March 18, 2008

Florida School Garden Competition
University of Florida
P.O. Box 110675
Gainsville, FL 32611-0675

Dear Chairperson,

We are happy to submit to you the Tavares Elementary School Garden Competition packet for the school year 2007-2008. The TES Classroom Garden energizes and inspires many of our students.

Sincerely,

Cecile M. Hemphill
Pre-K ESE Teacher
2008 Florida School Garden Competition
ENTRY FORM

School: Tavares Elementary School

Teacher(s) & Grade(s) involved in garden program:
- Cecile Hemphill (Pre K-5th), Patricia Hedgott (K-5th, Varying Exceptionalities)
- Oswaldo Conna (ESOL), Margaret Lassiter (5th Grade), DeeDee Kirkland (3rd Grade)

Contact Person:
- Cecile Hemphill
- Deborah Wetzberg (5th Grade)
- Dan Swanson (3rd Grade)

Email address:
- hemphillc@lake.k12.fl.us

Time contact person can be reached: 8:00 AM to 3:30 PM

Phone: (352) 343-2861
Fax: (352) 343-6618

Address (please include city and zip code):

720 E. Clifford St.
Tavares, FL 32778

CATEGORY (Please mark only one)
- [ ] SINGLE CLASS GARDEN (Garden used by one class only)
- [✓] MULTIPLE CLASS GARDEN (Garden used by more than one class or grade, but not by the entire school)
- [ ] ENTIRE SCHOOL GARDEN (Garden that is used by all grade levels at the school)

Number of students in class:

Number of students involved in the garden: 78

TYPE of school garden that you use with your students. (Please mark only one)
- [ ] Vegetable
- [ ] Flower
- [ ] Combination vegetable/flower
- [✓] Other, please specify: Garden Classroom - ecosystem includes, rain barrels, pitcher pump, birds, insects, pond, worms, composting, vegetables, solar fountain, flowers, herbs, shrubs

1
1. Please indicate the number of hours a week, on average, your students spend in the garden. **1 hour**

2. Please mark all the activities that your students participate in prior to gardening.

   - ✔ Planning the garden
   - ✔ Designing the garden
   - ✔ Preparing the garden
   - ✔ Choosing plants
   - ☐ Other, ________________

3. Please mark all the activities that your students participate in while in the garden.

   - ✔ Planting
   - ✔ Observing
   - ✔ Playing
   - ✔ Experimenting
   - ✔ Watering
   - ✔ Recording
   - ✔ Sitting
   - ✔ Weeding
   - ✔ Harvesting
   - ✔ Fertilizing
   - ✔ Looking for insects
   - ✔ Dressing garden "clothes" for holidays
   - ✔ Feasting on harvest
   - ✔ Dancing
   - ✔ Feeding birds

4. Please indicate the percentage of time, on average, that you used the garden as an instructional tool in your classroom. **30 minutes a week**

5. Please mark the subject area(s) into which you have incorporated school gardening. Check all that apply.

   - ✔ Math
   - ✔ History
   - ✔ Music
   - ✔ Ethics (responsibility and nurturing)
   - ✔ Science
   - ✔ Health/Nutrition
   - ✔ Physical Ed.
   - ✔ Social Studies
   - ✔ Language Arts
   - ✔ Environmental Ed.
   - ☐ Other, please specify ________________

6. Please indicate the number of years that a school garden has been part of your curriculum. **5**

7. Please indicate the types of volunteers that have helped you and your students with the garden.

   - ✔ Master Gardeners
   - ✔ Senior citizens
   - ✔ Parents
   - ✔ University students
   - ✔ Garden club members
   - ✔ High school students
   - ☑ FFA
   - ☐ 4-H members
   - ☐ Older students at your school
   - ✔ Other, please specify ________________

   - Lake County Pigeon Flyers
8. Please indicate the source(s) of information used to assist in the incorporation of school gardening into your school's curriculum. Check all that apply.

- ☑ County Extension service
- Teacher in-service training
- ☑ Personal knowledge
- Educational journals/publications
- National Gardening Association's Growlab/Growing ideas newsletter
- Other, please specify

- 4-H education materials
- Lifelab
- Master Gardener training
- Friends/volunteers

9. Please indicate the types of educational material(s) used in the classroom to support the use of school gardening in the curriculum.

