

Science
Unit 2: Pond Life

Essential Understandings	<ul style="list-style-type: none"> ▪ There are similarities within the diversity of all living things. ▪ Living things depend on one another and on non-living aspects of the environment. ▪ Living things change over time.
Essential Questions	<ul style="list-style-type: none"> ▪ How are organisms that live in the pond habitat similar? ▪ How are organisms that live in the pond habitat different? ▪ How can organisms be classified? ▪ How do living things depend on one another and on non-living aspects of the environment? ▪ What is a food web? ▪ Why do living things change over time? ▪ What is a producer? ▪ What is a consumer? ▪ What is a decomposer?
Essential Knowledge	<ul style="list-style-type: none"> ▪ Living things can be grouped and classified according to their physical characteristics. ▪ Some organisms are made of one cell and others are made of a collection of cells. ▪ There is interdependency of living organisms within a food web. ▪ Animals use food for energy and repair. ▪ An organism undergoes many changes during its life cycle. ▪ Organisms or ecosystems may not work well if a part is missing or broken. ▪ A species changes over time to increase its chances of survival. ▪ A producer is a green plant that makes its own food. ▪ A consumer is an organism that may eat producers and/or consumers. ▪ A decomposer is an organism that breaks down consumers and producers at the end of their life cycles. ▪ Scientists use tools to conduct investigations, gather data, and answer questions. ▪ Scientists use evidence to develop and communicate theories and understandings.
Vocabulary	<ul style="list-style-type: none"> ▪ <u>Terms:</u> <ul style="list-style-type: none"> ○ similarities, diversity, organisms, habitat, classify, physical characteristics, interdependent, food web, predator, prey, producer, consumer, decomposer, species, adaptation, environment, response, survival, magnifying glass, microscope, life cycle, vernal pool

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<p>Essential Skills</p>	<ul style="list-style-type: none"> ▪ Identify physical characteristics of plants and animals that live in and around the pond. ▪ Classify organisms. ▪ Describe a food web within the pond environment and the importance of each part. ▪ Identify the connection between living and non-living components in the pond habitat. ▪ Describe ways in which organisms depend on one another. ▪ Explain how organisms can affect the environment. ▪ Identify ways an organism changes during its life cycle. ▪ Give examples of single cell organisms. ▪ Give examples of multi-celled organisms. ▪ Compare how the needs of multi-celled and single celled organisms are met. ▪ Explain how organisms or ecosystems may not work as well if a part is missing or not working correctly. ▪ Define and give examples of producers, consumers, decomposers, and how they influence one another. ▪ Describe how species adapt over time. ▪ Ask questions and seek answers from reliable sources. ▪ Plan and conduct an investigation using appropriate tools. ▪ Use data to develop and communicate outcome.
<p>Related Maine Learning Results</p>	<p><u>Science</u> A. Unifying Themes A1. Systems Students explain interactions between parts that make up whole man-made and natural things. b. Explain ways that things including organisms, ecosystems, or man-made structures may not work as well (or at all) if a part is missing, broken, worn out, mismatched, or misconnected.</p>

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**Related
Maine Learning
Results**

- B. The Skills and Traits of Scientific Inquiry and Technological Design
- B1. Skills and Traits of Scientific Inquiry
Students plan, conduct, analyze data from, and communicate results of investigations including fair tests.
- a. Pose investigable questions and seek answers from reliable sources of scientific information and from their own investigations.
 - b. Plan and safely conduct investigations including simple experiments that involve a fair test.
 - c. Use simple equipment, tools, and appropriate metric units of measurement to gather data and extend the senses.
 - d. Use data to construct and support a reasonable explanation.
 - e. Communicate scientific procedures and explanations.
- E. The Living Environment
- E1. Biodiversity
Students compare living things based on their behaviors, external features, and environmental needs.
- a. Describe how living things can be sorted in many ways, depending on which features or behaviors are used to sort them, and apply this understanding to sort living things.
 - b. Describe the changes in external features and behaviors of an organism during its life cycle.
- E2. Ecosystems
Students describe ways organisms depend upon, interact within, and change the living and non-living environment as well as ways the environment affects organisms.
- c. Describe some of the ways in which organisms depend on one another, including animals carrying pollen and dispersing seeds.
 - d. Explain how the food of most animals can be traced back to plants and how animals use food for energy and repair.
 - e. Explain how organisms can affect the environment in different ways.
- E3. Cells
Students describe how living things are made of one or more cells and the ways cells help organisms meet their basic needs.
- a. Give examples of organisms that consist of a single cell and organisms that are made of a collection of cells.
 - b. Compare how needs of living things are met in single-celled and multi-celled organisms.

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<p style="text-align: center;">Related Maine Learning Results</p>	<p>E5.Evolution Students describe the fossil evidence and present explanations that help us understand why there are differences among and between present and past organisms. a. Explain advantages and disadvantages gained when some individuals of the same kind are different in their characteristics and behavior.</p>
<p style="text-align: center;">Sample Lessons And Activities</p>	<ul style="list-style-type: none"> ▪ Classifying activities (i.e., leaves, objects, etc.). ▪ Take a water sample from a pond and classify life forms. ▪ Illustrate a food web. ▪ Choose a pond plant or animal. Become that creature and write a story about a day when you had to adapt to your environment.
<p style="text-align: center;">Sample Classroom Assessment Methods</p>	<ul style="list-style-type: none"> ▪ Draw a pond, classify the organisms, and show interdependence. ▪ Describe how and why a species changes.
<p style="text-align: center;">Sample Resources</p>	<ul style="list-style-type: none"> ▪ <u>Publications:</u> <ul style="list-style-type: none"> ○ <u>Look At A Pond</u> - Rena Kirkpatrick ○ <u>One Small Square Pond</u> - Donald Silver ○ <u>Pond Life</u> - Frank Greenway ○ <u>Pond Life</u> - George Reid ○ <u>Pond Life</u> - Lynn Stone ○ <u>Pond Life: Watching Animals Find Food</u> - Herbert Wong ○ <u>Pond Life: A Guide To Common Plants and Animals</u> - George Reid ○ <u>Pond Life: Watching Animals Grow Up</u> - Herbert Wong ▪ <u>Video:</u> <ul style="list-style-type: none"> ○ <u>Life In A Drop Of Water</u> ○ <u>Ponds and Rivers</u>- Bill Nye