

**TEACHING KATE  
TEACHING KIDS ABOUT THE ENVIRONMENT**

**WONDERFUL WETLANDS**

**Grade Level: 3-5,  
learning disabilities  
self-contained**

**Time Required: 5 class periods and  
90 minutes - 2 hours for field trip**

**SC Science Standards**

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

**Grade 3:**

- I. A. 1. a
- I. A. 4. a
- I. A. 5. a
- II. A. 1. b
- II. C. 2. a, d, f

**Grade 4:**

- I. A. 1. a
- I. A. 4. a
- I. A. 5. a
- II. A. 1. a
- II. B. 3. a

**Grade 5:**

- I. A. 1. a
- I. A. 4. a
- I. A. 5. a
- II. B. 1. b
- II. B. 4. d, e

**Purpose**

Students will be able to describe the characteristics of wetlands, demonstrate their understanding of the importance of wetlands to wildlife and humans and identify the role of wetlands in the water cycle.

**Skills**

Analysis, application, classification, comparing, description, discussing, identification, inference, interpretation, listing, matching, small group work, synthesis.

**Concepts**

Identification of the importance of wetlands and their role in plant and animal activity, awareness and appreciation of wetland ecology, the application of conservation in future wetland use.

## Materials Needed

video-Fabulous Wetlands	chart of a wetland
video-Journey of the Blob	student Venn Diagram
chart paper	student webbing chart
markers	bug spray
Polaroid camera film	pictures of wetlands
samples of hydrophyte plants	heavy, porous white paper
wax paper	newspaper
pictures of ponds, rivers, lakes	
reference material such as The Golden Press guides to pond life and wetlands	

## Definition of Terms

<u>Bog</u>	Wetland characterized by a build-up of peat, acid conditions and mostly sphagnum moss.
<u>Bottomland</u>	Low-lying land usually next to a river or stream. These areas are highly productive because they contain rich, moist, alluvial soil; add diversity to the landscape and provide habitat for a number of wildlife species disproportionate to their expanse.
<u>Carolina Bays</u>	Shallow; pond-like; elliptical, oval or asymmetrical geological formations of uncertain origin. These wetland depressions are found in the coastal plain and are oriented northwest to southeast with prominent sand ridges on the southeast sides.
<u>Ecosystem</u>	The interacting system of a biological community and its non-living environment; also, the place where these interactions occur.
<u>Erosion</u>	The breaking down or washing away of soil and rocks on the earth's surface.
<u>Estuary</u>	A partly closed body of water where fresh and salt water meet and mix.
<u>Filter</u>	To pass through material of various types to remove particles.
<u>Habitat</u>	An area that provides an animal or plant with adequate food, water, shelter and living space in a suitable arrangement.
<u>Hydric Soil</u>	Soil that is wet long enough to periodically produce anaerobic conditions, thereby, influencing the growth of wetland plants.

<u>Hydrophyte Plants</u>	Any plant growing only in water or very wet earth.
<u>Marsh</u>	Wetland with mostly grassy plant material on site.
<u>Obligate</u>	Must have a wet site to grow.
<u>Pocosin</u>	An upland swamp of the coastal southeast.
<u>Pollutants</u>	Harmful substances deposited in the air, water or land; leading to a state of dirtiness or unhealthiness.
<u>Sediment</u>	Soil particles, sand, clay or other substances that settle to the bottom of a body of water.
<u>Swamp</u>	Wooded wetland where water is near or above ground level.
<u>Water Cycle</u>	The continuous circulation of water in systems throughout the planet, involving condensation, precipitation, runoff, evaporation and transpiration.
<u>Wetland</u>	Land area that is covered or saturated with water to within 18 inches of the surface for 7 or more days. They have hydric soils and characteristic wetland vegetation.

### **Before the Session**

Gather needed materials, make arrangements for a field trip to two aquatic sites- one a wetland. Preview sites and get permission to gather some plants. Learn types of plants found in a wetland.

