

Green Schoolyard Resource Directory

for the San Francisco Bay Area



*For schools, parents, teachers, students,
designers, and community members in
San Francisco and around the Bay Area*

A project of the San Francisco Green Schoolyard Alliance

*With generous support from
San Francisco Unified School District and San Francisco Beautiful*



About this Directory

This resource directory was compiled by co-editors

Tamar Cooper and Sharon Danks
San Francisco Beautiful *EcoSchool Design*

On behalf of the San Francisco Green Schoolyard Alliance
and the San Francisco Unified School District

with assistance from members of the
San Francisco Green Schoolyard Alliance.

Directory conceptual design and explanatory text by
Sharon Danks, unless otherwise noted.

Special Thanks To:

Leonard Tom and Jeff Stahl
for their support for this project;

Arden Bucklin Sporer and Nan McGuire
for their ongoing assistance;

Irene Yen, Kate Simmons, and Gregory Kellet
for their help with researching portions of the directory;

Greg Van Mechelen for his advice about green building;

the UC Botanic Garden for their permission to use excerpts
of their terrific *East Bay Guide to Garden Resources* in this directory;

and all of the SFGSA member organizations who
contributed their suggestions to this project.

Printed on paper with 30% recycled content.
Please remove the metal binding before recycling this document.

Resource Directory Updates

Please contact the San Francisco Green Schoolyard Alliance at the
address below if you know of additional resources that would be useful
to include in future editions of this directory, or if you would like to
update existing directory listings.

An online version of this directory will be available by Fall 2006 at
<http://www.sfgreenschools.org/> .

First printing: February 2006

© San Francisco Green Schoolyard Alliance, 2006

Photographs © Sharon Danks, unless otherwise noted.

For more information, please contact:

c/o San Francisco Beautiful
564 Market Street, Suite 709
San Francisco, CA 94104

Website: <http://www.sfgreenschools.org/>
Email: info@sfgreenschools.org



San Francisco
Green Schoolyard
Alliance



EcoSchool Design

Table of Contents

Introduction	1	7. Creating Artful Schoolyards	34
1. Designing Green Schoolyards	2	7.1 Murals	
1.1 Green schoolyard resources & programmatic expertise		7.2 Tile mosaics	
1.2 Green schoolyard designers		7.3 Sculpture & site furnishings	
		7.4 Other children's art specialists	
2. Gardening Resources for School Grounds	6	8. Fundraising Ideas for Green Schoolyards	36
2.1 Evaluating your garden soil		8.1 Fiscal sponsors	
2.2 Planting time! Garden seeds, plants, & expertise		8.2 Bay Area funding sources for green schoolyards	
2.3 Children's garden tools		8.3 Statewide funding sources for green schoolyards	
2.4 Bay Area tool lending libraries		8.4 National funding sources for green schoolyards	
2.5 Non-toxic pest control		9. Finding Helping Hands	40
2.6 Great resources for schoolyard food gardening		9.1 Potential sources of volunteers for green schoolyards	
2.7 Specialized resources for themed gardens		9.2 Local opportunities for green schoolyard networking	
		9.3 Regional & national opportunities for green schoolyard networking	
3. Native Plant & Wildlife Habitat Resources	19	10. Educational Opportunities	43
3.1 Native plant resources		10.1 Field trip ideas for children	
3.2 Bay Area insect & wildlife resources & information		10.2 Classes, workshops, & conferences for adults	
		10.3 Green schoolyard curricula	
4. Water Systems on School Grounds	22	10.4 Green schoolyard libraries, books, & other resources	
4.1 Wetland & watershed resources		10.5 Information on children's health on school grounds	
4.2 Pond building, maintenance, & curriculum resources		10.6 Internet resources for green school grounds	
4.3 Resources for water conservation & purification		11. Directory of Bay Area Green Schoolyards	50
4.4 Irrigation resources		11.1 Green schoolyards in San Francisco	
4.5 Stormwater drainage & rainwater gardens		About the San Francisco Green Schoolyard Alliance	52
5. Harnessing the Sun & the Wind for Energy & Education on School Grounds	25	References	52
5.1 Renewable energy expertise & suppliers			
5.2 Energy conservation resources			
5.3 Sundial resources			
6. Green Building Materials for School Grounds	28		
6.1 Green building expertise			
6.2 Sources for natural & green building materials			
6.3 Sources for recycled & used building materials & information			

Introduction

The San Francisco Green Schoolyard Alliance (SFGSA) is a coalition of Bay Area civic organizations whose work supports schoolyard transformations from ordinary asphalt yards into ecologically rich green spaces for learning and play. The SFGSA works to ensure that these emerging vibrant landscapes reflect their site's local ecology and their school community's green schoolyard goals and curricula.

Why Green School Grounds?

We believe that the environment that surrounds children as they learn is vital to how they perceive the world around them. Paved schoolyards are often chaotic environments that leave children with few opportunities for creative play and very little shade. Asphalt-covered schoolyards frequently make up a large portion of a school's domain, yet they are rarely used for educational activities.

Green schoolyards can substantially change the appearance of a school and its ecological impact on the surrounding community, as shown in the pictures below. With colorful plantings and creative use of space, green schoolyards offer expanded educational and recreational opportunities, shady nooks for teachers and students, and refuges for wild birds, butterflies, and other creatures. These outdoor learning and play environments can be great assets for the schools that invest the time and money to plan and build them.



The photographs above show the transformation of San Francisco's Tule Elk Park Child Development Center from an asphalt covered playground (1991, left) to an inviting green schoolyard (2001, right).

"Before" photo (L) by Lynne Juarez.
"After" photo (R) by Sharon Dankis.

Purpose of this Resource Directory

Over the last four years, the SFGSA has been an informal conduit for green schoolyard information and resources in San Francisco and around the Bay Area. We are now in the process of gathering these resource lists into a single directory to make it easier for local schools to find schoolyard greening materials and professional advice. This first edition of the directory is intended to launch

this project. We hope to produce printed updates once a year, and to maintain a continuously updated version of the directory online at <http://www.sfgreenschools.org/>, starting in Summer 2006.

Our goal is to create a green schoolyard directory that blends traditional school garden resources with green building and ecological design principles, to create a "one stop resource" for all types of innovative school ground greening projects. The directory includes useful contacts for relevant local organizations, businesses and individuals on a variety of themes including places to find: plants, soil, and other garden-related materials, solar panels, water conservation systems, recycled materials, green schoolyard design expertise, environmental education curriculum resources, grant opportunities, and many other related topics.

Please treat this guide as a type of "yellow pages" catalogue. In this first version of the directory, we have made an effort to include organizations whose work is known by at least one of our member organizations. However, all of the organizations and businesses listed in this directory are independent entities. *The San Francisco Green Schoolyard Alliance, its sponsors, and its member groups do not take any responsibility for the quality of the resources or work provided by these organizations. Please make sure that you thoroughly interview any potential contractors you are considering hiring before going forward with any schoolyard greening work.* Also, please be sure to ask your school principal and school district for permission before constructing or planting anything on your school grounds.

We Need Your Help

A guidebook like this one can only be successful over time if our readers help us by submitting updates as things change, by suggesting new resources as they arise, and for sending us reviews of your experiences with organizations included here. Please send this information to us at the address listed at the beginning of this guidebook, or email it to us at: info@sfgreenschools.org. Please contact us if your school or organization would like to be included in future versions of this resource directory.

For More Information

For more information and step-by-step advice about how to design and create green school grounds, we recommend that you read a wonderful guidebook called *All Hands in the Dirt: A Guide to Designing and Creating Natural School Grounds*. *All Hands in the Dirt* was written and published by a Canadian organization called Evergreen. It is available through their website at:

<http://www.evergreen.ca/en/lg/lg-resources.html>

All Hands in the Dirt can be viewed online for free, or you can purchase a copy of the manual from them for about \$15. Evergreen also has many other publications on their website that we think you will find helpful in your effort to create your own natural learning environment.

1. Designing Green Schoolyards

Many urban and suburban schools have “traditional landscapes” covered from edge to edge in asphalt or lawn. It is difficult to stand at the edge of such a schoolyard, and imagine it any other way. For example, an underutilized, paved portion of your schoolyard could be transformed into blooming gardens filled with nutritious and delicious vegetables and fruits, or flowering native plants that attract butterflies, hummingbirds and other interesting creatures. The possibilities are endless—and that can seem overwhelming when you have a large “blank slate” before you.

Many schools turn to design professionals and schoolyard greening organizations to help lead them through a participatory design process that blends their school’s unique curriculum needs with their desires to make their schoolyard more enjoyable and comfortable for students and teachers. The result of this collaboration with a designer is often a green schoolyard master plan that illustrates where things will be placed on the school site (in map form) and clarifies the overall goals and objectives of the project (in written form). These documents can then guide the gradual implementation of your green schoolyard in the years to come.

We recommend that you seek professional design assistance to create your plans for a green schoolyard so that you can avoid common problems and place things on your school grounds in a well researched manner.

1.1 Green Schoolyard Resources & Programmatic Expertise

There are a number of non-profit and public organizations in the Bay Area that are working to promote schoolyard greening. The organizations listed below have broad expertise in this field, including knowledge of potential curriculum connections (in most cases) and other programmatic ideas for green school grounds. Many of them can also help you to initiate a schoolyard greening project at your school. Advice from these organizations is generally free or available at a low cost to individual schools.

Ecology Center

Contact: 2530 San Pablo Avenue • Berkeley, CA 94702
Phone: 510-548-2220 x233
Web: <http://www.ecologycenter.org/>

The Ecology Center’s Environmental Resource Center provides information and tools for eco-friendly living. Their library contains many books, videos

and periodicals including curriculum guides and lesson plans, gardening and children’s books, and other resources. Their help desk can connect teachers and parents with resources for anything from garden supplies and worms to creek restoration groups. Their store sells non-toxic pest control products and organic fertilizers, soil, and compost along with many books on gardening and urban agriculture. Their “Terrain for Schools” program creates environmental lesson plans for high school teachers which follow State of California standards. These free lesson plans are available on their website. All of their services are free and teachers always receive a 10% discount on their store’s products.

Occidental Arts and Ecology Center – School Garden Program

Contact: Tina Poles, School Garden Program Director
15290 Coleman Valley Road • Occidental, CA 95465
Phone: 707-874-1557 x202
Fax: 707-874-1558
Email: tina@oaec.org
Web: <http://www.oaec.org/>

OAEC offers a five-day, intensive, residential training program about creating and developing school gardens. The course focuses on curricula linked to state standards, hands-on gardening, nutrition, cooking from the garden, team building, grants, fundraising, recycling, project based learning, and touring school sites. Participating schools receive an extensive resource binder, two site visits to their schools and two skill building follow up meetings. Participating schools are selected by an application process in the spring. Some resources are part of the School Garden program and others are fee for service. If your school is participating in the training, materials are free. For more information about OAEC, please see Chapters 2.3, 4.5, 6.1, and 7.3.

San Francisco Green Schoolyard Alliance (SFGSA)

Contact: Nan McGuire, Chair
San Francisco, CA
Email: info@sfgreenschools.org and nan@sfgreenschools.org
Web: <http://www.sfgreenschools.org/>

The SFGSA is a coalition of Bay Area civic organizations whose work supports schoolyard transformations from ordinary asphalt yards into ecologically rich green spaces for learning and play. The SFGSA works to ensure that these emerging vibrant landscapes reflect their site’s local ecology and their school community’s green schoolyard goals and curricula. The SFGSA can help schools find a wide variety of resources to improve their schoolyards. This organization publishes an online, bi-weekly, green schoolyard resource digest that lists local events, funding resources, and employment and educational opportunities. It also hosts quarterly meetings that provide networking opportunities with other green schoolyard enthusiasts, and sponsors other related events including a bi-annual green schoolyard conference.

San Francisco Unified School District – Facilities Department

Contact: Arden Bucklin-Sporer, Director of Educational Gardens
834 Toland Street • San Francisco, CA 94124

Phone: 415-695-5625

Email: bucklina@sfusd.edu

Director of Educational Gardens is housed in the SFUSD and is the district liaison to school garden projects. This office maintains a Yahoo listserv which connects SFUSD garden programs to one another. Arden provides: technical advice on building and sustaining school gardens; assists schools in finding and hiring garden coordinators; manages a materials yard for garden coordinators with compost and mulch; runs a garden coordinator nursery that periodically provides starts and plants to schools; disseminates information on grants, resources, and workshops; and provides expertise on navigating through the different SFUSD departments and procedures. Please see Chapter 2.1 for additional information about this organization.

The Trust for Public Land – Bay Area Parks & Playgrounds Program

Contact: Deborah Schoenbaum, Director
116 New Montgomery Street, #300 • San Francisco, CA 94105

Phone: 415-495-5660

Fax: 415-495-0541

Email: deborah.schoenbaum@tpl.org

Web: <http://www.tpl.org/>

The mission of TPL's Community Parks and Playgrounds Program is to create quality public spaces that revitalize low-income communities and link them to nature, history, and place. The Program's principal activities include community outreach and organizing; securing public and private funds for projects; the community design process; construction and construction management; and stewardship planning and programming. Projects include schoolyards as well as municipal parks and playgrounds.

TPL's services and supplies are offered locally and nationally at a discount or for free. Community organizations or individuals who seek TPL's services for a project should contact them to discuss the feasibility of the project. Once a project is selected, TPL assists with land acquisition (if required), fundraising, community outreach, design, construction and stewardship, and government relations.

The Watershed Project

Contact: Claire Beyer, Program Coordinator, Kids in Gardens Program
1327 South 46th Street, #155 • Richmond, CA 94804

Phone: 510-231-5706

Fax: 415-231-5703

Email: claire@thewatershedproject.org

Web: <http://www.thewatershedproject.org/>

The Watershed Project is an environmental education non-profit. Their mission is to educate and inspire communities to protect their local watershed. The Watershed Project offers a number of workshops for those interested in school gardening, including an introduction to school gardening,

a school garden design course, and a cooking and nutrition course. All workshops include curriculum correlated to California Content Standards, as well as extensive resources for getting your project started.

1.2 Green Schoolyard Designers

The list below includes Bay Area architects, landscape architects, and other design professionals who are interested in working with schools to green their school grounds. Most of these businesses charge a fee for their work.

450 Architects

Contact: Richard Parker, Principal
450 Clementina Street • San Francisco, CA 94103

Phone: 415-546-0450

Fax: 415-546-0550

Email: richard@450architects.com

Web: <http://www.450architects.com/>

450 Architects is a small firm that specializes in creating sustainable spaces. This firm can facilitate visioning and design charrettes for non-profit, public, and private groups and can prepare drawings for public agency review and fundraising campaigns. Initial consultations are offered for free. Services available throughout the Bay Area.

Conger Moss Guillard (CMG) Landscape Architects

Contact: John Bela
589 Howard Street, Suite 5 • San Francisco, CA 94105

Phone: 415-495-3070

Fax: 415-495-3080

Email: jbela@cmgsite.com

Web: <http://www.cmgsite.com/>

CMG specializes in ecological landscape design with experience designing and building recreational spaces and outdoor classrooms that incorporate edible gardens, bird and butterfly habitat, and storm water treatment functions. CMG is a full service professional design firm with significant experience in schoolyard design and a passion for working with San Francisco communities. Please contact CMG with a description of your project. CMG has done pro-bono design and build work specifically for playground and schoolyard projects. Services offered internationally.

EcoSchool Design®

Contact: Sharon Danks, Environmental Planner & EcoSchool Consultant
Berkeley, CA
Phone: 510-872-4554
Email: sharon@ecoschools.com
Web: <http://www.ecoschools.com/>

EcoSchool Design® assists school communities in transforming paved schoolyards into vibrant ecosystems for outdoor learning. Do you need help starting a “green schoolyard” project at your school? Contact EcoSchool Design® to bring a colorful slideshow of successful green schoolyards to your faculty and PTA meetings. EcoSchool Design® can also help you to create a “green schoolyard” master plan using workshops that emphasize school and community participation. The website above includes extensive information about schoolyard ecology and links to related projects around the world.

Gelfand Partners Architects

Contact: Lisa Gelfand, Principal or Ken Rackow, Marketing
450 Geary Street, Suite 100 • San Francisco, CA 94102
Phone: 415-346-4040
Fax: 415-346-4103
Email: lisa@gelfand-partners.com or ken@gelfand-partners.com
Web: <http://www.gelfand-partners.com/>

Gelfand Partners is a leader in sustainable architecture for schools. Their projects give importance to the enterprise of education and the social life of children. In California we have many “finger plan” schools with virtually identical barracks of classrooms connected by exterior covered walkways. Their designs give meaning to these spaces between the buildings. Previously wasted outdoor areas become part of the instructional setting, including native plants and demonstration of aspects of the water cycle.

Keller Mitchell & Co. Landscape Architecture

Contact: Jacque Keller
302 Fourth Street • Oakland, CA 94607
Phone: 510-451-9987
Fax: 510-452-9987
Email: jacque@kellermitchell.com
Web: <http://www.kellermitchell.com/>

From the design of bioswales to the use of drought-tolerant planting, Keller Mitchell seeks sound, environmentally responsible and sustainable solutions in their school planning and design. In undertaking schoolyard master planning, they involve teachers, administrators, parents—and students—in the process to engender pride and ownership in the finished results. They also push for an educational component in their projects to communicate the principles, causes and effects, or benefits: for example, running a water pump with solar power so students can clearly understand the interrelationship between the two.

Life Frames, Inc.

Contact: Bonnie Sherk, Director
93 Mirabel Street • San Francisco, CA 94110
Phone: 415-206-9710
Fax: 415-206-9710
Email: bonnieeora@alivinglibrary.org
Web: <http://www.alivinglibrary.org/>

Life Frames works with schools and communities to plan, design, implement, and help maintain site and culturally sensitive community learning environments, each called A Living Library & Think Park. Each Branch Living Library is unique and incorporates the local resources: human, ecological, economic, historic, technological, and aesthetic – past, present, and future – while animating all subjects through interdisciplinary, hands-on, standards-based, PreK-12 learning. Branch Living Libraries in diverse communities are linked electronically and programmatically.

Living Laboratories, Inc. / Todd Jersey Architecture

Contact: Todd Jersey, Principal
Berkeley, CA
Email: todd@toddjerseyarchitecture.com
Web: <http://www.toddjerseyarchitecture.com/> and
<http://www.toddjerseyarchitecture.com/livlab/livlab.html/>

The mission of Living Laboratories Inc. is to provide urban school children ways to learn about living systems by increasing their contact with nature. Living Laboratories specializes in designing and creating water-based habitat including ponds and wetlands on school grounds. Native habitat restoration/creation is also a focus. This firm offers pro-bono design consulting to schools in the East Bay cities of Albany, El Cerrito, Oakland and Richmond. Please see Chapter 6.1 for more information about this organization.

Moore, Iacofano & Goltsman

Contact: Susan Goltsman, Principal
or Mindy Craig, Director of Marketing
800 Hearst Street • Berkeley, CA 94710
Phone: 510-845-7549
Fax: 510-845-8750
Web: <http://www.migcom.com/>

Recognized leaders in creating specialized environments for children, MIG offers expertise in environmental and universal design, landscape architecture, and curriculum and program development. MIG’s outdoor learning environments provide teachers with a range of curricular options and children with spaces to play, explore, and learn in safe yet challenging settings. Authors of *Play for All*, *Play for all Guidelines*, *Plants for Play*, *Natural Learning: The Life History of an Environmental Schoolyard* and other books.

Second Nature Design – Sustainable Landscapes

Contact: Alma Hecht, Owner
San Francisco, CA
Phone: 415-586-6578
Email: alma@secondnature.bz
Web: <http://www.secondnature.bz/>

The keys to beautiful, personal green spaces involve: restoring native plant communities, employing best management practices, and reusing materials wherever possible. Whether an hourly consultation, or full-scale design, Second Nature Design employs a collaborative approach between client, land, and designer. Second Nature works on projects of all sizes ranging from acres to postage-size stamps." Second Nature's "process merges your wishes with what is present, to create the most environmentally sound site design and/or land use plan."

2. Gardening Resources for School Grounds

School gardens are outdoor learning environments which support students' performance and greater community involvement in our schools. For a relatively modest investment, much value can be added to learning, as well as to the community through garden education. School garden projects in particular offer opportunities for culturally and linguistically diverse learning, for infusing lessons with nutrition, science concepts, environmental awareness, and healthy behaviors.

School gardens also provide opportunities for students to become caretakers of small ecosystems and build a culture of ownership and stewardship at their school. The infectious enthusiasm that surrounds these gardens spreads to families and to the outlying community. Schools with gardens are generally more appealing, more attractive, and better-maintained facilities.¹

2.1 Evaluating your garden soil²

Gardens need great soil in order to thrive. Soil health and composition are vital to producing a successful garden. When starting a new garden, it is a good idea to check your soil to see what its existing nutrient composition is and to test its pH level. Home soil test kits, found at most hardware and plant supply stores, will give you a good estimate of your soil's nutrient content and acidity (pH level).

You should also check to see what kinds of materials are in your soil. Is it mostly sand? clay? or rich loam? Understanding your soil's composition will help you to determine if you need to add any soil conditioners (compost, sand, etc.), and will help you to anticipate your garden's future watering needs. (Water drains quickly through sandy soil, but is held for longer periods of time by soils with more clay or organic matter.)

