PollinatorLIVE: Schoolyard Gardening Basics

Wednesday, March 24, 2010
6:30 p.m. - 8:00 p.m. Eastern time
Supporting Partners

- USDA Forest Service
- US Department of Agriculture: NRCS, NIFA
- 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
Pollinators Welcome!

Learning through nature-based techniques - Create your own Schoolyard Habitat
Educational Challenges Today

- 80% to 90% of students opt out of science.
- 1/3 to 1/2 of urban students “drop out.”
High-stakes Testing

- Accountability
- Measurement
- Comparison
A New Challenge:
The “Indoor” Child
Poll Question

During an average school week, how much time do your students spend outside?

A: 0-15 minutes
B: 15 minutes – 1 hour
C: 1-3 hours
D: 3-6 hours
E: More than 6 hours
“Indoor Child”

- 8 hrs/day “wired up”*
- Over 50% reduction in outdoor time
- Relationship to Attention Deficit Hyperactivity Disorder (ADHD)
- American Academy of Pediatrics recommendations for unstructured time
  - *Kaiser Family Foundation 2010
Environmental Educators Observe that Participating Students

- Are motivated
- Learn in context
- Use all their “intelligences”
- Apply knowledge
Environmental Education (EE)
Advantages for Students

• Inquiry based & problem-solving

• Adapts to individual skills and abilities

• Explores local community and natural settings.
Let’s Pause for Questions
Schoolyard Habitats....

- Created and supported by students and teachers
- On-site opportunity for learning
- Re-designing school grounds as natural areas and encouraging wildlife
- Variety of National, State and Local Organizations that can help
Yes or No...

Does your school or educational setting currently have a garden or other outdoor learning space?

*Place your stamp in the appropriate box...*

- YES
- NO
Schoolyard Habitats Goals

- Develop and improve **wildlife habitats** on school grounds for educational purposes as an **outdoor laboratory**
- Enhance student **motivation for learning** and promote student **achievement** in all subject areas
Schoolyard Habitats Goals

• **Strengthen relationships** among students, teachers, parents, community members, and volunteers

• Build awareness, knowledge, skills, values, and sense of empowerment that promote **stewardship** of the earth
Transform Schoolyards

FROM THIS

→

TO THIS
Transform Schoolyards

FROM THIS ➔ TO THIS
Schoolyard Habitats For Pollinators
Poll Question

What is your favorite group of pollinators?

Vote for one of the following:

A: Butterflies
B: Beetles
C: Bees
D: Birds
E: Bats

Note: this list is not comprehensive—what’s missing type in the chat?
About Pollination

• Plants are pollinated by the wind and by animals
• Some pollinators collect pollen intentionally, such as bees (for food), but others, such as butterflies and birds, transport pollen from one flower to another unintentionally because the pollen sticks to their bodies.
• 75% of flowering plants depend on animal pollinators
About Pollinators

Major groups of pollinators:

- Butterflies and moths
- Bees—honeybees & native bees
- Beetles
- Wasps
- Ants
- Flies
- Birds—hummingbirds
- Bats—nectar eaters

Not just insects!
Create a Place for Pollinators

- Know your local pollinators—what will attract them to your garden?
- Design your outdoor classroom with pollinators in mind
- Observe your wildlife visitors
Questions about what has been covered so far?
All Wildlife (including pollinators) Need...

- Food Sources
- Water Source
- Cover
- Places To Raise Young
- Sustainable Gardening Practices
Provide Food

Use of Native Plants for local and migratory wildlife—what they’re adapted to

(foliage, nuts, fruits, seeds, sap, nectar, pollen, roots)

Contact your local native plant society, download Pollinator Partnership ecoregional planting guides at www.pollinator.org or visit Lady Bird Johnson Native Plant Database at www.www.wildflower.org/plants/
Examples: Plants for Native Bees

- Digger Bee
- Coneflower
- Milkvetch
- Mason Bee
- Lemon Bee Balm
Examples: Plants for Attracting Butterflies

- Native herb: Yarrow
  Also dill, parsley, fennel
  ![Black swallowtail](image)

