

Seminole County Water Atlas Learning Kit

What Lives in a Wetland? Lesson Plan

Students learn about the importance of wetlands and the interrelationships of wetland organisms.

Water Atlas Curriculum Lesson #

What Lives in a Wetland? (Who Eats What?)

Lesson Summary: This lesson will provide students with an opportunity to better understand the interrelationships of some of the different organisms that are found in wetlands. This lesson will also expose students to the importance of wetlands to not only animals but also mankind.

Grade Level: Middle School (5th–8th).

Time Allotted: Approximately 3 class periods (50 minutes each period).

Performance Objectives:

References are to the Next Generation Sunshine State Standards (2007).

Science

SC.6.N.1.1 Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.7.L.17.1 Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.3 Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

Language Arts

LA.6.4.2.2 The student will record information (e.g., observations, notes, lists, charts, legends) related to a topic, including visual aids to organize and record information and include a list of sources used.

LA.8.2.2.3 The student will organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, or comparing/contrasting).

LA.6.4.2.2 The student will record information (e.g., observations, notes, lists, charts, legends) related to a topic, including visual aids to organize and record information and include a list of sources used.

LA.6.4.2.3 The student will write informational/expository essays (e.g., process, description, explanation, comparison/contrast, problem/solution) that include a thesis statement, supporting details, and introductory, body, and concluding paragraphs.

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Prior Knowledge

Students should have prior knowledge of the steps in a scientific investigation. Teachers should review with students the procedures of scientific methodology.

Topic Overview

Wildlife depends on wetland habitats for survival more than any other ecosystem. Often called “nurseries of life,” wetlands provide habitat for thousands of species of aquatic and terrestrial plants and animals. Although wetlands are best known for being home to water lilies, turtles, frogs, snakes, alligators, and crocodiles, they also provide important habitats for waterfowl, fish, and mammals. Migrating birds use wetlands to rest and feed during their cross-continental journeys and as nesting sites.

However, due to increasing agricultural land use and urban development, wetlands have been lost in the United States at an alarming rate, which should be of concern to almost everyone. Apart from providing sanctuaries to many plants and animals, there are other important benefits of wetlands. They filter pollutants from water, help with flood control, and provide places for recreation.

In this lesson, students will explore energy transfer between the different species of plants and animals that live in wetlands.

Key Vocabulary

Carnivore

An organism that feeds chiefly on the flesh of animals

Erosion

Wearing away of land surfaces by wind or water through the processes of weathering, dissolution, abrasion, corrosion, and transportation. While erosion is a natural process, it can be accelerated by poor land management practices.

Food chain

A series of nutritional steps that pass energy through an ecosystem via a series of organisms, starting with plants.

Herbivore

An animal that feeds on plants.

Hydrologic cycle

The global cycle of water movement from the atmosphere to Earth and back.

Omnivore

An organism that eats both plants and animals.

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Wetlands

Areas where water stands, or where soils are saturated with water, during all or part of the year. Characterized by vegetation adapted to life in wet conditions, wetlands provide essential habitats for many species.

Materials

- Access to wetland
- Digital still or video camera (optional)
- Computer with Internet access

References

The following documents are available in the [Seminole County Water Atlas Digital Library](#):

King, D.M., & Herbert, L.W. (1997). [The fungibility of wetlands](#) National Wetlands Newsletter, 10-13.

Other references:

Howard T. Odum Center for Wetlands (<http://www.cfw.ufl.edu/>)

Haag, K.H., and Lee, T.M., 2010, Hydrology and ecology of freshwater wetlands in central Florida—A primer: U.S. Geological Survey Circular 1342, 138 p. <http://pubs.usgs.gov/circ/1342/>

UF/IFAS Wetlands Extension Website <http://wetlandextension.ifas.ufl.edu/>

Wetland Education Through Maps and Aerial Photography (WETMAAP). <http://www.wetmaap.org/>

YouthLearn Institute. Webbing.

<http://www.youthlearn.org/learning/teaching/techniques/webbing/webbing>

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Procedure

Engage/Elicit

1. Lead the class in a brainstorming exercise to list the different types of organisms (fish, birds, plants, reptiles, etc.) that live in a wetland
2. Ask the class to think of 2-3 organisms in each category, and write them on the chalk/white board (names of organisms cannot be repeated).
3. Help students to identify the category and sub-category of each organism in the lists: Decomposer, producer, consumer, carnivore, herbivore, omnivore.
4. Have students break into groups to do a webbing exercise to identify the inter-relationships among the organisms from the list generated by the class. Their map should show who eats what. (See References for how to do webbing)
5. Bring the groups back together. Have one group share their webbing diagram. Choose several different organisms in their web and for each discuss with the class:
 - a. What are some of the different ways in which climate change might affect this organism?
 - b. How might nutrient-rich runoff from nearby farmlands affect this organism?
 - c. Does this organism stay in the wetland all the time? If it uses other places as well, how does it get there? If the wetland were physically isolated from other habitat types, how would that affect it?

Explore

1. Take students on a field trip to a nearby wetland. (Beware of alligators!)
2. Arrange students into groups of 2-3.
3. Tell students they will be exploring different aspects of the wetland that are interesting to them. Aspects may include but are not limited to: the water quality, erosion and flood control, habitat quality, feeding relationships and the behavior of organisms in the wetland.
4. Have students make observations of the wetland with video cameras, still cameras, tables, charts and drawings.
5. Have student pose a researchable question based on their observation.
6. Students should then use appropriate referenced materials to provide answers to their question.

Explain

1. Ask each student (or team) to explain to the class their research questions and why they chose these questions.
2. Ask students to share with their classmates and teachers their planned procedures for answering their research questions.
3. Teacher should encourage students to provide feedback to their classmates on the researchable questions and procedures.

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Extend

Students should then answer the following questions:

1. Why are wetlands so important?
2. How might human actions affect the functions of a wetland?
3. What steps can we take to preserve our wetlands?
4. How do nutrients get recycled in a wetland?

Exchange/Evaluate

1. Have students develop a slideshow or other multi-media presentation of their research project and present it to the class.
2. Students will be assessed according to proper experimental procedure, creativity, and presentation.

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