The soil of most urban and school gardens should also be tested for lead, arsenic, and other heavy metals or contaminants before growing food or doing any gardening with children. Lead is often present in urban areas along building foundations, in areas close to busy streets, and on land that was previously used for industrial or heavy commercial applications. Soil that is near pressure treated lumber or old railroad ties (often mistakenly used as garden "enhancements") should also be treated with caution since the toxins in those materials frequently leach into surrounding soil and easily rub off on children's hands.

The best way to test for heavy metals and other contaminants is to send soil samples to a specialized soil testing laboratory. Laboratories can also test the nutrient composition, pH, and other factors at the same time. The following

website includes suggested guidelines for selecting a soil testing laboratory: <http://ohioline.osu.edu/hyg-fact/1000/1133.html>.

If you do find heavy metals or other contaminants in your soil, you can consider moving your garden location, or build raised beds that do not allow contact between the new garden soil and the existing, contaminated soil on the site. Please contact your school district office and seek professional advice about your garden if you find that your schoolyard has contaminated soil.

Soil Testing Laboratories

A & L Western Laboratories

Contact: 1311 Woodland Avenue #1 • Modesto, CA 95351
Phone: 209-529-4080
Email: Email inquiry available through their website's online form
Web: <http://www.al-labs-west.com/environmental.htm>

This laboratory can test soil, plants, and water for metals and pesticides. Check their website or call for instructions on collecting soil samples and to obtain a soil test form and rate sheet with prices for a variety of different tests.

Soil Foodweb, Inc.

Contact: 1128 NE 2nd Street, Suite 120 • Corvallis, OR 97330
Phone: 541-752-5066
Fax: 541-752-5142
Email: info@soilfoodweb.com
Web: http://www.soilfoodweb.com/01_services/01_oregon/index.html/

This lab gives you information on the living organisms in your soil, rather than focusing on the mineral content and type of soil.

Soil & Plant Tissue Testing Lab

Contact: West Experiment Station
University of Massachusetts
682 North Pleasant Street • Amherst, MA 01003
Phone: 413-545-2311
Fax: 413-545-1931
Email: soiltest@umext.umass.edu
Web: <http://www.umass.edu/plsoils/soiltest/>

The University of Massachusetts provides one of the least expensive standard soil tests, and also has a variety of other tests including tests for metals (lead, cadmium, chromium, and nickel). Please check their website to see if your question can be answered using their online materials before contacting them.

Home Soil Testing Kits

Check your local nursery or hardware store for basic soil test kits if you only need a general idea of the nutrient content of your soil and its pH. If you can't find a test kit at a local store, they can be ordered from:

Peaceful Valley Farms Supply

Contact: P.O. Box 2209 • Grass Valley, CA 95945
Phone: 530-272-4769 (questions) or 888-784-1722 (phone orders)
Fax: 530-272-4794
Email: helpdesk@groworganic.com
Web: <http://www.groworganic.com/>

Compost

The nutrient-rich organic matter contained in compost is a vital part of a successful garden. Adding organic matter to your soil helps it to retain moisture, improves the soil's texture, and makes nutrients available to the plants as they grow. Many organic gardeners add compost to their garden's soil at least once per year before putting in a new crop. Compost can also be added to the surface of your garden during the growing season.

Organizations that can help you make your own compost

Alameda County Waste Management Authority & Source Reduction & Recycling Board

(Limited to Alameda County residents)

Contact: 777 Davis Street, Suite 100 • San Leandro, CA 94577
Phone: 510-614-1699 (general information)
510-444-7645 (compost information, "Rotline")
Fax: 510-614-1698
Email: Email inquiry available through their website's online form
Web: <http://www.stopwaste.org/>

ACWMA offers a variety of compost and recycling services for residents of Alameda County including: low cost bins, free literature, and classes. Their website also includes a good "how to" guide for garden composting and using worm compost bins.

Garden for the Environment

Contact: 780 Frederick Street • San Francisco, CA 94117
Phone: 415-731-5627
Fax: 415-731-5607
Email: sfgcp@yahoo.com
Web: <http://www.gardenfortheenvironment.org/>
Listserv: To join their gardening email discussion send an email to: sf-gardening-and-composting-subscribe@yahoogroups.com

The Garden for the Environment is located on 7th Avenue at Lawton Street, in the Inner Sunset District of San Francisco. The Garden has a "Rotline" phone number (listed above) you can call to get general gardening and composting advice, and an email discussion group (listserv) you can join to connect with other garden enthusiasts. They also teach gardening and composting workshops at elementary and middle schools in San Francisco, and run a gardening and composting training program for educators.

San Francisco Department of the Environment

(Limited to San Francisco residents)

Contact: 11 Grove Street • San Francisco, CA 94102
Phone: 415-355-3700 (general number)
415-355-3742 (Food to Flowers school composting program)
Fax: 415-554-6393
Email: becky.wike@sfgov.org
Web: <http://www.sfenvironment.com/>

SF Environment's *Food to Flowers!* program turns lunchroom waste into nutrient rich compost and features school-wide assemblies that teach about the interconnectedness of nature and how recycling and composting protect the environment. SF Environment also provides standardized teaching materials, promotional items, recycling bins and training for students and staff on how to compost using the green cart. Their website includes detailed information about how to compost garden waste, set up worm compost bins, and manage your landscape in a resource efficient manner. For more information about their programs, please see Chapters 5.2, 6.1, 8.2, 10.1, 10.3, and 10.4.

San Mateo County RecycleWorks

(Limited to San Mateo County residents)

Contact: 555 County Center 5th Floor • Redwood City, CA 94063
Phone: 650-599-1405
Email: info@recycleworks.org
Web: <http://www.recycleworks.org/>

RecycleWorks offers a range of recycling, composting, and gardening programs for schools, homes, and businesses located in San Mateo County. They offer professional development workshops for teachers, classroom presentations for students, master composter training programs, discounted compost bins, and related online resources. With the exception of their online resources, all other services are only available to San Mateo County schools and residents.

Places to get *free* compost & mulch for school gardens

The organizations below have a limited geographic range for their services. If you don't live in Berkeley or San Francisco, try calling your city's green waste collection department to see if they will provide this service.

For Berkeley School and Community Gardens (only)

Contact: Beebo Turman
Berkeley Community Gardening Collaborative
Phone: 510-883-9096

The City of Berkeley provides free compost to Berkeley's community and school gardens, the last Friday of each month. This great compost is made from the plant debris collected from City residents by Grover Landscaping in Modesto, California. For more information, contact the Berkeley Community Gardening Collaborative at the number above.

For San Francisco Unified School District's Gardens (only)

Contact: Arden Bucklin-Sporer, Director of Educational Gardens
San Francisco Unified School District – Facilities Department
Phone: 415-695-5625
Email: bucklina@sfusd.edu

SFUSD has a materials yard located at the School of the Arts which houses compost and wood chips for use by San Francisco school gardens and other San Francisco Unified School District landscaping projects. Representatives from San Francisco public school gardens can make arrangements to visit the facility and pick up the compost and wood chips they need themselves, or to have a delivery made to their school (dependent on availability). For more information, please contact Arden Bucklin-Sporer at the number or email address above. Please make your request for a visit to the materials yard or a delivery at least one week before you need the supplies. Please see Chapter 1.1 for additional information about this organization.

Places to purchase compost & soil amendments

American Soil and Stone Products

2121 San Joaquin Street	<i>and</i>	565 A Jacoby St
Richmond, CA 94804		San Rafael, CA
Phone: 510-292-3000		415-456-1381
Fax: 510-526-3175		415-456-1754
Email: richmond@americansoil.com		sanrafael@americansoil.com
Web: http://www.americansoil.com/		

Large selection of soils, amendments, stone; delivery available.

California Colored Rock

Contact: 367 Bayshore Blvd. • San Francisco, CA 94124
Phone: 415-285-5025
Fax: 415-285-1052

Topsoil, gravel, masonry items; delivery available. Discounts for schools may be possible, contact Dave Painter at the main office: 408-683-4548.

Floorcraft Garden Center

Contact: 550 Bayshore Blvd. • San Francisco, CA 94124
Phone: 415-824-1900
Web: <http://www.floorcrafthome.com/>

Bagged soil, amendments and plants of all types available. Floorcraft offers a 10% discount to San Francisco schools. They also donate products from their bargain basement if you contact them with a letter requesting the donation. Letter must include the school's tax identification number.

Green Waste Recycle Yard (Aboricultural Specialties, Inc.)

Contact: Jeff Allyn
2550 Garden Track Road • Richmond, CA 94801
Phone: 510-530-6185 (sales and marketing) or
510-908-2169 (corporate office)
Email: jeff@greenwasterecycleyard.com
Web: <http://www.greenwasterecycleyard.com/>

The Green Waste Recycle Yard offers an alternative drop site for reclaimed urban forest "green waste" including trees, branches, shrubs and wood-chips. Premium "Treeincarnation" and organic mixed mulches are available. Landscape retaining walls and step blocks are also sold. Hours of operation: 9:00 am - 4:00 pm, Monday through Friday (please call before coming over). Delivery fee is \$65. Check the website for a price list and more detailed information about products sold.

Lyngso Garden Materials, Inc.

Contact: 19 Seaport Blvd. • Redwood City, CA 94063
Phone: 650-364-1730
Fax: 650-364-1905
Email: Email inquiry available through their website's online form
Web: <http://www.lyngsogarden.com/>

Large selection of soils and amendments. Delivery available for orders over one ton.

Plant It Earth

Contact: 2279 Market Street • San Francisco, CA 94114
Phone: 415-626-5082
Email: info@plantitearth.com
Web: <http://www.plantitearth.com/>

This store specializes in indoor and hydroponic gardens. They also sell bagged soil, soil amendments, fertilizers, natural pest controls, containers, and many other related supplies.

Sloat Garden Center

Contact: 2700 Sloat Blvd. *and* 327 3rd Avenue
San Francisco, CA San Francisco, CA
Phone: 415-566-4415 415-752-1614
Email: sloat@sloatgardens.com
Web: <http://www.sloatgardens.com/>

Bagged soil, amendments, plants of all types, and an in-house garden design department. Additional store locations in Marin, Contra Costa, and Sonoma Counties.

Vermiculture sources (composting with worms!)

Bay Worms®

Contact: 400 Eshleman Hall • Berkeley, CA 94720-4500
Phone: 510-643-0440 *or* 510-776-6210
Fax: 510-642-3022
Email: compost@ocf.berkeley.edu *or* mikijurcan@hotmail.com
Web: <http://www.ocf.berkeley.edu/~compost/>

Sells a mixture of nutrient-rich worm castings and aged compost. They provide 30% discounts to schools and non-profit organizations.

Cosmo's Red Worms

Contact: Paul Cosmides
432 Lawton Street • San Francisco, CA 94122
Phone: 415-759-7874
Web: <http://www.alcasoft.com/cosmos/>

Supplier of vermicomposting red wiggler worms and worm compost bedding. Discounts available on large orders.

Online compost & mulch resources

How to Compost.org

Web: <http://www.howtocompost.org/>

Website with extensive information and articles about all types of composting methods. Some supplies available for purchase.

Sonoma County Waste Management Agency

Web: http://www.recyclenow.org/r_composting_worm.html

Website with clear instructions for worm composting and other composting methods.

Using straw as a compost & mulch material

Straw is a useful material to add to your compost piles, or to use as mulch on garden beds and pathways. It can also be used to "lighten" the soil when growing crops such as potatoes.

Wheat straw can generally be found around the Bay Area in places that house farm animals. If you just need a few straw bales, try asking your local petting zoo or farm if you can purchase some from them. Be sure that you are buying STRAW and NOT HAY, or the grain will sprout and you will be picking wheat plants out of your garden for years to come! Straw bales are also frequently used in October and November by local stores to create "fall ambiance" in their window displays. If you need straw in the fall, consider asking these local businesses if you can have their straw bales when they remove their displays. Many will be happy to give them to you for free. Local horse tracks and riding stables also have large numbers of bales that they use for bedding, and you can often purchase small quantities of unused bales from them.

Used animal bedding straw can usually be acquired for free from petting zoos and small farms, who are frequently happy to dispose of this waste product. This nutrient-filled material can be added to compost piles in school gardens, or used as mulch on new garden areas that won't be planted with edible crops this season. (It is wise to wait until the manure on the used bedding straw has fully composted before planting edible crops in that location.) This type of manure-filled mulch will add valuable nutrients and organic matter to your soil.

Please see Chapter 6.2 for information about straw bale construction expertise and suppliers.

2.2 Planting Time!

Garden Seeds, Plants, & Expertise

There are many factors that go into selecting a good mix of things to grow in your school garden. Here are some general questions to consider before picking the crops for your garden:

- What do you want your students to learn?
- How much time do you have to spend working in your garden?
- How many students will be working in your garden?
- What do you like to eat?
- What would you like to cook with your class?
- Which types of birds and insects (i.e. butterflies) would you like to attract to your garden?
- What is your schoolyard's microclimate?

Seeds

There are a variety of free and low cost ways to get seeds, for the budget minded gardener. Seeds are packaged for one season. When the season is over, some retail stores return these seeds to the seed companies. Other stores sell their dated seeds at a discount, or give them away. The drawback is that these seeds are old, and their germination rate is lower than that of fresh seeds. You will have to use double the number of seeds. Also, when you get donated seeds, you don't get to choose what seeds you receive. Yet, with donations come surprises, such as a plant you wouldn't have chosen but which leads to a new adventure. Donated seeds are wonderful for starting out, for giving away and for sharing with students and families.

In October, go visit your local hardware store or your local nursery and ask them if they will donate last season's seeds to your school. Even if they won't donate, many will sell seeds to you at a discount. Please make sure to thank these stores in your PTA newsletter, and give a copy of the newsletter to the store. Most stores also appreciate a receipt for the donation on letterhead with your tax identification number.

In November, send your requests for seed donations to seed companies on school letterhead. Please remember to thank them properly, too.³

Berkeley Horticultural Nursery

Please see the description for Berkeley Horticultural Nursery in the plant section below.

Ecology Center – Bay Area Seed Interchange Library (BASIL)

Contact: 2530 San Pablo Avenue • Berkeley, CA 94702
Phone: 510-548-2240
Fax: 510-548-2240
Email: basil@ecologycenter.org
Web: <http://www.ecologycenter.org/>

The Bay Area Seed Interchange Library (BASIL) Project is part of a growing network of concerned farmers and community gardeners dedicated to conserving the remaining genetic diversity of our planet's seed stock. They have created a library of vegetable, herb, and flower seeds that are being made available to the public with the promise to grow them out and "return" some seeds of the next generation at the end of the season. BASIL is interested in non-hybrid seed saved from local gardening projects.

In the future, they hope to work with school and community gardens interested in "adopting" crop varieties to grow out. At this time, they are not yet prepared to work with numerous school gardens, but they are doing a pilot program with the intention to build seed saving curricula for school gardens and to open the process for more collaborations in the future.

Johnny's Selected Seeds

Contact: 955 Benton Avenue • Winslow, ME 04901
Phone: 207-861-3999 or 800-879-2258
Fax: 800-738-6314
Email: homegarden@johnnyseeds.com
Web: <http://www.johnnyseeds.com/>

The East Bay Guide to Garden Resources highly recommends this seed source, and says that many garden coordinators in Berkeley buy most of their "...vegetable seeds from Johnny's because Johnny's seeds have excellent germination and [they] like to be able to pick and choose what [they] want to plant. The people are nice and they give helpful answers to questions. Johnny's also sells seeds in bulk. Johnny's gives donations to schools. Send them a letter request on school letterhead."⁴

Modena Seed Company, Inc.

Contact: P.O. Box 12007 • San Francisco, CA 94112
Phone: 415-585-2324
Fax: 415-585-6820
Email: seedal@modenaseed.com
Web: <http://www.modenaseed.com/>

A family owned business since 1946, Modena Seed Company specializes in supplying wholesale flower and vegetable seed to the professional grower. They are a bulk seed provider and supportive of school gardens. Need a couple of pounds of fava beans or corn seed? They are your local source for quality seed to produce a quality garden. Please call, fax or email seed requests. Orders/requests from schools must be on school letterhead.

National Gardening Association – Seed Swap

Contact: 1100 Dorset Street • South Burlington, VT 05403
Phone: 802-863-5251 *and* 800-538-7476
Fax: 802-864-6889
Email: barbara@garden.org (Contact Barbara for questions or comments on online and print materials for educators)
Web: <http://www.garden.org/seedswap/> *and*
<http://www.kidsgardening.com/> (for school gardening themes)

The National Gardening Association's website includes a great variety of resources for school gardens including: a seed swap program, seasonal planting ideas, potential school garden themes, curricula for different grade levels, grant opportunities for school gardens, an online garden store, and many other resources. They also publish an excellent, free, online monthly school garden newsletter and a quarterly printed newsletter. Each issue of the online newsletter focuses on a different seasonal or educational theme to bring into your school garden. For more information about their free seed swap program, visit the web address listed above. For more information about the NGA, please see Chapters 2.3, 2.5, 2.7, 8.4, 9.3, and 10.6.

Seeds of Change

Contact: Nancy Shapiro
3209 Richards Lane • Santa Fe, NM 87505
Phone: 888-762-7333
Fax: 505-438-7052
Email: Email inquiry available through their website's online form
Web: <http://www.seedsofchange.com>

Seeds of Change offers over 600 varieties of organically grown seeds for the home gardener and over 100 varieties in bulk quantities for the market grower. Many of their varieties represent decades, even centuries, of cultures from around the world who have saved their favorite, most flavorful and nutritious plants. Seeds of Change has a Seed Donation Program that can provide organic seeds to schools at very low prices. See their website for more details and an application form.

Plants

There are also a variety of free and low cost ways to find garden plants. One good way is to coordinate purchases for several friends or several gardens and buy a large quantity of plants wholesale, rather than retail. You can save up to 50%. A one gallon perennial costs approximately \$3-\$5 wholesale. Remember, wholesalers are used to dealing with businesses. They don't want to answer questions. You have to be ready with your list. You can't walk around and pick plants out. Minimums are usually approximately \$500. You call or fax in your order. Some wholesalers will deliver if you meet a minimum, others will let you pick-up the plants at their site. So, if you need a large quantity, have done your research and are ready to order, try a wholesaler in your area. For a list of wholesalers, go to Yahoo.com's yellow pages, and type in "wholesale nurseries" and include your location."⁵

Some of the companies listed in the previous section sell plants as well as seeds. Other local free or low cost sources for plants include the following organizations and businesses:

For public schools in San Francisco only

Friends of the Urban Forest (FUF)

Contact: Doug Wildman, Landscape Architect/Program Director
Presidio of San Francisco, PO Box 29456
San Francisco, CA 94129-0456
Phone: 415-561-6890 ext.109
Fax: 415-561-6899
Email: doug@fuf.net
Web: <http://www.fuf.net/>

For 25 years Friends of Urban Forest (FUF) has been involved in community based tree planting in San Francisco. If FUF's budget permits, it can provide trees to schools at a discounted rate. FUF's services also include limited design and planning assistance (including plans for future maintenance needs) and coordination with the SFUSD landscaping department. FUF's involvement on a given project is subject to its staff workloads as well as the scope of a proposed project. Outside funding for this service is always appreciated.

San Francisco Unified School District – Facilities Department

Please see the description in Chapter 1.1.

Other discounted plant sources in the Bay Area

Berkeley Horticultural Nursery

Contact: Paul Doty
1310 McGee Avenue • Berkeley, CA 94703
Phone: 510-526-4704
Fax: 510-526-3400
Email: mail@berkeleyhort.com
Web: <http://www.berkeleyhort.com/>

This 2-acre family owned nursery was started in 1922. It strives to introduce new and unusual plants to the Bay Area, and carries a wide selection of plants. The best part of this nursery is the knowledgeable staff. Customers often bring in pieces of sick plants for diagnosis or an unknown plant for identification.⁶ Teachers and schools receive a 10% discount on purchases. To get this discount, bring in proof of your affiliation with a school, e.g. teacher's ID card or pay stub, and bring a letter about your school garden on your school's letterhead stationery. The nursery is closed on Thursdays.

Seasonal & regional plant sales worth traveling to

These sales generally feature plants that are appropriate for the current season. An added bonus is that several of them take place within beautiful and inspirational gardens. Make a day of it. Again, be sure to mention that you are buying plants for a school garden and maybe you will receive a discount. These sales are also great places to ask for advice. Many of the volunteers staffing these sales have exceptional knowledge and love of plants.⁷

California Native Plant Society, Yerba Buena Chapter (San Francisco)

Contact: Jake Sigg, Conservation Chair for Yerba Buena Chapter
Email: jakesigg@earthlink.net
Web: <http://www.cnps-yerbabuena.org/>

The Yerba Buena Chapter of CNPS holds an annual plant sale on the first Thursday in November every year. The sale offers plants propagated from naturally occurring stock exclusively, thus assuring adaptation to local conditions and attractiveness to local wildlife. Visit their website for more information about this event. Please see Chapter 3.1 for more information.

City College of San Francisco - Environmental Horticulture Program

Contact: Steven Brown, Department Chair
Email: sbrown@ccsf.edu
Web: http://www.ccsf.edu/Departments/ed_programs.html/

City College of San Francisco's Environmental Horticulture Program sponsors three plant sales a year offering indoor and outdoor plants, edibles, natives, exotics, succulents and seasonal plants. Floral arrangements and other

selected gift items are also available. The sales are open to the general public. Visit the program's website for sale dates and other information.

