

Reading the River, Summer 2003

There is more in the water than you know!

Second & Third Grade

Science and Language Arts

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Title: There is more in the water than you know!

Grade Level: Second and Third Multi-grade (though adaptable to any elementary)

Objectives: In this lesson, students will be able to.....

- Identify some plants and animals living in fresh water
- Identify the characteristics of a fresh water habitat
- Understand the impact of pollution on water
- Identify sources of water pollution
- Examine water samples under a microscope
- Develop and design a plan to protect the water
- Read fictional and non-fictional books about fresh water

Programs of Studies Addressed:

Scientific Inquiry

- Use simple equipment (e.g., aquariums), tools (e.g., magnifiers, spoons), skills (e.g., observing, pouring), technology (e.g., video discs), and mathematics in scientific investigations.
- Ask simple scientific questions that can be answered through observations

Conceptual Understandings

- Fossils provide evidence about organisms that lived long ago.
- Organisms have basic needs (e.g., air, water, nutrients, light) 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 organisms' environments. There are many different environments

(e.g., deserts rainforests) on Earth that support different types of organisms.

-Demonstrate how the study of science (e.g., ecology, chemistry) helps explain changes in environments (e.g., pollution).

Reading

-Use auditory and visual strategies to understand words and their meanings

-Use word identification strategies, including prediction, context cues, and phonetic awareness, to read and understand unknown words.

Writing

-Use details, explanations, and examples to support ideas for specific audiences and purposes.

-Use appropriate details, examples, and explanations to meet needs of audiences for authentic purposes in a variety of forms.

Core Content for assessment addressed

-SC-E-2.1.3 Fossils found in Earth materials provide evidence about organisms that lived long ago and the nature of the environment at that time.

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-3.1.1 Things in the environment are classified as living, nonliving, and once living. Living things differ from nonliving things. Organisms are classified into groups by using various characteristics (e.g., body coverings, body structures).

SC-E-3.1.2 Organisms have basic needs. For example, animals need air, water, and food: plants need air, water, nutrients, and light.

Organisms can survive only in environments in which their needs can be met.

SC-E-3.1.3 Each plant or animal has structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.

SC-E-3.2.2 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-3.3.1 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 (e.g., dams built by beavers benefit some aquatic organisms but are detrimental to others).

WR-E-1.4 Transactive writing

RD-E-2.0.8 Identify main ideas and details that support them.

RD-E-2.0.9 Make predictions and draw conclusions based on what is read.

Materials

3” nets

5” nets

8” nets

Aqua scope

D-nets

Magnifiers

White enamel pans

Forceps

Enviroscape

Microscopes

Cover slips

Slides

Kid Pix Computer Program

Copies of various books on Rivers see References

Activity Procedure

1. As a class create a web of what the students know about water.
2. Explain to the students that water is home for many different types of animals and some of them you can't even see with your naked eye.
3. Have the student visit a local creek and collect water samples and search for macro invertebrates.
4. Have the students view their water samples under a microscope and draw what they see.
5. Discuss with the students about their findings.
6. Play RIVIT (Four Block Guided Reading Predicting activity) to introduce the story *Russell the Mussel* by Adele Conover, Richard Biggins, and Richard Neves.
7. Discuss what the story may be about as a class.
8. Read the story to the students
9. Discuss the events of the story and problems that Russell faced due to pollution.
10. Use the Enviroscape to present more information on pollution.

11. Have the students split into groups and discuss what they can do to stop pollution. Then have them present their ideas to the class.
12. Explain to the students the performance task and the rubric
13. Once the students have completed their performance task have them present them to the class.
14. Add more information to the web about water

Accompanying handouts / materials

Performance task

Rubric for grading Performance Task

Volunteers to Save the Water!

You are a concerned citizen for a community where they are polluting the local river.

You are an expert on the way water can be polluted.

You will create a project that will communicate to the community the importance of the river and how to keep it clean.

Choose one of the following ways to present your information

-Poster

-Flipbook

-Poem

-Slide show (KidPix)

-Report

You will be graded using the rubric.

Name _____ Date _____

	Good Job	Great Job	Excellent Job	Super Job
Pictures (Visuals)	One picture clearly representing a cause of pollution	Two pictures clearly representing causes of pollution	Three pictures clearly representing causes of pollution	Four or more pictures representing causes of pollution
Explanation of Causes	No explanation of causes of pollution.	Minimal explanation of causes of pollution.	Somewhat detailed explanation of causes of pollution.	Very detailed explanation of causes of pollution.
Explanation of Solution	No explanation of solution of pollution.	Minimal explanation of solution of pollution.	Somewhat detailed explanation of solution of pollution.	Very detailed explanation of solution of pollution.
Presentation	The student has to be asked to speak louder in order to be heard. Is not able to answer questions.	The student is hard to understand or be heard. Is able to answer some questions asked.	The student speaks clearly and loudly enough to be heard. Is able to answer some questions asked.	The students speaks clearly and loudly enough to be heard. Is able to answer all questions asked.

RUBRIC FOR THERE IS MORE IN THE WATER THAN YOU KNOW!

Definition / Explanation of concept / skill

Students will learn that there are living things besides fish in fresh water. The students will learn the causes and effects of water pollution. Students will be able to create and present a performance task share their knowledge of water pollution.

Method to assess stated objectives

Students will be monitored during class discussion on pollution. After the discussions and experiments students will create a poster, flipbook, poem, slide show, or report to express what they have learned about water pollution. Students will be grading using a rubric.

References

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Haslam, Andrew. Make it Work! RIVERS. c.2001, Two-Can Publishing

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Reid, George K. a Golden Guide Pond Life c. 2001, St. Martin's Press

McCauley, Jane R. Lets Explore a River c.1988, Scholastic