Designing, Creating, and Teaching in Schoolyard Gardens

Presented by: Tamberly Conway, Martin Bomar, and Michael Hill

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Tamberly Conway
Conservation Education Coordinator
U.S. Forest Service
National Forests and Grasslands in Texas
PollinatorLIVE

U.S Forest Service/partnership program

Using education and action to address changing landscapes and pollinator decline

Working to promote landscape scale restoration
Gardening

– Schoolyard gardens
– Creating a garden
– Native plants
– How to start a garden
– Pollinator friendly practices
  • Celebrating Wildflowers

http://pollinatorlive.pwnet.org/gardening/howto_creating.php
How many of you have already created a garden?

√ Yes  X No
• Teacher resources
  - Lesson plans
  - Citizen science
PollinatorLIVE

• Provides students and teachers with a fun, interactive way to learn about pollinators

• Teachers may use pollinators and their habitats as a resource to meet science standards

• Get students, educators and communities involved in citizen science

• Become knowledgeable, engaged and active conservationists
Buzz in for our next PollinatorLIVE webcast and broadcast

"Nature's Partners: Pollinators, Plants, and People"

Wednesday, April 13, 2011

Lady Bird Johnson Wildflower Center

Austin, Texas
Supporting Partners

- USDA Forest Service
- US Department of Agriculture: NRCS, NIFA, FSA
- Partners in Resource Education
- US Fish and Wildlife Service
- American Forest Foundation: Project Learning Tree
- American Public Gardens Association
- Discover Life
- Lady Bird Johnson Wildflower Center
- Monarch Watch
- National Environmental Education Foundation
- National Garden Clubs, Inc.
- National Science Teachers Association
- National Wildlife Federation
- North American Pollinator Protection Campaign
- Prince William County Public Schools
- Smithsonian Institution: National Zoo, Natural History Museum
- Wildlife Habitat Council
Let’s pause for questions from the audience
An Earth Day Garden at
Ashland Elementary School, Manassas, VA
Our Outdoor Learning Adventure!

- Inquiry Based Learning -
  - VA Science SOL’s -
  - Student Involvement -

Martin Bomar, Parent Volunteer
USDA-Farm Service Agency
PART 1

A poll about Your School...

To create or enhance your school garden, which are the most important elements to its success?

A Space

Teacher Support

Parent Volunteers

Enhance Curriculum

Custodial Support

Student Interest

Administration Support
Inquiry Based Learning

- Active Questioning
- Real-world materials
- Staff and Parent Commitment
- Apply Skills
- Enhance Indoor Teaching
Your School...??

To create or enhance your school’s garden, what are your instructional goals?

- Grow Food
- Pollinator Habitat
- Recreation
- Break Area
- Fish Pond
- Conduct Experiments
PART 2

Supporting Science SOL’s

Academic **content** for essential components of K through 5th grade science curriculum:

- Earth Science
- Biology
- Chemistry
- Physics
Supporting Science SOL’s

Specific **content strands** are included in Elementary School science SOL’s

- Scientific Investigation
- Force, Motion, Energy
- Life Processes
- Resources Management
- Patterns, Cycles, and Change
- Living Systems
- Interrelationships in Earth Systems
- Matter
Supporting Science SOL’s
Garden instructional areas to support Science SOL concepts:

- Food Production
- Pollinator Garden
- Recycling
- Outdoor Classroom
- Weather Data Station
- Fruit Production
- Water Garden
- Sensory Garden
- Recreation and Reflection
Let’s pause for questions from the audience
Food Production
Pollinator Habitat
Fruit Production
Water Garden
Recycling and Composting
Weather Data Recording
Sensory Garden
Outdoor Classroom
Let’s pause for questions from the audience
PART 3

Your School...??

Student and Parent Involvement: Connecting Service and Learning

Does your school have a volunteer or service-based student club?

