2009 Florida School
Garden Competition
Entry Form

Camelot Elementary School
14501 Waterford Chase Parkway
Orlando, Florida
32828
Orange County Public School
2009 Florida School Garden Competition
ENTRY FORM

School  Camelot Elementary School
Teacher(s) & Grade(s) involved in garden program
Richard Ellenburg (science lab teacher), all students in our school – grades kindergarten – fifth grade
(720 students are actively engaged in the garden each week)

Contact Person  Richard Ellenburg
Time contact person can be reached  7am – 7pm
Phone (407) 247-8510  Fax (407) 207-3881
Address (please include city and zip code)  14501 Waterford Chase Parkway
Orlando, Florida  32828
Email address  ellenbr@ocps.net

CATEGORY (Please mark only one)

_____ SINGLE CLASS GARDEN (Garden used by one class only)
Number of students in class and grade  

_____ MULTIPLE CLASS GARDEN (Garden used by more than one class or grade,
but not by the entire school)
Number of students involved in the garden and grades

X  _____ ENTIRE SCHOOL GARDEN (Garden that is used by all grade levels at the
school)
Number of students involved in the garden and grade  720
**TYPE** of school garden that you use with your students. (Please mark only one)

____ Vegetable
____ Flower
X____ Combination vegetable/flower
____ Other, please specify ________________________________

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

____ Minimum of 1 hour for every child in the school (720 students)

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

   X____ Planning the garden       X____ Preparing the garden
   X____ Designing the garden       X____ Choosing plants
   X____ Other, creating the raised beds and composting soil in preparation for the plants; mapping the garden; developing an irrigation plan; participating in a bird and insect population study to determine the plants that would best encourage them to stay

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

   X____ Planting       X____ Watering       X____ Weeding
   X____ Observing      X____ Recording      X____ Harvesting
   X____ Playing        X____ Sitting        X____ Fertilizing
   X____ Experimenting
   X____ Other, propagation (students start seeds for new garden areas; population studies to determine the effect the garden has on birds and insects, creation of rain barrels and passive irrigation system for the garden beds ________________________________

3. Please indicate the percentage of time, on average, that you used the garden as an instructional tool in your classroom. 40% of my science lab instruction is in the garden

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

   X____ Math       X____ Science       X____ Social Studies
   X____ History    X____ Health/Nutrition       X____ Language Arts
   X____ Music      X____ Physical Ed.       X____ Environmental Ed.
   X____ Ethics (responsibility and nurturing)
   ____ Other, please specify ________________________________

5. Please indicate the number of years that a school garden has been part of your curriculum. 3 yrs

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

   ____ Master Gardeners      ____ Senior citizens      X____ Parents
   ____ University students   ____ Garden club members      ____ 4-H members
   X____ High school students       ____ FFA
   X____ Older students at your school
   X____ Other, please specify faculty members at our school
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.

X County Extension service
X Teacher in-service training
X Personal knowledge
X Educational journals/publications
X National Gardening Association’s Growlab/Growing ideas newsletter

Other, please specify__________________________________________________________

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

X Library books
X Internet
X Filmstrips
X Textbooks
X Trade books
X Newspapers

Other, please specify__________________________________________________________

Other, please specify__________________________________________________________

***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 2010 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.

[Signature]

3/9/09

Date
School Garden Description:

Our school garden has been in existence for seven years. In 2005 we were awarded the Florida School Garden of the Year. Only three months after winning the location of our garden was moved due to the redistricting and reduction of our school population and facilities which resulted in the relocation of our science lab and garden. The new site next to the new science lab was formerly the site of an old basketball court and adjoins a wooded water discharge area. Our student teams decided to build the garden in raised beds on top of the concrete court. This serves two purposes: first we have some students that need greater handicap access to our garden and second we hope to control unwanted weeds. Our greatest challenges have been identified in controlling the soil temperature of the beds and providing adequate water to the plants.

