

Teacher Resources: Stream Life

Water in a stream rushes, splashes, tumbles or flows smoothly, creating different conditions and homes for a variety of organisms. In spite of the challenges of life in moving water, the streambed teams with insects. Many feed on plant and animal debris, helping to break down organic material that falls into the water, and they in turn provide a rich source of food for fish, birds, salamanders and other stream inhabitants.

UNIT VOCABULARY

Habitat	Predator
Prey	Stream
Current	Riffle
Run	Pool
Decomposer	Nymph
Larva	Shredder
Scraper-feeder	Collector

OUTSIDE YOU GO

Recess, or other breaks in the day for outdoor play, can be a great time to observe your students' learning. How well do your students cooperate, help each other and take turns when playing games? Do you notice them practicing problem solving while they build things with sticks or rocks? Do they discover anthills, dandelions, spider webs and other animals and plants? You can record your observations on a small note pad for use at parent/teacher conference time.

FOLLOW UP IDEAS

Morning Meeting: During introductions ask pairs of students to introduce themselves to each other, while the class listens:
Student 1: "Hi, _____. What was your favorite stream discovery?"
Student 2: "Hi, _____. My favorite stream discovery was _____.
What was yours?" Student 1: "Thanks for asking. My favorite stream discovery was _____."

Social Studies and Language Arts: Is there a parent in your school, who enjoys fly-fishing? Or perhaps there's a local fly-fishing guide or river conservation organization with whom you can connect. If so, start by having your students **read** *A Kid's Guide to Fly-fishing: It's More Than Catching Fish*, by Tyler Befus. You also might ask your students to **research** fly-fishing on the internet. Ask students to **write questions** that they have about trout, the insects that trout eat, tying flies, casting with a fly rod, fishing on local streams, etc. Invite your local expert to visit your class so your students can **ask their questions** and he or she can answer them. He or she also can give a demonstration in fly tying, show and describe gear, share favorite photos and teach the students how to cast a fly rod. Afterwards, students can **write an informative/explanatory text** based on what they learned.

NATURE JOURNALS

Ask students to close their eyes and to visualize the stream that they visited during their Four Winds lesson. Ask them specific questions and prompt them to visualize different features that they saw at the stream. You may even play the sound of a stream in the background. Ask the children to draw the stream, and to include as many details as they can. Allow the children to color in their drawings, or paint them with watercolors. Include stream creatures in the places where they were found.

BOOKS FOR KIDS

Sayre, April Pulley, *Trout Are Made of Trees*, Charlesbridge, 2008.

STREAM LIFE ALIGNMENT WITH NEXT GENERATION SCIENCE STANDARDS

When working with your students on the following Disciplinary Core Ideas (DCI), consider using and making connections to activities from this Four Winds unit to support students' learning. The DCI's listed here are taken from Grade Band Endpoints in *A Framework for K-12 Science Education*. Additionally, our activities give children opportunities to engage in many of the Science and Engineering Practices and reflect on the Crosscutting Concepts as identified in the Next Generation Science Standards.

Grades K-2 Disciplinary Core Ideas

- **LS1A:** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find and take in food, water and air. p.144
- **LS1B:** Plants and animals have predictable characteristics at different stages of development. Plants and animals grow and change. p.146
- **LS1C:** All animals need food in order to live and grow. They obtain their food from plants or from other animals. p.147
- **LS2A:** Animals depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. Animals depend on plants or other animals for food. They use their senses to find food and water and their body parts to gather, catch, eat, and chew the food. p.151
- **LS2B:** Organisms obtain the materials they need to grow and survive from the environment. Many of these materials come from organisms and are used again by other organisms. p.153
- **LS3A:** Organisms have characteristics that can be similar or different. Young animals are very much, but not exactly, like their parents and also resemble other animals of the same kind. p.158
- **LS3B:** Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. p.160
- **LS4C:** Living things can survive only where their needs are met. If some places are too hot or too cold or have too little water or food, plants and animals may not be able to live there. p.165
- **LS4D:** There are many different kinds of living things in any area, and they exist in different places on land and in water. p.166
- **ESS2A:** Wind and water can change the shape of the land. The resulting landforms, together with the materials on the land, provide homes for living things. p.180
- **ESS2B:** Rocks, soils, and sand are present in most areas where plants and animals live. There may also be rivers, streams, lakes, and ponds. p.183
- **ESS2C:** Water is found in the ocean, rivers, lakes, & ponds. It carries soil & rocks from one place to another and determines the variety of life forms that can live in a particular location. p.184

Grades 3-5 Disciplinary Core Ideas

- **LS1A:** Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior and reproduction. p.144
- **LS1B:** Plants and animals have unique and diverse life cycles that include being born (sprouting in plants), growing, developing into adults, reproducing, and eventually dying. p.146
- **LS1C:** Animals and plants alike generally need to take in air and water. p.148
- **LS2A:** Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. p.151-152
- **LS2B:** Organisms obtain gases, water, and minerals from the environment and release waste matter (gas, liquid, or solid) back into the environment. p.153
- **LS4D:** Scientists have identified and classified many plants & animals. Populations of organisms live in a variety of habitats, & change in those habitats affects the organisms living there. p.167

Grades 6-8 Disciplinary Core Ideas

- **LS1C:** Animals obtain food from eating plants or eating other animals. p.148
- **LS2A:** Organisms and populations of organisms are dependent on their environmental interactions both with other living things and with nonliving factors. p.152
- **LS2B:** Food webs are models that demonstrate how matter and energy is transferred between producers (generally plants and other organisms that engage in photosynthesis), consumers, and decomposers as the three groups interact—primarily for food—within an ecosystem. p.153

STREAM LIFE ALIGNMENT WITH COMMON CORE STANDARDS

In addition to science content, activities in this unit also can help students to practice the following mathematics and language arts concepts. The Common Core Standards listed here are in addition to the ones that our activities typically address, as listed in the Four Winds document, *The Nature Program: Alignment with Learning Standards*.

Grades K-2 Common Core Standards

- **Mathematics Standard 2.OA:** Use addition and subtraction within 100 to solve one- and two-step word problems.

Grades 3-5 Common Core Standards

- **Reading for Informational Text Standard 7:** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
- **Mathematics Standard 3.MD:** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

Grades 6-8 Common Core Standards

- **Mathematics Standard 6.SP:** Summarize numerical data sets in relation to their context, such as by giving quantitative measures of center (median and/or mean) and variability, as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **Mathematics Standard 6.RP:** Understand ratio concepts and use ratio reasoning to solve problems. Find a percent of a quantity as a rate per 100.

