing			15-60
Bat and or Raptor Boxes			40.00-70.00
Total:			

Garden/Nutrition Education Curriculum and Resources

	<u>Description</u>	<u>Where to Find it</u>	<u>Cost</u>
Garden Based Curriculum		(All from Life Lab Science Program)	
The Growing Classroom			38.5
Kindergarten: Great Exploration			75.95
1st Grade: Earth Is Home	Teacher Resource Book		79.95
2nd Grade: Change Around Us	Teacher Resource Book		79.95
3rd Grade: How things Work	Teacher Resource Book		79.95
4th Grade: Connections	Teacher Books w/ Student Lab Materials		189
5th Grade: Change Over Time	Teacher Books w/ Student Lab Materials		189
Gardens for Learning	FREE School Garden Book	www.csgn.org	free to teachers
Sunset Western Garden Book		OSH/Sunset.com	30
Clip Boards	Class Set/\$3 each	Staples	3.00-5.00
Salad Spinners/Colanders			6.00-20.00
Pot Maker Kit		Peaceful Valley	13
PH Soil Test Kit		Peaceful Valley	20
Interpretive Native Plant Signs (Laminated Cards on Metal Stakes)		Return of the Natives	5each/100 for set
Life Lab Garden Signs	(purchase as a PDF file)	www.lifelabstore.org	6 for 100
Total:			

Garden Based Professional Development

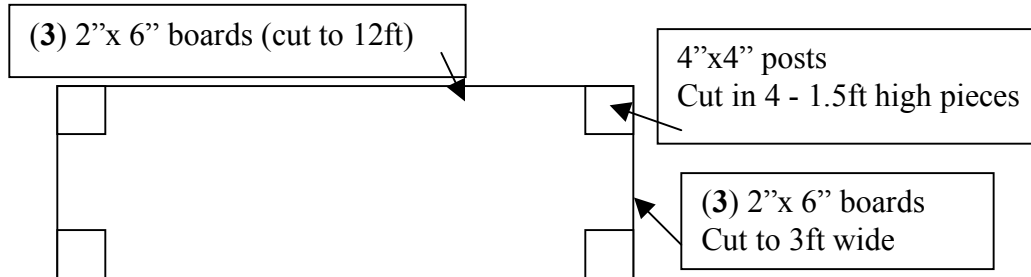
<u>Professional Development</u>	<u>Description</u>	<u>Estimated Cost</u>
Instructional Garden Coordinator	Develops and leads garden based education activities, provides resources & supplies	\$60/hr or \$300/day
Garden Assistant	Assists teachers with their garden activities	\$25/hr or \$150/day
Garden Consultant	Helps develop garden building plan and coordinates purchase of supplies	\$60/hr
Workshops/Registration Fees	Individual/ whole school training	25.00-1500.00
Profess. Development Travel Expenses		25.00-100.00
Total:		

Rectangular Garden Bed Dimensions and Estimated Costs

Dimensions for a Large Garden Bed:

12' x 3' x 1.5' (12 feet long, 3 feet wide, 1.5 feet high)

2 yds soil to fill bed



Materials for one Large Garden Bed:

6- 2"x6" boards of 16ft length (\$20 each= \$120)

1- 4"x4" post of 8ft length (\$15)

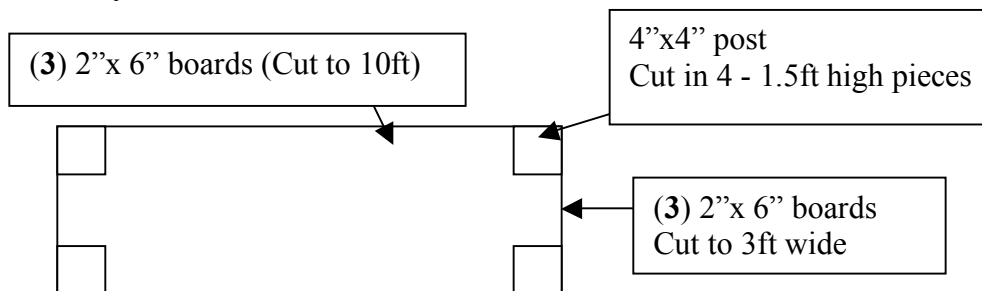
2-yds soil ~ \$100

Hardware (screws) \$3.00

Dimensions for a Medium Garden Bed:

10' x 3' x 1.5' (10 feet long, 3 feet wide, 1.5 feet high)

1.66yds soil to fill bed



Materials for one Medium Sized Bed:

6- 2"x6" boards of 14ft length (\$17 each= \$102)

1- 4"x4" post of 8ft length (\$15)

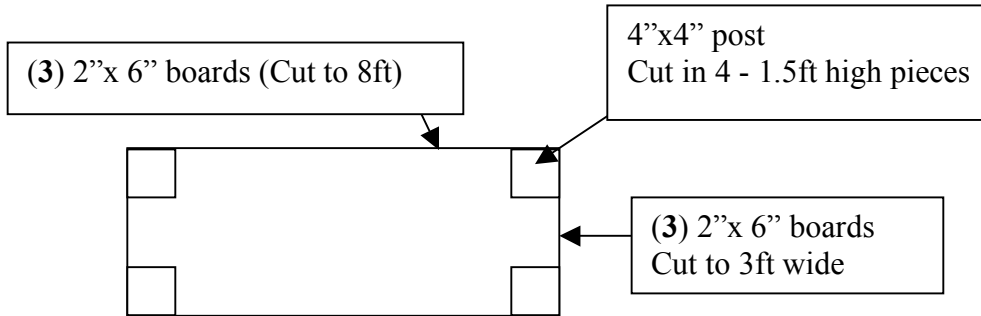
1.66- yds soil ~\$85

Hardware (screws) \$3.00

Rectangular Garden Bed Dimensions and Estimated Costs

Dimensions for a Medium-Small Garden Bed:

8' x 3' x 1.5' (8 feet long, 3 feet wide, 1.5 feet high)
1.33yds of soil to fill bed

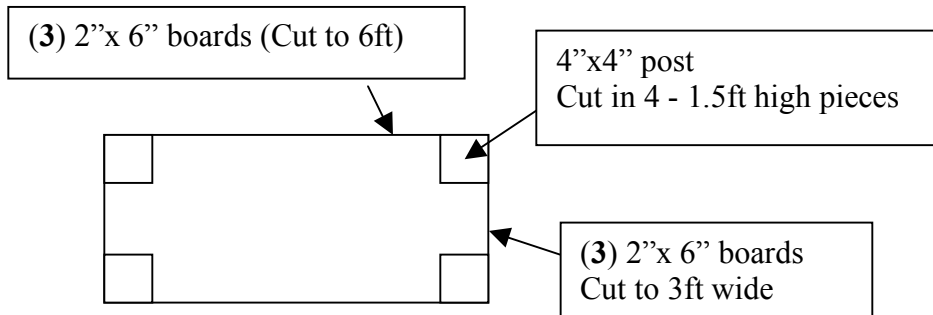


Materials for one Medium-Small Garden Bed:

6- 2"x6" boards of 12ft length (\$15 each= \$90)
1- 4"x4" post of 8ft length (\$15)
1.33yds soil ~\$65
Hardware (screws) \$3.00

Dimensions for a Small Garden Bed:

6' x 3' x 1.5' (6 feet long, 3 feet wide, 1.5 feet high)
1yd soil to fill bed



Materials for one Small Garden Bed:

6- 2"x6" boards of 10ft length (\$13 each= \$78)
1- 4"x4" boards of 8ft length (\$15)
1yd soil ~\$50
Hardware (screws) \$3.00

General Resources for School Gardens

Construction & Materials:

Lumber: Home Depot, Local Lumber Store

Soil: Sunland Soils, OSH, local landscaping company

Composters: MRWMD, Seeds of Change

Vermicomposters: MRWMD, Seeds of Change

Season Extenders (like greenhouses): Seeds of Change, OSH, Home Depot

Gardening Supplies (Catalogues/Websites)

Peaceful Valley Farm and Garden Supply

Resources: tools, seeds, fertilizers

Contact: www.groworganic.com

Seeds of Change

Resources: seeds, season extenders, tools

Contact: www.seedsofchange.com

Harmony Farm Supply

Contact: www.harmonyfarm.com

Resources: tools, seeds

Sunland Garden Products

Resources: soil, compost, (they sell to OSH)

Contact: www.sunlandgarden.com

School Garden Resources

- California School Garden Network: www.csgn.org
- California Foundation for Ag in the Classroom: www.cfaitc.org
(California standards based agricultural curriculum)
- Kid's Gardening: www.kidsgardening.com
- Sunset Magazine: www.Sunset.com
(provides gardening tips)
- Farm to School National Page: www.farmentoschool.org
- KidMax-free donated materials for schools:
<http://www.ciwmb.ca.gov/CalMax/Kidmax.htm>
- Life Lab Science Program: www.lifelab.org
curriculum, teacher training and more.