Occidental Arts & Ecology Center

Contact: 15290 Coleman Valley Road • San Francisco, CA 95465
Phone: 707-874-1557
Fax: 707-874-1558
Email: oaec@oaec.org
Web: <http://www.oaec.org/>

OAEC has a 30-year old inspirational "Mother Garden" with an amazing diversity of edible and ornamental plants. It holds excellent plant sales three times a year with plants propagated from their own collections. Take advantage of the guided tours of OAEC's terrific gardens during the plant sales, since the gardens are closed to the public outside of classes and special events. Please refer to their website for more details about the plant sales.

San Francisco Botanical Garden at Strybing Arboretum

Contact: Kitty Fisher, Education Coordinator (x300)
9th Avenue at Lincoln Way • San Francisco, CA 94122
Phone: 415-661-1316
Email: kfisher@sfbotanicalgarden.org
Web: <http://sfbotanicalgarden.org/>

Monthly plant sales offering plants propagated from the San Francisco Botanic Garden's diverse collection. All plants are suitable for Bay Area gardens. The Garden also offers a year-round series of workshops, daily garden tours, and other events such as an annual summer gardening fair.

University of California Botanical Garden

Contact: 200 Centennial Drive • Berkeley, CA 94720-5045
Phone: 510-643-2755
Email: garden@berkeley.edu
Web: <http://www.botanicalgarden.berkeley.edu/>

UC Botanical Garden has daily plant sales as well as three major seasonal plant sales. Plants are primarily grown from seeds or cuttings from the Garden's spectacular collection including cacti, orchids, California native plants, species parent plants for many horticultural varieties, house plants, and carnivorous plants. Silent auctions of rare plants are often featured at plant sales along with books and gifts from the Garden Shop. Open daily 9:00 am - 5:00 pm, except select holidays. Also closed 1st Tuesday of every month. Please see Chapters 2.6, 10.1, and 10.3 for more information about their garden-related educational programs.

2.3 Children's Garden Tools

It is important to stock your school garden's tool shed with hand tools that are an appropriate size and weight for children. Many schools also find it useful to own a supply of child-size rubber boots and gardening gloves, to avoid potential problems with excessively muddy shoes and make garden work more appealing.

Many local garden stores stock these garden items for children. When buying shovels and other tools, make sure that the handles are well connected to the blades, and that all materials used are sturdy. Select tools for their quality, rather than initial price... tools made from inexpensive materials will often break very quickly and disappoint you later. Be aware that tools developed for children are often made from materials that break quickly with regular garden use. You might be better off purchasing tools that are intended for adults, but are lighter weight and come in smaller sizes. (For example, there are small shovels, smaller trowels, narrow rakes, light hoes, etc.)

If you can't find a good set of child sized tools locally, or would prefer to order tools through the mail, you can check the company below for some additional products.

National Gardening Association – Kidsgardening.com

Contact: 1100 Dorset Street • South Burlington, VT 05403
Phone: 800-538-7476
Fax: 802-864-6889
Email: sales@kidsgardening.com
Web: <http://www.kidsgardening.com/>

The Kidsgardening.com website has a full range of resources available including planting ideas, curriculum suggestions, and online links. The National Gardening Association also has a well stocked online store that specializes in products related to gardening with children, including child-sized hand tools. For more information about the NGA, please see Chapters 2.2, 2.5, 2.7, 8.4, 9.3, and 10.6.

2.4 Bay Area Tool Lending Libraries

Many tool lending libraries exist around the Bay Area. Most have a "lending range" limited to residents of their own city, however. If you don't see your city listed below, try calling your local library or parks department to see if they have a local tool lending library they can recommend.

San Francisco Clean City Coalition - Tool Lending Center

(Limited to San Francisco residents)

Contact: 1016 Howard Street • San Francisco, CA 94103
Phone: 415-552-9201 or 415-701-8665 (Tool Lending Center)
Fax: 415-552-9202
Email: info@sfcleanccity.com
Web: <http://www.sfcleanccity.com/tool-lending/index.html/>

The Clean City Coalition runs the San Francisco Tool Lending Center (TLC). The TLC lends tools free of charge to San Francisco residents. Residents may take out tools for use on any schoolyard endeavor. Tools and services available include: hand tools for carpentry, concrete, electrical, floor and wall, gardening, mechanical, and plumbing work; educational workshops including topics like sustainable building are offered; a reference collection of books, manuals, magazines, and instructional videos; video viewing area. Please visit their website for hours of operation and a complete list of tools.

Tool Lending Library – Berkeley Public Library, next to South Branch

(Limited to residents and property owners in Berkeley)

Contact: 1901 Russell Street (at MLK) • Berkeley, CA 94703
Phone: 510-981-6101, call for library hours and requirements for lending
Web: <http://www.berkeleypubliclibrary.org/tool/>

The Berkeley Public Library's Tool Lending Library loans tools to Berkeley residents and Berkeley property owners. The tool lending library includes tools for: carpentry and woodworking, concrete and masonry work, electrical work, various home maintenance tasks, and gardening and digging.

Tool Lending Library - Oakland Public Library, at Temescal Branch

(Limited to residents and property owners in Oakland, Piedmont, Emeryville)

Contact: 5205 Telegraph Avenue • Oakland, CA 94609
Phone: 510-597-5089 (call for hours/requirements for lending)
Email: tyurgele@oaklandlibrary.org
Web: <http://www.oaklandlibrary.org/Branches/temtll.htm>

The Temescal Tool Lending Library loans tools to residents and property owners from the East Bay cities of Oakland, Piedmont, and Emeryville. It currently has over 2,200 tools available for loan, as well as books and how-to videos. The tools can be used for a variety of purposes, including carpentry, gardening, plumbing, and electrical work. The Tool Lending Library also offers occasional workshops on home improvement and tool safety topics.

2.5 Non-Toxic Pest Control⁸

Children are very sensitive to garden chemicals, so it is particularly important to use non-toxic pest control methods on school grounds. The integrated pest management (IPM) philosophy recommends starting with the least toxic method to control a given problem, and avoiding the use of pesticides and herbicides if at all possible.

Each school district has its own policy regarding IPM, and it is a good idea to know which chemicals (if any) are used on your schoolyard. For example, San Francisco Unified School District has a strong IPM policy due to a school board resolution passed in the late 1990s. For this reason, SFUSD's Facilities Management Department does *not* use pesticides or herbicides on school grounds. All SFUSD schools have a pest control binder which resides in the school's office and contains all of the IPM data and makes this information readily available.

Some organic gardeners recommend releasing beneficial insects into your garden to help control the numbers of "problem insects" such as aphids. There is no doubt that releasing ladybugs on a spring day in a school garden is an enjoyable exercise and is also probably a good way for children to "meet" some insects first hand. There is some controversy, however, over the harvesting of beneficial insects from their native habitats since many die in the process of being captured, transported, and sold, and their normal migrations are disrupted. You should know that purchased ladybugs will usually fly away before eating your garden's pests, so it is quite likely that they won't take care of the aphid problem in a given garden. Buying beneficial insects is mainly beneficial to the store that sells them. The best way to attract beneficial insects to your garden is to create an excellent, pesticide-free insect habitat that will breed its own population of beneficial insects for free for years to come.

Clinics

Before you can treat a given problem in your garden, you need to know what it is! Plant clinics can help you diagnose the specific disease or insect that is causing you trouble.

Sick Plant Clinic – UC Botanic Garden

Contact: 200 Centennial Drive • Berkeley, CA 94720-5045
Web: <http://www.mip.berkeley.edu/garden/>

UC plant pathologist Dr. Robert Raabe, UC entomologist Dr. Nick Mills and their team of experts will diagnose what ails your plants. This free service is available the first Saturday of each month, from 9:00 am - noon.

Other Resources

Alameda County Waste Management Authority – Stop Waste

Bay-Friendly Landscape Guidelines

Email: info@bayfriendly.org

Web: <http://www.stopwaste.org/home/index.asp?page=378/>

Bay-Friendly is a holistic approach to gardening and landscaping that works in harmony with the natural conditions of the San Francisco Bay Watershed. *Bay-Friendly* practices foster soil health, conserve water and other valuable resources while reducing waste and preventing pollution. The *Bay-Friendly Landscape Guidelines* are based on 7 environmental principles, offering 55 practices in landscape design, construction, and maintenance. Read this book to learn more about: landscaping in harmony with the SF Bay watershed; reducing waste and recycling materials; nurturing healthy soils; conserving water, energy, and topsoil; using integrated pest management to minimize chemical use; reducing stormwater runoff; and creating wildlife habitat. Free hard copies are available to Alameda County residents (limit two per order). ACWMA's resources and technical assistance are available for Alameda County residents and landscape professionals ONLY, however, anyone can download their guidelines from the website above.

California Department of Pesticide Regulation – Schools Integrated Pest Management Program

Contact: 1001 I Street, PO Box 4015 • Sacramento, CA 95812-4015

Phone: 916-445-3914

Web: <http://www.schoolipm.info/>

This website is a comprehensive source of information for parents, teachers, school staff and others involved in resolving pest issues in schools. In 1993, the Dept. of Pesticide Regulation (DPR) began working with school districts in California to provide information about integrated pest management (IPM) practices. The enactment of the Healthy Schools Act of 2000 (Assembly Bill 2260) put into place right-to-know requirements such as notification, posting, and record keeping for pesticides used at schools and instructed DPR to promote and facilitate adoption of IPM in schools.

Friends of the Urban Forest (FUF)

Contact: Douglas Wildman, Landscape Architect/Program Director
Presidio of San Francisco, PO Box 29456
San Francisco, CA 94129-0456

Phone: 415-561-6890 ext.109

Fax: 415-561-6899

Email: doug@fuf.net

Web: http://www.fuf.net/tree_care/pest_management.html/

FUF's website includes some excellent information about integrated pest management. Please see Chapter 2.2 for more information about this organization.

National Gardening Association – Pest Control Library

Contact: 1100 Dorset Street • South Burlington, VT 05403
Phone: 802-863-5251 and 800-538-7476
Fax: 802-864-6889
Web: <http://www.garden.org/pestlibrary/>

The National Gardening Association's website includes a detailed online pest control library, complete with photographs of plant diseases and insect and animal pests, to help you identify common garden problems. They also recommend a range of solutions to these problems, from planting and watering methods to biological and chemical controls. For more information about the NGA, please see Chapters 2.2, 2.3, 2.7, 8.4, 9.3, and 10.6.

National Pesticide Information Center

Phone: 800-858-7378
Email: npic@ace.orst.edu
Web: <http://www.npic.orst.edu/>

This hotline and extensive website offer help in reading and understanding pesticide labels, answers questions about specific pesticides, and provides emergency information contacts.

San Francisco Public Utilities Commission

Web: http://sfwater.org/detail.cfm/MSC_ID/78/MTO_ID/NULL/MC_ID/4/C_ID/1402/holdSession/1
(Note: This is a single, long internet address.)

Visit this website to access all sorts of less toxic pest management resources and ideas, including *Our Water our World Fact Sheet* and other resource links.

SF Environment – City Toxics Reduction Program

Please see the description in Chapter 8.2.

Sloat Garden Center

Contact: 2700 Sloat Blvd. and 327 3rd Avenue
San Francisco, CA San Francisco, CA
Phone: 415-566-4415 415-752-1614
Email: sloat@sloatgardens.com
Web: <http://www.sloatgardens.com/>

Sloat Garden Center often sells a variety of live beneficial garden insects such as mantis egg cases, ladybugs, and beneficial nematodes. Please see Chapter 2.1 for more information about this company.

U-Mix-It Safe Spray®

Contact: Andi Willhoit
3017 Sandi Drive • Chico, CA 95973
Phone: 530-897-0274
Fax: 530-897-0274
Email: info@safespray.com
Web: <http://www.safespray.com/>

U-Mix-It Safe Spray® sells recipes for making household cleaners and garden pest control sprays that the company describes as “earth-friendly and child-safe.” Many of the recipes use natural and inexpensive kitchen ingredients such as vinegar, liquid soap, lemon juice, onions, garlic, baking soda, and cayenne pepper. U-Mix-It Safe Spray® products can also be used as an environmental educational fundraiser. Call or email for more information. Service available nationally.

2.6 Great Resources for Schoolyard Food Gardening

Many schools in the Bay Area are creating food gardens to expand their students' understanding of nutrition, improve their eating habits, and diversify their culinary creativity. The organizations listed below are some of the many local groups that are interested in helping schools develop their food related gardens and associated curricula.

City Slicker Farms

(Geographic restrictions apply. Please see below.)

Contact: Willow Rosenthal
737 Henry Street • Oakland, CA 94607
Phone: 510-763-4241
Email: cityslickerfarms@riseup.net

City Slicker Farms (CSF) works to increase food self-sufficiency in West Oakland by creating organic, sustainable, high yield urban farms and backyard gardens. These spaces provide healthy, affordable food and improve the environment. CSF seeks to serve all West Oakland residents, prioritizing people who have the least access to food.

CSF also provides educational programs for children and adults. These programs foster experiential learning opportunities through workshops, school fieldtrips to CSF urban farms and work-days. Informal advice regarding food gardening and natural "green" building materials/techniques is available via phone, email or in person. To find out about workshops, schedule a school fieldtrip or work-day please call or email CSF. Fieldtrips to CSF farms are available to schools in the greater Bay Area, but all of its other resources are restricted to West Oakland residents and schools ONLY.

Getting Going Growing - Foundation for Global Community

(Limited to schools in San Mateo and Santa Clara Counties)

Contact: Susan Stansbury
222 High Street • Palo Alto, CA 94301
Phone: 650-328-7756 x 626
Fax: 650-328-7785
Email: ssansbury@globalcommunity.org
Web: <http://www.globalcommunity.org/vhd/index.shtml>

Getting Going Growing is a non-profit community collaborative that provides support to school gardens on the Mid-peninsula. They provide connections to in-kind resources from landscaping professionals, and consulting on management, curriculum and fundraising for school gardens. They help find in-kind support for schools such as design, landscape contracting, soil, plants, etc.

Growing Green Kids

(Limited to San Francisco schools)

Contact: Sybil Tate
Phone: 415-595-9484
Fax: same as phone number
Email: sybil@growinggreenkids.org
Web: <http://www.growinggreenkids.org/>

Growing Green Kids (GGK) is a membership organization that provides schools with the hands-on support necessary to create food gardens onsite and use them as nutritional and academic teaching tools. School communities that are a part of the Growing Green Kids network benefit from relevant training for garden educators/coordinators, site evaluations and fieldtrips for students. These benefits help solidify the school community's connection to its food garden.

Life Lab Science Program

Contact: Erica Perloff & John Fisher
1156 High Street • Santa Cruz, CA 95064
Phone: 831-459-2001
Fax: 831-459-3483
Email: lifelab@lifelab.org
Web: <http://www.lifelab.org/>

Life Lab offers curriculum and professional development for educators implementing garden-based learning programs. Life Lab coordinates staff development efforts throughout California and at the Life Lab Garden Classroom, located at the University of California, Santa Cruz. The two-acre Life Lab Garden Classroom is a model outdoor learning center offering school fieldtrips, and after-school and community programs. The garden includes compost demonstration areas, a chicken house, beds highlighting pollination, production, fiber and dye, aquatic plants, a carnivorous bog, an outdoor kitchen and much more. Services available internationally.

Pam Peirce - Gardening Consultant

Phone: 415-584-0993
Email: ppeirce@ccsf.edu

The author of *Golden Gate Gardening* and *Wildly Successful Plants: Northern California*, Pam Peirce is a Bay Area gardening expert/consultant with a specialization in growing edibles year-round in the Bay Area, especially in the cool-summer parts of the region. She can offer advice on how to coordinate your planting schedule with the school year or help identify and solve problems related to microclimate, soils, or pests. Consulting services are available on a fee for service basis. Pam also teaches Saturday morning gardening classes year-round at City College of San Francisco (see Chapter 10.2). She is also available to give lectures on Bay Area gardening topics.

Sustainable Agriculture Education (SAGE)

Contact: Sarah Cohen, Project Manager
1417 Josephine Street • Berkeley, CA 94703
Phone: 510-526-1793
Fax: 510-524-7153
Email: info@sagecenter.org
Web: <http://www.sagecenter.org/>

Sustainable Agriculture Education (SAGE) is a Berkeley-based non-profit founded in 2001. SAGE has a dual mission: to develop urban edge agriculture as a vital urban-rural interface and to engage California's diverse population in regional food and agriculture systems. Urban-rural linkage projects include development of *Agricultural Parks*, entities designed to create opportunities for small farmers within urban edge community food systems. SAGE also produces educational resources including *Kids Cook Farm Fresh Food*, a sustainable agriculture curriculum for grades 2 - 7 consisting of recipes, activities, and farm profiles; *Open Garden Day* maps of school and community gardens and other urban agricultural projects in the Bay Area (most recently produced in 2002), and other resources relating to San Francisco farmers' markets and Bay Area farms. Visit their website to read about new projects, publications and upcoming events.

University of California Botanical Garden

Contact: Education Department
200 Centennial Drive • Berkeley, CA 94720-5045
Phone: 510-643-4832
Email: kdbarret@berkeley.edu
Web: <http://botanicalgarden.berkeley.edu/>

The UC Botanical Garden offers an annual school garden conference in March for teachers, school garden managers, and parent volunteers. This conference includes inquiry-based botanical, science, and math units which integrate school gardens and curriculum, horticulture and composting practices, classroom management tips and examples of successful and diverse school gardens. In addition, Botanical Garden docents can come to

individual schools and present *Grocery Store Botany*. The Garden Shop also has a wide selection of books on botany, ethnobotany, horticulture, gardening, and related children's books. Garden developed curricula including *Botany on Your Plate* (grades 1-4) and *Math in the Garden* (K-8) will be available in January 2006. Please see Chapters 2.3, 10.1, and 10.3 for more information about their plant sales and garden-related educational programs.

University of California Cooperative Extension – San Mateo County

(Limited to San Mateo/San Francisco County residents)

Contact: Marilyn Johns
80 Stone Pine Road, Suite 100 • Half Moon Bay, CA 94019
Phone: 650-726-9059
Web: <http://www.cesanmateo.ucdavis.edu/>

Have a question about what types of nutritious foods to include in your child's lunch or how to include native plants in your garden? The University of California Cooperative Extension in San Mateo County offers public service and educational programs related to nutrition and gardening to County residents. This office offers a nutrition education training program for teachers, presentations on nutrition to parents of school-age children, and serves as a general resource for teachers and parents on all things gardening and nutrition related. Residents of other counties should check with their own Cooperative Extension offices to seek similar services.

Urban Tilth

Contact: Kristan or Park Guthrie-Childs
1710 Francisco Street • Berkeley, CA 94703
Phone: 415-699-7307
Email: urbantilth@yahoo.com

This organization is a new, small non-profit with a mission to help diverse communities learn the benefits and techniques of local, organic food production. They are seeking to partner with 2-5 different organizations over the next couple of years to help them create productive gardens. They will help their partner organizations secure gardening tools, materials (such as wood chips or soil), seeds and seedlings, curriculum resources, and will also help to plan volunteer garden work parties and harvest festivals.

Gardening Classes

Many organizations in the Bay Area offer classes that are relevant to schoolyard gardening. For more information about local gardening classes, please see Chapter 10.2.

2.7 Specialized Resources for Themed Gardens

School gardens can be designed around a myriad of different educational themes. Below are a few resources to help you begin planning themes for portions of your own schoolyard landscape.

Seasonal & Educational Garden Themes

Cultivate Peace

Contact: Adele Maze
210 G Street #6 • San Rafael, CA 94901
Phone: 415-258-2813
Email: adelemaze@yahoo.com

Cultivate Peace is dedicated to truth, beauty and goodness in the world. They seek to provide inspiration and enthusiasm, simple designs and plans for peace gardens and peace curriculum. Their services include workshops for adults and children, festivals, classroom activities and gardening. Services are offered on a sliding scale range and are available throughout the Bay Area and internationally.

Life Frames, Inc.

Please see the description in Chapter 1.2.

National Gardening Association

Contact: Barbara Richardson (for questions about materials for educators)
1100 Dorset Street • South Burlington, VT 05403
Phone: 802-863-5251 and 800-538-7476
Fax: 802-864-6889
Email: barbara@garden.org
Web: <http://www.garden.org/>

The National Gardening Association's website includes a great variety of resources for school gardens including: a seed swap program, seasonal planting ideas, potential school garden themes, curricula for different grade levels, grant opportunities for school gardens, an online garden store, and many other resources. They also publish an excellent, free, online monthly school garden newsletter and a quarterly printed newsletter. Each issue of the online newsletter focuses on a different seasonal or educational theme to bring into your school garden. For more information about their free seed swap program, visit the website listed above. For more information about the NGA, please see Chapters 2.2, 2.3, 2.5, 8.4, 9.3, and 10.6.

Sundials & Time-Related Garden Themes

Many schools have found it useful to have sundials on their school grounds to support their “time telling” curriculum and lessons about seasonal change. Many sundials are also marked with the four cardinal directions—North, South, East, and West—to facilitate discussions about map reading, orienteering, and related topics.

Many local garden stores carry small, table top sundials that can be mounted in sunny locations on school grounds. If you want a larger sundial, you can also paint one in a sunny location on the asphalt at your school, using a special “human sundial” painting pattern. “Human sundials” are very compatible with other painted playground features since they use a person’s body to cast a shadow onto the face of the “clock” painted on the ground. There isn’t anything that permanently “sticks up” on your schoolyard. (Children stand on the human sundial when they want to tell the time.)