- Dutchman’s pipe, other pipevines
  ![Pipevine swallowtail](image)

- Milkweeds
  ![Monarch](image)
Provide Water

- Bird Bath
- Lakefront
- Stream
- Pond
- Coast
- Water/Rain Garden
- Riverfront
- Puddling Area
- Wetland
- Spring
Provide Cover

- Wooded Area
- Bramble Patch
- Ground Cover
- Log Pile
- Roosting Box
- Dense Shrubs/Thicket
- Brush Pile
- Rock Pile/Wall
- Meadow/Prairie
- Water/Rain Garden
- Burrows
- Evergreens
Provide Places to Raise Young

- Mature trees
- Meadow/Prairie
- Nesting Box
- Dead Trees/Snags
- Dense Shrubs/Thicket
- Water/Rain Garden
- Pond
- Burrows
- Host plants for caterpillars
- Wetland
Use Sustainable Gardening Practices
Breakout Session

In your small group, discuss:

What elements of a habitat (Food, Water, Cover, Places to Raise Young) do you already have on your school grounds?

Do you use any sustainable gardening practices?

Share with each other for 7 minutes
So, after your discussion – What Questions do you have?
How To Begin?
Seven Easy Steps to Get Started

1. Identify a team to help in the habitat planning and implementation
2. Educate others in the school including administration about the program and opportunities for learning
3. Begin to map and plan your outdoor classroom
4. Fundraise or receive donations
5. Organize a planting day
6. Certify your habitat
7. Celebrate your success
Conclusion
Resources at your finger tips

Few websites to get you started on building your schoolyard habitat and supporting pollinators and other wildlife.

http://pollinatorlive.pwnet.org/index.php
www.nwf.org/schoolyard
www.eco-schoolsusa.org
www.kidsgardening.org
www.pollinator.org
www.plt.org
www.fs.fed.us/wildflowers/pollinators
Herndon, VA
The Mission of the National Wildlife Federation

*Inspiring Americans to protect wildlife for our children’s future.*

™
Beginnings

• In 2003 the PTA and several staff members formed a Garden Committee.
• The goal was to use an available open space to create an outdoor garden/science lab to support the curriculum.
• Several local businesses and garden clubs were contacted for help with this endeavor.
Before
After
Funding: Find Businesses and Clubs to Help - Reward Their Support

• Beitzel Fence
• Meadows Farms Nurseries
• Occoquan Forest Garden Club
• Smoot’s Lumber
• Ross Tree Service
• Exxon Mobil Corporation
• Starbuck’s Coffee
We recognized them on our sign which was also donated.
Start with a Definite Plan and Goals
9,700 Feet of Teaching Garden Space!
First Volunteer Workday
First Day
First Day
Second Volunteer Day
Second Day
Our Garden was dedicated on June 5th, 2003
Students Celebrate the Opening of the Garden
Upkeep During the Year

- September/October Harvest Time
- October/November Clean up and Prep for Spring Compost pile established
- Dec-March Garden Rests
- March/April Prep for spring. Classes plan their parts of the garden. (Indoors: plants started) Bulbs Bloom
- April/May Planting and Weeding, Herb Gathering
- June – Aug Summer weeding, watering, and harvesting. The garden becomes a community food source
Questions?

Let’s Pause for Two Minutes for Questions about getting started, funding, or upkeep?
The Curriculum Theme Gardens

- Different theme gardens for each grade level.
- Allows students to have new and different experiences each year.
- Aligns with the Virginia Standard of Learning requirements.
- Is a hands on tool to enhance the students education.
Theme Gardens by Grade Level

1st – ABC Garden
2nd – Market Garden
3rd Grade Butterfly Garden
4th – Herb Garden
K – Down on the Farm
5th – Pond, Compost and Rock Garden

Prince William County Public Schools
Providing a World-Class Education
Students will study plants grown on a farm and the germination, growth & life cycles of plants.

Ms. Links class planting watermelon.

Corn
Sunflower
Watermelon
Pumpkins
Kindergarten Garden - Down on the Farm

Over the summer scarecrows watched over the corn.

The sunflower house includes a welcome mat, table, chairs and toys for the students to enjoy.