A  YES   B  NO   C  Not Yet!
Student Involvement:
Connecting Service and Learning
Student Involvement:Connecting Service and Learning
Student Involvement:
Connecting Service and Learning
School Garden

- Benefit School and Community
- Connect
- Promote Health, Wellness
- Foster PRIDE
Final thought...

Grow a garden...

...Grow a Child
Bailey’s School, Fairfax VA.
3 Gardens Comparison
Three Spaces:

1. Planting Beds – various contributors
2. Existing courtyard garden – developed with USFS
3. New Pollinator Garden – developed with USFS
Planting Beds -- southwest corner:

Raised beds used by youth for crop planting, edibles
- Working
- Lots of traffic

Components:
- Raised beds
- Pathways
- Concrete learning platform
Planting Beds -- southwest corner:

- Intensively used
- Area cannot be secured
- Work space, not aesthetic
- Large, flat area
- Subject to change in use
Courtyard Garden – center of school:

- Intensive installation
- Long-term project
- Secured space
Courtyard Garden – center of school:

Components:
- established plantings
- Unique features
- Pond = life
- high quality materials
Courtyard Garden – center of school:

- Center of school
- Intensive installation
- Expensive materials
Courtyard Garden – center of school:

- Pond = professionals!
- controlled access
- Connected to classroom
Pollinator Garden – at southeast corner of school building near temporary classrooms:

pollinators, habitat, nature observation

- Intensive installation vs. security issues
- Art fence
- Heavily revised design

Components:

- Learning platform
- Defined planting areas
- Border fence
- Trellis, fountain more rain barrels (pending)
Pollinator Garden – at southeast corner of school building near temporary classrooms:

- Foot traffic
- Area cannot be secured
- Installation of art fence, rain barrels
- Future installations – approvals?
Let’s pause for questions from the audience
Site Questions:

How many of you:

- Have an accurate map/drawing/aerial photo of your proposed site – or know where to get one?
- Know which direction is north on your site?
- Have a drawing of the proposed garden at a measurable scale?
- Have samples of some of the materials you will use in your school garden?
Concept Development

The Fibonacci Pattern is found at every scale in the natural world, from small to large.
Schematic Design

Multiple levels with wooden trellis; extended pathway across concrete walk, into lawn
Schematic Design

Multiple levels with wooden trellis; extended pathway across concrete walk, into lawn
This 3-D model shows the construction based on the drawing on the last slide.
Design Development

The final construction was vastly simplified – cost, ease of construction, safety

Think about the drawings you just saw. What has been taken out of the final job?
Remove turf and install wood base – 6x6 landscape timbers
Construction

What seemed like a small area took several cubic yards of fill dirt and gravel to fill
Install filter fabric before installing metal edging and surface pattern.
Construction

Students were very excited during the construction process.
Students take responsibility for installing plants
Students found larval and mature butterflies in the 1st year – 25 wild butterflies banded.
Construction

Detail of platform – levels, surface pattern
How many years did it take teachers to collect enough pickets for the fence?

a) 18 months  

b) 5 years  

c) 3 years
Let’s pause for questions from the audience
Process Questions:

How many of you:

- Have at least 2 other sources of material/funding support?
- Have an activity planned to involve students in designing the garden?
- Have accessed professional assistance for construction or design? Pro-bono service is required of most professional associations!
- Know what offices/officials will need to approve your garden installation? You may need approvals from officials besides school managers.
Next Phase

Revised trellis – 10-ft. tall steel posts typical of cyclone recreation fence, tennis courts

Why use a mundane material like this?
Next Phase

Stone fountain, pump attached to solar panel

What lessons can this installation teach?
Next Phase

Proposed design
Core messages

• Determine what kind of help you need and get it
• Understand the site – what’s above and below ground
• Understand necessary approvals
• Simplify design, construction and materials
• Clear design focus – 1 to 3 key elements
• Manage time frame – phases show progress
• Involve students, teachers and parents
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