- ☑ Library books
- ☑ Internet
- Filmstrips
- Textbooks
- Trade books
- Newspapers
- Other, please specify

- Computer software
- Videos
- Personal books
- Experiments
- Gardening magazines and catalogs

***Please read and sign below***

By submitting the same you acknowledge and agree that the University of Florida (and Walt Disney World Co.) may reproduce the same, and all materials may be displayed (in part or in whole) at the 2008 Epcot® International Flower and Garden Festival and for other promotional materials. Such presentation materials (and School Garden packets) will NOT be returned to you (they will become the property of the University of Florida and Walt Disney World Co.) Finally, you acknowledge and agree that should your school be selected as a winner under the competition, then to the extent any of the photographs or materials submitted contain the names of likeness of students, teachers and/or others, you will be required to have adult individuals sign (and the parents/guardians of such students) sign consent/release forms provided by us so that we can display those photographs or materials concerning your winning garden. Such requirement would be a condition of your accepting the award.

I have read and understand the above.

Cecile M. Hemphill
Signature

March 18, 2008
Date
TAVARES ELEMENTARY SCHOOL (TES) GARDEN CLASSROOM

BACKGROUND:

Our TES Garden Classroom started in 2003 as a small face garden for pre-kindergarten students with exceptionalities. The garden was used to develop their language. Students planted flowers in the shape of a face and learned parts of the face, colors, shapes, and plant names. The garden also provided practical life activities such as digging, watering, and weeding. Over the years, our garden has evolved into gardens between portables into our present day 1134 square feet sun-shaped garden. Some features added over the years include a solar-run fountain, a pigeon loft, a composter, rain barrels, a pitcher pump, and a Can-O-Worms. These features can be found in our garden today.

OUR GARDEN CLASSROOM (Garden Quality)
“One touch of nature makes the whole world kin.” (William Shakespeare)

Our garden, formerly called the TES Teaching Garden, was changed to the TES Garden Classroom because we wanted to focus on student directed learning, instead of teacher directed learning. By providing a garden classroom, students were provided a natural environment that enabled nature to unfold itself to the students. The plants and animals encouraged the students to observe, touch, interact, and be active in nature.

The garden was originally designed by Cecile Hemphill and the basic design is still used. Our garden is in the shape of the sun. The sun is the center of our solar system. The sun is the source of life of our planet. The sun is outlined by yellow flowers – marigolds and pansies. The center of the sun is planted to grass and serves as a classroom/stage. Sixteen rays emanate from the sun. Flowers, vegetables, herbs, shrubs are planted in the middle of the rays. Pathways in between the rays enable the students to garden easily and to explore the garden.

The plants, animals, and features of our garden are directed by the theme of our garden every year. Last year, our garden was a multicultural garden. The rays were planted to plants from different cultures. We grew bitter cucumber, asparagus beans, and ichiban eggplants for our Filipino ray. We grew cactus, cilantro, and peppers for our Mexican ray. We grew basil, tomatoes, pepper, rosemary, and thyme for our Italian ray. We ended the year with a Spring Festival filled with multicultural songs, dances, and food.

This year, our theme is Ecosystems. We wanted to create an ecosystem that brought living and non-living things together. Soil, atmosphere, heat, light from the sun, and living things interact with each other and maintain a healthy balance. Students turned the soil and augmented it with mushroom compost. They used organic fertilizer and worm “tea” water as fertilizer. Students learned about composting and vermiculture. The sun as an energy source is demonstrated in our solar-run fountain. Collecting rain water using rain barrels demonstrated how students can utilize rain for irrigation. A
TES Garden Classroom

"One touch of nature makes the whole world kin." - William Shakespeare

The thick rays around the sun contain various flowers, herbs, vegetables, shrubs, and butterfly host plants.
pitcher pump is utilized to demonstrate how to tap underground water. In addition to demonstrating the use of water in agriculture, the strawberries being raised by Ms. Padgett’s Varying Exceptionalities Class in two rows of hydroponics pots also demonstrate an alternative growing medium that use limited space. A wind sock also highlights the importance of air and the atmosphere.