Needham Science Center

Contact: c/o Newman Building
1155 Central Avenue • Needham, MA 02492
Phone: 781-455-0475
Web: <http://www.needham.k12.ma.us/sciencecenter/>

The Needham Science Center is part of the Needham public school system in Massachusetts. They have developed a great computer program that can create a pattern for a human sundial that is specific to your school’s latitude and longitude. They charge a modest fee of \$5.00 for this service. To order a human sundial for your school, please send them a check made payable to the Needham Science Center. This fee includes an 8 page instruction booklet, the customized computer coordinates to enable you to layout a sundial pattern for your schoolyard, and postage. *Be sure to remember to include your exact longitude and latitude in your request.* Before requesting a sundial, please remember that you must have a minimum blacktop area of 22 x 15 feet in full sun (where there are never any automobiles!). The area you select also must be perfectly flat. Your sundial can be drawn temporarily in chalk or permanently painted. Please visit their website for more information.

The Rahus Institute

Contact: Tor Allen, Director
1535 Center Avenue • Martinez, CA 94553
Phone: 925-370-7262
Fax: 925-889-2322
Email: greenschoolyard@rahus.org
Web: <http://www.rahus.org/> and <http://www.solarschoolhouse.org/>

This organization specializes in renewable energy education. They can help your students understand how sundials work and assist you with their installation. Please see Chapter 5.1 for more information about their work.

3. Native Plant & Wildlife Habitat Resources

Urban development has replaced many native plants and wildlife habitats throughout the Bay Area, making numerous species that were once abundant here much more rare. In most parts of our region, children grow up in urban and suburban neighborhoods observing imported plant species—and missing out on the amazing diversity of flora that once covered our hills, valleys, and shorelines. Many children (and adults!) have not yet learned to differentiate between plants that are native to our ecosystems and those that were brought by settlers and residents over the years.

Bay Area native plants, and the animal and insect species they support, are the foundation of our local ecosystems and are part our community's history. If you use native plants to create small wildlife refuges on your schoolyard, you will attract birds, butterflies, and other creatures to your school site, and will have a living resource to teach your students about science and local history. You will also find that native plant gardens are generally easier to care for than other types of gardens that use imported species since they are adapted to our local climate and rainfall patterns. Once established, native plants are usually very low maintenance, requiring little extra water or pruning... if planted in the right place!

3.1 Native Plant Resources

The Bay Institute of San Francisco - STRAW Project

Contact: Laurette Rogers
500 Palm Drive, Suite 200 • Novato, CA 94949
Phone: 415-506-0172 x27
Fax: 415-506-0155
Email: rogers@bay.org
Web: http://www.bay.org/watershed_education.htm

With its collaborative partners, the STRAW Project coordinates and sustains a network of teachers, students, restoration specialists and other community members as they plan and implement watershed studies and restoration projects in Marin, Sonoma, and Napa counties. STRAW provides teachers and students with the scientific, educational and technical resources to prepare them for hands-on, outdoor watershed studies, including ecological restoration of riparian corridors. STRAW teachers are required to participate in their annual summer training and fall and spring network of events in order to do watershed projects with their students. Since 1998, almost 9,000 students have participated in 145 STRAW restorations on rural and urban creeks, planting close to 15,000 native plants and restoring approximately 38,000 linear feet of creek banks or almost 28 acres.

California Native Plant Society, Yerba Buena Chapter (SF)

Web: <http://www.cnps-yerbabuena.org/>

The California Native Plant Society is a statewide non-profit organization of amateurs and professionals. Their goals are to increase understanding of California's native flora and to preserve this rich natural heritage for future generations. CNPS's Yerba Buena Chapter serves San Francisco and northern San Mateo counties. Visit their website to learn more about their: chapter events, including monthly meetings, fieldtrips, plant sales and other programs; native plant related articles, plant lists, books, artwork, children's poetry, photos; and links to other native plant related resources. Please see Chapter 2.2 for more information.

Coevolution Institute - Butterfly & Pollinator Habitat Gardening

Contact: Gregory Kellett or Jen Marks
423 Washington Street, 5th Floor • San Francisco, CA 94111
Phone: 415-362-1137
Fax: 415-326-3070
Email: gk@coevolution.org or jm@coevolution.org
Web: <http://www.coevolution.org/>

In partnership with the local school districts, the Coevolution Institute has established nearly 30 butterfly and pollinator habitat gardens at local elementary schools, senior centers, hospices and after-school centers. These pocket habitats are a refuge for native pollinating species and a living laboratory for humans to connect with nature in urban settings. If you would like to explore establishing a pollinator garden in your school please contact Gregory Kellett or Jen Marks. Please see Chapters 3.2 and 10.4 for more information about the Coevolution Institute.

Living Laboratories, Inc. / Todd Jersey Architecture

Contact: Todd Jersey, Principal
Berkeley, CA
Email: todd@toddjerseyarchitecture.com
Web: <http://www.toddjerseyarchitecture.com/> and
<http://www.toddjerseyarchitecture.com/livlab/livlab.html/>

Living Laboratories specializes in designing and creating water-based habitat, including ponds and wetlands, on school grounds. Native habitat restoration/creation is also a focus. Please see Chapter 1.2 for more information about this firm.

National Wildlife Federation - Schoolyard Habitats Program

Contact: Gretchen Muller (western office)
6 Nickerson Street, Suite 200 • Seattle, WA 98103
Phone: 206-285-8707 x107
Fax: 206-285-8698
Email: muller@nwf.org
Web: <http://www.nwf.org/> and for more information about resources:
<http://www.nwf.org/schoolyardhabitats/educatorresources.cfm/>

Launched in 1996, the Schoolyard Habitats Program assists school communities in the use of school grounds as learning sites for wildlife conservation and cross-curricular learning. Through the Schoolyard Habitats certification program, the NWF recognizes the accomplishments of, and fosters networking among, innovative school communities nationwide. This K-12 program provides opportunities to create, build and maintain living classrooms and are exceptional ways for students, teachers and community members to work together. This program represents a sustained, multi-disciplinary approach to environmental education, providing teachers with the training and curriculum resources they need to be successful, as well as enabling schools to provide effective outdoor environmental lessons, onsite.

3.2 Bay Area Insect & Wildlife Resources & Information

There are many ways that you can help introduce students to the insects and other creatures that live in the Bay Area. A healthy schoolyard wildlife garden will attract an abundance of interesting critters, creating opportunities for hours of engaging play and study at your doorstep. In addition, there are some local organizations that will come to your school to talk to your students about bugs and other local wildlife. Other organizations can provide assistance with the scientific aspects of wildlife gardening and answer your questions as they arise. Some businesses also sell caterpillars and other insects for use in the classroom.

Biggs Wildlife Pond

Contact: Kathy Biggs, Pond wildlife expert
Email: bigsnest@sonic.net
Web: <http://bigsnestpond.net/Pond/>

Kathy Biggs offers workshops on how to create ponds that foster dragonflies and other pond wildlife. Her website contains a wealth of information on this topic. Services are available throughout California at this time, but the price of workshops varies with distance traveled.

Butterfly Sky Farm

Contact: Deborah Jacobs
16934 Hofacker Lane • Lower Lake, CA 95457
Phone: 888-700-5030 or 707-995-0377
Fax: 707-995-0377
Email: info@ButterflySkyFarm.com
Web: <http://www.butterflyskyfarm.com/>

Butterfly Sky Farm provides live Monarch caterpillar growing kits which allow students to grow their own Monarch butterfly and learn about the fascinating process of butterfly metamorphosis close up. Their caterpillar kits use live milkweed and enable students to see how the Monarch lives and grows in its natural environment. Service available nationally. 10% discount is offered for orders of \$150.00 or more.

California Academy of Sciences (including The Naturalist Center)

Contact: 875 Howard Street • San Francisco, CA 94115
Phone: 415-321-8000 (Centralized Reservations)
Email: info@calacademy.org
Web: http://www.calacademy.org/research/library/naturalist_center/

Including the natural history museum, Steinhart Aquarium, and the Morrison Planetarium, the California Academy of Sciences comprise one of the largest natural history institutions in the world. Available resources for teachers include Education Resource Materials (ERM) kits on life science themes (to borrow), school group tours, classroom outreach programs, teacher workshops and seminars. To reserve services contact Centralized Reservations (see above). A limited number of scholarships are available for classroom outreach and school group tours.

The Naturalist Center is a portal to Research, Education and the Academy Library providing in-depth inquiry at all levels. It includes: an extensive library on ecology-related topics, with helpful reference librarians; a large collection of plant, animal, and insect specimens; and a variety of educational programs. For more information, please contact the Naturalist Center through Centralized Reservations at the number above.

Citybugs

Contact: Vernard Lewis & Denise Steinlein
Berkeley, CA
Email: citybugs@nature.berkeley.edu
Web: <http://www.cnr.berkeley.edu/citybugs/>

This organization has a detailed website about insects found in the San Francisco Bay Area, including many resources designed for classroom use. Citybugs is a collaborative outreach project between UC Berkeley's College of Natural Resources and the Oakland Unified School District in California. Citybugs offers you the unique opportunity to contact entomologists at the University of California at Berkeley and ask them questions about bugs you are interested in or have come in contact with.

Coevolution Institute – Bug Mobile

Contact: Bill Wicht, Program Coordinator
423 Washington Street, 5th Floor • San Francisco, CA 94111
Phone: 415-362-1137
Fax: 415-326-3070
Email: bw@coevolution.org
Web: <http://www.coevolution.org/>

Fun, exploration, learning, and beauty! The BugMobile brings live arthropods, such as the Giant African Millipede and Asian walking sticks, into classrooms to eliminate fear and increase understanding and appreciation for the importance of the insect world. The hands-on mobile classroom brings science, environmental education and nature to many, including underserved urban populations. Take-home materials encourage family discussion. More than 30,000 individuals have participated in this program. Please see Chapters 3.1 and 10.4 for more information about the Coevolution Institute.

Golden Gate Audubon Society & Nature Store

Contact: 2530 San Pablo Ave, Suite G • Berkeley, CA 94702
Phone: 510-843-2222
Fax: 510-843-5351
Email: ggas@goldengateaudubon.org
Web: <http://www.goldengateaudubon.org/>

This organization has extensive knowledge about Bay Area birds. They offer all sorts of events including bird watching classes, slide shows, habitat restoration efforts, etc. Bird sighting information and a variety of related online resources are also available from the Society's website. Visit the website for more information on upcoming events and useful resources. The Society's Nature Store in Berkeley carries birdseed, bird feeders, books, and much more. Hours of operation are: Monday through Friday, 9:00 am - 5:00 pm. Call the store in advance of a visit to make sure the item you want is available.

Eco-Oakland Program (Limited to elementary schools in East-Oakland)

Contact: Amiko Mayeno
Phone: 510-635-5533
Email: Amayeno@goldengateaudubon.org

The Golden Gate Audubon Society's Eco-Oakland Program offers year-round, hands-on, environmental education to elementary school students and their community in East Oakland. Golden Gate Audubon staff and volunteers work with teachers, students, and their families to explore and conserve local wildlife habitats throughout the Oakland watershed—from the classroom to the Bay and the ocean.

4. Water Systems on School Grounds

Every school has its place in our region's watersheds, and access to rainfall during our wet seasons—yet the educational potential of these resources generally remains untapped. In addition, all of our local schools are connected to municipal or county water supply and disposal systems, but these, too, often remain hidden from view and are unnoticed by most urban and suburban residents, young and old alike. Where does our water come from? Where does it go? How does it get there?

When you bring local water systems to your students' attention, you put something powerful at their fingertips. From an early age, children can be entrusted with reducing their school's impact on the surrounding environment by taking charge of the water they use, conserving it where possible, and helping to make sure that rainwater is clean when it leaves the schoolyard to flow into the nearby creeks and ultimately the ocean. Student water conservation efforts might also save your school some money on its water bills, too!

Make the most of rainfall. Take your children out into the drizzle and let them watch it as it flows down hills, across the pavement, through your garden, and into the storm drain. Ask them where it comes from, where it goes, and what it might pick up on its journey through your schoolyard (and the city!). Help them to find your school's place in the watershed. Plant rainwater gardens to clean the flowing water, create ponds to observe water creatures, teach them responsible irrigation practices, and experiment with the properties of this fascinating liquid.

4.1 Wetland & Watershed Resources

Adopt-A-Watershed

Contact: Kim Stokely
Phone: 530-628-5334
Email: kim@adopt-a-watershed.org
Web: <http://www.adopt-a-watershed.org/>

Adopt-A-Watershed (AAW) is a non-profit organization that promotes educational enhancement, environmental stewardship, and community development. AAW offers workshops with teachers, parents, students, community groups, and environmental organizations, guiding them through *5-Steps to Leadership in Place-Based Learning (The 5-Steps)*. The 5-Steps process creates unique partnerships and programs that encourage student and community participation in local watershed conservation projects. Visit their website for more information about local watershed conservation.

EnviroScape®

Contact: c/o JT&A, Inc.
14524-F Lee Road • Chantilly, VA 20151
Phone: 703-631-8810
Fax: 703-631-6558
Email: info@enviroscapecom.com OR
erin-foster@erols.com (for school discounts)
Web: <http://www.enviroscapecom.com/>

EnviroScape® sells a watershed learning tool/model that helps students understand the connection between water quality and land use. Visit their website to view photos of these educational landscape models. School discounts are available. Contact Erin Foster at the email address or phone number above (extension 11) for school discounts.

Water Education Foundation – School Programs

Contact: Judy Maben
Phone: 916-444-6240
Fax: 916 448-7699
Email: jmaben@watereducation.org
Web: <http://www.water-ed.org/schoolprograms.asp>

The mission of the Water Education Foundation is to create a better understanding of water issues and help resolve water resource problems through educational programs. This organization produces water-related materials and curriculum resources for schools (including *Project WET*, *Water Education for Teachers*). All curriculum materials are correlated to the California State Subject Area Standards. *Project WET* materials are also correlated to the national standards.

The Watershed Project

Please see the description in Chapter 1.1.

4.2 Pond Building, Maintenance, & Curriculum Resources

Biggs Wildlife Pond

Please see the description in Chapter 3.2.

Living Laboratories, Inc. / Todd Jersey Architecture

Please see the description in Chapter 1.2.

San Francisco Recreation & Parks Department – Youth Stewardship Program

(Geographic restrictions apply. Please see below.)

Contact: Cheri Garamendi, Education & Volunteer Coordinator
McLaren Lodge, 501 Stanyan Street • San Francisco, CA 94117
Phone: 415-753-7276
Email: cheri.garamendi@sfgov.org
Web: http://www.parks.sfgov.org/site/recpark_index.asp?id=21196/

Have questions about your schoolyard pond's ecology? Contact the Recreation and Parks Department to learn more about how your pond fits in to the local ecology. One in a series of fieldtrips addresses pond ecology. Phone consultation and website information are available to everyone. Other resources provided by this department are limited to San Francisco schools/residents. Please see Chapter 10.2 form more information.

4.3 Resources for Water Conservation & Purification

East Bay Municipal Utility District, Water Conservation Division

(Limited to Alameda/Contra Costa Counties residents)

Contact: Teri Dean
P.O. Box 24055 • Oakland, CA 94623
Phone: 510-287-0898
Fax: 510-287-0898
Email: tdean@ebmud.com
Web: <http://www.ebmud.com>

EBMUD's Water Conservation Division offers institutional, landscape and irrigation audit and rebate programs designed to assist customers with water efficient landscape design and irrigation systems. In addition, EBMUD sponsors Kids in Gardens workshops and trainings that promote watershed stewardship by encouraging East Bay educators to create and use healthy, low maintenance gardens to teach pesticide free gardening methods and the importance of water conservation and urban run off pollution prevention.

HarvestH₂O.com

Contact: Doug Pushard
Email: doug@harvesth2o.com
Web: <http://www.harvesth2o.com/>

HarvestH₂O.com is a website dedicated to the advancement of sustainable water management practices for individuals, families, communities, and businesses. They work collaboratively with vendors, universities, research organizations, and individuals across the globe to devise solutions for managing real world problems in water conservation.

U.S. Environmental Protection Agency

Office of Ground Water & Drinking Water

Contact: Ariel Rios Building
1200 Pennsylvania Avenue, NW • Washington, DC 20460-0003
Phone: 202-564-3750 (main number)
800-426-4791 (Safe Drinking Water Hotline)
Fax: 202-564-3753
Web: <http://www.epa.gov/OGWDW/kids/>

This helpful website has ground water and drinking water information for children and educators, in addition to technical information about water quality standards and related topics. The website includes ideas for classroom activities and experiments.

Water Efficiency Program

Web: <http://www.epa.gov/owm/water-efficiency/>

This website includes extensive information and resources on how to use water more efficiently. Their information is applicable to all water users, from homeowners to governments.

Water Wiser

Web: <http://www.waterwiser.org/>

This website includes news, information, research results, discussion forums, references, calendar of events, and searchable databases. It is targeted to water conservation professionals, but is freely accessible to the general public. The website also includes links to Water Saver Home (<http://www.h2ouse.net/>), a virtual encyclopedia of water saving tips for indoor and outdoor uses.

4.4 Irrigation Resources

Urban Farmer Store

Contact: 2833 Vicente Street • San Francisco, CA 94116
Phone: 415-661-2204
Fax: 415-661-7826
Email: info@urbanfarmerstore.com
Web: <http://www.urbanfarmerstore.com/index.html>

This store sells a wide variety of irrigation and water features. They offer free spring and summer classes on irrigation and water conservation topics. Their website includes guides for installing drip irrigation and water features. Urban Farmer offers design assistance for community and school projects. There are additional store locations in Mill Valley and Richmond.

4.5 Stormwater Drainage & Rainwater Gardens

Occidental Arts & Ecology Center

Contact: Brock Dolman
Director, Permaculture Program & The WATER Institute
15290 Coleman Valley Road • Occidental, CA 95465
Phone: 707-874-1557 X206
Fax: 707-874-1558
Email: Brock@oaec.org
Web: <http://www.oaec.org/>

The Occidental Arts and Ecology Center provides expertise in permaculture design and stormwater management to schools participating in their School Garden Teacher Training Program (as needed). Schools NOT participating in OAEC's school garden teacher training program can request these services and expertise on a fee for service basis. Please see the description in Chapter 6.1 for more information about their green building expertise, and Chapter 10.2 for more information about their School Garden Teacher Training Program.

Rainwater Garden Information

Bonestroo, Rosene, Anderlik & Associates, Inc.

Contact: Sherri Buss, Landscape Architect
2335 West Highway 36 • St. Paul, MN 55113
Phone: 651-604-4758 (direct)
800-880-4700 (toll free)
Fax: 651-636-1311
Web: <http://www.bonestroo.com/rainwatergardens.asp/>

This private Minnesota design firm has an informative website that describes what rainwater gardens are, how they can be used, and basic information about how to create one. Their services are available on a fee for service basis.

5. Harnessing the Sun & the Wind for Energy & Education on School Grounds

Every school has access to sunlight and wind but most are not yet using them as energy resources or educational tools. The organizations listed in this section can help you to make the most of the sunny or windy locations on your school site. You might consider working with your students to: understand sun and shade patterns to improve your garden plantings; mark the passage of time using sundials; or even install renewable energy systems to help demonstrate small scale energy generation techniques.

5.1 Renewable Energy Expertise & Suppliers

Berkeley Solar Energy Education Program

Contact: Hal Aronson, Director
P.O. Box 5679 • Berkeley, CA 94705-0679
Phone: 510-665-7747
Email: hal@risingsunenergy.org
Web: <http://www.solarschoolhouse.org/>

The Solar Energy Education Program offers sustainable energy lessons and projects and can loan solar technology (such as solar panels) to teachers.

Pacific Energy Center

Contact: 851 Howard Street • San Francisco, CA 94103
Phone: 415-973-2277 (Reception Desk)
Web: <http://www.pge.com/pec/>

The Pacific Energy Center operated by PG&E offers free educational programs, design tools, information and advice to create energy efficient buildings and comfortable indoor environments. Services include: over 125 free energy efficiency and renewable energy courses annually; a Tool Lending Library (free loans of measurement tools for evaluating energy use in buildings and for performing solar access and shading studies); the Energy Resource Center (information and assistance with energy efficiency research and general questions); daylighting and shading analysis of physical building models to optimize building design; advice on site orientation, glazing, shading, daylighting and electric lighting systems; and tours of the PEC arranged by appointment. All PEC services are free to California utility customers who contribute to the public goods fund on their utility bill.

The Rahu Institute – Solar Schoolhouse Program

Contact: Tor Allen, Director
1535 Center Avenue • Martinez, CA 94553
Phone: 925-370-7262
Fax: 925-889-2322
Email: greenschoolyard@rahus.org
Web: <http://www.rahus.org/> and <http://www.solarschoolhouse.org/>

Through its Solar Schoolhouse Program, the Rahu Institute provides teacher training and consultation on solar energy projects and activities. In addition, solar modules, pumps, and instructions for building solar fountains for school gardens are available for purchase. They have secured a large quantity of “experienced,” high quality, solar modules that are less than half the price of new comparable products. Discounted solar modules are available for school projects. Additional solar energy education kits, used at many environmental outdoor schools, are also available for purchase. Visit the website for more information. Their services are available nationwide. Please see Chapter 2.7 for more information about their work with sundials.

Real Goods

Contact: 13771 S. Highway 101 • Hopland, CA 95449
Phone: 707-744-2100 (Hopland store)
800-919-2400 (catalog sales)
Fax: 707-744-1342
Web: <http://www.realgoods.com/>

The Real Goods store carries a wide variety of renewable energy systems (solar, wind, and hydro power), energy conservation resources, and related information. Their products are available through their store in Hopland, California, and through their extensive online catalog. They also teach classes on renewable energy and provide a technical assistance phone line to help you fix any problems you might have with their energy systems. The store is open 7 days a week.

