

**Native and Edible Gardens for Schools:
An Award-Winning Case Study
Tree of Life Nursery Workshop
Friday, August 27, 2010**

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LEARNING THROUGH NATURE PROGRAM
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**Concordia's School Garden Wins 1st Place Awards at State and National Level in June 2010!
Operation Wildflower: Outdoor Classrooms ----HOW DID WE DO IT? WHERE DID WE BEGIN?**

DREAM BIG...BUT START SMALL...Think in PHASES

PLANNING THE SCHOOL GARDEN

Step 1: DEVELOP THE GARDEN CONCEPT OR THEME – Butterfly/Metamorphosis Garden – 2nd Grade Focus; name your program (helps in grant writing too!)

Step 2: IDENTIFY LEADERSHIP AND SUPPORT SYSTEM – Reach out to the Garden Club. As a Club member/parent, I took the lead with the San Clemente Garden Club as my support system.

Step 3: SEEK ADMINISTRATIVE APPROVAL – From the Principal, Key Teaching Staff and the PTA.

Step 4: PROPOSE SITE OPTIONS – Redevelop the existing neglected garden area.

Step 5: IDENTIFY GOALS AND WAYS TO LINK THE GARDEN TO CURRICULUM – Encourage students to appreciate nature and explore scientific discovery through hands on garden projects tied to California educational science standards by grade.

Step 6: DESIGN THE GARDEN -Determine which grade(s) will plant directly in PHASE 1; how many students (2ND grade; 120 students)

Step 7: IDENTIFY SUPPLIES AND FUNDING NEEDS – Secure initial funds from internal sources (San Clemente Garden Club matched by PTA, \$300 each)

Step 8: PLANT THE GARDEN – A few volunteers planted the initial sustaining portion of the butterfly garden over Thanksgiving week; with caterpillar donations from fellow butterfly gardeners, students had an instant butterfly garden complete with 3 kinds of caterpillars!

Step 9: DEVELOP TEACHING MATERIALS AND DESIGN GARDEN SCIENCE PROJECTS - Reference school science books and research various online sources for project ideas. Make a master binder for teachers to reference and share for self-discovery and reinforce class discussions.

Step 10: MAINTAIN AND SUSTAIN THE GARDEN – Develop a volunteer base (collect emails) and communicate to families through monthly garden newsletters; develop a regular monthly Workday after school and recognize volunteering students through Volunteer Service Awards.

Step 11: KEEP DREAMING AND EXPANDING THE GOALS AND WAYS TO REACH MORE STUDENTS! The “voluntary” project grows naturally as more teachers “opt In” and they continue to incorporate the garden into their classroom instruction. Parents and grandparents get enthused with the response from their children! Standardized test scores begin to reflect the increased interest in science!

ENVIRONMENTAL EDUCATION

POLLINATOR GARDENS IN SCHOOL: Plants are at the bottom of the food chain, and native plants are a primary component of healthy ecosystems. Just as edible plants are important for human health and survival, native plants are equally necessary to other forms of life. Native plants help pollinator populations survive and thrive, which in turn help pollinate edible crops.

LEARNING THROUGH NATURE CURRICULUM

PHASE 1: 2008-2009

Kindergarten – Metamorphosis Garden & Vegetable Seed Garden

~Volunteers planted the initial sustaining butterfly habitat and teachers/parents assisted students with starting veggies by seeds in the ground in April in existing bed and barrels.

2ND GRADE – Metamorphosis/Pollinator Garden

~Seed Starting in Cups – grown indoors using host/nectar plant seeds

~Planting in the Garden – seedlings and nursery plants (1 or 2 small plants per student)

~In-Class Habitats – raising Painted Lady Butterfly Caterpillars – metamorphosis instruction

~Seasonal Caterpillar Talks in the Garden

3rd GRADE – California Friendly Butterfly Habitat

~Seed Starting in Cups – Milkweed and Other Host Plants.

~Focus Instruction on How Plants Adapt to the Environment – (drought tolerant) additional fieldtrip to Casa Romantica Cultural Center & Gardens – grant by the Water Authority (*includes Native American plant uses and examples).

~Planting in the Garden – the redeveloped garden with high visibility near the Administrative Office – CA natives and drought tolerant plant selections. – OPERATION WILDFLOWER: OUTDOOR CLASSROOM Award Winner 2010!

~Wildflower Life Cycle- instruction and seed collecting in June.

4th GRADE – Do the Rot Thing! Worm Composting (classroom bins)

~Instruction given by volunteer WORM LADY (Diane Cheek) – retired local elementary school teacher.

~Students learn to reduce, reuse and recycle in class.

5th GRADE – Save A Drop! Rainwater Harvesting

~Students painted/decorated 3 recycled food quality plastic drums (1 per class; 24 students participated as art contest winners)

~Barrels were installed in the 2nd Grade butterfly garden where water was diverted from the nearby portable building rain gutter.

~A water conservation and barrel lesson was given by me to all 5th grade classes (including a EPA Kids *WaterSense* Quiz).

LEARNING THROUGH NATURE CURRICULUM
PHASE 2: 2009-2010
(in addition to Phase 1 Curriculum)

Kindergarten/1ST Grade Garden Expansion – NEW Veggie Seed Garden and 5 Senses Butterfly Habitat Garden
(built by 30+ Eagle Scouts, parents, students, etc. over two or more Saturdays)

~800 sf garden including (4) 9ftx3ft raised beds and (1) 5ftx3ft bed; (3) beds were planted in veggie seeds by (100) kindergarten students with teachers/parents assisting/ organizing.

