



Bay-Friendly School Garden Case Study

Peralta Elementary School Tel: (510) 879-1450
460 63rd Street, Oakland, CA 94609

Year garden started: 1997

Grades involved in garden: K-5

No. of garden teachers: No designated garden teachers. All teachers teach a garden lesson at least once per week.

No. of students involved: Approximately 250

Student hours in garden per week: Approximately 1 hour

No. of students in the garden at a time: 20-35

Length of a garden lesson: Approximately 1 hour

Examples of garden curriculum:
Math in Garden (UC Botanical Garden & Lawrence Hall of Science);
FOSS Kits (Full Option Science System)

No. of parents/community volunteers involved: 20-60

Parent/community hours volunteered per week: Approximately 10-70 hours

Other garden activities:
Students' afterschool gardening club meets every Thursday for 1.5 hours
Family garden work day held the first Saturday of each month from 9 am-1 pm
Students and parents have access to the garden before and afterschool as well as during recess and lunch time.

Total square footage of garden(s): Approximately 12,000 sq. ft.



Garden Description:

Peralta Elementary School is a K-5 public school of 250 students that is an urban oasis. The teachers, principal, parents, and community members have transformed this once mostly black-topped school site into one that is surrounded by colorful ornamental and edible flowers, vegetables, Mediterranean plants and trees. The gardens are complemented with kids' murals, decorative tiles, banners, and metal sculptural pieces.

There are five garden areas located throughout the campus:

1. The main garden area includes a colorful hand-molded ceramic tiled Amphitheater providing a seating area for classrooms that is surrounded by fruit trees (apricot, plum, nectarine, and peach), perennial borders and raised beds with edibles;
2. The entrance garden, located at 63rd Avenue, includes daisies, flax, wild grasses, and flowering buddleia bushes that provide nectar for pollinators alongside the walkway;
3. The courtyard garden (decimated in a school fire in 2007) is flourishing once again with in-ground beds and pots that include two pistache trees, a variety of native grasses, heuchera, ferns, edible flowers and large boulders;



4. The north street garden provides a space for each classroom to maintain their own garden bed filled with organic vegetables that vary by season. There are also sloped areas with a plethora of Bay-Friendly plants; and
5. A newly constructed 3,000 square foot "Kindergarten Discovery Play Area & California Creek Bed" that will encourage the youngest Peralta students to have their own natural play area including a playhouse, climbing wall, seating and raised garden beds.

Highlights of Bay-Friendly School Garden Practices:

Peralta's main garden was registered as a Bay-Friendly School Garden in 2006. All of the gardens incorporate Bay-Friendly practices. A large portion of the school's asphalt and concrete areas have been removed and replaced by permeable surfaces filled with perennials, edibles, and trees.

The latest addition to the school campus, the "Kindergarten Discovery Play Area & California Creek Bed" features a California creek bed ecosystem designed to catch rainwater but remain dry for most of the year.

This area has been designed to encourage young children to interact with their natural environment through hands-on experiences and free play in a natural setting.



Peralta Bay-Friendly Practices:

- Builds Healthy Soil**
 - Sheet mulching is used to establish planting areas
 - Soil is amended with compost
 - Cover crops (fava beans & vetch) are grown to enrich the soil
- Reduces Waste in the Garden**
 - Garden trimmings are composted either on-site or in green waste cart
 - Pruning is minimized by choosing plants that are appropriate for the space
- Conserves Water**
 - Efficient irrigation (drips, timers, and soaker hoses)
- Creates Wildlife Habitat**
 - Wildlife is encouraged with a variety of plants
 - Garden areas include Mediterranean or native plants adapted to a summer dry climate
- Protects Local Watersheds and the Bay**
 - Non-permeable surfaces removed and replaced by permeable surfaces
- Contributes to a Healthy Community**
 - Organic vegetable garden provides food
 - An integrated approach is used for controlling weeds, insect pests, and diseases
- Saves Energy**
 - Trees and shrubs are selected and placed to reduce energy requirements
 - Solar panel supplies energy
- Builds a Network of Community Support**
 - Monthly family garden work days
 - Support is sought from the school district for funding and supplies
 - Regular meetings, website and newsletter provides updates to the school community
- Encourages Play, Learning and Teaching in the Garden**
 - Students participate in weekly garden lessons and activities
 - Students have unstructured time for exploration
 - Outdoor seating area for students

Garden Management:

The garden is overseen by the Parent Teacher Garden Committee and the school principal coordinates the use of garden space by the teachers during the school day. Parents help with watering and the community also helps at garden work days.