Sun, Light & Power Company

Contact: 1035 Folger Avenue • Berkeley, CA 94710
Phone: 510-845-2997
Fax: 510-845-1133
Email: info@sunlightandpower.com
Web: <http://www.sunlightandpower.com/>

Sun Light & Power is a design/build firm with 27 years of leadership in alternative energy systems and innovative designs for homes and businesses. Their commitment is to create a living environment that serves people’s intrinsic needs, supports the human spirit and preserves the planet’s resources for future generations. Sun Light & Power designs and installs solar electric systems, solar hot water systems and radiant heating and can install both grid-tied or off-grid (solar energy battery backup) electric systems. This firm can be contracted to act as a consultant in order to evaluate a site for its viability as a solar or radiant heating site.

Sun Power & Geothermal Energy Company, Inc.

Contact: Brendan Neagle, Manager of Domestic Sales and Business Development
863 E. Francisco Blvd., Suite A • San Rafael, CA 94901-4711
Phone: 415-459-4201 or 800-815-5562
Fax: 415-457-3219
Email: sales@sunpowergeo.com
Web: <http://www.sunpowergeo.com/>

Sun Power & Geothermal Energy Co., Inc. (SPG) is a Marin County-based company that develops, designs and installs solar electric systems ranging in size from 1 kilowatt to 1 megawatt for business, government, schools and homes. It is actively working with local school districts to promote the benefits of solar power and has recently helped the Kentfield School District become the first and only school district in California that is 100% solar. SPG offers free site evaluations and energy use analyses. Their website includes links to case studies that emphasize the benefits schools can realize by using solar power.

5.2 Energy Conservation Resources

Saving energy—through conservation measures such as turning off light switches, insulating walls, and turning down the thermostat—is usually easier to accomplish than generating energy. Energy conservation techniques are also easily mastered by young children, making it an ideal topic for a school’s environmental club (or classroom) to take on. The resources below will help to give you some ideas about how to address energy conservation issues in the classroom and on the schoolyard.

Alliance to Save Energy

Web: <http://www.ase.org/>

The Alliance to Save Energy promotes energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. Visit their website for more information. Be sure to visit the “Educators” link to learn more about the “Green Schools” program, which promotes energy efficiency in schools through interactive programs, lesson plans, publications and other useful resources that promote energy efficiency specifically in schools.

Pacific Energy Center

Please see the description in Chapter 5.1.

San Francisco Public Utilities Commission (SFPUC) - Power Enterprise

(Limited to SFUSD schools served by SFPUC)

Contact: 1155 Market Street, 4th Floor • San Francisco, CA 94103
Phone: 415-554-0725
Fax: 415-554-3280

The SFPUC Power Enterprise Energy Conservation and Renewable Energy Program can help your school conserve energy and identify opportunities for renewable energy. Contact the Power Enterprise to see how your school can benefit from their services.

SF Environment Energy Hotline

(San Francisco PG&E customers ONLY)

Phone: 415-355-3769

SF Environment provides free support for energy efficiency projects. This service is available for private schools that are also PG&E customers. The assistance includes: onsite efficiency surveys by a qualified engineer; an assessment of current lighting, refrigeration, food service equipment and HVAC; a detailed report identifying areas of improvement; information about equipment and rebates; assistance in obtaining bids and completing paperwork. For more information about SF Environment’s programs, please see Chapters 2.1, 6.1, 8.2, 10.1, 10.3, and 10.4.

United States Department of Energy

Building Technologies Program

Web: <http://www.eere.energy.gov/buildings/>

This website provides information about the US DOE’s Building Technologies Program, which supports research and development activities to improve the energy efficiency of buildings. This program also includes tools, guidelines, training, and access to technical and financial resources.

Energy Star

Web: <http://www.energystar.gov/>

This website provides information about energy efficient buildings, appliances, and equipment. Energy Star appliances and building strategies often qualify for rebates.

Flex Your Power

Web: <http://www.fypower.org/>

This website provides energy efficiency and conservation information for California residents, businesses, industry, local governments, schools, and agriculture. The program includes incentives/rebates, technical assistance, retailer information, product guides, case studies, and more.

Pacific Gas & Electric Company - School Resource Program

Web: http://www.pge.com/biz/energy_tools_resources/school_resource_program/
(Please note: this is a single, long web address)

The School Resource Program (SRP) is an innovative program that combines available resources from the California Energy Commission's Bright Schools Program (<http://www.energy.ca.gov/efficiency/brightschools/>), the U.S. Department of Energy's Rebuild America Program (<http://www.rebuild.org/>), and Pacific Gas and Electric Company to provide energy efficiency services to participating public school districts. The SRP was created to help K-12 school districts save energy and money and to improve the physical quality of the learning environment. By providing energy audits, technical assistance with retrofit plans, information about financing methods, staff training and educational programs, the School Resource Program helps schools identify many ways to save energy and free up money for what schools do best—educating students.

5.3 Sundial Resources

Sundials are useful additions to green school grounds because they can be used by students learning to tell time or in more complex lessons about the solar system or solar energy. Sundials can be small or large, made from stone, wood, metal, or plastic—or painted on the asphalt to create a “human sundial,” using a person’s shadow to tell the time. Please see Chapter 2.7 for more information about sundials and related resources.

6. Green Building Materials for School Grounds

Green building “is a ‘Whole-Systems’ approach for designing and constructing buildings [and landscapes] that conserve energy, water, and material resources and are healthier, safer, and more comfortable.”⁹ The Bay Area is lucky to have a wealth of green building resources and expertise that you can tap into for your green schoolyard project. Many of our local architects, landscape architects, and contractors specialize in resource efficient construction techniques and the use of natural, renewable, and recycled building materials.

Everything you place in your green schoolyard should ideally be made from materials that support your overall “greening effort” and be consistent with the educational philosophies you envision for the project. If possible, try to make benches, signage, tool sheds, greenhouses, and other schoolyard structures out of materials from natural, renewable, and/or recycled sources. Use non-toxic finishes (if any) on wood products in your yard, and consider the “lifecycle” of the materials you use on your school grounds. For example, check to see if your school can answer questions like these about the materials you will be using: Where were the building materials harvested or collected? How much energy did it take to make the finished products and transport them to your school? What will happen to the building materials used in your schoolyard when you are finished with them?

6.1 Green Building Expertise

Many Bay Area cities have established green building resource centers, staffed by knowledgeable professionals and filled with displays of innovative materials. These centers promote “greener” design and construction in our region. Please visit them and take advantage of the help they can offer you!

Bay Area Green Building Resource Centers

Build It Green

Contact: PO Box 11944 • Berkeley, CA 94712
Phone: 510-845-0472
Email: Info@BuildItGreen.org
Web: <http://www.BuildItGreen.org/>

Build It Green is a professional, non-profit membership organization whose mission is to transform the building industry in California. Supported by a solid foundation of outreach, education and technical expertise, Build It

Green connects consumers and building professionals with the tools they need to create healthy, durable, energy- and resource-efficient buildings. Services offered include: “Ask an expert” program (see below); an extensive green materials database with information about suppliers in the Bay Area; in-depth information about green building materials and strategies; fact sheets; referrals; case studies; event listings; green building links; trainings and workshops; a resource library; and displays of various green building materials.

Ask An Expert is a free hotline providing customized responses to a variety of green building questions. It serves the general public, building professionals, local governments, and building suppliers in the 9-county Bay Area. Ask An Expert provides trusted, unbiased, quality green building information. It is staffed by professionals from Build It Green. You can call 1-888-40-GREEN to submit a Green Building Question, or do this online by visiting their website.

SF Environment – Green Building Resource Center

Contact: 11 Grove Street • San Francisco, CA 94102
Phone: 415-355-3700
Web: <http://www.sfenvironment.com/>

Have you ever seen a piece of bamboo flooring or a kitchen countertop made from recycled glass? SF Environment has a useful display of green building materials and information in its lobby. The display is open to the public during regular business hours. For more information about SF Environment’s programs, please see Chapters 2.1, 5.2, 8.2, 10.1, 10.3, and 10.4.

Local Green Building-Related Non-Profits

Architects / Designers / Planners for Social Responsibility (ADPSR), Northern California Chapter

Contact: Katharine Steele
P. O. Box 9126 • Berkeley, CA 94709-0126
Phone: 510-845-1000
Email: admin@adpsr-norcal.org
Web: <http://www.adpsr-norcal.org/>

Architects / Designers / Planners for Social Responsibility is a 501c3 non-profit organization focused on the environmental effects of the built environment. Need to find a source for willow whips or any type of green or recycled building material? Join ADPSR’s listserv where you can make requests for services or materials related to green building and receive announcements regarding green building news and events. To join the listserv or send a materials/supplies request to listserv members, send an email to: adpsrmail@aol.com.

Build Green Now

Web: <http://www.buildgreennow.org/>

This website focuses on green building resources for the general public, design and building professionals, and public agencies. It includes Green Building Guidelines for renovations and new construction that have been adopted by or serve as the basis for many green building programs in the San Francisco Bay Area.

California Straw Building Association (CASBA)

Contact: P.O. Box 1293 • Angels Camp, CA 95222-1293

Phone: 209-785-7077

Email: casba@strawbuilding.org

Web: <http://www.strawbuilding.org/>

CASBA is a non-profit organization whose members are architects, engineers, builders, and others who are promoting the use of straw as a building material. CASBA's website offers a resource list of straw building professionals in California, many of whom are located in the Bay Area. The website also provides links to other resources that are familiar with straw bale who can be contacted for additional information. CASBA conducts hands-on workshops to teach straw building techniques all over California. Check their website for a list of scheduled workshops and locations.

Occidental Arts & Ecology Center

Contact: Brock Dolman

15290 Coleman Valley Road • Occidental, CA 95465

Phone: 707-874-1557 x206

Fax: 707-874-1558 (fax)

Email: Brock@oaec.org

Web: <http://www.oaec.org/>

OAEC has extensive natural building expertise and can help schools to create such things as cob benches, urbanite walls (built using recycled concrete chunks), trellises, sustainably harvested or recycled wood structures or sculptures, living willow constructions, and other related natural building projects. They can also provide consultation and referrals on these topics. Please see Chapters 4.5 and 10.2 for more information.

Solar Living Institute

Please see the description in Chapter 10.2.

United States Green Building Council (USGBC)

Web: <http://www.usgbc.org/>

This website includes an extensive collection of green building resources such as market research, publications, presentations, and links to related resources. It also includes LEED® Rating System information such as case studies, training, certification, and workshops.

Local Designers Specializing in Green Building Techniques

The designers and builders listed below can help your school with a variety of green building projects including such things as: benches and other types of outdoor seating areas made from natural or recycled materials, outdoor ovens, tool sheds and small garden buildings, shade structures, and other things you can dream up to enliven your school grounds. Each organization listed below has a different area of expertise, so please read the descriptions to find one that will fit your needs.

450 Architects

This firm has extensive experience with a broad range of green building materials and methods. Please see Chapter 1.2 for more information.

Arkin Tilt Architects

Contact: Anni Tilt or David Arkin, AIA

1101 8th Street #180 • Berkeley, CA 94710

Phone: 510-528-9830

Fax: 510-528-0206

Email: info@arkintilt.com

Web: <http://www.arkintilt.com/>

Arkin Tilt Architects is an award-winning firm specializing in energy and resource efficient design. Their projects embody a marriage of thoughtful design and ecology, creating spaces that are comfortable and lyrical. They pay particular attention to the integration of the built and natural environments from siting to careful detailing. They have extensive experience with alternative construction systems, including straw bale and rammed earth, renewable energy systems, greywater, and non-toxic and recycled materials. Their school-related experience includes integration of solar systems, in particular those doubling as shade or weather-protection structures, and passive solar buildings and modifications.

DeBoer Architects

Contact: Darrel DeBoer, Architect

1835 Pacific Avenue • Alameda, CA 94501

Phone: 510-865-3669

Fax: 510-865-7022

Email: Darrel@DeBoerArchitects.com

Web: <http://www.deboerarchitects.com/>

Headed by Darrel DeBoer (just named one of the top ten green architects by Natural Home & Garden Magazine), this firm of architects specializes in ways to build with natural materials less expensively. They teach workshops on building with natural materials, especially bamboo and straw bale. They consult, on an hourly basis, about materials and building system choices for any scale of project.

Living Laboratories, Inc. / Todd Jersey Architecture

This firm has extensive experience with a broad range of green building materials and methods. Please see Chapter 1.2 for more information.

Occidental Arts & Ecology Center

Please see the description in the section above.

Van Mechelen Architects

Contact: Greg Van Mechelen, Architect
1117 Virginia Street • Berkeley, CA 94702
Phone: 510-558-1075
Fax: 510-558-1076
Email: info@vanmechelenarchitects.com
Web: <http://www.vanmechelenarchitects.com/>

Architect Greg Van Mechelen designs environmentally responsible buildings. Past projects include the first strawbale school in California, and an education center featuring passive solar design, renewable materials, and photovoltaic and hot water solar systems. He also provides low-cost, environmentally appropriate, durable school garden benches.

Vital Systems Natural Building & Design, Inc.

Contact: Tim Owen-Kennedy & Bill Camp
P.O. Box 751 • Ukiah, CA 95482
Phone: 888-859-6336 or 707-468-7488
Fax: 707-462-3765
Email: vsinfo@vitalsystems.net
Web: <http://www.vitalsystems.net/>

Vital Systems is a full service ecological building, design and consulting company formed in 1997. They work with a wide range of sustainable building systems, including strawbale, cob, bamboo, natural plasters, alis finishes (an alternative to interior toxic paints), recycled and green products, as well as renewable energy, waste and water systems. Vital Sytems also mixes and sells ecological products like 100% recycled denim/cotton insulation as well as earth plaster exteriors, cob and alis finishes that are available for delivery. Their focus in design and construction is on high-quality, healthy, and inspired spaces that benefit the clients, the builder and the Earth. They welcome owner-builders and general design work. A licensed and bonded building contractor, Vital Systems is available for residential, commercial, consulting, educational and whole community projects. Vital Systems is a broad-based company with the support of a large community of professionals that can be brought together on any project. Their website includes photos and descriptions for all products.

Other Green Building Resources & Educational Opportunities

Builders Booksource

Contact: 1817 Fourth Street (near Hearst) • Berkeley, CA 94710
Phone: 510-845-6874 and 800-843-2028
Fax: 510-845-7051
Email: service@buildersbooksource.com
Web: <http://www.buildersbooksource.com/>

Builders Booksource is a bookstore that carries a wide collection of books on ecological design, green building, architecture, and landscape architecture topics. Their hours are Monday-Saturday, 8:30 am - 7:00 pm and Sunday from 10:00 am - 7:00 pm. Their books are also available for purchase through their website. Discounts are available through their book club program.

Real Goods

The Real Goods store carries a wide variety of books on all types of green building topics, including straw bale, bamboo, and earth based construction techniques. Their products are available through their store in Hopland, California, and through their extensive online catalog. Please see Chapter 5.1 for contact information and a general description of this business.

Solar Living Institute

Please see the description in Chapter 10.2.

6.2 Sources for Natural & Green Building Materials

Natural building materials, such as wood, bamboo, and stone, can be found at many Bay Area garden centers and building supply stores. Look for materials that were sustainably harvested, and that come from places as close to the Bay Area as possible.

Sources for Sustainably Harvested Wood & Bamboo

The section below lists several sources for purchasing bamboo and sustainably harvested wood. Be sure avoid using wood products that have been pressure treated or contain other toxic preservatives. Such chemicals can rub off onto children's hands and/or leach into your garden soil.

Green Waste Recycle Yard (Aboricultural Specialties Inc.)

Contact: Jeff Allyn
2550 Garden Track Road • Richmond, CA 94801
Phone: 510-530-6185 (sales and marketing) or
510-908-2169 (Corporate office)
Email: jeff@greenwasterecycleyard.com
Web: <http://www.greenwasterecycleyard.com/>

The Green Waste Recycle Yard offers an alternative drop site for reclaimed urban forest "green waste" including trees, branches, shrubs and wood-chips. Premium Treeincarnation and organic mixed mulches are available. Landscape retaining walls and step blocks are also sold. Hours of operation: 9:00 am – 4:00 pm, Monday through Friday (please call before coming over). Delivery fee is \$65. Check the website for a price list and more detailed information about products sold.

New Life Mill Works

Contact: Paul Maheu
2550 Garden Track Road • Richmond, CA 94801
Phone: 510-376-9994

New Life Mill Works offers custom milling of dimensional lumber, flooring and landscaping materials from salvaged urban trees. This business diverts approximately 2,000 tons of trees per year from landfill. All parts of each tree are used to make either lumber products or sent elsewhere to make soil amendments. Lumber materials for decking, siding, and retaining walls are available. Hours: Monday-Thursday, 8:00 am - 5:00 pm, and Friday, 8:00 am - noon.

Truitt & White Lumber Company

Contact: 642 Hearst Avenue • Berkeley, CA 94710
Phone: 510-841-0511
Fax: 510-845-2604
Email: Emailed questions accepted through their website
Web: <http://www.truittandwhite.com/>

In business since 1946, Truitt and White Lumber Company has a 5-acre lumberyard, a window and door showroom, a large hardware store, and a warehouse filled with a variety of green building materials as well as a full range of other conventional building supplies. Materials they carry include "lumber" made from recycled plastics, non-toxic paints and other finishes, energy efficiency-related products, and other related goods. They also have a "Truitt and White Green Approved" label on some of their inventory to help consumers make the "greenest" purchases. This business is focused on serving the needs of professional builders but they are also open to the public. Hours: 7:00 am - 4:30 pm, Monday - Friday, 8:00 am - noon on Saturday.

Sources for Living Willow Cuttings & Information

If you are interested in building living willow play structures (such as domes, tunnels, archways, etc.), we suggest that you contact the parks department in your city, or a nearby regional park, to ask if they have any willows that need to be trimmed. Willows grow in many Bay Area parks, adjacent to creeks and ponds. Sometimes this source of willow cuttings is available for free if you provide the labor to do the harvesting work yourself. Please make sure that you have the appropriate permission to harvest willow cuttings before you remove any material from public land!

EcoSchool Design

Web: <http://www.ecoschools.com/>

This website includes information about living willow construction techniques as well as examples of living willow projects from around the world. To find the information about living willow play structures, follow the "Creative Play" link in the sidebar menu.

Straw Bale Construction Expertise & Suppliers

Straw is a waste byproduct of grain agriculture (rice, wheat, barley, oats, etc.). It is a renewable, natural material that is produced in the Central Valley, and is easily and cheaply available to Bay Area schoolyards. Loose straw can be used as a garden mulch or as an addition to your compost pile. Rectangular "blocks" of tightly baled straw can be used as a building material for temporary or permanent garden buildings, seating, and low walls. Straw bales are naturally fire and insect resistant, and with good roof overhangs to keep it dry, it will not rot. Well-built strawbale structures (with protective roofs and plastered walls) have been known to last over 100 years. Almost every local jurisdiction in Northern California has approved straw bale structures, and at least two school buildings in the Bay Area have already been built out of straw bales.

Both rice and wheat straw bales are suitable for building construction. While the evidence is still preliminary, it seems that straw bales perform better and last longer when they are put into buildings with climate control (i.e. heating and/or cooling), and they may break down more quickly when used to create unheated buildings like garden storage sheds. To date, there is no scientific study of this phenomenon, but it should be taken into consideration. Bales used as benches, whether exposed or plastered, will eventually decompose. If the plaster is thick enough (about 1") this is not a real problem, as the bales will have done their job as temporary formwork. Unprotected straw bales left in a garden setting for use as temporary benches or walls will break down over the course of a semester.

Be sure to purchase STRAW rather than HAY for your garden projects! Straw is the part of the plant that remains after the seed heads (grain) have been removed from the stalk. Hay looks very similar but *includes* the seed heads... and will sprout in your garden if it gets wet!

The section below includes some local sources for straw and hay bales. You can also try calling farm suppliers in the Bay Area's rural counties. Please see Chapter 2.1 for more information about using straw as a garden mulch and compost material.

Blasing Feed

Contact: David Blasing
Phone: 650-222-9088

Blasing Feed sells wheat straw and hay bales. Check with David Blasing for current prices. Orders can be picked up at Golden Gate Fields in Berkeley at the South Parking Lot, 1100 East Shore Highway (at the west of end of Gilman Street). Call to order and for pick-up schedule.

Martin Brothers Supply

Contact: 232 Shoreline Highway • Mill Valley, CA 94941
Phone: 415-388-2025
Email: martinbros@sbcglobal.net

This landscape and building supply store sells bales (about \$10 each) and bags (about \$1.50 each) of wheat straw. This store also sells alfalfa straw and hay, and a variety of gardening tools and pathway materials. Hours: Weekdays 7:30 am - 5:00 pm, Saturday 8:00 am - 4:00 pm.

Sources for Other Natural & Green Building Materials

Eco Design Resources

Contact: Casey Bradshaw or Sabrina Maier Smith
633 Quarry Road, Suite A • San Carlos, CA 94070
Phone: 650-591-1123
Fax: 650-591-8884
Email: ecodesves@aol.com
Web: <http://www.ecodesignresources.com/>

Eco Design Resources is one of the Bay Area's oldest environmental home improvement showrooms. Their products are made with recycled, renewable, or non-toxic materials. They offer tiles, flooring, textiles, furniture, countertops, cabinets, paints and stains (interior and exterior), plaster, sealant, adhesives, cleaning products and more.