~(1) of the 9ftx3ft beds was planted by volunteers as a Sustainable pollinator habitat.

~perimeter beds were planted by volunteers as a Sustainable 5 senses butterfly habitat (drought tolerant and/or natives)

~Also includes a story circle

~Also includes 4 rain barrels painted by 5th graders

3rd GRADE Garden Expansion - NEW Outdoor Classroom - California Friendly Butterfly Habitat & Native American Garden *(built by 20+ parents, students, etc. over two Saturdays)*

~Nearly 500 sf garden including (4) 8ftx10ft raised beds that were planted in CA native/Native American and drought tolerant habitat plants by (120) 3rd grade students as their NEW outdoor classroom, located just outside their classrooms!

~Sustainable CA Natives to remain in middle/interior of each bed, with students plant seedlings in on perimeter each year.

~Additional garden instruction given on Native American plant uses.

5th GRADE Rainwater Harvesting – Project expanded to include all (100) 5th grade student in the Art of the recycled barrels.

~Students also received their Water Conservation/Barrel Lesson from the City of San Clemente's Water Conservation Expert (Nathan Adams), including the EPA WaterSense Quiz.

SCHOOL GARDEN BUDGET

Phase 1 Garden: 2008-09

\$250 Initial Grant from San Clemente Garden Club (to start butterfly garden within existing 300sf beds – plants, compost)

\$500 Initial Budget Approved by PTA (for educational programs)

\$750 Additional Funds from SCGC for 2008-09.

\$500 Increase in PTA Budget for 2008-09 (for educational programs)

\$2,000.00 Total Operating Budget

Phase 2 Garden: 2009-10

\$900 Grant from SCGC – Operational Expenses

\$900 Budget Approved from PTA – Operational Expenses

\$500 Grant from City of San Clemente’s Water Conservation Program – funding 5th grade rainwater harvesting project (year 2)

\$2,300 Grant from Captain Planet Foundation for K/1st Grade and 3rd Grade garden expansion projects

\$4,600.00 Total Operating Budget w/Expansions

Phase 3 Garden: 2010-2011

\$900 Grant from SCGC

\$900 Budget Approved from PTA

\$500 Grant Requested from City of San Clemente’s Environmental Education Programs – pending decision (for rainwater harvesting – year 3)*

\$1,100 Grant Awards - National Garden Clubs

\$220 Grant Awards - California Garden Clubs Inc.

\$3,620.00 Total Operating Budget*

VOLUNTEER NUMBERS

Year 1:

- (23) students on Workday(s) + sibs; 11 students on average participating with adults
- (11) volunteer waterers and/or Club, parent volunteers for projects; average of 2-3 Club members per activity.

Year 2:

- (56) students on Workday(s) + sibs; 5-10 on average participating with adults
- (27) volunteer Summer waterers; 17 club/17 regular parent volunteers for projects; average of 3-5 Club/parents per activity.

COMMUNITY PARTNERS

San Clemente Garden Club

City of San Clemente

Nathan Adams, City of San Clemente

Diane Cheek, The Worm Lady

Nurseries: Miramar Wholesale Nurseries; Plant Depot; Tree of Life Nursery

FUNDING RESOURCES

- www.grantwrangler.com
- www.csgn.org
- www.kidsgardening.org
- <http://pollinatorlive.pwnet.org>
- <http://www.greeneducationfoundation.org/index.php>
- www.captainplanetfdn.org
- Lowes: <http://www.toolboxforeducation.com/>

SCHOOL GARDEN RESOURCES

- California School Garden Network
<http://www.csgn.org/>
 - Gardens For Learning (downloadable book)
 - Gardening Kids: <http://www.kidsgardening.org/>
<http://www.csgn.org/images/pdf/GFLBook.pdf>
 - PollinatorLIVE (EXCELLENT! – Schoolyard Gardens)
http://pollinatorlive.pwnet.org/gardening/howto_schoolyard.php
 - EPA Environmental Kids Club
<http://www.epa.gov/kids/>
 - MacMillan Science (text books for CapoUSD)
<http://activities.macmillanmh.com/science/ca/>
 - National Wildlife Federation: www.nwf.org
 - MonarchWatch: www.monarchwatch.org
 - Journey North: www.journeynorth.org
 - North American Butterfly Assn: www.naba.org
 - California Garden Clubs, Inc.: <http://californiagardenclubs.com>
 - San Clemente Garden Club: www.sanclementegardenclub.com
 - National Garden Clubs: www.gardenclub.org
 - National Environmental Education Week
http://www.eeweek.org/water_and_energy_wise

Many of our earliest connections to nature began in yards, gardens, or parks, marveling at animals and plants, digging in the soil, and smelling flowers. Childhood stories connected these simple pleasures to our emotions by opening our eyes to the mystery and importance of gardens and the creatures, real and imagined, that lived there. Nature is a complex world of intricate, living connections. Memories are created by rare and stimulating moments when we connect with the natural world. *ZOONOOZ Magazine, May 2010 (San Diego Zoological Society; Daniel Simpson, Associated Horticulturalist, San Diego Zoo.)*