Students in grades three, four and five helped design the new garden. All of the students attend the project coordinator’s science resource lab once a week. Classes were broken down into design teams with the task of designing a garden which would attract butterflies and song birds. The nearby wooded area provides a haven for many of the birds and butterflies and our garden was designed to support and enhance the populations. In addition, the project coordinator designed stations which would allow for science explorations focusing on our state science standards. Examples include wooden spider frames, a composting area, habitats for earthworms, a weather station and a bird watching area. All of the ideas were share with our district maintenance and safety staff to make sure that we were in compliance regarding.

The steps involved in the garden creation process include:

- Classes measured the area to be used and created a survey map.
- The amount of sunlight (and shade) available to the garden was charted by all classes coming to the lab.
- Population studies were conducted by students to determine which insects and birds currently inhabit the site.
- Student teams were tasked with creating a design for garden beds, a list of plants to be included in the garden (with special emphasis on butterfly attractors), and a time table for completion.
- All of the designs were discussed in each class and from the discussions the final elements of the garden were decided upon.
- Soil was brought by dump truck and deposited at the site by our district maintenance team.
- The project coordinator, our fourth and fifth grade classes and student volunteers from a local high school created the raised beds and filled them with the soil.
- Additional composted soil was added by the project coordinator and the fifth grade classes to further enrich the soil. Soil was provided commercially and through the use of our lab composter and composting sites.
- Second graders added earthworms to the soil and began scheduled watering cycles.
- Plants were purchased by the project coordinator, acquired through cuttings provided by the project coordinator and parent volunteers, and through a donation by a local nursery.
- Four raised beds were initially established and the planting took place by the students in all classrooms of the school. This process was supervised by the project coordinator and a parent volunteer and took approximately one week to complete.
- Mulch was secured from a tree service that has been grinding trees in the area and through private purchases by the project coordinator.
- The second year additional beds were added, as well as a container garden that uses a broken wheel barrow as the focal point.
- Students teams have continued to add the following features:
- Two garden sheds (donated by the science lab teacher) have been build to house our tools, seeds and other garden equipment
- A twenty foot potting aluminum potting bench was donated by our local credit union and is now the focus of ongoing propagation projects
- With the help of our local County Extension office, we have built a rain barrel that is getting water from air conditioner discharge and is being used for irrigation (by the time this plan is submitted we will have built a total of ten rain barrels)
- An outside sink was installed by the lab teacher for easier clean up
- Three picnic tables (one with handicap access) were donated by by our school PTA and the school lab teacher has donated and installed umbrellas
- A wormery has been built for composting and to enrich the garden bed soil
- A large barrel composter was donated by a community member and is used for composting new soil
- A rabbitry, consisting of three donated rabbits, provides additional fertilizer for our gardens
- Three bird baths, two bird feeders and numerous bird houses provide for our bird populations
- Digital photography for this application was provided by the students of our fifth grade science club.
- A bird watching station has been established with ten pair of binoculars and a population chart is kept to track bird populations.

- The garden is maintained by individual classes and by a weekly, after school garden club consisting of fifth graders. During the summer the garden is maintained by the science lab teacher and additional parent and teacher volunteers.

In addition to winning the 2005 Florida School Garden of the Year, our garden is now a registered school garden with the National Gardening Association and a School Certified Wildlife Habitat site with the National Wildlife Federation. The science lab teacher currently serves on the advisory board for the National Gardening Association site, Kid’s Gardening, and our garden has been featured twice on their site. Additionally our students are conducting population studies of our surrounding bird populations to be share with the Florida Audubon Society.

Since 2007 the fifth grade science club and lab teacher have hosted an annual Camelot Spring Family Garden Party for the parents and students of our school. Faculty members and fifth grade garden club members provide support for about 250 families who come out for a garden scavenger hunt, physical science take home activities, elementary science Olympiad competitions and Earth Day related activities.