6.3 Sources for Recycled & Used Building Materials & Information

Information About Recycling at School

Alameda County - irecycle@school Education Center

(Limited to Alameda County public schools/after-school programs)

Contact: 2615 Davis Street • San Leandro, CA 94577
Phone: 510-563-4282
Fax: 510-563-4205
Email: edcenter@stopwaste.org
Web: <http://www.stopwaste.org/>

The irecycle@school program is founded in the 4Rs: Reduce, Reuse, Recycle, and Rot (composting). The irecycle@school program offers a comprehensive approach, including educational programs, teacher training and technical support for school districts" in Alameda County. Fieldtrips to the irecycle@school Education Center, located at the Waste Management Inc., Davis Street Transfer Station, offer Alameda County students an opportunity to learn first-hand how curbside materials are sorted, separated and packaged at a working material recovery facility and transfer station. Tours are available to 4th and 5th grade Alameda County public school groups and after school programs.

StopWaste.Org

Contact: 777 Davis Street, Suite 100 • San Leandro, CA 94577
Phone: 510-614-1699 (main number)
877-STOPWASTE (recycling hotline)
Fax: 510-614-1698
Email: acwma@stopwaste.org
Web: <http://www.stopwaste.org/>

StopWaste.Org is a collaborative project of the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board, "dedicated to achieving the most environmentally sound solid waste management and resource conservation program for the people of Alameda County." It serves Alameda County residents, businesses, and schools with a variety of waste reduction- and resource conservation-oriented programs including: recycling and green building guides; school district recycling programs; a recycling education center for schools; "Bay friendly" landscaping and gardening information; and a variety of curriculum materials on related topics. Visit the website to learn more and download free information guides that address many of the topics listed above.

San Francisco Department of Environment

Please see the description in Chapter 10.3.

Sources for Recycled & Used Building Materials

Building Resources

Contact: Matthew Levesque
701 Amador Street • San Francisco, CA 94124
Phone: 415-285-7814
Fax: 415-285-4689
Email: brsfr@yahoo.com and reuserprime@yahoo.com
Web: <http://buildingresources.org/>

This San Francisco non-profit building materials center provides low cost materials for construction, landscaping, and gardening. Open to the public 7 days a week, Building Resources offers a variety of education programs including creative reuse, garden design with local materials, reuse strategies, energy concepts, and a host of other topics. They also offer onsite tours and lecture opportunities, as well as classroom based programs.

CalMax (California Materials Exchange)

Contact: Diana Rivera
1001 I Street, PO Box 4025 • Sacramento, CA 95812
Phone: 877-520-9703
Email: CalMAX@ciwmb.ca.gov
Web: <http://www.CalMAX.org/>

CalMAX is an online classified listing service provided for free by the California Integrated Waste Management Board. It is designed to help organizations find materials that may otherwise be discarded. Many items are construction-related or organic items that may be suitable for California schools and outdoor areas. Other non-outdoor items are also sometimes available. KidMAX, a subset of CalMAX, focuses items that are suitable for schools and children and are available for free.

East Bay Depot for Creative Reuse

Address: 6713 San Pablo Avenue • Oakland, CA 94608
Phone: 510-547-6470
Email: eastbaydepot@hotmail.com
Web: <http://www.east-bay-depot.org/>

The East Bay Depot is a large non-profit store where teachers, artists, or anyone can find low-cost reuse items. While the Depot still carries a wide variety of reuse, used, and new art supplies, it also has books, magazines, party supplies, office supplies, paper, small furniture, fabric, frames, artwork, jewelry, and many unique and vintage items. The entire Depot inventory is made from donated materials, and all donated items are eligible for a tax deduction. New items come in every hour!

SCRAP (Scroungers' Center For Reusable Art Parts)

Contact: 801 Toland Street (enter on Newcomb Avenue btwn. Toland & Selby)
San Francisco, CA 94124
Phone: 415-647-1746
Fax: 415-647-1744
Email: scrap@scrap-sf.org
Web: <http://www.scrap-sf.org/>

SCRAP is a creative reuse center in San Francisco, making available a variety of low-cost materials suitable for arts and educational purposes. Donations of reusable materials such as textiles, yarn, paper, jewelry findings, wood, buttons and plastics are collected from businesses, institutions and individuals and distributed to teachers and parents, art and educational groups, crafters and serious artists. SCRAP diverts over 170 tons of materials annually, reducing the amount of waste going to crowded landfills. SCRAP stimulates creativity and environmental awareness in children and adults by offering school fieldtrips, creative reuse workshops for adults and hands-on activities at community events. Hours of operation: Tuesday through Saturday 9:00 am - 5:00 pm. Suggested donations are requested in exchange for SCRAP materials. For more information about materials currently in stock, email, call or visit SCRAP. New materials come in daily. Please see Chapter 10.2 for more information.

Urban Ore

Contact: 900 Murray Street • Berkeley, CA 94710
Phone: 510-841-0113 **PLEASE do NOT call to inquire about inventory!**
Email: uoecopark@sbcglobal.net

Urban Ore salvages all sorts of used goods from the Berkeley dump and receives many donated used items from the public. They carry everything from building materials (lumber, windows, doors, brick, tile, etc.) to house wares (furniture, dishes, clothing), hardware and tools, and arts and media items (books, music, art supplies, instruments, computer stuff etc.).

7. Creating Artful Schoolyards

Children spend a lot of their time in the schoolyard, so it should be a cheerful, inviting space that will capture their imaginations. Adding outdoor artwork to schools can create a sense of playfulness in their environment, and make the schoolyard a more memorable place. This chapter includes listings for a variety of artists who can work with schools to cover hard surfaces with bright tile mosaics, add colorful murals to buildings, sculpt natural materials into fanciful creatures, and find appropriate ways to include children's artwork in the school's outdoor landscape.

We would like to add more art-related resources to this chapter, especially artists who have successfully completed a least one school art installation. Contact us with your recommendations at: info@sfgreenschools.org.

7.1 Murals

Mona Caron – Mural Artist

Phone: 415-255-8488
Email: mona@bok.net
Web: <http://www.monacaron.com/>

Mona is a muralist who works with and incorporates local communities, ideas, concepts and local history (both social and natural) into her work. Examples of her work include the wildly popular Market Street Railway mural at Church and 15th Streets and the Duboce Bikeway Mural at Church and Duboce (in San Francisco). Examples of her school-related work include the Theresa Mahler CDC & BEST (Brisbane Educational Support Team).

Kid Serve

Contact: Josef Norris - Mural Artist/Director, Kid Serve
Phone: 415-337-8474
Email: josef@kidserve.com
Web: <http://www.kidserve.com/>

Kid Serve is an arts education program that integrates social values, creativity and community service. Students in grades 2-12 are guided through the process of designing and creating permanent outdoor murals in their communities and schools. The 8 or 14-week projects empower young people to take a leadership role in beautifying and transforming their neighborhoods. Visit the website to see various Kid Serve mural themes. Contact Josef Norris to find out how to secure a Kid Serve mural residency at your school.

Jamie Morgan – Mural & Graphic Artist

Phone: 510-655-4681
Email: piatnitz@lmi.net

Jamie works with school communities in the Greater Bay Area to design and install mural artwork on school grounds. He has worked on mural projects at Peralta and Anthony Chabot Elementary (both in Oakland) and the Oxford School (in Berkeley), creating bright, cheerful murals with the children's own art. Jamie also has experience as a public school visual arts teacher.

Precita Eyes Mural Arts

Contact: Susan Cervantes
2981 24th Street • San Francisco, CA 94110
Phone: 415-285-2287 Fax: 415-920-0592
Email: pem@precitaeyes.org
Web: <http://www.precitaeyes.org/>

Precita Eyes Mural Arts is a San Francisco-based arts and education non-profit that can work with Bay Area schools to direct hands-on efforts to design and install murals on school grounds. There is a fee for service but schools are offered discounted rates. Contact Precita Eyes to see how they can work with you on your school's mural project. Precita Eyes also offers tours of murals in San Francisco's Mission District as well as art classes for toddlers, children and adults. Visit the website for information on all of these programs or to view Precita Eyes' murals.

7.2 Tile mosaics

Bob Buechting – Tile Mosaic Artist

Contact: 612 Steiner Street #4 • San Francisco, CA 94117
Phone: 415-971-0647
Email: bbuechting@hotmail.com

Bob works with teachers and students to design and install vibrant mosaic tile murals on school grounds. He has worked with a number of San Francisco schools including Alamo, Sloat, Monroe, and Hillcrest Elementary schools.

7.3 Sculpture & Site Furnishings

Occidental Arts & Ecology Center

Contact: Brock Dolman
15290 Coleman Valley Road • Occidental, CA 95465
Phone: 707-874-1557 x206
Fax: 707-874-1558 (fax)
Email: Brock@oaec.org
Web: <http://www.oaec.org/>

OAEC has extensive natural building expertise and can help schools to create such things as cob benches, urbanite walls (built using recycled concrete chunks), trellises, sustainably harvested or recycled wood structures or sculptures, living willow constructions, and other related natural building projects. Many of these natural building materials also have excellent sculptural properties, and can be used to create a variety of site furnishings “with personality.” (For example, gently curving retaining walls, cob benches in the shape of a snake or other creature, or dragon-shaped cob ovens that “breathe smoke” when lit!) OAEC can also provide consultation and referrals on these topics. Please see Chapters 4.5, 6.1, and 10.2 for more information about their work.

Van Mechelen Architects

Contact: Greg Van Mechelen, Architect
1117 Virginia Street • Berkeley, CA 94702
Phone: 510-558-1075
Fax: 510-558-1076
Email: info@vanmechelenarchitects.com
Web: <http://www.vanmechelenarchitects.com/>

In addition to his architecture work, architect Greg Van Mechelen can help schools to create low-cost, environmentally appropriate, durable school garden benches. He has created two sculptural benches for schools in San Francisco using a technique called “earth bag” construction. One bench is in the shape of a shark, and another is in the form of a worm, diving in and out of the ground! Please see the description in Chapter 6.1 for more information about his firm.

7.4 Other Children’s Art Specialists

Nuala Creed – Children’s Art Specialist

Phone: 707-789-0807
Email: mail@nualacreed.org
Web: <http://www.nualacreed.org/>

Nuala works with students, teachers and environmental educators to create, two- and three-dimensional visual artwork. Her specialty is ceramic work. The interests of the students and the school environment determine the direction of the artwork from inception through project completion. Themes explored include alternative energy, literacy, and peace. Examples of her work can be viewed at Tule Elk Park CDC in San Francisco or on their website.

Cultivate Peace

Please see the description in Chapter 2.7.

8. Fundraising Ideas for Green Schoolyards

So... you have lots of ideas about what to build and plant in your schoolyard, but no money to get the project started? Don't worry. This is a common situation. Green schoolyard projects can be built on almost any budget. Some schools run their programs on \$500 per year, while others spend hundreds of thousands of dollars to hire new staff members and greatly improve their site's infrastructure.

Think about the overall goals for your project and raise funds accordingly. Plan to implement your greening project slowly, one project at a time, as you raise the money you need. Seek out volunteers with the skills needed to make your schoolyard a success. Some schools have found parents and nearby community members who can serve as garden educators and grant writers. Other schools have found that their local community includes landscapers, landscape designers, gardeners, home improvement specialists, hardware store owners and other specialists in related fields—and put them to work as volunteers on their greening projects. This local support can help you make your garden money go further.

Try to use inexpensive natural and used construction materials to keep your costs down. Another way to keep costs down is to seek out free and discounted materials. We have tried include a list of resources that generally offer discounts to schools, but you may also want to approach other local businesses to ask if they will support your school's greening efforts with free or discounted supplies and materials.

If you don't have a lot of money at the beginning of your project, dream big but start small. Seek to complete one small project at a time and make sure it is done well. (This will also ensure that your green schoolyard remains sustainable and makes your project more attractive to potential financial supporters). To raise a few thousand dollars per year, you could involve your students in some simple, time-tested fundraisers such as: holding regularly scheduled bake sales, selling flower bulbs, selling herbs or plant starts the children grow from seed, or organizing a school-wide garage sale to benefit your garden project.

To raise more money for larger projects or to support a part time garden coordinator position, consider sponsoring large, school-wide fundraising events such as silent auctions or walk-a-thons. Also, do your research on grants that are available to local schools. The section below includes more information about some potential funding sources. Grant applications can be time consuming, so try to seek out funding sources that don't require large amounts of paperwork and documentation for minimal grants. With that said, be sure that your grant proposals are carefully done, and specifically targeted to an individual funder's application and interests.

Please remember to appropriately thank any individuals, businesses, or foundations that support your green schoolyard project. Send them a formal thank you note on the school's letterhead stationary to acknowledge their

donation. (This will usually allow them to take an appropriate tax deduction.) It is also nice to send them informal thank you notes or pictures drawn by the students who benefit from the donation.

8.1 Fiscal Sponsors

Most school garden or greening programs do not have their own non-profit status or 501c3 number, and in order to accept most foundation money (ie: grants), such a status is required. A Fiscal Sponsor is an umbrella organization that can shelter small organizations such as school garden programs by allowing use of their non-profit status. Sometimes Fiscal Sponsors act as incubators, nursing little organizations along until they become large enough to have the resources to get their own non-profit status. A fiscal sponsor will typically charge 5-10% of incoming money for their services. Each sponsor does it a little differently, and it is wise to shop around for what works for your organization.

Some individual schools have non-profit status through their parent associations or PTA and many SFUSD schools are associated with Beacon Centers which can serve as fiscal sponsors, too.

Neighborhood Parks Council

(Limited to projects in San Francisco)

Contact: Colleen Flynn

451 Hayes Street, 2nd Floor • San Francisco, CA 94102

Phone: 415-621-3260

Fax: 415-703-0889

Email: cflynn@sfneighborhoodparks.org

Web: <http://www.sfnpc.org/>

The Neighborhood Parks Council (NPC) advocates for a superior, equitable and sustainable park and recreation system. NPC offers its services as a fiscal sponsor to park groups and other related projects, for a standard fee. This fiscal sponsorship provides legal and accounting services for groups that do not have a 501c3 status.

San Francisco Clean City Coalition

(Limited to projects in San Francisco)

Contact: Gia Grant, Executive Director

1016 Howard Street • San Francisco, CA 94103

Phone: 415-552-9201

Fax: 415-552-9202

Email: info@sfcleanccity.com

Web: <http://www.sfcleanccity.com/>

To be considered for fiscal sponsorship, a prospective project must fall under the clean, green and beautification mission of the Clean City Coalition. A 10% fiscal agent fee is generally charged, but it can be negotiated on case by case basis.

San Francisco Parks Trust

(Limited to projects in San Francisco)

Contact: Channing Sargent, Office Manager
501 Stanyan Street • San Francisco, CA 94117
Phone: 415-750-5105
Fax: 415-221-5996
Email: channing@sfpt.org
Web: <http://www.sfpt.org/>

San Francisco Parks Trust (SFPT) is a non-profit organization committed to enhancing and promoting stewardship for San Francisco's parks, recreation centers and open spaces. They do this by providing funding for critically needed capital projects, programming and activities for residents throughout the City. They also provide fiscal agency services for "friends of" and other park- and school- related organizations, for a small fee of 5%, which is below the market rate. In many cases they also act as a "funding mentor" to guide these groups in such things as grant writing, applying for permits and sending acknowledgment letters.

San Francisco School Alliance

(Limited to schools in the San Francisco Unified School District)

Phone: 415-955-5790

The San Francisco School Alliance (formerly the Every Child Can Learn Foundation) is the non-profit arm of the SFUSD. They can be contacted for fiscal sponsorship at the phone number listed above. Their usual fee is 10%.

8.2 Bay Area Funding Sources for Green Schoolyards

Bay Area CREEC Network

Contact: Laura Powell
Phone: 707-775-2420
Email: bacreec@comcast.net
Web: <http://www.creec.org/region4/>

Bay Area CREEC seeks to improve environmental education in California classrooms by linking educators with high quality resources. CREEC produces email newsletters that list grant opportunities, teacher trainings and local events. Please see Chapter 9.2 for more information.

Philanthropic Ventures Foundation –

Science Resource Grants for Public School Teachers

(Limited to public school teachers in the Bay Area)

Contact: Dawn Hawk, Program Officer
1222 Preservation Park Way • Oakland, CA 94612-1201
Phone: 510-645-1890
Fax: 510-645-1892
Email: dhawk@venturesfoundation.org
Web: <http://www.venturesfoundation.org/>

PVF has provided immediate response resource grants, up to \$500, to public school teachers in the San Francisco Bay Area for the last 8 years. Currently, PVF is operating the Science Teacher Resource Grants Program to support K-12 Science and Conservation education. Through the Program, San Francisco Bay Area public school teachers, grades K through 12th, are eligible to apply for grants up to \$500 for conservation science projects, classroom resources, educational fieldtrips, and professional development. A maximum of three grants will be awarded to a school. Collaboration is encouraged for joint activities (up to \$500) between same grade level teachers. Call the phone number listed above to: check on grant availability; request the program flyer by fax (this flyer includes detailed information regarding what to include in your grant proposal); or to ask questions regarding the grant program. Teachers are always welcome to contact PVF to see if funding is available for teacher mini-grants, or to ask questions about the program.

San Francisco Beautiful

(Limited to projects within the City of San Francisco)

Contact: Dee Dee Workman, Executive Director
564 Market Street # 709 • San Francisco, CA 94104
Phone: 415-421-2608
Fax: 415-421-4037
Email: sfb@sfbeautiful.org,
Web: <http://www.sfbeautiful.org/grants/>

San Francisco Beautiful's (SFB) mission is to create, enhance and protect the unique beauty and livability of San Francisco. Through its Friedel Klusmann Grants Program, SFB has given nearly one million dollars in small grants to San Francisco community groups for neighborhood improvement projects throughout the city including the greening of schoolyards. Grant proposal submission deadlines are: February 1, May 1, August 1, and November 1. Visit SFB's website for grant guidelines and more information about the grants program.

SF Environment – City Toxics Reduction Program

(Funding is limited to specific types of programs. Please see below.)

Contact: Chris Geiger or Deanna Simon

Email: chris.geiger@sfgov.org or deanna.simon@sfgov.org

The San Francisco Department of the Environment's City Toxics Reduction Program offers small grants to City Departments for projects that will lower the use of toxic materials in San Francisco. Past funded projects include trainings, resource materials, less toxic products, or equipment that will reduce the need for using toxic products. Please contact Chris Geiger or Deanna Simon at the email addresses above for more information. Funding is limited to City and County of San Francisco departments & associated groups such as SFUSD. For more information about SF Environment's programs, please see Chapters 2.1, 5.2, 6.1, 10.1, 10.3, and 10.4.

8.3 Statewide Funding Sources for Green Schoolyards

Western Growers Charitable Foundation

Contact: P.O Box 2130 • Newport Beach, CA 92658

Phone: 949-863-1000

Fax: 949-863-9028

Email: KLovett@wga.com

Web: <http://www.wga.com/>

The Western Growers Charitable Foundation provides hands-on opportunities for every child to learn about agriculture, their food supply and the importance of nutrition through garden-based education. It is our goal to raise funds to establish a garden in every school in California and Arizona. The Western Growers Foundation is a non-profit charitable foundation that makes \$1,500 grants available to school gardens. The grant also includes educational resources, seeds and an irrigation kit. For grant applications please visit their website or contact Western Growers' School Garden Coordinator.

8.4 National Funding Sources for Green Schoolyards

National Fish and Wildlife Foundation

Contact: *Contacts vary by program. Please see below.*

1120 Connecticut Avenue, NW, #900 • Washington, DC 20036

Phone: 202-857-0166

Fax: 202-857-0162

Web: http://www.nfwf.org/grant_apply.cfm/

"The National Fish and Wildlife Foundation conserves healthy populations of fish, wildlife and plants, on land and in the sea, through creative and respectful partnerships, sustainable solutions, and better education." The Foundation offers the following three grant programs that may relate to greening schoolyards and environmental education. To learn more about each program and its grant deadlines, please visit the website listed above and click on the name of each program.

Five Star Restoration Matching Grants Program

Contact: Matthew Hurley, at the address and phone number above

Email: matthew.hurley@nfwf.org

Provides modest financial assistance on a competitive basis to support community-based wetland, riparian, and coastal habitat restoration projects that build diverse partnerships and foster local natural resource stewardship through education, outreach and training activities.

Nature of Learning

Contact: Lauren Madden, at the address and phone number above

Email: lauren.madden@nfwf.org

Supports costs associated with The Nature of Learning, a community-based conservation education initiative that uses National Wildlife Refuges as outdoor classrooms and enhances natural resource stewardship in the community.

Nature Restoration Trust

Contact: Jane Van Gunst

28 Second Street, 6th Floor • San Francisco, CA 94105

Phone: 415-778-0999

Fax: 415-778-0998

Email: jane.vangunst@nfwf.org

Seeks to fund projects that benefit fish, wildlife, and plants, as well as provide educational opportunities and encourage community involvement in conservation efforts within the Pacific Gas and Electric Company's service area in northern and central California.

