2009 Annual Convening of Service-Learning Leaders
Maryland State Department of Education

Service-Learning Unit

Bluebird Restoration Project

Primary Subject: Science

Grade Level: 7th Grade

Additional Subject Area Connections:
Math, Technology, Engineering, Language

Unit Title: Bluebird Restoration Project

Type(s) of Service: Direct Action

Unit Description: As students study the factors that have an environmental impact on an ecosystem, they will research and develop a plan of action to restore the population of a native species that has been diminished in the local area.

Potential Service-Learning Action Experiences:

- **Restoring native animal species and creating habitat for native animal species.**
- **Restoring native animal species and/or their habitats (Bluebirds)**
- **Bluebirds:**
  www.birdsforever.com/bluebird.html
  www.nabluebirdsociety.org/birdfacts.htm
  www.mbr-pwrc.usgs.gov/Infocenter/i7660id.html
  www.news.cornell.edu/Chronicle/99/5.6.99/bluebird_count.html

Maryland State Curriculum Indicators Met

Science:
Students will demonstrate the thinking and acting inherent in the practice of science.
B. Applying Evidence and Reasoning

Standard 3.0 Life Science:
The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interactions that occur over time.

1. Give reasons supporting the fact that the numbers of organisms an environment can support depends on the physical conditions and resources available.
   a) Explain the populations increase and decrease relative to the availability of resources and the conditions of the environment.
   b) Identify and describe factors that could limit populations within any environment, such as disease, introduction of nonnative species, depletion of resources, etc.
   d) Cite examples to illustrate that competition is reduced when organisms use different sets of resources, such as birds in a forest eat different kinds and sizes of seeds.

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Local School System: Charles County Public Schools

LSS Coordinator: Jack Tuttle (CCPS Service Learning Coordinator)
Marjorie Watson (Davis SSL Coordinator)

LSS Contact Information:
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Additional VSC Indicators Met
Math:
Standard 7.0 Processes of Mathematics
Students demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.
A. Problem Solving
1. Apply a variety of concepts, processes, and skills to solve problem

Objectives –
- Identify the question in the problem.
- Decide if enough information is present to solve the problem
- Make a plan to solve a problem
- Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation.

Reading and Language Arts:
Standard 4.0 Writing
Students will compose in a variety of modes by developing content, employing specific forms, and selecting language appropriate for a particular audience and purpose.
1. Compose texts using the prewriting and drafting strategies of effective writers and speakers.
   a. Use a variety of self-selected prewriting strategies to generate, select, narrow, and develop ideas.
   - Evaluate topics for personal relevance, scope, and feasibility
   - Begin a coherent plan for developing ideas
   - Explore and evaluate relevant sources of information
   b. Select, organize, and develop ideas appropriate to topic, audience, and purpose
   - Organize information logically
   - Use effective organizational structures

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Additional VSC Indicators Met
Math (cont.):
- Select or eliminate information as appropriate
- Verify the effectiveness of paragraph development by modifying topic, support, and concluding sentences as necessary

Engineering:
Students will demonstrate knowledge of and apply engineering design and development process.
Indicator Statement: Develop abilities to apply the design process. (ITEA, STL 11)

Objectives:
- Apply the design process to solve problems in and beyond the classroom (ITEA, STL 11-H)
- Specify criteria and constraints for design. (ITEA, STL 11-1)
- Test and evaluate the design in relation to the pre-established requirements, such as criteria and constraints, and refine as needed (ITEA, STL 11-K)
- Make a product or system and document the solution (ITEA, STL 11-L)
- Design, plan, and construct objects in response to a particular need or problem (e.g., instruments, machines, structures, systems)

Alignment with Maryland's Best Practices of Service-Learning:

Bluebird Restoration Project

1. Meet a recognized community need

The bluebird population was restored to the region. The population was originally diminished by the removal of plant life (trees and bushes) resulting from the construction of the elementary, middle and high school campuses.

2. Achieve curricular objectives through service-learning

See the state curriculum objectives as identified in the unit.

3. Reflect throughout the service-learning experience

Students gathered data through the website. Teachers worked with students to help analyze the effectiveness and impact of their project through visual aids and restoration project observations.

4. Develop student responsibility (Students have opportunities to make decisions about the service-learning project.)

Students were responsible for researching and developing a project relevant to their educational complex.

5. Establish community partnerships

Partnerships were developed between the community schools (high school and middle school). The technology component involved partnerships for materials with local businesses for construction of the bluebird houses.

6. Plan ahead for service-learning

Students investigated why native animal species are important to their community and were involved in all aspects of planning and implementation.

7. Equip students with knowledge and skills needed for service

Instruction regarding the environmental impact on the ecosystem and seasonal changes affecting bluebird habitats and. Students developed the skills necessary to implement their plan (building a bluebird box, data collection, and verification of repopulation).