
Life in a Pond



First-Grade Teacher Resource Guide

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Life in a Pond: Lesson Summary and Vocabulary

Lesson Summary: YSI's *Life in a Pond* program allows students to touch and examine aquatic animals and acquire a greater understanding of the pond's unique ecology. The presentation focuses on both instructor-led discussion and hands-on activities. Students will first work as a group to put together a model of a pond. They will discuss the role of each plant, animal, and object in forming an interactive system, and come to understand how the food chain is sustained. Discussion will continue as the instructor presents live examples, touching on the physical adaptations, diets, roles, and growth of different aquatic organisms. Throughout the program, students will be challenged to use their critical thinking skills to answer a wide range of open-ended questions and construct a comprehensive picture of life within our local ponds.

Vocabulary: Below are words and concepts that relate to the *Life in a Pond* program.

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

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

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

Fresh Water: inland water that does not contain large quantities of salt like the ocean

Larva (Entomology): the wingless, feeding stage of an insect that undergoes complete metamorphosis

Metamorphosis (Biology): major changes in form from one stage to the next in the life cycle of an organism

Nymph (Entomology): the young of an insect that does not undergo complete metamorphosis, usually differs from the adult in that it is smaller and does not have wings

Pond: a still body of fresh water that is smaller, and shallower than a **lake**. Ponds and lakes form in natural or man-made depressions or from building banks or dams around an area.

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

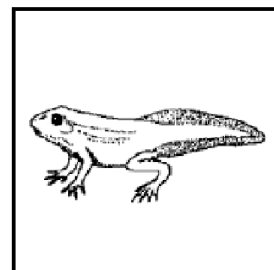
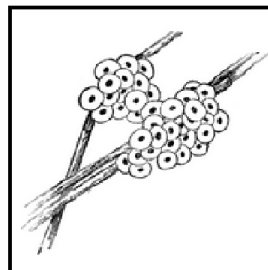
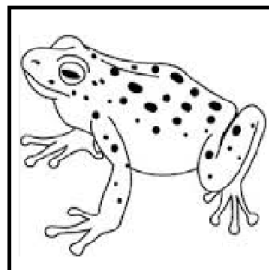
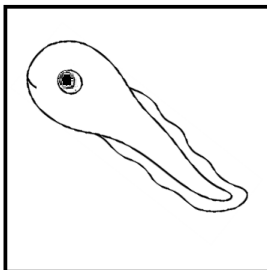
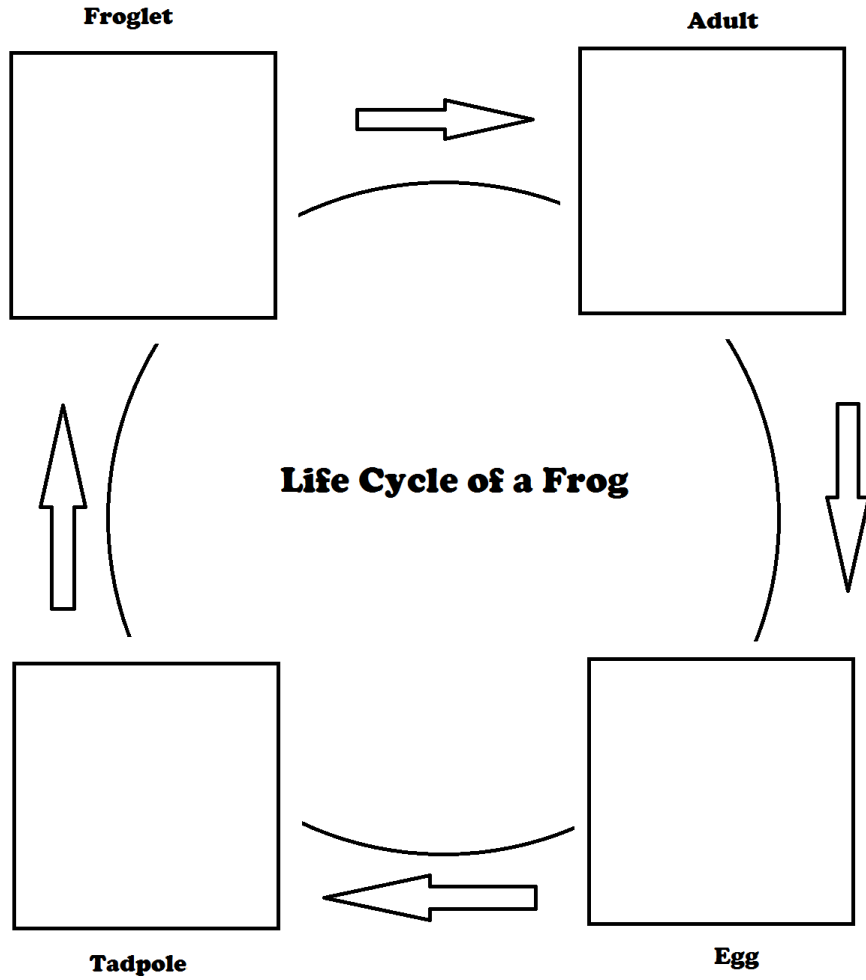
River: a large flowing body of fresh water; smaller flowing bodies of water are called **creeks** or **streams**

Water Cycle: the circulation of the earth's water, in which water **evaporates** from the oceans into the atmosphere, **condenses** to form clouds, falls as **precipitation** (rain, snow, sleet), and returns to the oceans via fresh water bodies on land

Definitions based on www.dictionary.reference.com

Life in a Pond Activity Page

Color, cut and paste each picture into the correct box



Life in a Pond: 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 life in a pond.

[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 Our oceans have an entire world of aquatic life, and provide a home to thousands of species...

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

[RAFT Idea Land or Water – Resource Area For Teaching – RAFT Bay Area](#)

Grades Covered: Pre-K through 3

Subjects Covered: Life Science

Curriculum topics: Animals, Environments, Sorting and Classifying

Primary learners can sort animals into two categories in this activity: those that live on the land, and those that live in the water...

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

[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.

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

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

Life in a Pond: Education Standards

Our Life in a Pond program will contribute to students' ability to meet the California Science Content Standards, Common Core, and Next Generation Science Standards listed below.

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:

- a. *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.
 - Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1)
 - **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)
- **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:

- **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)
- **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/>