

Reading the River, Summer 2002

**River Habitat Picture Book
Culminating Project for 6th Grade Science**

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River Habitat Picture Book

Objectives:

In this project students will:

1. Research and observe organisms that are found in a river habitat.
2. Produce a picture book that demonstrates their knowledge of a single creature's life cycle, energy resources and environmental interactions.
3. Present the book to a 4th grade reading group.

Program of Studies:

Scientific Inquiry

- Identify and refine questions that can be answered through scientific investigations combined with scientific information.
- Use appropriate equipment, technology, and mathematics in scientific investigations.
- Use evidence, logic, and scientific knowledge to develop scientific explanations.
- Communicate designs, procedures, and results of scientific investigations.

Conceptual Understandings

- Investigate how organisms obtain and use resources, grow, reproduce, and maintain stable internal conditions. Examine the regulation of an organism's internal environment.
- Analyze internal or environmental stimuli and organisms' behavioral responses. Explore how organisms' behavior changes through adaptation.
- Observe populations and determine the functions they serve in an ecosystem.
- Investigate energy flow in ecosystems.
- Investigate factors that affect the number of organisms an ecosystem can support.

Applications/Connections

- Recognize how science is used to understand changes in populations, issues related to resources, and changes in environments.

Core Content:

- SC-N-2.1.5 Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle. Water dissolves minerals and gases and may carry them to the oceans.
- SC-M-3.2.1 All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.
- SC-M-3.5.1 A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.
- SC-M-3.5.2 Populations of organisms can be categorized by the function they serve in an ecosystem.
- SC-M-3.5.3 For most ecosystems the major source of energy is sunlight.
- SC-M-3.5.4 The number of organisms an ecosystem can support depends on the resources available and the abiotic factors.

Materials:

- Information resources; books, internet, field trip observations and photos, and guest speaker information
- Paper, pencils, markers, crayons, photographs
- 3 ring binders (paper-folder type)

Activity Procedures:

- Students will select an organism that has a river or stream as a habitat or is part of their habitat.
- Students will then compile information about the organism including; energy resources, life-cycle and environmental interactions. Information will come from the following sources; field trip observations and photos, guest speaker, text book, library books, and internet.
- Students will then produce a book that will inform a reader about all of the previous aspects of the organism's life using both text and pictures.
- The book will need to include the following terms; population, community, ecosystem, habitat, niche, biome, biotic, abiotic, producer, consumer, and decomposer. These terms will have to be defined in a glossary included in the book.
- Students will read the book to a 4th grade reading group (4-8 students), then discuss the information with them through a series of follow up questions.

Assessment:

Student's final product will be assessed based on the following items;

- Proper use of the 11 required terms in the text.
- Terms defined in a glossary

- Proper inclusion of the organism's energy resources, life-cycle and interactions.
- At least 5 pictures
- Presentation to reading group

Definition/Explanation:

Students will be producing the book at the end of a unit covering ecosystems. We will focus on the ecosystems found in Kentucky throughout the unit. Towards the end of the unit students will choose an organism that lives in or near a river or stream. The student will then focus on that organism as we visit a local stream in Gallatin County. During the field trip students will record their observations of the organism's habitat, other organisms in the habitat and how they interact. They will observe abiotic factors found in the habitat. They will have an opportunity to listen to a guest speaker from the Kentucky Fish and Wildlife Resources. After producing the picture book they will take on the role of a teacher and present their book to a small group of 4th grade students. This activity will show how well the student was able to collect scientific data through observations and research, then present it to a group of students at a lower level of education. I believe that teaching a concept is a successful way for people to learn about that concept themselves.

Context:

The unit preceding the culminating project will cover concepts such as; ecosystems around the world, the water cycle, nitrogen cycle, carbon dioxide-oxygen cycle, energy resources (renewable and non-renewable), energy flow through an ecosystem, interactions within an ecosystem, interactions between ecosystems and the effects of abiotic factors on ecosystems. We will focus on ecosystems found in Kentucky throughout the unit. We will do this through a field trip and a guest speaker from the Kentucky Fish and Wildlife Resources. This unit is collaboration between the members of the 6th grade team at G.C.M.S.

References:

- Lisa Rawe, Kentucky Fish and Wildlife Resources, huntwithkids@juno.com
- "Splashing in Kentucky!: An Educators Guide to Nonpoint Source Water Pollution", Neeley, Cathy L., Kentucky Waterways Alliance
- Textbook, Science, Harcourt, 2002
- Reading the River,(2002), Licking River Watershed Workshop Packet, Morehead State University and Northern Kentucky University

