
Aquatic Habitat Exploration



First-Grade Teacher Resource Guide

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Aquatic Habitat Exploration: Lesson Summary and Vocabulary

Lesson Summary: YSI's *Aquatic Habitat Exploration* program allows students to examine aquatic animals and acquire a greater understanding of the water-based environments around them. Students will discuss the composition of our local lakes and creeks and the way living and nonliving features combine to form an interactive ecosystem. They will be offered a chance to touch different arthropods, amphibians, and reptiles that live in and around our aquatic habitats. After learning about the creatures that might be found nearby, students will take a short hike. At the creek or lake, they will have the chance to apply their knowledge hands-on by looking for aquatic organisms and attempting to identify them with instructor aid. Throughout the program, students will be challenged to use their critical thinking skills to work through a wide range of open-ended questions and activities about aquatic habitats and the life that inhabits them.

Vocabulary: These are words and concepts that relate to the YSI *Aquatic Habitat Exploration* program.

Amphibian: a cold-blooded animal that starts its life in water or a very wet environment but when mature can live on land

Aquatic: consisting of, relating to, or being in water

Arthropod: an animal with an exoskeleton and jointed legs

Consumer: an organism that receives energy to live by consuming other organisms

Creek: a flowing body of water smaller than a river; stream.

Decomposer: an animal that feeds on dead matter and breaks it down into simpler compounds

Ecosystem: a community of living things, together with their environment

Environment: the sum of everything that surrounds animals and humans in the natural world, including the air, the water, and the soil

Habitat: the natural environment of a plant or animal

Lake: a stationary body of fresh water surrounded by land.

Metamorphosis: rapid changes in an animal's form after it is born or hatched

Niche: the part of an ecological system occupied by a particular organism, or the functions of that organism in the system

Producer: an organism that takes energy from light to produce living compounds

Reptile: a cold-blooded animal with dry scaly skin that typically lays soft-shelled eggs on land

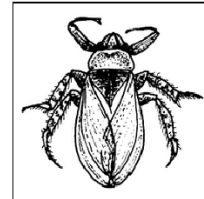
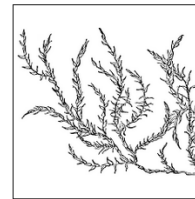
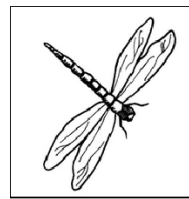
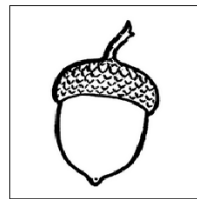
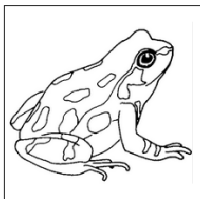
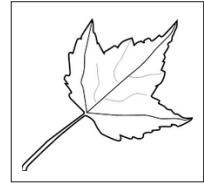
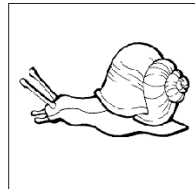
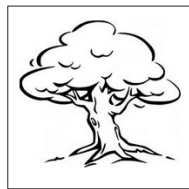
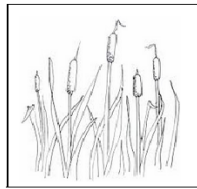
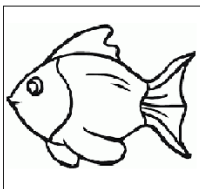
Watershed: the area that all of the rain water in a region drains into

Definitions based on www.dictionary.reference.com

Aquatic Habitat Exploration: Activity Page

Cut out the pictures below and paste them into the correct
box

Plants	Animals



Aquatic Habitat Exploration: Extension Activities

The extension activities listed below are from RAFT (Resource Area For Teaching). RAFT educational content is available online (www.raftbayarea.org) at no cost and is aligned to California Science Standards and Next Generation Science Standards. Below is a selection of post-visit activities from RAFT to extend student learning about aquatic creatures and the habitats they belong to.

[RAFT Idea: Bug Pooter - Resource Area For Teaching - RAFT Bay Area](#)

Grades Covered: K through 10

Subjects Covered: Life Science

Curriculum topics: Arthropods, Observation, Classification, Insects

Description: A safe, humane way to collect and observe small creatures...

<http://www.raftbayarea.org/ideas/Bug%20Pooter.pdf>

[RAFT Idea: Mini Ice Mountains – Resource Area For Teaching – RAFT Bay Area](#)

Grades Covered: K through 10

Subjects Covered: Physical Science, Earth/Space Science

Curriculum topics: Landforms, Erosion, Patterns in Nature, Phases of Matter

Description: Use “mini mountains” of ice to observe how lakes, rivers, streams, and ice caves are formed...

<http://www.raftbayarea.org/ideas/Mini%20Ice%20Mountains.pdf>

[RAFT Idea: Ocean in a Box – Resource Area For Teaching – RAFT Bay Area](#)

Grades Covered: K through 6

Subjects Covered: Life Science, Earth/Space Science, Art

Curriculum topics: Oceanography, Environments, Ecology

Description: Our oceans have an entire world of aquatic life ...

<http://www.raftbayarea.org/ideas/Ocean%20in%20a%20Box.pdf>

[RAFT Idea: Water Cycle in 3D – Resource Area For Teaching – RAFT Bay Area](#)

Grades Covered: Pre-K through 12

Subjects Covered: Physical Science, Earth/Space Science

Curriculum topics: Water Cycle, Weather, Atmosphere

Description: Students use a circular format to create a realistic model of all phases of the water cycle ...

<http://www.raftbayarea.org/ideas/Land%20or%20Water.pdf>

Aquatic Habitat Exploration: Education Standards

The following pages cite California Science Content Standards, Common Core Standards, and Next Generation Science Standards which students will be exposed to during the program.

California Science Content Standards First Grade:

Life Sciences: 2. Plants and animals meet their needs in different ways. As a basis for understanding this concept:

- a. *Students know* different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.
- b. *Students know* both plants and animals need water, animals need food, and plants need light.
- c. *Students know* animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

Earth Sciences: 3. Weather can be observed, measured, and described. As a basis for understanding this concept:

- c. *Students know* the sun warms the land, air, and water.

Excerpted from CA State Standards: <http://www.cde.ca.gov/>

Common Core First Grade:

Speaking and Listening Standards: Students will...

1. Participate in collaborative conversations with diverse partners about grade 1 topics with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions.
 - b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
 - c. Ask questions to clear up any confusion about the topics under discussion.
2. Ask and answer questions about key details from information presented orally.
3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

Excerpted from Common Core Standards: <http://www.corestandards.org/>

Next Generation Science Standards First Grade:

Structure, Function and Information Processing

- **1-LS3-1:** Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
 - **Science and Engineering Practices:**
 - **Constructing explanations and designing solutions:** Builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.

Aquatic Habitat Exploration: Education Standards

- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1)
- o **Disciplinary core ideas:**
 - **LS3.A: Inheritance of Traits:** Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)
 - **LS3.B: Variation of Traits:** Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)
- o **Crosscutting Concepts:**
 - **Patterns:** Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)

Other Topics Covered

- o **Disciplinary core ideas:**
 - **LS1.A: Structure and Function:** 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. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)
 - **LS1.D: Information Processing:** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)
- o **Crosscutting Concepts:**
 - **Structure and Function:** The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)

Excerpted from NGSS: <http://www.nextgenscience.org/>