Garden Education Program:

Every teacher takes their students out to the garden at least once a week and uses it to teach science, math, art, and language arts lessons.

Bringing the Garden back into the Classroom:

There are numerous ways that the garden is brought into the classroom curriculum.

1. *Math in the Garden* curriculum – provides opportunities for students to apply mathematical concepts such as graphs and plots in a natural setting. For example, they use string to divide raised beds into sections and transfer the coordinates for specific plants onto graph paper.
2. Kindergarten students use the garden for inspiration during journaling, where they write about the coming of spring using their powers of observation.
3. Peralta students participate in an annual heritage project. They study California and Native American history, including a discussion of seasonal crop plants. Kids plant beans, corn and squash that are then harvested by the next year's students for a Thanksgiving feast.



Engaging Teachers:

All of the teachers use the garden as part of their weekly teaching. Teachers also participate in regular garden committee meetings and special projects as necessary.

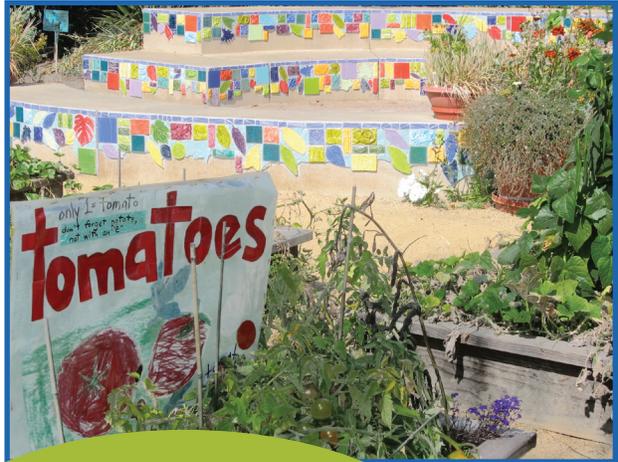
Engaging the Community:

A garden work day is held the first Saturday of every month from 9 am-1pm. Parents and community members (sometimes prospective parents) come volunteer to maintain the garden.

A weekly afterschool produce stand brings nutrition to the school by offering a variety of organic fruits and vegetables for sale from the Berkeley Farmer's Market on a sliding fee scale.

Funding:

- Peralta Parent Teacher Group
- City Councilmember Pay Go Funds
- Lower Rockridge Parent Group Yard Sale
- Rotary Club of Oakalnd
- In-kind contribution from the school district (i.e. for asphalt demolition)
- Lowes Charitable and Educational Foundation
- In-kind architectural design work by parents and community members
- Tides Foundation
- In-kind donations from local cement business



"We know the gardens enrich the students' lives, they tell us so!"
-Calvert Hand, 1st Grade Teacher

For more information, go to www.StopWaste.Org





Bay-Friendly School Garden Case Study

Sequoia Elementary School Tel: (510) 531-6696
3730 Lincoln Ave, Oakland, CA 94602



Garden Description:

Sequoia Elementary School is committed to engaging students through multi-sensory and creative learning experiences in art and nature. The Sequoia School Garden, established more than 30 years ago, can be seen in late spring with its grape vine filled with purple grapes; its olive tree's canopy heavy with fruit; apple trees bursting with red goodness; and raised beds producing tomato, celery, snap peas, chard, sunflowers, and green beans.

A circle of tree stumps below the prominent olive tree provide a comfortable outdoor classroom. A dome-shaped greenhouse stands on the asphalt outside the garden, which allows students to witness the full life cycle of a plant from seed to seedling, to a full-grown fruit-bearing plant.

The perimeter of the garden is planted with drought-tolerant native plants like coffeeberry, sticky monkeyflower, salvias, and ribes. A shady corridor on the north side of the garden, previously laden with geraniums and weeds, is now being transformed into a native shade garden. A system of compost bins, a worm bench, and "decomposition holes" reside between the shady corridor and the north end of the garden. The greening of the school has recently spilled over into the schoolyard, where large paved areas are now covered with native plants, flowering crabapple, Chinese pistache, and decomposed granite pathways lead to outdoor seating areas.



Highlights of Bay-Friendly School Garden Practices:

Sequoia School Garden registered as a Bay-Friendly School Garden in 2009. The well-established garden has been planted with native, drought-tolerant plants and is in the process of expansion; Sequoia is implementing a campus-wide plan for greening and renovating the schoolyard, converting asphalt into islands of Bay-Friendly gardens for play and outdoor classrooms. Sheet mulching is used to prepare the soil for new planting areas bordering the school. Within the teaching garden, hand-tilled raised beds produce a diversity of organic vegetables. Reused pipes provide support structures for snap peas.