The Mission of our Garden:

The purpose of our garden is to provide an environment in which students may better understand the relationship of living organisms. Through directed learning explorations within the garden students may observe the life cycles of living things, adaptations of living things to their environment, the interdependence of all living things, the fragility of living things, season changes of our unique environment and man’s role and relationship with the living things around him. Our mission is to help foster a sense of stewardship within our students as they take a personal role in the care and growth of the unique environment.
Our Garden Goals

The garden is organic and uses no pesticides or fertilizers. Life cycles are more fully understood through composting, the introduction of beneficial insects and a philosophy of allowing nature to interact with minimal interruption. Some plants are included in the garden with the knowledge that birds, worms and insect populations will be eating them.

The garden should be accessible to all students. Students can sit on the garden walls, or at the tables to write notes or observe things in the middle of the garden. The use of raised beds allows children of all ages to have superior viewing of all areas of the garden. Raised beds allow my primary students access to butterfly chrysalis, herbs that can be touched and worms that can be dug up. Our potting table allows older students the opportunity to propagate seeds, explore the parts of plants or explore grafting. Observation areas for all ages include the use of microscopes, hand lenses, binoculars and spotting scopes.

The responsibility for this garden belongs to the students. All of the students have ownership in our garden. Our garden is mapped by students, the design and purpose of the garden was student driven, the construction and maintenance of is done by our students.

The garden should be a sensory experience. Our garden addresses each of the senses. Students are met with a variety of smells (Sweet Alyssum, Rosemary, Mint, Lemon Balm, Society Garlic); plants of various colors are compared (Daylilies, Pentas, Salvis, etc.); plants of various textures are touched and compared (Rosemary, Petunias, Alyssum, Succulents, etc.); wind chimes are found throughout the garden, as well as the sounds of birds can be heard; and the vegetables grown provide food to compare tastes.

The garden provides a habitat for other living things. The plants in our garden are placed for food for caterpillars, nectar for butterflies and pollen for bees. Wildflowers are planted in a designated area and allowed to reseed for birds. Water supplies are found throughout the garden for birds and shallow mudding areas for butterflies. In addition our garden is home to two covey of quail that our class hatched and continues to feed, a family of wild rabbits and a cat that has adopted us.

The garden is a teaching tool. Everything in the garden is designed to allow overlapping experiences which reflect diverse science benchmarks. Stations provide students with self exploration, activity cards are provided for group explorations and lessons are provided for teachers to continue whole class explorations and discussions.

Art is incorporated into the gardening experience. Sculptures, giant fabric windmills, windsocks, birdbaths and decorative pots are integrated into the garden. Some of the plants are sculptured and plantings are done to enhance color and design. Wind chimes provide additional sensory experiences. Aesthetics are emphasized along with function.

Students should understand that not all living things grow in the same way. In order to demonstrate different life cycles we established a bed of perennials, a bed of annuals, a bed of bulbs and corms, a native wildflower area, an area for arid plants, an area for bog plants, an area for caterpillars to find food (a specific area for Monarch or Viceroy and another area for Swallowtails, and other areas for other types of butterflies), an area for succulent plants, a variety of areas for different kind of vegetables with different needs or growing requirements.
Specific Benchmarks Addressed by our Garden

SC.B.1.1.5: The student knows that every human action requires energy that comes from food.

SC.D.2.1.1: The student understands that people influence the quality of life of those around them.

SC.F.1.1.1: The student knows the basic needs of all living things.

SC.F.1.1.5: The student compares and describes the structural characteristics of plants and animals.

SC.G.2.1.1: The student knows that if living things do not get food, water, shelter, and space, they will die.

SC.G.2.1.2: The student knows that the activities of humans affect plants and animals in many ways.

SC.D.1.1.2: The student knows that life occurs on or near the surface of the Earth in land, air, and water.

SC.F.1.1.4: The student understands that structures of living things are adapted to their function in specific environments.

