School Garden Workshop

FAIRCHILD TROPICAL BOTANIC GARDEN
Exploring, Explaining and Conserving the World of Tropical Plants
Why start a school garden?

Beauty and Aesthetics

Physical Benefits
- Exercise
- Nutrition

Social Benefits
- Life skills – responsibility, cooperation…
- Cross-generational/cultural learning

Intellectual Benefits
- Direct experience vs. textbook learning
- Multiple learning styles, ‘education equalizer’

Eco-literacy/nature-deficit disorder
- Positive experience/attitude about nature
First Steps

_Dream big, but start with a plan that is manageable!

• **Brainstorming session**
  – Map out initial vision and goals
  – Involve students, teachers, staff…

• **Identify resources/challenges**
  – Space
  – Funding
  – Support

• **Administrative approval**
  – Garden as an asset and teaching tool
  – Proposed plan of action; list of potential key players/supporters
Developing a Team

- Involve administrators, teachers, staff, parents…and students!

- Create network of local resources
  - Master gardeners, garden clubs, garden supply store, landscapers, sponsors, etc…

- Different people, different skills
  - Construction, art/design, horticulture, nutrition, cooking, fundraising, communications…

→ Diversity of your team will be mirrored in the beauty of the garden!
Developing a Theme/Mission Statement

• What is the purpose of the garden?
  – Aesthetic, memorial, job training, wildlife habitat, edible…

• Theme Gardens
  – Native, medicinal, storybook, herb, ABC, rainbow, global/cultural…

- Use the garden as an extension of the classroom!
Site Selection Criteria

• **Sunlight** – min. 6 hours ideal

• **Water** – access, irrigation system

• **Drainage** – avoid slopes/low spots

• **Visibility** – beauty, safety, prevent out of sight/out of mind

• **Accessibility** – during class period, for students with special needs
Other Elements to Consider

- Seating, tables, meeting area
- Signs, interpretation
- Tool storage, shed
- Compost area
- Security, safety
- Room to grow
- Availability into the future…
Raised Bed Gardening

- **Materials:**
  - Lumber, concrete blocks, unframed
  - Ideal soil depth – 8-12”

- **Benefits:**
  - Best option for SFL soils!
  - Can optimize/customize soil type
  - Less weeds
  - Less soil compaction
  - Better drainage
  - Better root development
  - Can even be built on asphalt
Container Gardening

- Pots, barrels, tubs, tires...

**Benefits:**
- Small spaces, indoors
- Portable
- Accessible
- Can control soil type
- Reduces weeds
- Prevents trampling, compaction

**Challenges:**
- Watering/fertilizing can be trickier!
Creating the Layout

• **Size of beds and paths**
  – Beds not too big to reach
  – Paths big enough for students, wheelbarrow, wheel chairs…
  – 3’ rule of thumb

• **Designs**
  – Great opportunity to involve students, incorporate math and art lessons
  – Research – seed catalogs, garden design magazines

• **Recommended steps**
  – Site analysis
  – Create base map
  – Design overlays on tracing paper
Example Designs
My idea of the perfect garden is....
Sample Designs
Vision – Design – Reality!
Square Foot Gardening
Working with Space You Have!
Colorful Containers
Preparing the Soil

• Clearing the area
  – Remove sod, rocks, weeds
  – Layer of cardboard or newspaper

• Adding soil
  – Types of commercial soil
  – Ingredients/amendments
  – Difference between compost and mulch

  – Soil test
Healthy Soils, Healthy Plants

- Feed the soil, let the soil feed the plants
- Soil as living environment
- Organic matter is crucial
  - Improves soil structure
  - Optimizes aeration/drainage
  - Feeds soil organisms
- Micro-organisms
  - 1st link in food chain
  - Decompose organic matter to make nutrients available
Composting

• Can reduce or eliminate the need for fertilizers

• Critical elements
  – Balance of ‘green’ and ‘brown’
  – Moisture, aeration

• Ready when it looks like soil, approx. 3-6 months
• Work into soil, at least 1 inch deep
Composting Systems

Types of bins -

Stages -
Vermicomposting

- Red wigglers (*Eisenia fetida*)
  - 35.00/lb = 1000 worms
- Shredded paper base
- Optimum temp 60-75ºF
- Moisture, aeration, drainage
- Can apply as compost or liquid
- Fertile Earth Foundation
Compost
Preparing for Planting

• Planting calendar
• Plant Selection
  – opportunity for student research
  – right plant, right place
  – growth requirements
  – size at maturity
• Planting Day
  – Invite sponsors, community, media, etc
Planting

• Seeds or seedlings?
• Start in pots or in ground?