Newly installed cisterns collect and store rainwater from the roof for use in the vegetable garden.



Year garden started: 1980

Grades involved in garden: K-5

No. of garden teachers: 2

No. of students involved:

Approximately 200

Student hours in garden per week:

45 minutes – 1.5 hours

No. of students in the garden

at a time: 15–35

Length of a garden lesson:

30 minutes – 1 hour

Examples of garden curriculum:

Math in Garden (UC Botanical Garden

& Lawrence Hall of Science); *Kids in*

Gardens, (The Watershed Project)

FOSS Kits (Full Option Science System)

No. of parents/community

volunteers involved: 20-60

Parent/community hours

volunteered per year:

Approximately 400 hours

Other garden activities:

Afterschool garden club meets once a week involving up to 40 students

Parent and community workdays

are held three times a year.

Total square footage of garden(s):

Approximately 3,750 sq. ft.





Sequoia Bay-Friendly Practices:



Builds Healthy Soil

- Soil is protected from compaction with clearly defined paths covered with mulch.
- Nitrogen-fixing cover crops like fava beans enrich the soil



Reduces Waste in the Garden

- Active compost bins and worm bench
- Reused pipes provide support structures for snap peas



Conserves Water

- Timed drip irrigation system provides water based on plant needs.
- Cisterns collect rainwater from the roof to use for watering in the garden
- Sheet mulching, drought-tolerant plants and water-wise irrigation installed



Creates Wildlife Habitat

- Solar-powered bird bath
- Bee condos



Protects Local Watersheds and the Bay

- No invasive species are planted



Contributes to a Healthy Community

- Organic vegetable garden provides tomatoes, snap peas, chard and green beans.



Saves Energy

- Solar-powered fountain



Builds a Network of Community Support

- Weekly meetings between garden educators and teachers
- Garden workdays involving parents, students and community members



Encourages Play, Learning and Teaching in the Garden

- Outdoor classroom areas of tree stumps and picnic tables
- Propagation table at children's height

Garden Management:

The garden is overseen by two garden teachers sustained through grants and community partnerships. Each teacher works with different grade levels and typically half the class stays with the classroom teacher while the other half is with the garden teacher.

Garden Education Program:

Sequoia Elementary garden teachers address the academic needs of their students using a wealth of resources from recipe books to *Kids in Gardens* materials, *UC Botanical Garden's Math in the Garden* curriculum, and a variety of other resources.



Bringing the Garden back into the Classroom:

Classroom curriculum meets the garden program in an integrated way. For example, the 3rd grade students study living systems through FOSS kits (Lawrence Hall of Science). The garden teachers focus on the plant-based living system component of the FOSS kit (plant life cycle, bean parts, weight, properties) and the classroom teachers facilitate the animal-based component in the classroom (raising crayfish and snails). The 3rd grade students learn questioning skills in language arts, so the garden educators integrated questioning into outdoor lessons, create Venn diagrams and maintain a KWL chart. The 1st graders study spiders in class, so they conduct an investigation in search of spiders, spider habitats and spider web



After "greening" the playground area, many teachers now bring their classes outside.

designs using magnifiers in the garden. Later in the school year, 1st grade students study pictorial graphs and tallies in mathematics. In the garden, they make a bar graph plotting the food group most prevalent in students' breakfasts for the day. In the fall, students harvest apples, make apple juice, and study the parts of an apple, corresponding to students' study of Johnny Appleseed. These are just a few of many integrated weekly lessons as part of the garden program at Sequoia Elementary. Three kindergarten classes have a raised bed garden adjacent to their classrooms off of their playground area that they access regularly.

Engaging Teachers:

After extending the campus "greening" efforts to the playground area, many teachers began to bring their classes outside. Teachers bring their students into the garden to draw, write, or interview and photograph one another for the student online Zine. The 3rd grade teachers collect mulberry leaves for the caterpillars to complete their metamorphosis in the classrooms. There is a weekly meeting among participating teachers and the garden teachers to share their experiences and collaborate on curriculum development. The garden is also used by Sequoia Elementary's afterschool program once a week.

Engaging the Community:

The planted areas of the school are maintained by volunteer community work days three times a year. Sequoia school is an integral part of the neighborhood, and the school welcomes any neighbors' interest in volunteering at the school to help maintain the wonderful garden or to assist with classes.

Funding:

- East Bay Community Foundation
- East Bay Municipal Utility District
- Oakland City Council member, District 4
- Reach-A-Star Foundation
- School Improvement Fund

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