SC.F.1.1.5: The student compares and describes the structural characteristics of plants and animals.

SC.F.2.1.2: The student knows that there are many different kinds of living things that live in a variety of environments.

SC.G.1.1.2: The student knows that plants and animals are dependent upon each other for survival.

SC.G.1.1.3: The student knows that there are many different plants and animals living in many different kinds of environments (e.g., hot, cold, wet, dry, sunny, dark).

SC.G.1.1.4: The student knows that animals and plants can be associated with their environment by an examination of their structural characteristics.

SC.B.2.1.1: The student recognizes systems of matter and energy.

SC.B.1.2.1: The student knows how to trace the flow of energy in a system (e.g., as in an ecosystem).

SC.B.2.2.1: The student knows that some source of energy is needed for organisms to stay alive and grow.

SC.F.1.2.2: The student knows how all animals depend on plants.

SC.G.1.2.1: The student knows ways that plants, animals, and protists interact.

SC.G.1.2.5: The student knows that animals eat plants or other animals to acquire the energy they need for survival.

SC.G.2.2.2: The student knows that the size of a population is dependent upon the available resources within its community.

SC.G.2.2.3: The student understands that changes in the habitat of an organism may be beneficial or harmful.

SC.B.1.2.1: The student knows how to trace the flow of energy in a system (e.g., as in an ecosystem).

SC.B.2.2.1: The student knows that some source of energy is needed for organisms to stay alive and grow.

SC.F.1.2.2: The student knows how all animals depend on plants.

SC.G.1.2.1: The student knows ways that plants, animals, and protists interact.

SC.G.1.2.3: The student knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction.

SC.G.1.2.4: The student knows that some organisms decompose dead plants and animals into simple minerals and nutrients for use by living things and thereby recycle matter.

SC.G.1.2.5: The student knows that animals eat plants or other animals to acquire the energy they need for survival.

SC.G.1.2.6: The student knows that organisms are growing, dying, and decaying and that new organisms are being produced from the materials of dead organisms.

SC.G.1.2.7: The student knows that variations in light, water, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem.

SC.G.2.2.3: The student understands that changes in the habitat of an organism may be beneficial or harmful.
Adjoining area has just had portables removed and will become next garden phase.

The garden is approximately 200 ft. X 50ft. with one side sloping out from the lab to about 40 ft. The shape is:

- Herb garden includes dill, fennel, rosemary, lavender for sensory experience. 8' X 8'
- Mixed annuals and perennials designed as caterpillar and butterfly attractors. Large collection of milkweed plants. 8' X 8'
- Fragrance Bed: Sweet Alyssum, Salvia, Marigolds, Petunias, Basil, Lavendar 8' X 8'
- Potted plant area with old wheel barrow in center
- Picnic table and umbrella
- Perennials Bed including pentas, verbena, daylilies, basil, etc. Anchor is a large perennial 8' X 8'
- Mexican petunias
- Vegetable garden: carrots, broccoli, onions, beans 4' X 6'
- Wildflower area 4' X 25'
- Composting Barrel
- Rain barrel irrigators
- Hanging baskets
- School Lab Building
- Shelves for seed starting (missing wand has been attached to shelves)
- Storage Sheds
- Outdoor sink
- 20' potting table with storage shelves underneath
Camelot Elementary invites your family to a

Science Garden Party

When: Wednesday, May 9th
6:00 pm - 7:00 pm

Where:
The Science Lab Garden
in the portable classroom area.
(park in our parking lot and walk to the back portable area)

Join us and enjoy a beautiful evening in the garden as your family explores science activities in the outdoors.
Year-Round Gardening In Florida

Reprint from article appearing in Kid’s Gardening

Many look to fall as a time of winding down the school garden, but there are places where you can find a second gardening season filled with flowers, butterflies and vegetables. Florida provides just such gardening opportunities. Travel south until autumn leaves cease to fall and you’ll arrive in a region of year-round gardening that many envy. In Florida, my students and I do not experience the beauty of fall leaves or excitement of the first snow, but our garden is filled with colorful flowers in December, still hosts caterpillars and butterflies in January, provides ripe cucumbers and tomatoes almost continually, and teems with dill, mint, pentas, salvia, milkweed, fennel, and much more.