Animals found in our garden provide the living things in our ecosystem. Habitats are found within ecosystems. Students in pre-kindergarten and second grade are developing insect and bird habitats in our Classroom Garden that provide food, water, cover, and place for insects and birds to nurture their young. Students with the help of their teachers help choose the plants in the garden. Many of the flowers and vegetables were started from seed. Zinnias and black-eyed susans grew back from seeds from previous seasons. Perennials such as holly, viburnum, cetrum, jatropha, crepe myrtle, pseudranthenum, St. Vincent Lilac, blue berries, and cassia were planted at the periphery of the garden. Inside the rays, wildflowers, milkweed, pipe vine, passion vine, herbs, carrots, cabbage, snow peas, tomatoes, and broccoli were planted to provide food for birds and insects. Some of the vegetables are left to seed to provide food for birds. In addition, bird feeders and bird baths provide food and water. Several students in a class of Kindergarteners to 5th Graders with Emotional Exceptionalities care for homing pigeons in their loft. Their chores include collecting pigeon manure for the garden.

In addition to providing food to insects and birds, the vegetables grown in our garden are harvested and enjoyed by our students.

With the help of Ponds of Reflection, a fifth grade science class is installing a pond ecosystem in one of the sun’s rays to demonstrate how the living and non-living things in a pond interact with each other to sustains and support the different life forms in it. Goldfish, gambusias (native mosquito minnows), ramshorne (native snails), and water lilies are the life forms in this ecosystem. It is hoped that this pond will provide numerous opportunities to students to understand and appreciate the many pond and lake ecosystems in Florida.

Ms. Hemphill supervises the overall care and maintenance of the garden. Because of the proximity of her classroom to the garden, Ms. Hemphill’s students water the plants regularly. Water is always available for students to use when they come to the garden to care for their plants.

It is because of our concerns about global warning, depleting fossil fuel, the danger of animal and plant extinctions, pollution, nutrition, and other issues that we decided to use Ecosystems as our theme for this year’s garden. Students are alienated from nature. Many times, their understanding of living things is limited to a pet or to the vegetables and fruits from the supermarket. Understanding and appreciating the interdependence of living and non-living things can be greatly achieved by providing a natural environment such as our Garden Classroom. Our Garden Classroom provides many hands-on opportunities to observe and experiment with alternative sources of energy, renewable energy, alternative agriculture, importance of plant life in global
warming, effect of housing developments and golf courses on animal habitats. The features of our Garden Classroom can be a jumping board to many “ah hahs”, research, and further studies. Can the solar run fountain make them ask “How does it work?” and hopefully discover solar power? Can the harlequin bugs devouring the cabbages make them ask “If they are eating our cabbage, should we exterminate them? How do we control them?” Will the swallowtail butterflies and the sulphurs stop them from picking flowers so that the butterflies will have nectar to drink? When the hawks come and scare our homing pigeons because they are hungry, will our students discover the food chain?

By providing a Garden Classroom they can be in, explore, and hopefully interact with, these students can discover nature and living things. Hopefully, they will also realize that they are an integral part of this ecosystem and that they have a responsibility in maintaining, sustaining, and supporting the life. They can be a creative force in nature.

Our Garden Classroom is unique because it is a microcosm of our planet, earth. It features plant and animal life and non-living things. Man is part of this ecosystem. It is the interaction among these elements that make life on earth possible. When students understand the interdependence of living and non-living things, they will discover their role(s) in maintaining life on earth. Growing plants and caring for animals develop responsibility and nurturing in our students. A teacher of students with special exceptionalities has seen a gentle side of two of her students who take care of our homing pigeons. Students eagerly come to the garden to gather food for their caterpillars as they take part in a caterpillar’s metamorphosis.

Our Garden Classroom provide countless opportunities of discovery and learning. Our Garden Classroom provides a venue where we can celebrate life in song and dance in the middle of various life forms – sunflowers, zinnias, cassias, eggplants, cabbages, butterflies, stink bugs, strawberries, finches, caterpillars, and earthworms.

