

WETLANDS

Unit Overview: Students will be introduced to wetlands as ecosystems, unique homes to various types of organisms. Through exploration and observation of two wetland habitats, students will begin to think about biodiversity. Students will answer essential questions and be introduced to scientific observation and explanation.

Grade Levels: K-6

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Desired Results

Standard: K-LS1 From Molecules to Organisms: Structures and Processes

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

Standard: K-ESS3 Earth and Human Activity

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

Standard: 1-LS1 From Molecules to Organisms: Structures and Processes

- 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Standard: 2-LS4 Biological Evolution: Unity and Diversity

- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

Standard: 3-LS1 From Molecules to Organisms: Structures and Processes

- 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Standard: 3-LS3 Heredity: Inheritance and Variation of Traits

- 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

Standard: 3-LS4 Biological Evolution: Unity and Diversity

- 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Standard: 4-LS1 From Molecules to Organisms: Structures and Processes

- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Standard: 5-LS2 Ecosystems: Interactions, Energy, and Dynamics

- 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

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<p>Standard: MS-LS1 From Molecules to Organisms: Structures and Processes</p> <ul style="list-style-type: none"> MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. <p>Standard: MS-LS2 Ecosystems: Interactions, Energy, and Dynamics</p> <ul style="list-style-type: none"> MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. 	
<p>Understanding(s):</p> <p>Students will understand that...</p> <ul style="list-style-type: none"> Wetlands are unique ecosystems that need to be conserved. Wetlands are home to a wide range of plants and animals. Wetland plants and animals have adaptations that help them survive in their habitat. Vernal pools play a critical role in the life cycle of some Maine amphibians. Without these pools, the food chain in the surrounding forested ecosystem would be disrupted. 	<p>Essential Question(s):</p> <ul style="list-style-type: none"> What makes wetlands unique ecosystems as a whole and individually? How are wetlands a good habitat for various organisms? What adaptations do wetland plants and animals have? (Grades 4 through 6) What classifications and types of plants can be found in wetlands? Which wetlands and wetland plants and animals can be found in Maine?
<p>Students will know...</p> <ul style="list-style-type: none"> Types of wetlands. Plants and animals found within different wetlands. Similarities and differences between reptiles and amphibians. Life cycle changes during complete and incomplete metamorphoses. 	<p>Students will be able to...</p> <ul style="list-style-type: none"> Identify how wetlands differ from other ecosystems. Identify different species of plants and animals found within wetlands.

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Assessment Evidence	
<p>Performance Tasks:</p> <ul style="list-style-type: none"> ● Learn the adaptations of wetland animals and plants, and be able to describe their importance to the organisms' survival. ● Visit two different wetland habitats to compare the plant and animal life found in each. 	<p>Other Evidence:</p> <ul style="list-style-type: none"> ● Vocabulary activities. ● Field survey of two wetland habitats. ● Drawing of a wetland and the plants and animals that live there and their adaptations. ● Metamorphosis worksheet.

Learning Plan
<p>Learning Activities:</p> <ul style="list-style-type: none"> ● Visit the websites below to learn more about wetland types. ● Do vocabulary activities to learn the key vocabulary. ● Look at pictures of wetlands and identify the key characteristics. ● Understand the importance of wetlands as an ecosystem: who uses them, how do they use them, and why? ● Learn the difference between nocturnal, diurnal, and crepuscular behavior. ● Compare and contrast reptiles' and amphibians' characteristics and understand how that affects their relationship to the wetland. ● Learn about complete and incomplete metamorphosis through the example of a few species found within wetlands. ● Understand the importance of plants to wetland ecosystems. ● Learn the various classifications and types of plants found within wetlands. (Grades 4- 6) ● Identify and discover various wetland species that are native to Maine. ● Visit two different wetland habitats on the Gardens' property and compare the plant and animal life living there. Grades 4 through 6 will use a field guide to identify what they find. ● Review the essential questions with the group. ● Draw a wetland (any type) and include three plants and three animals that live there. Label one adaption of each plant and animal. ● Illustrate complete and incomplete metamorphosis.

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Web Resources:

<https://www.uaex.edu/environment-nature/wildlife/youth-education/TR%20Wetlands%20activities%20DU.pdf>

<https://www.epa.gov/wetlands/classification-and-types-wetlands#marshes>

https://kids.lovetoknow.com/wiki/Wetlands_for_Kids

https://magicschoolbus.fandom.com/wiki/Gets_Swamped