For years my elementary school garden has enjoyed the advantages and challenges unique to year round gardening. In the subtropic zone of Central and South Florida we don’t usually feel the cool mornings of fall until mid November; a winter freeze threat usually exists for only a few weeks in January and February; our spring planting begins in early March; and summer comes to us in May. With the opportunity of an extended growing season come challenges. Garden pests are a constant concern; the depletion of soil nutrients is an ongoing battle; and garden management and maintenance become critical gardening skills.

Designing Our Year-Round Gardens

Because the challenge of gardening in every month of the year can be overwhelming, in our school garden we have approached everything in manageable stages. Our research and past experiences have helped us realize that the soil in Florida is composed mostly of sand, and that organic matter and rainfall is seasonally inconsistent. As a result we undertook the creation of a diverse raised bed garden supported by containers, as well as in-ground sites where appropriate. This decision was made due to a number of factors:

1. We could more easily enrich the soil and control moisture;
2. We provide better control of nematodes and other garden pests;
3. All students would have equal access to the garden, from kindergartners, to fifth graders, to our physically challenged students;
4. We could better control weeds.

Most of our beds are large, measuring eight feet square, but others are much smaller. Containers of kalanchoe, sunflowers, roses, ornamental trees and other plants are also found throughout our garden and allow us to provide a greater diversity of plants.

We developed large beds to provide a variety of experiences:

- one filled with assorted mints, lavender, and other scented plants for a sensory experience;
- one contains only annuals so that students may better understand plant life cycles;
- two provide host plants for both caterpillars and butterflies (we have focused on Monarchs, Queens, Viceroy, assorted Swallowtails, Gulf Fritillary and Sulfurs);
• one bed of perennials is allows us to measure plant growth;
• one bed of ginger and canna allows us to explore bulbs;
• one bed dedicated to Southern wildflowers allows students to better understand that one region’s weed in another region’s wildflower;
• one bed of vegetables that are constantly harvested.

Water gardening is popular in our state, but has its own challenges. Evaporation leads the list. If fish are part of the water gardening experience then tap water must be ruled out as the water source. Many gardeners have rain barrels or filtration systems designed to provide a constant source of appropriate water. Too much or too little water depletes necessary nutrients creating more work, and our wonderful sun also contributes to high growth of algae! And don’t forget that you may also find the occasional egret or crane looking for his next meal in your water garden! Water gardens provide us with unique learning opportunities as we peer into the aquatic environment. Students watch the changes taking place with tadpoles, observe roots extending beneath lily pads and they can measure the water temperature near the surface of the pond and the temperature under the lily pad. Simple empty glass jars can touch the surface of the water and be used as viewers into this watery habitat. The excitement and opportunities of water gardening far exceeds any obstacles.

Year-Round Maintenance

The garden is maintained by our afterschool gardening club, as well as volunteer classes.

Over the years we have adopted a number of rabbits from pet rescue groups and school families. As a result we add our rabbit manure to both our garden beds and our large composter. Rabbit dropping provide us with fantastic organic time released fertilizer! Additional soil is obtained from composted matter available at our county landfill.

Irrigation as needed is supplied through web of hoses connected to sprinklers that links each bed to our main water supply. Our goal was to use as little water as possible.

Seeds from the garden are collected, dried and added back to the beds as part of our understanding of the life cycle.

