

**READING THE RIVER  
SUMMER 2002**

**HEALTHY ENVIRONMENTS  
AND YOU  
LESSONS FOR SECOND GRADE  
SCIENCE/HEALTH/PRACTICAL LIVING**

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## PROMOTING HEALTHY ENVIRONMENTS

**Lesson Context:** The lesson described is one of several in a series to help promote guidelines for healthy environments to early primary students. The focus through these lessons is on water, its use, misuse and what we can do to help any water issues that we discover. See brief lesson descriptions below.

1. **Adopt a Land Area**  
Continuous Lesson 1: Habitat observation of land area in the fall, winter and spring (pollution and observable changes over each visit). Record notes in Kidspiration with use of symbol library. Water sample will be taken to observe under the digital microscope. Temperature and pH will be taken on each visit. Digital camera will be used to take pictures to compare habitat changes through the seasons. If any pollution issues are present, students will develop a plan of action for improvement.
2. **Rivers, Lakes and Streams**  
Continuous Lesson 2: Various maps of Kentucky will be used for student discovery of how streams and lakes flow into rivers. As discoveries are made about different water areas, students will highlight waterways we have discussed and studied. Specific detail will be given to those waterways in our community.
3. **Enviroscape**  
Students will have access to two enviroscape models throughout the year. Mary Kate Dickerson will be coming in to explain her job and how important it is that we do not pollute the water in our communities. Sanitation District Number 1 will be providing a model for us to use through our study.
4. **Sanitation District No. 1/ Erin Culp**  
Guest speaker Erin Culp will be coming in to share information about how water is purified as it goes through the treatment plant process. She will be sharing with us the importance of water and what we can do to help water issues facing us today.
5. **Water Pollution Power Point/Jeopardy/Word Search**  
Students will be reviewing information gained through use of a power point presentation. A jeopardy game has been created to review information. A word search has been developed using terms that will be discussed in SD#1's presentation. This will all be presented on the smart board.
6. **Save a Stream: Block by Block**  
A sewer cover painting kit is being sent from SD#1. Students will be designing logos to paint on drainage covers in our community.
7. **Only A Drop to Drink**  
Students will visualize actually how much useable freshwater there is currently. This demonstration will help students gain an understanding of the importance of water quality protection. What are our fresh water sources?
8. **Recycled**  
Students will review where our water comes from and the process it goes through as it is recycled. The poem "Recycled" will be used to inspire a creative writing piece about water and the importance of its reuse.

## **Adopting An Area**

**Grade Level: 2**

### **Objectives:**

In this lesson, students will:

1. assess their habitat as good, fair, or poor
2. observe and describe changes in their area through the 3 visits (fall, winter, and spring)
3. compare water samples from the 3 visits (digital microscope, pH, and water temperature)
4. develop a plan of action for any pollution issues in their area

### **Program of Studies**

Scientific Inquiry:

- ask simple scientific questions that can be answered through observations
- use simple equipment, tools, skills, technology, and mathematics in scientific investigations
- use evidence from simple scientific investigations and scientific knowledge to develop reasonable explanation
- communicate designs, procedures and results of scientific investigations

Conceptual Understandings:

- the position and motion of an object can be described by comparing it to another object or background
- weather changes from day to day and over the seasons
- organisms have basic needs and can only survive when these needs are met
- organisms have different structures that serve different functions. These structures are used to sort organisms into groups
- organisms' patterns of behavior are related to the nature of the organisms' environments. There are many different environments on Earth that support different types of organisms.

Applications/Connections:

- distinguish between natural objects and objects made by humans
- examine the interaction between science and technology
- examine how science fosters understanding of issues related to natural resources

-demonstrate how the study of science helps explain changes in environments

## **Core Content**

Properties of Objects and Materials:

SC-E-1.1.1 Objects have many observable properties such as size, shape, mass, color, temperature, magnetism, and the ability to react with other substances. Some properties can be measured using tools such as metric rulers, balances and thermometers.

Position and Motion of Objects:

SC-E-1.2.1 The position of an object can be described by locating it relative to another object or the background. The position can be described using phrases such as to the right, to the left, 50cm from the other object.

Properties of Earth Materials:

SC-E-2.1.2 Earth materials provide many of the resources humans use. The varied materials have different physical and chemical properties, which make them useful in different ways.

Changes in Earth and Sky:

SC-E-2.3.1 The surface of the Earth changes. Some changes are due to slow processes such as erosion or weathering. Some changes are due to rapid processes such as landslides, volcanic eruptions and earthquakes.

SC-E-2.3.2 Weather changes from day to day and over seasons. Weather can be described by observations and measurable quantities such as temperature, wind direction and speed, and precipitation.

The Characteristics of Organisms:

SC-E-3.1.2 Organisms have basic needs. Organisms can survive only in environments in which their needs are met.

Organisms and Their Environments:

SC-E-3.3.2 The world has many different environments. Distinct environments support the lives of different types of organisms. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.

SC-E-3.3.3 All organisms, including humans, cause changes in the environment where they live. Some of these changes are detrimental to the organism or to other organisms; other changes are beneficial.

## **Materials**

1. A marker stick labeled with each child's class number to stake adopted area.
2. Habitat assessment rubric to indicate good, fair, poor (the rubric will show fall, winter and spring assessments). Students will be providing input when developing the rubric.
3. Notebook for note taking and drawings to be transferred into Kidspiration Program on return to school. Special notes for pollution issues.
4. Water Collection Tools/Equipment: temperature probes, pH probes, bag for sample to view under microscope, critter collectors
5. Digital camera to take pictures to compare through the different visits
6. Checklist of tasks

## **Activity Procedures**

1. Discuss with students what they already know about habitats, critters that live in streams, and water quality/pollution issues.
2. Discuss students tasks: select an area, stake the area, detailed notes about observation of area (words and drawings, pollution concerns), water sample if available (testing will be done as a class for pH), temperature documented, digital camera picture of adopted area, habitat assessment rating, collections of critters if possible.
3. On return to school data will be organized, dated and discussed. Checklists will be collected.

## **Definition/Explanation of Concepts**

By adopting an area, students will be able to observe the changes that take place in an area through the different seasons. Students will also assess what habitat problems are in that given area and may be able to investigate the reasons for the problems. Students will have to problem solve and develop ideas that could help any pollution issues in their areas. After visiting this site through the year, hopefully students will take action in other areas that they know about to help any water quality issues.

It is major that our young people today take an active role in protecting our healthy environments and make efforts to create new ones. The future of water quality depends on what our youth does to protect it. It is our job to

make sure that kids today know what harm is happening to our environment every day. It is up to all of us to do what we can to protect our resources so that the circle of life remains unharmed.

Skills Include: analyzing, assessing, classifying, communicating, comparing, data collecting, describing, observing, evaluating, recording, reporting

### **Assessment**

1. Student habitat assessments will be compiled for comparisons of the 3 visits.
2. Observations/drawings and Kidspiration notes will be analyzed for the 3 visits.
3. All data will be collected and compared for the 3 visits (pH, water temperature, critter collections).
4. Plans of action for pollution issues will be collected and addressed as a class (possible letters to community leaders, newspapers, or clean up days organized).

### **Reference:**

This lesson was adapted from “Adopt a Stream – Stream Walk”  
Found in: Splashing in Kentucky. (1998) An Educator’s Guide to Nonpoint Source Water Pollution

Sources For the Lessons:

Splashing in Kentucky. (1998) An Educator’s Guide to Nonpoint Source Water Pollution.

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