

**TEACHING KATE
TEACHING KIDS ABOUT THE ENVIRONMENT**

TEACHING UNIT ON WETLANDS

Grade Level: 9-10

Time Required: 2 class periods

SC Science Standards

This lesson plan was correlated with only the grade level specified unless otherwise noted.

Grades 9-12:

- I. B. 2
- II. D. 2. a
- II. D. 5. b

Purpose

Students will become more aware of the different plant and animal habitats found in wetlands. Upon completion of field trip, students will learn the importance of and how to protect wetlands.

Skills

Analyzing, attributes and components, decision making, interpreting.

Concepts

Populations of organisms exhibit variations in size and structure as a result of their adaptation to their habitats; awareness and appreciation of plant and animal habitats in wetlands; wetlands occur in many forms and perform a great number of functions.

Materials Needed

paper	pencils	map
scissors	diagram of food chain	diagram of food web
plastic bags	binoculars	wetlands video
pictures of plants and animals found in wetlands		

Definition of Terms

<u>Anaerobic</u>	Living, acting or occurring in the absence of oxygen.
<u>Biological Niche</u>	Ecological role played by organism.
<u>Environment</u>	Sum of all external conditions and influences that affect the development and ultimately, the survival of an organism.
<u>Food Chain</u>	Transfer of food energy from organisms in one trophic level to those in another.
<u>Food Web</u>	Complex and interlocking series of food chains.
<u>Ground Water</u>	Water found under ground in the zones of soil and bedrock.
<u>Habitat</u>	The locality where a plant or animal normally lives and grows.
<u>Hydric Soil</u>	Soil that is wet long enough to periodically produce anaerobic conditions, thereby, influencing the growth of wetland plants.
<u>Hydrophyte</u>	Any plant growing in water or hydric substrate; wetland plant.
<u>Surface Water</u>	Rain water that collects as streams, rivers, lakes, ponds and potholes.
<u>Wetlands</u>	Lands transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface of the land; usually characterized by fluctuating water levels, hydric soil and an abundance of aquatic and marsh plants.

Before the Session

Plan a field trip to a wetland, preferably an area you are familiar with. If you are not familiar with any wetlands, contact your South Carolina Department of Natural Resources District Biologist.

Background Information

*What makes a wetland?

- Water input must exceed water output.
- Wetland Function and Values
 1. Function - Ecological process that occurs whether man is present or concerned.
 2. Value - Determines the human wants and desires.

What are wetlands?

There are many types of wetlands, including bogs, fresh water and salt water marshes and swamps. Wetlands stay wet for any of several reasons: they are in low areas that stay saturated by rain; they are fed from below by ground water that is at or near the surface; they are near rivers and other bodies of water that flood them periodically; or they are saturated along the coast by the tide.

Wetlands are valuable and productive in critical ways. They control floods by slowing down rushing water, thereby, letting it spread out over a broader area and eddy around trees and other vegetation. Wetlands also help purify water by trapping silt.

Wetland soils are classified as hydric soil. This type of soil is saturated and has little or no oxygen. A variety of chemical reactions occur in hydric soil. These reactions affect the nature of the soil over time, changing some of the physical and chemical properties. The initial composition of the soil, degree of wetness and frequency and duration of flooding determine what the soil will look or feel like.

An area with water above the soil surface for 7-21 consecutive days is considered a wetland. Freshwater wetlands are highly productive ecosystems. Wetlands are sedimentary systems. They accumulate carbon, nitrogen, phosphorus and other materials and exchange them among the wetlands, atmosphere and landscape. We are making a concerted effort to save the remaining wetlands, but progress is slow because of human resistance to save what appears to many as worthless land.

Suggested Lesson Plan

1. Class discussion- The following questions will be asked:
 - a. What is a wetland?
 - b. What are plant and animal habitats like in wetlands?
 - c. Discuss geographic locations of wetlands (maps).
 - d. Show video.
 - e. Follow-up video re-emphasizing key points along with discussion.

2. Field trip for class:
 - a. Have students record observations.
 - b. After returning to class, discuss observations.
 - c. Students will write a descriptive paragraph about the wetlands.

Application

Students are able to discuss the value and importance of wetlands, not just to humans but to wildlife and plants. Questions are still being raised as to whether wetlands are beneficial or just wasteland. Wetlands are the nursery grounds and homes for many species of animals which are utilized by man for food and fur. They provide resting and feeding grounds for migratory waterfowl. Wetlands provide homes and food for raptor species such as Bald Eagles and Osprey. They also act as gigantic filters allowing sediments to settle out and absorbing and neutralizing many pollutants. Many unique plant species aid in the filtration process. Other unique features of wetlands are carnivorous plants such as the Venus Fly Trap, pitcher plants, and sundrops. These are just a few of the unique aspects of wetlands. Are they wasteland?

Extension

Divide the students in half and engage them in a debate as to whether wetlands are beneficial or wasteland (look at the question from a developer's or farmer's view point). If the school is close to the coast visit a freshwater and a salt water wetland. Have students compare and contrast them. Discuss the Carolinas' unique and mysterious wetlands, the Carolina Bays or pocosins.

Resources Available

Elements of Ecology, 3rd edition. 1992. R. L. Smith. Harper Collins Publishers Inc., New York, N.Y.

Teaching KATE. 1995. Coalition for Natural Resource Education.

WETLANDS. Nebraska Department of Education in Conjunction with the Satellite Educational Resource Consortium.

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