Pruning and weeding are ongoing and vital to our gardens. With a mild year round climate many plants will grow at accelerated rates. Without a period of dormancy many plants have been planted in small areas only to eventually take over the entire garden space. Our own experience started one year with a Mexican Petunia staging a revolt and attempting to take over our entire garden through a network of vine-like roots. Unable to learn our lesson, we repeated the cycle with a determined ornamental potato vine.

Regardless of how you approach gardening in Florida, the joys far exceed any challenges you might encounter. Our school garden has become such an integral part of our community that last spring it was the site of an evening Garden Party attended by over 400 students and their families. Though we might out on miss the colors of fall leaves and the clean fields associated with the first snow, we in the Sunshine State celebrate with an explosion of colors every day, and invite you to come down and share in the warmth and excitement of year-round gardening!
STEWARD OF A COMMUNITY

Camelot science teacher a state finalist for Teacher of the Year

"Education is not the filling of a pail, but the lighting of a fire."  
William Butler Yeats

JENNIFER KNIGHT-ARI
Staff Writer

Inside the 50-gallon drum is a swirling mixture of grass clippings, rabbit manure, dead tomatoes and yesterday’s lunch that doesn’t smell as bad as you’d think.

“Every time we go out into the garden, one of the trips is always to the composter. We have some plants turning brown, and some tomatoes beginning to dry and rot a little bit,” said Rick Ellenburg, the science lab teacher at Camelot Elementary.

“The kids want to hold their noses because they know what’s in there. It smells, but not in a stinky way. It smells like earth.”

In about a month, everything will be broken down completely, and the result will be soil just like the kind one might buy at a gardening store.

The students take turns cranking the composter to aerate the decomposing mixture, which is the first step in a years-long process to build an organic vegetable garden. Ellenburg hopes the garden will ultimately produce a harvest that can be given to a homeless shelter or food bank, similar to what Timber Creek High has done.

“We’re working to help the children become more aware of the environment and animals. It’s a real nice relief circle of life,” he explained. “We really want to be stewards of the land, and also of each other.”

It’s easy to see why Ellenburg has won Orange County Teacher of the Year twice, has now been chosen as one of top 5 finalists in the state.

He received a $5,000 check from Macy’s and a $500 gift card, and moves on to the Florida Department of Education Teacher of the Year ceremony at 6:30 p.m. July 12 at the Hard Rock Live.

The winner of the statewide competition will receive more than $10,000 in cash and prizes, and a trip for four to New York City to watch the Macy’s Thanksgiving Day Parade.

“He is excited by everything. Rick can talk about anything, anywhere, anytime, to anybody from any strata of life,” said his wife, Susan Koenig-Ellenborg, who teaches kindergarten at Camelot. “He thrives off the excitement he sees from students when they learn to solve a problem themselves.”

The organic vegetable garden is simply the latest vision to take hold of Ellenburg’s imagination, as he perfects the already award-winning garden outside his portable at Camelot, where wildflowers and herbs excite the students’ olfactory and tactile senses.

Ellenburg applied for and won a $500 grant through the Captain Planet Foundation, an offspring of the TBS cartoon by the same name, the proceeds of which fund environmental grants for schools.

The students have also planted more than 500 sunflowers, not only along the fence but in the field next to the garden. Seeds from the sunflowers will be harvested and reused.

Next year, he’s choosing to recycle a project he did before, where he designates one plot as the “trash garden” — where a tennis shoe, a Sunday newspaper, an aluminum can and other items will be planted about a foot underground. Every month, the students will dig it up to see how it’s changing.

“The Sunday newspaper is one of the items we’re putting in there for an entire year, and still read the print,” he said. “On the shoe, the canvas completely deteriorated, and all we had left was the rubber sole and eyelets.”

Back to basics

Whereas once upon a time, elementary school science was all about dinosaurs, at Camelot it’s become an opportunity for kids to learn more relevant fundamentals.

Ellenburg gives the students a battery, a light bulb and a wire, and asks them to find four different ways to light the bulb. The children don’t realize they’re