• Planting depth
  – 1-2x diameter of seed

• Thinning, transplanting
  – When approx. 6 inches

• Saving seeds
Caring for Plants

- Watering
  - Overhead and drip irrigation
  - Recycled bottle reservoirs
  - Rain barrels
    - Miami-Dade Extension Service

- Fertilizing
  - Start with lots of organic matter
    - Compost!
  - Fertilizer products
    - Organic fertilizer products
    - Liquid fertilizer – 1-2 x per month
    - Slow release fertilizer – 1-2 x per year
Garden Pests

- Grass hopper
- Tomato hornworm
- Garden snail
- Aphids
- Mealy Bugs
- White Flies
- Weevil
- Thrips
- Scale
<table>
<thead>
<tr>
<th>Garden Friends</th>
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<tbody>
<tr>
<td>Lady Beetle</td>
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<tr>
<td>Lacewing</td>
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<td>Preying Mantis</td>
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<td>Bee</td>
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<td>Stink Bug</td>
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<td>Syrphid fly</td>
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<td>Big Eyed Bug</td>
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<tr>
<td>Garden spider</td>
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Natural Pest Control

- Horticultural Oil
- Neem Oil
- Insecticidal Soap Spray

Home Recipes
- Dish soap – 1-3 tsp per gallon water
- Cooking oil – 2 tsp. per cup of water
- Garlic – 10-15 cloves in oil or water
- Hot pepper spray – ½ cup with 2 cups water
- Coffee grounds
Gardening for Wildlife

• School gardens as important ‘corridor’ for wildlife
• Encourage wildlife in your garden:
  – Don’t spray pesticides
  – Provide water source for butterflies and birds
  – Provide native plant sources (host/nectar plants)
Integrating the Garden into the Curriculum

Garden Based Learning

- Multi-sensory, inquiry based, active discovery
- Appeals to multiple learning styles
- Provides many cross-curricular connections
- Provides a real life context
- May also provide important *unstructured* time for reflection, observation, wondering…

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*Images of children engaging in various garden activities.*
• **Science** – plant growth requirements, weather, insects, soil, decomposition, adaptations, health and nutrition

• **Math** – calculations, comparisons, measurements, geometry, graphing, monetary values

• **History/social science** – ethnic/cultural uses of plants, history of agriculture and growing practices, geographical origin of plants, economics of agriculture

• **Language arts** – vocabulary, creative stories, poems/haikus, journal, newsletter, research paper

• **Arts** – drawing, photography, interpretive signs, mural, plant press, garden crafts

• **Garden Activities** – drama, music, dance, story-telling…
Fundraising

• Create wish list, identify specific needs
  – Donation request letter

• Raising money
  – Selling produce, flowers, garden crafts…
  – bake sale
  – raffle/auction

• Engage your community, tell your story
  – Parents, businesses, local politicians, media…
  – Newsletter, flyers

• Additional resources and grant opportunities
  – Kidsgardening.com
  – Florida Ag in the Classroom
Documentation and Evaluation

- Keep notes about successes and challenges
- Student journals, artwork, photography
- Newsletter
- Pre/post surveys and evaluation methods

- Useful for fund-raising/friend-raising, grants, and not repeating mistakes!
Growing into the future…

- Well thought out mission, goals, plan
- Well developed team, clearly defined roles, regular meetings and shared schedule of use
- Administrative support, student involvement, community participation
- Continually foster sense of ownership, recognition and appreciation for ALL partners
- Standards based learning
- Adequate funding
- Assessment, evaluation and documentation