National Gardening Association

Contact: Barbara Richardson
1100 Dorset Street • South Burlington, VT 05403
Phone: 802-863-5251 and 800-538-7476 x119
Fax: 802-864-6889
Email: barbara@garden.org
Web: <http://www.kidsgardening.com/grants.asp/>
<http://www.kidsgardening.com/awards.asp/>

NGA awards Youth Garden Grants to schools and community organizations with child-centered, outdoor garden programs. In evaluating grant applications, priority will be given to programs that emphasize one or more of these elements: educational focus and/or curricular ties (if applicant is a formal education program); nutrition or plant-to-food connections; environmental awareness/education; entrepreneurship; social aspects of gardening such as leadership development, team building, community support, or service-learning. NGA also sponsors other garden grant programs/awards. Please check their website for current grant application deadlines. For more information about the NGA, please see Chapters 2.2, 2.3, 2.5, 2.7, 9.3, and 10.6.

9. Finding Helping Hands

Greening your school grounds is a lot of work! Is your school's "to do list" bigger than your school's "greening committee" can handle on its own? Don't despair... find people to help you! Here are a few ideas for recruiting some helping hands from your local community:

Students as Stewards of the School Grounds

Many tasks needed to maintain a green schoolyard can be accomplished by students. Kids in 3rd grade and up are particularly helpful since their attention spans are longer and their physical strength is generally greater than that of younger children—but kids of all ages can help with daily maintenance tasks such as planting, weeding, raking, and other types of light garden clean up. Students should be given the responsibility to be the primary stewards of their school grounds, with the assistance of adults only where needed. Ask them what they think needs to be done, and how it might be accomplished. Involve them in all aspects of designing, planting, and caring for their schoolyard.

This type of student participation can occur in the course of their regular academic class work, or at recess (create clean up related games!), or in the context of after school programs or environmental/gardening clubs.

Harness Parents' Energy by Creating Green Schoolyard Work Days

There are some tasks in a green schoolyard that are just too big for young students to help with, or require tools that are too dangerous to give to children. This is where support from parents and other adults in the community is key.

- Establish a schedule of community work days for your green schoolyard (monthly, every other month, or twice a year, depending on the scale and maintenance needs of your project).
- Send notes home with every student, asking their parents to help work on the project. Put notes up along the school's fence to invite neighbors, too.
- Arrange for food at your event, and include this information in your work day announcement. For example, set it up as a potluck meal, or ask a few local restaurants if they can donate snacks or coffee to feed your hungry workers! (Be sure to remember to thank them with a letter acknowledging their donation, so that they can take a tax deduction for their contribution.)
- Ask parents to bring their own tools and gardening gloves to your work day or contact your local tool lending library to borrow what you need. Label all tools so they will find their way back to their owners at the end of the day.
- Have a well organized plan about which areas of the schoolyard need work, so that your volunteers are busy from the moment they walk in. This will show them that you value their time and are putting it to good use!

- Take time to celebrate your achievements at the end of each work day, and share refreshments together, socialize, and make it an enjoyable event.

Find Other Sources of Volunteers

Sometimes there are things you will want to build—or clean up—that require more volunteers than you can find within your own school community. Your first goal should be to look for volunteers within an easy walk or short drive of your school's neighborhood. For example, try to find a senior center that wants to create an intergenerational, collaborative project—or one that can agree to come water your garden during the summer in exchange for some of the summer harvest. Try partnering with other local social or religious groups such as sororities, gardening clubs, religious organizations, etc.

In addition to these types of organizations, there are many other sources of volunteers in the Bay Area. The section below lists some of them to help you get started.

9.1 Potential Sources of Volunteers for Green Schoolyards

City College of San Francisco - Environmental Horticulture Program

Contact: Steven Brown, Department Chair

Email: sbrown@ccsf.edu

Web: http://www.ccsf.edu/Departments/ed_programs.html/

City College of San Francisco's Environmental Horticulture Program is a source for volunteers that can help your school community green its grounds. Volunteers from CCSF may be able to assist with: instruction, weeding, and planning and planting. Please email CCSF at the email address listed above to arrange for volunteers to assist your school with its greening efforts.

Growing Green Kids

(Limited to San Francisco schools)

Contact: Sybil Tate

Phone: 415-595-9484

Fax: same as phone number

Email: sybil@growinggreenkids.org

Web: <http://www.growinggreenkids.org/>

Need some people power to help clean, green and activate your green schoolyard? Growing Green Kids (GGK) is a portal to enthusiastic volunteers that could help at your next green schoolyard clean-up day or volunteer on a long-term garden project. Contact GGK to find out which types of volunteer interests and skills are available. Please see Chapters 2.6 and 10.2 for more information.

National Wildlife Federation - Habitat Stewards Program

Phone: 206-285-8707 x107
Email: muller@nwf.org
Web: <http://www.nwf.org/volunteer/habitatsteward.cfm/>

Habitat Stewards™ volunteer opportunities are part of a community-based program that trains volunteers to educate and assist others in their area in the creation and restoration of wildlife habitat. This may mean coordinating other volunteers to take on a Schoolyard Habitats project at a local elementary school, or may involve speaking to a class at a local school or garden club about the importance of native plants and habitat suitable for wildlife. If you would like to become a Habitat Steward™ or would like to find out if there is a Habitat Steward™ near you, please contact the National Wildlife Federation using the contact information listed above.

San Francisco Clean City Coalition

(Limited to San Francisco residents)

Contact: 1016 Howard Street • San Francisco, CA 94103
Phone: 415-552-9201
Fax: 415-552-9202
Email: info@sfcleancity.com
Web: <http://www.sfcleancity.com/cleanteam/>

In addition to the San Francisco Tool Lending Center mentioned above in Chapter 2.4, the Clean City Coalition's Community Clean team works district by district to clean and green the City. Check their website to view the events calendar and see when the Community Clean Team will be in your school's (supervisory) district, then call the number listed above to sign your school up as a work-site. The Clean City Coalition is also a resource for volunteer/event organizing, technical assistance with grants and expertise in using recycled materials.

Volunteer Match - Community Services

Contact: 385 Grove Street • San Francisco, CA 94102
Phone: 415-241-6872
Fax: 415 241-6869
Email: support@volunteermatch.org
Web: <http://www.volunteermatch.org/>

Volunteer Match's mission is to help everyone find a great place to volunteer. By visiting their website and using their service, volunteers and non-profits are able to each find the necessary resources to have a successful volunteer opportunity. Schools can register as a non-profit and recruit volunteers to help build a play area, restore a playground, or simply garden the school grounds.

9.2 Local Opportunities for Green Schoolyard Networking

There are many people throughout the Bay Area who are working to make their school grounds greener. Meeting people with similar interests, and talking to them about the work you are doing at your school, will give you new ideas and provide you with advice and support networks that are very valuable. We recommend that you take advantage of the local and regional networking opportunities listed below.

Bay Area CREEC Network

Contact: Laura Powell
Phone: 707-775-2420
Email: bacreec@comcast.net
Web: <http://www.creec.org/region4/>

Bay Area CREEC is part of a statewide California Department of Education project called the California Regional Environmental Education Community Network. The Network's purpose is to increase and improve environmental education in California classrooms by linking educators with high quality resources. CREEC offers: a directory of programs and other resources related to environmental education in an extensive, online searchable database; email newsletters that list grant opportunities, teacher trainings and local events; and a discussion group that connects Environmental Educators throughout the Bay Area. Bay Area CREEC serves seven counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Solano. Please visit their website to access CREEC's resources.

Berkeley Community Gardening Collaborative

Contact: PO Box 2164 • Berkeley, CA 94702
Phone: 510-883-9096
Web: <http://www.ecologycenter.org/bcgc/index.html/>

The Berkeley Community Gardening Collaborative brings together diverse members of the community around a common commitment to urban agriculture and access to healthy food for all residents of Berkeley. Their group includes gardeners, teachers, community activists, students, nutritionists, writers, public office holders and others who share ideas, knowledge, vitality and resources to increase local food production and improve nutrition. Visit their website for more information.

Ecology Center

Contact: 2530 San Pablo Avenue • Berkeley, CA 94702

Phone: 510-548-2220 x233

Web: <http://www.ecologycenter.org/>

The Ecology Center's Environmental Resource Center provides information and tools for eco-friendly living. Please see a detailed list of their services in Chapters 1.1 and 2.2. In addition to the services described in these sections, the Ecology Center often hosts lecture series on a variety of ecology-related themes including garden and green building topics. These lectures and their BASIL seed exchange events are good places to meet like-minded ecology enthusiasts.

San Francisco Green Schoolyard Alliance (SFGSA)

Please see the description in Chapter 1.1.

San Francisco Unified School District – Facilities Department

Please see the description in Chapter 1.1.

University of California Botanical Garden

Please see the description in Chapter 10.2.

9.3 Regional & National Opportunities for Green Schoolyard Networking

National Gardening Association – School Garden Registry

Web: <http://www.kidsgardening.com/School/register.asp/>

The National Gardening Association offers an on-line school garden registry that gives school communities with gardens the opportunity to share their greening experiences. The registry also lets users search for information on other school garden projects from all over the country. Schools and educators can even locate e-mail pals through the registry. To register with or search the directory, visit the website listed above. For more information about the NGA, please see Chapters 2.2, 2.3, 2.5, 2.7, 8.4, and 10.6.

Junior Master Gardener Program

Web: <http://jmgkids.com/>

Please see the description in Chapter 10.3.

10. Educational Opportunities

The Bay Area has a multitude of terrific educational resources related to schoolyard greening. There are great places to bring your students for fieldtrips; classes, workshops, and conferences to help you fill your head with terrific ideas; a wide variety of excellent curriculum resources, many developed locally; and other resources we can recommend that you can find in books or on the web.

10.1 Fieldtrip Ideas for Children

Center for Urban Education about Sustainable Agriculture (CUESA)

Contact: Education/Executive Director
One Ferry Building, Suite 50 • San Francisco, CA 94111
Phone: 415-291-3267
Fax: 415-291-3275
Email: info@cuesa.org
Web: <http://www.cuesa.org/>

CUESA is dedicated to promoting sustainable food systems through the operation of the Ferry Plaza Farmers' Market and educational programs. They offer hand-outs (*Sustainable A-Z*) and fact sheets covering various sustainable agriculture topics that can be used as teaching tools. They also offer curriculum-based market tours for schools. Please check their website for new programs and resources.

Crissy Field Center

Contact: Nancy Caplan
P.O. Box 29410 • San Francisco, CA 94129
Phone: 415-561-7763
Fax: 415-561-7695
Email: ncaplan@parksconservancy.org
Web: <http://www.crissyfield.org/center/>

Crissy Field Center offers a variety of public workshops, special events and fieldtrips that connect the diverse population of the Bay Area to urban environmental issues. Crissy Field Center programs are designed to actively engage us with our environments and teach us to build a more sustainable and environmentally-just society. Visit the Crissy Field Center website for more information about the specific programs, events, fieldtrips and resources available. Program and fieldtrip scholarships are available to qualifying individuals and schools. Please contact the center for an application.

Greenbelt Alliance - Greenbelt in Your Schoolyard Curriculum

Contact: Julie Cummins
631 Howard Street, Suite 510 • San Francisco, CA 94105
Phone: 415-543-6771
Fax: 415-543-6781
Email: info@greenbelt.org
Web: <http://www.greenbelt.org/>

The Greenbelt Alliance protects open space and promotes livable communities in the San Francisco Bay Area. The Greenbelt Alliance's Youth Outings program provides free outdoor day trips for classes and groups of youth, grades 3-8 who otherwise would not have the opportunity to enjoy the greenbelt.

Literacy for Environmental Justice

Contact: Teresia Gichache
800 Innes Avenue, Unit 11 • San Francisco, CA 94124
Phone: 415-282-6840
Fax: 415-282-6839
Email: info@lejyouth.org
Web: <http://www.lejyouth.org/>

LEJ is an urban environmental education and youth employment and empowerment organization that works to foster an understanding of the principles of urban sustainability and environmental justice in our young people in order to promote the long-term health of our communities. They maintain a 24-acre wetland park in Southeast San Francisco where many students visit and volunteer, and are in the process of building a "Living Classroom" education center to showcase green technology and sustainable living options. Call or email LEJ to set up a "teacher meeting" to plan in-class and fieldtrip activities. LEJ follows a project based service-learning model and aims to engage students in more than just one-time activities. Additional services for teacher members are available as well.

Presidio Native Plant Nursery

Contact: Katy Pleak
201 Fort Mason, 3rd Floor • San Francisco, CA 94123
Phone: 415-561-4826
Fax: 415-561-4839
Email: kpleak@parksconservancy.org
Web: <http://www.parksconservancy.org/>

Here's the Dirt is a free Middle School program that introduces students to the native plants of San Francisco and ways that they grow them in the park for restoration purposes. Visit <http://www.nps.gov/goga/education/> to register online for their curriculum based environmental program, *Here's the Dirt*. Please note that the Presidio Native Plant Nursery does not sell plants to the public.

SF Environment – Environmental Fieldtrips

(Limited to San Francisco schools)

Contact: Becky Wike, Environmental Education Coordinator
Phone: 415-355-3742
Email: becky.wike@sfgov.org

Each year, SF Environment awards fieldtrips to San Francisco's teachers and their students. All fieldtrips include a 45-minute classroom presentation that helps prepare students for the trip and introduces environmental concepts that will be reinforced during the trip. The following four fieldtrips are offered: "Where Does Our Garbage and Recycling Go?" (Grades 3-8), "A Day in the Garden" (Grades 3-12), "The Art of Reuse" (Grades 2-12) and "The Miracle of Plants" (Grades 3-4). Fieldtrip applications are available in August and are awarded shortly thereafter. Contact SF Environment to learn more or to apply for a fieldtrip. For more information about SF Environment's programs, please see Chapters 2.1, 5.2, 6.1, 8.2, 10.3, and 10.4.

University of California Botanical Garden

Contact: Education Department
200 Centennial Drive • Berkeley, CA 94720-5045
Phone: 510-643-4832
Email: kdbarret@berkeley.edu or manoux@berkeley.edu
Web: <http://botanicalgarden.berkeley.edu/>

Group tours are provided by the docents of the UC Botanical Garden for ages 5 and up. These experienced docents will modify tour presentations so they are appropriate for the age group of your specific students. If you wish, the Tour Scheduler will help you make your final selection based upon your interest and the best time to take the tour considering when the plants in the Garden are at their peak for the tour's content. Docent-led tours are available year round. Teacher materials are available with some tours and will be included with your tour confirmation letter. Ask how your tour matches to the California State Education Standards. Visit the website above for detailed information about the tours including rates, chaperone and scheduling requirements. Please see Chapters 2.3, 2.6, and 10.3 for more information about this garden and its educational programs.

10.2 Classes, Workshops, & Conferences for Adults

Adopt-A-Watershed

Please see the description in Chapter 4.1.

Association for Environmental and Outdoor Education (AEOE)

Contact: Michael Charnofsky
P.O. Box 2555 • Wrightwood, CA 92397
Phone: 760-249-4351
Email: michaelcharnofsky@yahoo.com
Web: <http://www.aeoe.org/>

AEOE is a professional development organization for naturalists, outdoor and environmental educators, and teachers. Through conferences, newsletters, and a website, they "teach the teachers." Traditional classroom science teachers and those interested in taking their students outside for science and environmental education instruction and service learning are a small but growing part of AEOE membership. AEOE itself does not provide workshops at this time outside of their conferences, but many of their member organizations do.

Bay Area Environmental Education Resources Fair (BAEER Fair)

Web: <http://www.baeerfair.org/>

Normally held annually at the beginning of the year (late January), the BAEER Fair gives attendees the opportunity to discover the latest in classroom materials, environmental education programs and fieldtrip sites. Attend workshops introducing conservation and wildlife education, school gardens, and strategies for fostering environmental awareness. This event is especially designed for teachers, community educators, students, families and all concerned about the environment we share. Visit the website listed above for more detailed information about this event.

The Building Education Center

Contact: 812 Page Street (@ 6th Street) • Berkeley, CA 94710
Phone: 510-525-7610
Web: <http://www.bldgeductr.org/seminars.html/>

The Building Education Center is a non-profit educational organization that teaches courses on building and remodeling. BEC offers 61 seminars, short classes and hands-on workshops for beginners, and professionals. Topics for seminars, classes and workshops include: Garden Hardscapes, Landscape Design, Creating an Ecological House, Alternative Materials; Cob and Strawbale, Landcape Watering Systems, Ceramic Tile and Plan Reading. Visit their website for a list of current course offerings, and to learn more about their fees and schedules.

California Native Plant Society (CNPS) – Yerba Buena Chapter

Web: <http://www.cnps-yerbabuena.org/>

Join CNPS -Yerba Buena Chapter for exciting fieldtrips to local natural areas and other events that address a variety of native plant related topics. Fieldtrips and other programs are open to the general public. Visit their website for more information on upcoming fieldtrip locations and topics, meeting times/places. Please see Chapter 3.1 for more information.

California Straw Building Association (CASBA)

Web: <http://www.strawbuilding.org/>

CASBA conducts hands-on workshops to teach straw building techniques throughout California. Visit their website for a list of scheduled workshops and locations. Please see Chapter 6.1 for more information.

City College of San Francisco (Main Campus) - Gardening Courses Taught by Pam Peirce

Web: http://www.ccsf.org/Departments/ed_programs.html
Website navigation directions: Click on "Class Schedule" then "Index" (for the proper semester) then "Env. Horticulture"

The author of *Golden Gate Gardening* and *Wildly Successful Plants: Northern California*, Pam Peirce is a Bay Area gardening expert who teaches classes on various gardening topics. Classes are conveniently scheduled on Saturdays from 9:00 am - 1:00 pm. Check the City College website listed above and follow the instructions provided to find out which courses are being offered during upcoming semesters. Course topics include: Garden Practices 101 (gardening basics), and three other classes covering topics from composting and seed starting to pest management.

Crissy Field Center

Please see the description in Chapter 10.1.

Cultivate Peace

Please see the description in Chapter 2.7.

Golden Gate Audubon Society

Contact: Tara Zuardo
Phone: 510-0843-2222
Email: ggas@goldengateaudubon.org
Web: <http://www.goldengateaudubon.org/>

Golden Gate Audubon offers more than 100 fieldtrips annually for birders of all levels and ages. Their trips explore local areas from Golden Gate Park to the East Bay shoreline and hills, as well as such wildlife-rich destinations as California's Central Valley and the Sierra Nevada. They also sponsor trips to other parts of the U.S. and to international destinations, including Latin America, Africa, and Australia. Fieldtrips are led by experienced birders who are passionate about sharing their knowledge of birds and their habitats. Local trips are free, except for any park entrance fees. Advance reservations are occasionally necessary. It is advisable to confirm with the trip leader that a trip will take place as planned, especially if inclement weather is expected. Please visit their website and see Chapter 3.2 for more information.

Growing Green Kids

(Limited to San Francisco schools)

Contact: Sybil Tate
Phone: 415-595-9484
Fax: same as phone number
Email: sybil@growinggreenkids.org
Web: <http://www.growinggreenkids.org/>

Growing Green Kids (GGK) focuses on supporting San Francisco garden coordinators/school communities by providing educational classes, onsite consulting and support and communication within the school garden community. GGK offers garden educator trainings that focus on edible/food garden and nutrition topics. See Chapters 2.6 and 9.1 for more information.

Merritt College

Phone: 510-208-7225 (enrollment)
510-436-2418 (questions)
Web: <http://www.peralta.cc.ca.us/> (for online enrollment information)

Wide variety of classes offered on many topics including environmental design and management, landscape horticulture, and natural building techniques.

Occidental Arts & Ecology Center – School Garden Teacher Training Program

Please see a description of OAEC's School Garden Teacher Training Program in Chapter 1.1. Other information about OAEC's course offerings and wide-ranging expertise is listed in Chapters 2.3, 4.5, 6.1, and 7.3.

San Francisco Recreation and Parks Department – Youth Stewardship Program

(Geographic restrictions apply. Please see below.)

Contact: Cheri Garamendi, Education & Volunteer Coordinator
McLaren Lodge, 501 Stanyan Street • San Francisco, CA 94117
Phone: 415-753-7276
Email: cheri.garamendi@sfgov.org
Web: http://www.parks.sfgov.org/site/recpark_index.asp?id=21196/

The Youth Stewardship Program (YSP) engages San Francisco youth, 4th - 12th grade, in environmental education and service-learning projects in parks city-wide. Their mission is to foster in youth an understanding of their important role in helping to build healthy social and natural communities. A series of fieldtrips to San Francisco recreation and park sites provide students with geographic and ecological context for topics such as plant adaptation, water and soil issues, animal adaptation and ecological interdependence. Please visit their website for more information or to access the YSP application. The program can be modified to accommodate your class' interests and resources. Priority is given to San Francisco Public Schools. Please note: Phone consultation and website information are available to everyone but their other resources are only available to San Francisco schools and residents.

SCRAP: Scroungers' Center For Reusable Art Parts

Contact: 801 Toland Street (enter on Newcomb Avenue btwn. Toland & Selby)
San Francisco, CA 94124
Phone: 415-647-1746
Fax: 415-647-1744
Email: scrap@scrap-sf.org
Web: <http://www.scrap-sf.org/>

SCRAP offers a variety of workshops that focus on making use of re-usable materials in creative and exciting ways. Workshops are open to adults and children (aged 10 and above when accompanied by an adult) and cost \$15 (materials fee) or \$30 for two-part workshops. Check SCRAP's website for a list of current workshops offered. Call the phone number above to reserve a space in upcoming workshops. Please see Chapter 6.3 for more information.