Over the summer scarecrows watched over the corn.
• The garden contains plants with names in alphabetical order.

• This garden is used to introduce students to language arts, the study of plant parts, and life cycles of plants and animals.
First Grade - ABC Garden

Our Garden Gnome is setting an example by practicing his ABC’s in the garden.

Student’s artwork is displayed throughout the garden.
Second Grade - Market Garden

- This garden contains plants that are used for food and can be sold in local farmer’s markets and grocery stores.

- This garden is used to teach students the relationship of plants, economics and the effects of plants on market economies.
Second Grade - Market Garden

• Fruit & Vegetables grown in this garden in 2008:
  – Tomatoes - Cherry, Grape, Roma, Early Girl & Better Boy
  – Cucumbers - Lemon, Dill and Regular Cucumbers
  – Lettuce – Iceberg, Bibb, Leaf
  – Squash – Yellow & Zucchini
  – Beans – Bush & Pole
  – Onions
  – Peppers
  – Radishes
  – Beets
  – Cabbage
  – Cantaloupe
  – Strawberries
Second Grade - Market Garden

You could sit in the bean teepees and watch the garden grow.
Third Grade –
Butterfly, Bee & Bird Garden

- This garden is filled with plants that can be food for butterflies, bees or birds.
Third Grade –
Butterfly, Bee & Bird Garden

Prince William County
PUBLIC SCHOOLS
Providing A World-Class Education
Fourth Grade Herb Garden

• This garden contains herbs that were grown and used by early Americans in Colonial Virginia.
• This garden also contains a variety of other herbs for students to study and compare/contrast to Colonial Virginia herbs.
Fourth Grade - Herb Garden
Fifth Grade
Pond, Rock & Compost Garden

- This garden represents a pond habitat, natural rock found in Virginia and the natural process of composting.
In 2008 we moved the compost bin. We planted potatoes where the bin used to be, and Wow, did the potatoes grow!!
Themes by Grade Level

Let’s Stop Two Minutes for Questions about garden themes
Garden of Knowledge Thrives

• Garden continues to be an active outdoor classroom
• Teachers, students, and volunteers maintain it, especially in summer
• Designated Roots and Shoots Garden
Our Garden in March 2008
Our Garden in July 2008
Our pole beans grow on poles and allows the students to sit inside the teepees and watch the beans grow during the early summer.
Summer Garden Care

- Families adopt weeks
- Trade food for help
- Over abundance: share with shelters
- Volunteers from gardening community
- Business partnerships send employees to help or pay for professional help
- Girl Scout/Boy Scout/4-H Projects
These are only a few of the types of vegetables our summer volunteers have harvested:

- Cherry Tomatoes
- Watermelon
- Cucumbers
We are also a Roots & Shoots Garden

- In 1985, the first Roots and Shoots Garden was established at the Elizabeth Gamble Garden Center in Palo Alto, California. Students from the nearby Walter Hays Elementary School came each week for their garden class.

- In 1995 the Blue Ridge Garden Club in Lexington, Virginia asked to sponsor a similar garden program, and the faculty at Waddell Elementary School asked to have it established on their school grounds.

- In 2003 a group of parents and faculty came together to create a Roots & Shoots Garden at Signal Hill Elementary.
What is a Roots & Shoots Garden?

• Young children, known as Shoots and older community volunteers known as Roots, grow vegetables, flowers, and herbs together as “garden friends”, especially during the summer months when the garden needs the most help. Here we create a lasting link between the young and old, between the community and the school.
There is a garden in every childhood, an enchanted place where colors are brighter, the air softer, and the morning more fragrant than ever again.

Elizabeth Lawrence 1910 - 1985

This garden is a gift to our future.
Signal Hill Elementary School
Garden of Knowledge
Register at

www.pollinatorlive.pwnet.org
National Science Teachers Association
Dr. Francis Q. Eberle, Executive Director
Zipporah Miller, Associate Executive Director
Conferences and Programs
Al Byers, Assistant Executive Director e-Learning

NSTA Web Seminars
Paul Tingler, Director
Jeff Layman, Technical Coordinator

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