**LEVEL OF INVOLVEMENT**

Our Classroom Garden is available to all students and teachers of Tavares Elementary School. There are different levels of involvement in our Classroom Garden. The classes directly involved in our garden cultivate, plant, water, weed, fertilize, and harvest. Some of them record different aspects of the plants and animals. A 5th grade class dress our garden mannequins in holiday costumes. Some care for our pigeons

Another level of involvement in our Classroom Garden is visits. Some classes are involved in our garden by visiting and observing the plants and animals. They look for butterfly eggs and caterpillars. Others come and water. Others are allowed to harvest and enjoy the vegetables. During some of the visits, visiting students are given impromptu lessons on the tap root system of the carrot, host plants of different butterfly species, and different parts of a vegetable plant. Others visit the homing pigeons and see, hold the baby chicks, and see them grow.
Another level of involvement is observing garden animals and plants in the classroom. Some classes raise caterpillars from our garden and observe the life cycle of butterflies in their classrooms. Other classes get worms from our can-o-worms and raise their own worms.

Another level of involvement is holding classes in our Garden Classroom. The pond ecosystem is one feature that encourages these classes.

Each class directly involved in our Garden Classroom has to come up with a plan to develop their garden ray. Every activity need some kind of organization and students have to learn to work together. In some instances, some students are informally chosen to lead the activity. In some instances, the activity is achieved through collaborative efforts. Because students are not used to gardening, directions from a teacher is important during activities in the garden.

One of the activities in our garden is sharing of garden information with other classes. Students have to organize information, decide how to present information, and present the information with another class. Sharing information with others also promote leadership among students.

The development of our 2007-2008 Garden Classroom is made possible by grants from Lake County Water Authority, The Educational Foundation of Lake County, and The Golden Rule Foundation. Our school administrators support our Garden by allowing us to develop part of the school grounds. Our classes support our Garden by utilizing what the garden has to offer in their own lessons. On the district level, School Superintendent Anna Cowin came to our Garden Festivals during the previous years.

Although there are no formal partnerships with garden-related organizations, we have consulted Master Gardeners and local businesses on different features of our garden. The Lake County Pigeon Flyer Association provides feed and expertise. Local businesses have given us discounted prices for our purchases. Local newspapers cover our garden efforts. Many of the seeds and seedlings have been provided by the parents of our students. The Tavares High School Art Class is painting insects and birds on plywood signs for our Garden Classroom.

EDUCATIONAL RELEVANCE

Education prepares students for life. The ecosystem we have developed in our Classroom Garden provides numerous opportunities to observe, explore, and experience life in its various forms. Our Classroom Garden addresses Sunshine State Standards in all subject areas, particularly, Science, Mathematics, Social Studies, Physical Education, The Arts, Reading, Language, and Geography. The classroom teachers determine what activities and/or features to use and how to use them in their lesson(s).

All the activities and features of our Garden Classroom are resources to facilitate learning. The pond ecosystem, the bird and insect habitats, the rain barrels, and the
GARDEN CULTIVATES LESSONS ABOUT LIFE

Courtney Nease, 5, (above) peers at a butterfly on her arm Wednesday during the Tavares Elementary School Spring Festival. Students in costume performed a variety of international dances and songs in the garden classroom. At right, Madhur Wadhwa, 11, leads an Indian dance. The garden classroom was created with more than $8,000 in grants received during the past 4 years. The idea of the garden is to create awareness among students of the interdependence of living things. In addition to butterflies, the garden has flowers, vegetables, homing pigeons, earthworms and more.
Growing Future Gardeners

The Florida School Garden Competition gives students the opportunity to learn about plants and work as a team to beautify their schools.

The Florida School Garden Competition is a learning tool that helps students gain recognition for their hard work, as well as receive funds for their gardens. Schools are invited to enter the contest in the fall. Submissions must include photographs of the garden, as well as a narrative. The entries are judged by horticulture employees and landscape architects from Epcot, as well as researchers and educators from the University of Florida and members of the Florida Federation of Garden Clubs. Prizes are awarded to the top three schools in each of the three categories: Single Class Garden, Multiple Class Garden, and Entire School Garden.

The awards — $500 for first place, $250 for second place, and $150 for third place — are intended to help the schools pay for gardening supplies. The names of the winning schools, as well as photographs of their gardens, are displayed at the Epcot International Flower & Garden Festival.

This year, FNGLA was asked to help strengthen the competition by using its members to coordinate work days and help schools gather the necessary materials.

"FNGLA is a first-year sponsor of the Florida School Gardening Competition, and we’re excited to play a role in inspiring and connecting children to gardening," says Jennifer Nelis, director of public relations for FNGLA. "The program is truly planting a legacy for future generations."