Solar Living Institute

Contact: P.O. Box 836, 13771 S. Highway 101 • Hopland, CA 95449
Phone: 707-744-2017
Fax: 707-744-1682
Email: sli@solarliving.org
Web: <http://www.solarliving.org/index.cfm/>

The Solar Living Institute in Hopland, CA, is a non-profit organization that promotes sustainable living through inspirational environmental education. The SLI maintains a 12-acre demonstration site 90 miles north of San Francisco. Schools can arrange tours of their renewable energy systems, green buildings and organic gardens, or participate in April's Earth Day program. The SLI also offers daylong workshops for adults on ecological design, earth-based construction techniques, permaculture, solar energy systems and more.

University of California Botanical Garden

Please see the description in Chapter 2.6, and additional information for this organization in Chapters 2.3, 10.1, and 10.3.

10.3 Green Schoolyard Curricula

Adopt-A-Watershed

Contact: Kim Stokely
Phone: 530-628-5334
Email: kim@adopt-a-watershed.org
Web: <http://www.adopt-a-watershed.org/>

Adopt-A-Watershed (AAW) is a non-profit organization that promotes educational enhancement, environmental stewardship, and community development through *Placed-Based Learning*. AAW offers standards-aligned K-12 curriculum units that utilize the watershed as the context for learning.

The curriculum units encourage students to explore and take action in their local community. Please visit their website and see Chapter 4.1 for more information.

Alliance to Save Energy

Web: <http://www.ase.org/section/program/greenschl/>

Please see the description in Chapter 5.2.

California Integrated Waste Management Board

Contact: Theresa Bober
1001 I Street, P.O. Box 4025
Sacramento, CA 95812
Phone: 916-341-6766
Fax: 916-319-7473
Email: tbober@ciwmb.ca.gov
Web: <http://www.ciwmb.ca.gov/>

The California Integrated Waste Management Board's Office of Education and the Environment (OEE) provides standards-based K-12 curriculum and integrated waste management information and assistance to schools and districts. OEE works with local agencies to promote waste management education in local schools and informal settings such as science centers and museums. The OEE has brochures and curricula available to schools, and has posted some of it on their website.

Center for Urban Education about Sustainable Agriculture (CUESA)

Please see the description in Chapter 10.1.

Greenbelt Alliance – Greenbelt in Your Schoolyard Curriculum

Contact: Julie Cummins
631 Howard Street, Suite 510 • San Francisco, CA 94105
Phone: 415-543-6771
Fax: 415-543-6781
Email: info@greenbelt.org
Web: <http://www.greenbelt.org/>

The Greenbelt Alliance offers "Greenbelt in Your Schoolyard" curriculum free of charge to Bay Area educators. This guide, for grades 3-8, contains five hands-on activities for investigating urban nature. For a copy of this curriculum, email info@greenbelt.org with your name, school and address or download a copy at <http://www.greenbelt.org/resources/reports/>. Please see Chapter 10.1 for more information.

Junior Master Gardener Program

Contact: Susan Gloeckler
4-H Program, Marin UC Agriculture and Natural Resources
669 County Square Drive #100 • Ventura, CA 93003
Phone: 805-662-6943
Fax: 805-645-1474
Email: sygloeckler@ucdavis.edu
Web: <http://jmgkids.com/>

JMG's mission is to grow good kids by igniting a passion for learning, success, and service through a unique gardening education. JMG offers curriculum for grades 3-8 that covers many types of gardening issues and related topics such as ecology, landscape, nutrition, and pest control. JMG curricula include: a) independent and group learning experiences; b) life/skill and career exploration; c) service learning opportunities for youth; and d) correlation to state teaching standards. Visit JMG'S website to order curricula. Become a member of JMG and network with other students and practitioners worldwide via the JMG website.

SF Environment - School Education Program

(Limited to San Francisco schools)

Contact: Becky Wike
11 Grove Street • San Francisco, CA 94117
Phone: 415-355-3742
Fax: 415-554-6393
Email: becky.wike@sfgov.org
Web: <http://sfenvironment.com/>

SF Environment's School Education Program develops and implements waste reduction, recycling and composting programs that educate students and helps schools increase waste diversion. San Francisco is the first city in the nation to implement a lunchroom composting program at K-12 schools called *Food to Flowers!* By participating in the *Food to Flowers!* lunchroom composting and recycling programs, schools can receive free school-wide assemblies, training for students and staff, classroom recycling bins, onsite audits, promotional items, and standardized teaching materials. For more information about SF Environment's programs, please see Chapters 2.1, 5.2, 6.1, 8.2, 10.1, and 10.4.

University of California Botanical Garden

Contact: Education Department
200 Centennial Drive • Berkeley, CA 94720-5045
Phone: 510-643-4832
Email: kdbarret@berkeley.edu
Web: <http://botanicalgarden.berkeley.edu/>

UCBG has developed curricula with teacher input, including *Botany on Your Plate* (grades 1-4), *Math in the Garden* (K-8) and *Biodiversity & Habitats Around You* (5-8). They are available through the UCBG website. These units blend content with standards in lessons that excite and are meaningful

to students, teachers, and parents. The units link science and math with nutrition, literacy, and social studies. Visit the website (listed above) to learn more and to acquire this curricula. Please see Chapters 2.3, 2.6, and 10.1 for more information about this garden and its educational programs.

10.4 Green Schoolyard Libraries, Books, & Other Resources

Coevolution Institute – Metrics Measurement

Contact: Bill Wicht, Program Coordinator
423 Washington Street, 5th Floor • San Francisco, CA 94111
Phone: 415-362-1137
Fax: 415-326-3070
Email: bw@coevolution.org
Web: <http://www.coevolution.org/>

Ensuring success for environmental education and conservation programs depends on solid social science to design interventions that work. CoE has pursued the finest examples of active measurement, and the findings have been compiled into the publications *Measuring Results* and *Measuring Results Executive Summary*. The lessons learned from this evaluation are used to inform CoE's work and the community of institutions working to preserve the natural world. Please see Chapters 3.1 and 3.2 for more information about the Coevolution Institute.

Evergreen – Learning Grounds

Web: <http://www.evergreen.ca/>

Evergreen's Learning Grounds program helps schools create outdoor classrooms to provide students with a healthy place to play, learn and develop a genuine respect for nature. Their website offers access to a variety of useful school ground resources in print, video and web format. Many of their excellent publications are available through their website.

Green Teacher

Contact: Tim Grant
P.O. Box 452 • Niagara Falls, NY 14304
Phone: 888-804-1486
Fax: 416-925-3474
Email: info@greenteacher.com
Web: <http://www.greenteacher.com/>

Drawing on the best expertise across the United States and Canada, the 144 page *Greening School Grounds* remains one of the most popular and comprehensive books on the topic. *Green Teacher* magazine continues to publish schoolyard greening articles in most of its quarterly editions.

Golden Gate Gardening: *The complete guide to year-round food gardening in the Bay Area and Coastal California*, by Pam Peirce, Sasquatch Books, Seattle, 1998.

This book, found in many local bookstores, includes topics such as planting calendars, information on planning a garden, preparing the soil, composting, learning to water, weed and pest management by organic methods (IPM), how to grow, harvest, and use vegetables, herbs, and edible flowers, how to select and care for fruit plants, and how to cook from a garden. Coastal gardeners will particularly appreciate learning what will produce crops in foggy summers, while inland gardeners will find that the information on winter gardening is appropriate throughout the Bay Area.

New Village Press

Contact: Lynne Elizabeth and Karen Kearney
P.O. Box 3049 • Oakland, CA 94609
Phone: 510-420-1361
Fax: 510-420-1361
Email: le@newvillage.net
Web: <http://www.newvillagepress.org/>

New Village Press is an independent, non-profit publisher of books related to the emerging field of community building. Their books focus on the good news, providing profiles of exemplary programs and information on topics such as community-based arts, ecological schoolyards, education for green building, and prison horticulture. They plan to publish a book specifically outlining the range of design possibilities for green schoolyards that have been successfully implemented around the world. For more information, please visit their website. Materials available nationwide.

The "New Village Journal" was published between 1999 and 2002 and includes one issue entitled "Education for Community Building". The contents of this issue is published on their website. NVP offers this issue free of charge to organizations for use in conferences, if they can pay the shipping. E-mail New Village Press to make arrangements.

San Francisco Botanical Society

Contact: Annette Huddle
9th Avenue at Lincoln Way • San Francisco, CA 94122
Phone: 415-661-1316 x307
Fax: 415-661-7427
Email: ahuddle@sfbotanicalgarden.org/
Web: <http://www.sfbotanicalgarden.org/>

The SFBGS offers guided walks in the botanical garden as well as school and summer programs in their Children's Garden. Schools looking for help planning a garden can use the Helen Crocker Russell Memorial Library, which includes books of horticultural interest, books on gardening with children and nature study, and an extensive collection of children's books. A variety of classes for adults can help teachers and parent volunteers learn

more about plants and gardening. Teachers can participate in orientations and workshops, which can be scheduled and developed on request. Monthly plant sales offer a variety of low-cost plants, including natives, butterfly and shade plants. Serves the entire Bay Area. Access to library and garden is free.

SF Environment - Resource Library for Teachers

(Limited to San Francisco teachers)

Contact: 11 Grove Street • San Francisco, CA 94102
Phone: 415-355-3700
Web: <http://www.sfenvironment.com/aboutus/school/teacher.htm/>

Check out SF Environment's environmental lending library! They have books and videos for all grades on a variety of topics including recycling, composting, and water pollution. They also have a limited collection of materials in Spanish and Chinese. Browse through their online listing of resources at www.sfenvironment.com and navigate to School Education, then Teacher Lounge. Borrowing library materials requires a fully refundable \$50 deposit. To arrange a time to visit their library or order materials through the mail, call the number above. For more information about SF Environment's programs, please see Chapters 2.1, 5.2, 6.1, 8.2, 10.1, and 10.3.

Wildly Successful Plants: Northern California, Pam Peirce, Sasquatch Books, Seattle, 2004.

This book includes a thorough exploration of 50 ornamental plants that have naturalized in Northern California--meaning that they grow practically untended in our gardens. This book is valuable for garden educators because these easy-to-propagate plants are common in school gardens. From it you will learn how to grow the 50 plants, design with them, make them more beautiful through the year, propagate them, and keep them in bounds. There is also a brief history of gardening in California, overall tips for ornamental gardening in our region, and a careful explanation of wildland weeds. Along with the practical information are the stories of how each of the 50 plants came to California and how each one got its name.

10.5 Information on Children's Health on School Grounds

San Francisco Department of Public Health – Children's Environmental Health Promotion Program

(Geographic restrictions apply. Please see below.)

Contact: Joe Walseth

Phone: 415-554-8930 x16

Email: joe.walseth@sfdph.org

Web: <http://www.sfgov.org/site/frame.asp?u=http://www.dph.sf.ca.us/>

The Central mission of Children's Environmental Health Promotion (CEHP) is the prevention of lead poisoning and the control of asthma. The Childhood Lead Prevention Program works in partnership with community and city agencies, landlords, and families to advocate for lead-safe homes. The asthma project reaches children and families most affected by asthma and enables them to maintain a healthy environment. The website listed above provides further information about lead poisoning/prevention as well as how to control asthma. In addition, the program produces a periodic report entitled "Director of Health's Report on the Comprehensive Environmental Lead Poisoning Prevention Program for the City and County of San Francisco" with recommendations for schools regarding reducing and eliminating lead hazards. Contact CEHP to request a copy of the report. Search the Department of Public Health's website for other environmental health information that may be useful to you. This program's services are ONLY available to San Francisco residents, but anyone can contact them for information related to children's environmental health.

10.6 Internet Resources for Green School Grounds

EcoSchool Design

Web: <http://www.ecoschools.com/>

This website includes extensive information about schoolyard ecology and links to related projects and resources around the world. Please see Chapter 1.2 for more information about this organization.

National Gardening Association – National/Regional Resource Directory

Web: <http://www.kidsgardening.com/resources/resource.asp/>

The National Gardening Association's website offers a searchable resource directory that is designed to assist schools with gardens. The directory lists regional and national school garden resources, such as grant opportunities, relevant books, free materials, relevant organizations, seed sources, etc. For more information about the NGA, please see Chapters 2.2, 2.3, 2.5, 2.7, 8.4, and 9.3.

San Francisco Green Schoolyard Alliance (SFGSA)

Web: <http://www.sfgreenschools.org/>

The SFGSA's website lists upcoming green schoolyard events, information and photographs from its past two green schoolyard conferences, and contact information for its like-minded member organizations. The SFGSA's website will also include an online version of this directory, as of Summer 2006. Please see Chapter 1.1 for more information about this organization.

11. Directory of Bay Area Green Schoolyards

In addition to the educational opportunities listed in the previous chapter, we recommend that you try to visit some other local green schoolyard projects to get a feel for the different types of schoolyard features that are possible—and to see how they function on a day to day basis. Go on a local green schoolyard tour! Call some of the schools below, make appointments to visit their schoolyards, and ask their coordinators or greening committee members to tell you about their work. There are many terrific projects to see throughout the Bay Area!

Please note: This chapter is currently limited to schoolyards in San Francisco. Later editions of this directory will include schoolyards in other parts of the Bay Area, as well. Please contact us if your school would like to be listed.

11.1 Green Schoolyards in San Francisco

Child Development Centers (serving preschoolers)

Junipero Serra Child Development Center

Location: 155 Appleton Street, near Holly Park Circle
Phone: 415-920-5138 Web: <http://www.alivinglibrary.org/>
Yard: chicken coop, edible garden, bird & butterfly garden

Las Americas Child Development Center

Location: 801 Treat Avenue, near 21st Street
Phone: 415-695-5746 Web: <http://growinggreenkids.org/>
Yard: small edible garden

San Miguel Child Development Center

Location: 300 Seneca Avenue, near San Jose Avenue
Phone: 415-469-4756 Web: <http://alivinglibrary.org/>
Yard: fruit tree orchard, garden art, edible garden, bird & butterfly garden, native plantings. Adjacent to James Denman's garden.

Tule Elk Park Child Development Center

Location: 2110 Greenwich Street, near Webster
Phone: 415-749-3551
Yard: green schoolyard, master plan, edible garden

Elementary Schools

Commodore Sloat Elementary School

Location: 50 Darien Way, near Ocean Avenue
Phone: 415-759-2807
Yard: edible garden, bird & butterfly garden, native plants, artwork, green house, compost, master plan

Cesar Chavez Elementary School

Location: 825 Shotwell Street, near 23rd Street
Phone: 415-695-5765
Yard: raised beds in front of school, murals, edible garden

E.R. Taylor Elementary School

Location: 423 Burrows Street, near Girard
Phone: 415-330-1530 Web: <http://growinggreenkids.org/>
Yard: edible garden, native plantings

Fairmount Elementary School

Location: 65 Chenery Street, near Randall
Phone: 415-695-5669
Yard: native plantings, edible garden

George Moscone Elementary School

Location: 2576 Harrison Street, near Treat
Phone: 415-695-5736
Yard: edible garden in raised beds

Grattan Elementary School

Location: 165 Grattan Street
Phone: 415-759-2815
Yard: native plantings, outdoor classroom, tree well

Harvey Milk Civil Rights Academy

Location: 4325 19th Street, near Diamond
Phone: 415-241-6276
Yard: edible garden raised containers, cob oven, shade structure

Jefferson Elementary School

Location: 1725 Irving Street, near 19th Avenue
Phone: 415-759-2821
Yard: small kindergarten garden

John Muir Elementary School

Location: 380 Webster Street, near Fell
Phone: 415-241-6335
Yard: edible garden at nearby Koshland Park. onsite: master plan for the yard, container plantings, native garden & worm bins

John Swett Alternative School

Location: 727 Golden Gate Avenue, near Gough
Phone: 415-241-6320
Yard: raised beds, edible garden

Jose Ortega Elementary School

Location: 400 Sargent Street, near Ramsell
Phone: 415-469-4726
Yard: raised bed edible garden at nearby Brooks Park

Lakeshore Alternative School

Location: 220 Middlefield Drive, near Sylvan
Phone: 415-759-2825
Yard: many garden areas throughout large school site: edible garden, artwork, native plantings, greenhouse, raised beds, flowers

Miraloma Elementary School

Location: 175 Omar Way, near Bella Vista
Phone: 415-469-4734
Yard: native plantings, edible garden

Monroe Elementary School

Location: 260 Madrid Street, near Excelsior
Phone: 415-469-4736
Yard: native plantings, edible garden, bird & butterfly garden

Sunset Elementary School

Location: 1920 41st Avenue, near Quintera
Phone: 415-759-2760
Yard: fruit trees, herb garden, native plantings, outdoor classroom

Tenderloin Community School

Location: 627 Turk Street, near Van Ness
Phone: 415-749-3567
Yard: rooftop garden, raised beds, edible plantings

Uiloa Elementary School

Location: 2650 42nd Avenue, near Vicente
Phone: 415-759-2841
Yard: large outdoor classroom, native plantings, dry creek bed, schoolyard plantings, raised bed edible garden

Willie Brown Academy

Location: 2055 Silver, near Revere
Phone: 415-695-5400
Yard: raised beds, edible garden, fruit trees

William L. Cobb Elementary School

Location: 2725 California Street, near Divisadero
Phone: 415-749-3505
Yard: wheelchair accessible pathways, nice garden signs, raised beds

Middle Schools

Luthur Burbank Middle School

Location: 325 La Grande Avenue, near Brazil
Phone: 415-469-4547 Web: <http://burbanksprouts.org/>
Yard: large edible garden

James Denman Middle School

Location: 241 Oneida Avenue, near San Jose
Phone: 415-469-4535 Web: <http://alivinglibrary.org/>
Yard: well established garden with large edible garden, bird & butterfly plants, garden art, master plan, water feature

Visitacion Valley Middle School

Location: 450 Raymond Street, near Elliott
Phone: 415-469-4590
Yard: large acreage, raised beds, drip irrigation, flowers

K-8 Schools

Alice Fong Yu Alternative School

Location: 1541 12th Avenue, near Lawton
Phone: 415-759-2764
Yard: large garden with raised beds on slope, native plantings, pond with solar powered pump, outdoor classroom

Rooftop School

Location: 500 Corbet Street, near Burnett
Phone: 415-522-6757
Yard: large established garden with raised beds, edible garden, shade structure, greenhouse, well developed env. education program

San Francisco Community School

Location: 125 Excelsior Avenue, near London
Phone: 415-469-4739
Yard: master plan, edible garden, native plantings, fruit trees, cob oven, greenhouse, artwork

Children's Day School (Pre-K through 8)

Location: Delores Street & 16th Streets
Phone: 415-861-5432 x321
Web: http://www.cds-sf.org/life_at_cds/campus.html/
Yard: mini-farm & garden with barnyard (chickens and sheep), outdoor classroom, herbs, murals, native plants, fruit trees, cob benches

High Schools

Ida B Wells High School

Location: 1099 Hayes Street, near Pierce
Phone: 415-241-6315 Web: <http://burbanksprouts.org/>
Yard: ornamental plantings, edible garden

About the San Francisco Green Schoolyard Alliance

Formed in March 2001, the San Francisco Green Schoolyard Alliance (SFGSA) promotes inclusive, community-driven processes that create and sustain integrated outdoor learning environments in San Francisco's public schools. SFGSA envisions a future in which each schoolyard operates in concert with its neighborhood and local ecology to foster academic achievement, environmental stewardship, creativity, and community building.

In order to realize this vision for schoolyards, SFGSA:

- Partners with community members, educators, students, public officials, and other stakeholders;
- Supports the integration of green schoolyards with student learning;
- Makes the case for green schoolyards based on research and best practice;
- Advocates for responsible public policy;
- Secures financial and volunteer resources; and
- Ensures the efficacy and sustainability of each green schoolyard.

SFGSA Member Organizations

Adopt-A-Watershed	Parents for Public Schools
Cobb Elementary School	Preparing the Ground
Coevolution Institute	Project OLE
Dept. of the Environment, City & County of San Francisco	Rooftop School
EcoSchool Design	San Francisco Beautiful
Friends of the Urban Forest	San Francisco Food Systems
Growing Green Kids	San Francisco Parks Trust
Haight Ashbury Neighborhood Council	San Francisco Planning & Urban Research Assoc.
Life Frames, Inc.	Trust for Public Land
Muir Elementary School	Tule Elk Park Child Development Center
Neighborhood Parks Council	The Watershed Project
Occidental Arts & Ecology Center	

SFGSA Endorsers

American Friends Service Committee
Strybing Arboretum

For more information about the SFGSA, please visit:
<http://www.sfgreenschools.org/>

References

We would like to thank the UC Botanic Garden for generously allowing us to include text and references from their excellent *East Bay Guide to Garden Resources* in this directory. References to our use of this material are listed below.

Endnotes

- ¹ This chapter introduction by Arden Bucklin-Sporer.
- ² This chapter on soil has been reprinted and adapted from the University of California Botanical Garden's terrific garden resource directory entitled, *East Bay Guide to Garden Resources* (Berkeley, CA: 2003), with permission from the UC Botanical Garden staff.
- ³ Ibid, section on seeds, p.12.
- ⁴ Ibid, section about Johnny's Seeds, p. 13
- ⁵ Ibid, section on plants, p.13.
- ⁶ Ibid, section on Berkeley Horticultural Nursery, p. 14.
- ⁷ Ibid, section on Plant sales, pp. 15-16.
- ⁸ Ibid, section on Pest control, pp. 23-24.
- ⁹ City of Oakland's Public Works Agency's definition from their website: http://www.oaklandpw.com/green_building/index.htm.