Reading the River, Summer 2002

Environmental Education/Conservation
A Series of Lessons for Grades 1-5

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Environmental Education/Conservation

Context Of Curriculum Product

In the 2001-02 school year, the site based council of Highland Heights Elementary School decided to implement an enrichment program (Husky Hour) as part of their school's consolidated plan. It was one way to address the needs of gifted students who required creative activities beyond regular classroom learning. It was decided that all the students would participate, and that all certified staff would share in the responsibility of implementing the program. The lessons include students at all grade levels (1through 5) with mixed grade levels in all of the lessons. Husky Hour is taught in a series of 3 sessions of 4 days per session (total of 12) to be held on Friday afternoons from 2:15 - 3:00. Students choose which topics they want to study from a selection of 13 different topics to include studies such as English Country Dancing, Faraway Places, Pet Care, and Quilt Making to name a few. After each session, the students rotate to a new session to study a different topic. This provided an excellent opportunity to include some lessons and activities from the Reading the River Workshop.

Objectives

In these lessons, students will:

1. Describe the importance of preservation and conservation of our natural resources
2. Identify sources of nonpoint and point source pollution
3. Define terms associated with conservation/environmental education
4. Demonstrate how water is cleaned
5. List endangered species
6. Explain the importance of habitat preservation
7. Identify renewable and nonrenewable resources
8. Understand the concepts of reduce, reuse, recycle in making decisions as a consumer
9. Understand the impact of litter on our environment
10. Develop an awareness and appreciation for the need to be conscientious consumers and stewards

Program of Studies

Scientific Inquiry

- Ask scientific questions that can be investigated through observations combined with scientific information
- Ask scientific questions about objects, organisms, and event in the environment.
- Plan and conduct simple investigations
- Draw inferences based on information gathered
- Communicate (e.g. draw, graph, verbalize, write) investigations and explanations
- Review and ask questions about scientific investigations and explanations of other students.

Conceptual Understandings

- The Characteristics of Organisms
- Life Cycles of Organisms
- Organisms and Their Environment
- Structure and Functions in Living Systems

Applications/Connections

- Give examples of how science and technology relates to their community.
- Recognize how science is used to understand changes in population, issues related to resources, and changes in environments.

Core Content

Characteristics of Organisms

- LS3 Identify the basic needs of all organisms (e.g. air, water, nutrients, light) and research how organisms can survive only when these needs are met.

Life Cycles of Organisms

- LS5 Illustrate and /or compare the life cycles for different organisms

Organisms and Their Environments

- LS9 Observe how organisms' patterns of behavior are related to the nature of organisms' environments (adaptations).
- LS10 Evaluate how organisms change the environment. These changes may be detrimental or beneficial.

Materials

Freddy the Fish

1. A large fishbowl
2. A light colored sponge
3. A weight or fishing sinker
4. 6 small paper cups
5. Index cards
6. Powdered plant fertilizer
7. salt
8. Liquid detergent
9. Green and red food coloring
10. cold tap water
11. string
12. a pencil
13. soil
14. pancake syrup
15. punched paper dots
16. Hot tap water

Enviroscape

Presenter will provide materials

Cleaning the Water

1. Three plastic bottles
2. Cotton
3. Sand
4. Small stones
5. gravel
6. paper
7. Dirty water
8. Three glasses of jars

Wastewater Treatment

Presenter will provide materials

Endangered Species

Presenter will provide materials

Predator/Prey Scavenger Hunt

1. 4-5 sets of color construction paper marked as follows:
   blue- water
   green- food
   brown- shelter
2. 2 sets of red construction paper marked "Predator"
3. 2 sets of yellow construction paper marked "Prey"
4. pins or tape

Endangered Species in KY

Posters and materials provided by mail via other agencies

Animal Collages

1. large selection of old magazines (nature magazines are best)
2. 1/2 poster board for each student
3. glue
4. several pairs scissors
5. large colored markers

Renewable/Nonrenewable Resources

1, 10 pictures of consumer items mounted onto index cards (i.e. clothing, shoes, paper, aluminum can, etc.)

2. 10 pictures of natural resources- 5 renewable, 5 nonrenewable mounted onto index cards

Reduce/Reuse/Recycle-- Which is better?

A pair of 10 commonly found household objects that are throw-away or permanent (i.e., disposable diaper/cloth diaper, plastic fork/metal fork, paper towel/cloth towel, paper cup/glass cup, etc.)

Trash Timeline
A large assortment of commonly discarded household items to include paper carton, plastic bag, cigarette butt, leather shoe, piece of rope, class container, aluminum container, wax coated carton, hot dog, Styrofoam container, metal tool.

Campus Cleanup
One trash bag per student
One rubber glove per student
Refreshments and water for students

Activity Procedure
Each of the 12 activities have a different lesson and procedure. In 2 of the activities presenters will provide the lesson plan and materials. In the other activities the teacher has gathered materials, lessons, and activities from a variety of sources. See the Resources listed the description of Husky Hour Activities attached.

Definition/Explanation of Concepts
Students learn best when they are activity involved in their instruction. They do not learn when a teacher lectures to them or performs a demonstration in front of them, and they do not learn from the memorization of facts. Students need to manipulate objects, move their bodies, and use their senses. They need to be asked to make observations, then use their judgement about what they have observed. Teachers need to encourage students to make discoveries, ask questions, explore, make decisions, and solve problems. This is also the best approach in teaching students about their environment.

Students need to understand the connection all things have to one another-- that if one species is destroyed or eliminated everything else is effected by that change. It is imperative that they understand the necessity to preserve our natural resources, and that human activity has had severe detrimental impact on the earth's capacity to renew itself. New technologies have offered great hope in maintaining and improving the health of our environment, but these technologies also present new dilemmas that must be addressed. We must all assume responsibility for the care and preservation of our environment, and be able to make critical decisions that will affect all aspects of life.

"One of our prime responsibilities as educators is to prepare our youth to live compatibly and successfully in our universe. We must learn to live in such a manner that we can safely breathe our air, drink our water, and grow food in our soil. The interdependence of these cannot be ignored. Good teaching should result in a desirable behavioral pattern which preserves our environment." (Campbell County Schools Science Philosophy, Campbell County Schools Curriculum, 1993)

Assessment
There will be no formal assessment of student performance and no grades will be given. Teachers will monitor and check for students' understanding through a variety of informal measures:

1. Monitor students' classroom discussions for involvement and seeking of desired information, as well as through the types of questions that they ask.
2. Monitor students' responses to assure that the terms used are accurate and appropriate.
3. Check to see that all students are involved and cooperating, and that the older more capable students are including the younger students equally in the activities.
4. Students will be asked to describe, restate, and summarize the learning at the end of each lesson, and answer questions about the concepts taught.
5. In class discussions, students will be asked to analyze the facts presented and make decisions based on what they learned.
6. Students will be asked to describe sources of pollution, and problems in our environment, then present possible solutions that they as individuals can offer.

References

See Husky Hour Resources on list of activities.