In 2006, says her school didn’t plant the garden and participate in the competition. "We were doing the garden because it is a tool for our kindergarten students and also a way to enhance our campus aesthetics," she adds. Wilcox adds they wanted to enter the competition for recognition purposes, too.

“We are situated in the lowest income area and are constantly searching for situations to generate positive recognition for our student school,” she says.

The competition also improves learning, especially the subject of science, in addition to teaching sustainable gardening, notes Wilcox.

Tavares Elementary School in Tavares, FL, won third place in the Multiple Class Garden category last year, and teacher Cece Hemphill says students look very positively to planting, watering, and looking for insects.

“Our garden is a microcosm of the interdependence of living things. It is what we learn about the birth-life-death cycle. If we want students to take care of the planet, we must put them in a natural environment, such as a garden, so that they can learn from it and see their role in the relationship with other life forms in the garden,” Hemphill says. "Learning from books does not make the topic real to them. In our garden, learning is hands-on and inquiry based."

For more information about the Florida School Garden Competition, visit the website at http://hort.ufl.edu/ggk/.
hydroponics system are examples of these resources. These resources can plant seeds of learning, inspire inquiry, and spark the imagination. They provide concrete and real learning opportunities to students. Textbooks and library books, the internet, videos on gardening, guest lecturers on garden related topics, are additional sources to facilitate garden learning.

Listed below are Sunshine State Standards that are addressed by specific activities in our Garden Classroom.

<table>
<thead>
<tr>
<th>Sunshine State Standards</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>Health/Physical Education HE A.1.1 Health Literacy P.E. A.3.1 Benefits of Physical Activity</td>
<td>Eat freshly picked vegetables from the garden for snack or as part of a meal. Play and run around the Garden</td>
</tr>
<tr>
<td>Mathematics MA.A.1.1-MA.A.1.2 Number Sense and Concepts MA.B.1.3 Measures quantities in real world and use the measures to solve problems MA.C.1.3 Geometry and Spatial Sense MA.E.1.3 Data Analysis and Probability M.A.D.1.3 Algebraic Thinking</td>
<td>Count seeds Measure garden perimeter and area Record birds that visit the garden Observe leaf shapes Collect data on birds and insects in the garden Graph data on birds and insects</td>
</tr>
<tr>
<td>Science SC.B.1.1 – SC.B.2.2 Energy SC.D.2.1-SC.D.2.2 Processes that shape the earth – protection of natural systems on Earth</td>
<td>Trace flow of energy in the ecosystems in the garden Solar-powered fountain Composting Create the insect and bird habitat Conserving and use of rain water with rain barrels; using underground water with a pitcher pump Create the pond ecosystem Garden is in the shape of the sun Different plants and animals demonstrate growth, adaptations, characteristics i.e. life cycle of a butterfly, tendrils of a snow pea Bird and insect habitat Garden as an ecosystem Observing life cycles and off springs of plants and animals in the garden Bird and Insect Habitat Pond ecosystem Life cycles of plants and animals observed in the garden</td>
</tr>
</tbody>
</table>
| SCG.2.1-SCG.2.2 Consequences of limited resources | Bird and Insect habitat  
Pond ecosystem  
Hydroponics  
Use of rain barrels  
Solar energy as an alternative source of energy  
Collect data on birds and insects that come to the garden; record characteristics of these animals; compare different butterflies |
|-------------------|--------------------------------------------------|
| SCH.1.1-SC.H.1.2 Use of scientific process | Tagging monarch butterflies and studying their migration routes  
Pond ecosystem  
Dress up garden mannequins for holidays |
| Social Studies  
Geography – People, Places, & Environment  
SB.2.1-2.2 – Interaction of people and the physical environment | Language  
L.A.A.1.1 Reading Process  
L.A.B.1.1 Use writing process effectively  
L.A.B.2.1 Communicate ideas and information effectively  
The Arts  
DA.C.1.1 Cultural and Historical Connection | Research insect and bird habitats from books and internet sites.  
Write a report on insect and bird habitats based on research  
Write a report of the life cycle of a butterfly.  
Share research on bird and insect habitats with another class.  
Use the garden to celebrate holidays |
(Counterclockwise) Our pond looks like a fish! Gulf fritillaries, swallowtails, sulphurs, monarchs, and zebra longwings feast on our flowers.