

**Project Title: \*** Lifecycle Garden

**To be eligible for the grant, projects should be specifically tied to one or more of the following topics (Choose all that apply) \***  
The Water Cycle  
Native Plant and/or Pollinator-Friendly Gardens  
Waterwise Landscaping

**Amount Requested: \*** 500.00

**Teacher / Leader's Name: \*** Melissa Twisdale

**School or Organization Name & Complete Address: \***  
Barron Elementary School  
45 Fox Hill Road  
Hampton, Virginia 23669

**Subject / Grade / Age Range: \*** Grades K - 5

**Number of Children: \*** 400

**Goals & Objectives: \***

Standards of Learning:

2.4 The student will investigate and understand that plants and animals undergo a series of orderly changes as the autre and grow.

Key concepts include:

- a) animal lifecycles; and
- b) plant lifecycles

2.5 The students will investigate and understand that living things are part of a system.

Key concepts include:

- a) living organisms are interdependent with their living and nonliving surroundings;
- b) an animal's habitat includes adequate food, water, shelter or cover, and space;
- c) habitats change over time due to many influences; and

2.8 The student will investigate and understand that plants produce oxygen and food, are a source of useful products and provide

benefits in nature. Key concepts include:

- a) important plant products are identified and classified;
- b) the availability of plant products affects the development of geographic area;
- c) plants provide oxygen, homes, and food for many animals; and
- d) plants can help reduce erosion.

2.10 The student will investigate and understand that natural events and human influences can affect the survival of species.

- a) the interdependency of plants and animals

3.7 The student will investigate and understand the major components of soil; its origin and its importance to plants and animals including humans. Key concepts include:

- a) soil provides the support and nutrients necessary for plant growth;
- b) topsoil is a natural product of subsoil and bedrock;
- c) rock, clay, silt, sand, and humus are components of soils; and
- d) soil is a natural resource and should be conserved.

#### Life Processes

4.4 The student will investigate and understand basic plant anatomy and life processes. Key concepts include

- a) the structures of typical plants and the function of each structure;
- b) processes and structures involved with plant reproduction;
- c) photosynthesis; and
- d) adaptations allow plants to satisfy life needs and respond to the environment.

#### Living Systems

4.5 The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem. Key concepts include

- a) plant and animal adaptations;
- b) organization of populations, communities, and ecosystems and how they interrelate;
- c) flow of energy through food webs;
- d) habitats and niches;
- e) changes in an organism's niche at various stages in its life cycle; and
- f) influences of human activity on ecosystems.

#### Living Systems

5.5 The student will investigate and understand that organisms are made of one or more cells and have distinguishing characteristics that play a vital role in the organism's ability to survive and thrive in its environment. Key concepts include

- a) basic cell structures and functions;
- b) classification of organisms using physical characteristics, body structures, and behavior of the organism; and
- c) traits of organisms that allow them to survive in their environment.

#### **Project Timeline: \***

Timeline:

March 2015-

Turn over the soil for the learning garden area, test the soil and add the necessary soil and other nutrients.

Mark the learning garden boundaries with stones/rocks and use stones to create drainage route for rain/water overflow.  
Obtain and create rain barrels for collection of rainwater for natural garden irrigation.

April 2015-

Begin gathering donated and otherwise purchasing butterfly-attracting plants for the garden.

May 2015-

Begin planting the butterfly attracting plants.

June 2015-

Add butterfly eggs to the learning garden habitat.

The butterfly learning garden project will target our entire elementary school population. The focus for this project will center on project based learning. Project based learning is a high yield research based approach that allows students to master standards while engaged in a hands-on experience. While most of the learning garden SOL's are geared toward the science content, language arts, math, and social studies standards will be imbedded in the rich learning experiences offered by our learning garden. The following website are two of many that provide integrated lessons for multiple grade levels.

<https://thekitchencommunity.org/lesson-plans/stem-in-your-learning-garden/>

<http://captainplanetfoundation.org/learning-garden-lessons/>

The initial objectives will involve creation of the learning garden. Students will help in the process as we:

1. Mark off area for garden and turn over soil and test for the proper mineral balance.
2. Add soil and humus so that the soil is in top condition for plants to be added in the spring.
3. Mark garden boundaries, and place rocks for water run-off/drainage.
4. Research the types of flowers best suited for attracting a maintaining butterfly habitat.
5. Create maps for placement of flowers.
6. Order and purchase butterfly attracting flowers.
7. Gradually plant all the flowers and plants for our butterfly garden.

We are hoping to accomplish many learning objectives through the creation and utilization of our butterfly learning garden. The following lists a few:

- Students will use the butterfly learning garden to investigate and understand that plants and animals undergo a series of orderly changes as they grow.
- Students will utilize features of the butterfly learning garden in order to apply the scientific method for investigating phenomena such as growth cycles, weather accumulation and changes, measures of change, and best approaches for optimal garden conditions.
- Students will investigate and understand the impact of human influences on plants and animal survival.
- Students will investigate and experiment with the various types and components of soil.
- Students will investigate and understand the basic plant anatomy and life processes.
- Students will investigate and understand how plant and animals, including humans interact with one another in an ecosystem.
- Students will investigate and understand how traits of organisms allow them to survive in their environment.

- Students will investigate and understand the lifecycle of the butterflies in the learning garden and research their migratory behavior and other adaptations.
- Students will research the location and climate of Mexico, the migratory wintertime destination of the Monarch butterflies that will be growing in our learning garden.
- Younger students will work with older students in the garden, in order to observe and record plant changes, weather changes, and butterfly metamorphosis.

The major emphasis of the learning garden is to provide teachers and students with hands on opportunities for real-world learning. The learning garden will provide a medium for project-based learning within the grade levels and in some cases between grade levels. Our school has been fostering community-based learning experiences throughout the school, and specifically among our kindergarten and fifth grade students. It is my hope that the learning garden will provide another means for our "K5 Buddies" to work cooperatively as scientists in their study of the learning garden habitat.

Teachers will use various assessment measures, to include HCS power quizzes, benchmark tests, authentic assessments through teacher observation, and teacher made assessments.

**Project Budget: \*** Landscaping Stones-\$300  
 Plants:  
 Milkweed, fennel, passion flower, leatris, delphinium, bee balm, lantana, and other butterfly attracting varieties.-\$200  
 We have already started our garden, and have acquired many donations to put many pieces in place to include:  
 rain barrels  
 garden pond liner  
 garden pond pump  
 plant boxes for annuals  
 mulch  
 soil

**Name: \*** Melissa Twisdale

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**Phone Number: \*** (757) 850-5100

**All information in this application is correct. I have reviewed the proposal with my school principal or organizational leader. As a condition of accepting the mini-grant money, I understand that I will be required to complete and submit the project summary form and pictures from the project upon** By checking the box and submitting this form, I certify the above.

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completion of this project. I will  
submit my summary report within  
14 days of completion. \*

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