### **Background Information**

Wetlands are important in many ways. Wetlands provide homes and breeding grounds for millions of plants and animals which are important to people, including some which are rare or endangered. At least part of the year wetlands are covered by shallow water or have water logged soil. We have wetlands as small as a table top and wetlands that stretch for miles. Animals that live in wetlands range in size from alligators weighing up to 1,500 pounds to insects so small you can hardly see them. Plants can be as tall as the 150 foot cypress tree or as tiny as a one-celled diatom. The water can be fresh or saline. Wetlands include marshes, swamps, bogs, and Carolina bays. They can be prairie potholes, lagoons, mud flats, spring ferns, bayous, pocosins and sloughs. Wetlands are important habitats. For a long time, people thought wetlands were useless. They drained, paved and planted them. Now we have learned how valuable

wetlands are for all of us. Wetlands are the earth's natural air conditioner, giving off moisture and oxygen. They help purify and store water so we have fresh water to drink. They help prevent flooding by providing an area where flood waters can spread out and slow down. Wetland vegetation helps prevent erosion and act as filters to remove sediments and trap pollutants that would otherwise seep into the ground. People hunt, fish, hike, bird watch and boat in wetlands. Because of their great benefits, we all need to care about protecting and preserving wetlands.

## **Suggested Lesson Plan**

### Day 1

1. The teacher will lead a brainstorming session on wetlands. The information given will be written on chart paper in the Web format.
2. Students will then view the video- Fabulous Wetlands.
3. The class and teacher will then refer back to web made earlier. Using a second chart let the class decide what items you need to keep from chart 1 and also what should be added to the new chart after viewing the video.
4. Each student will then copy the second web chart on their own handout.

### Day 2

1. The class will review what was learned on day 1.
2. The class will then be divided into small groups of 4 or 5 students. Each group will be given chart paper and markers. They will be asked to discuss with their group the things that make a body of water a wetland. The groups will then list or draw the characteristics of a wetland on their charts.
3. Each group will share their list with the class.

### Day 3

1. The students will be shown pictures of some different kinds of aquatic plants found in wetlands and other fresh water habitats.
2. The teacher will then show students a small variety of samples of local aquatic plants.
3. The class will again be divided into small groups. Each group will be given 4 plant samples and guide books.

4. Using the guide books the groups will identify their plants and decide if the plant is from a wetland or another freshwater habitat.
5. Groups will then place their plants on sheets of heavy, porous white paper. They will cover each plant with wax paper. The name of the plant and where it would be found will be written on the wax paper.
6. The specimens will be placed between several sheets of newspaper. Heavy books need to be stacked on top to serve as a plant press.

#### Day 4

1. The class will take a field trip to two aquatic sites- one will be a wetland.
2. Using the water plant specimens from day 3, the groups should decide which site is a wetland and which another type of aquatic habitat.
3. Polaroid pictures of plants and animals will be taken by each group at the sites.

#### Day 5

1. Using the information learned in the last 4 lessons, the teacher will review with the students what they have learned about wetlands and other freshwater habitats using a Venn format.
2. Students will fill in their Venn worksheets for their folders.
3. When the class Venn diagram is completed, the students will attach their photos from the field trip to the correct places.

#### Day 6

1. Show the video - The Journey of the Blob.
2. Using a handout of the water cycle, developed by a teacher or found in a science workbook, students will review what was learned in the video about the water cycle and how wetlands contribute to the water cycle.
3. Next, list on a chart the environmental responsibilities that people have which were discussed on the video.

## Application

Have students draw pictures showing why wetlands are important to us or show ways that we can help to preserve our wetlands. Have each student draw a wetland metaphor which they derive from what they have learned. Wetlands act as a nursery, which could be represented by a cradle, for many species of aquatic insects and crustaceans, fish, waterfowl, reptiles and mammals. They act as a sponge soaking up floodwater and retaining moisture. A pillow or bed could signify a resting place for migrating waterfowl. Wetlands are like a mixer, whisk or egg beater because they add nutrients and oxygen into the water. They act as a sieve or strainer straining silt and debris from the water and as a filter, by filtering out the smaller impurities. Other images could be as an antacid neutralizing toxic substances, a box of cereal or can of food could signify feeding grounds and soap could relate to their action in helping cleanse the environment.

## Extension

1. Invite a speaker from the Natural Resource Conservation Service or the South Carolina Department of Natural Resources to speak to the class. If possible have them join the class on the field trip.
2. Use activity #27 from *Project Learning Tree* adapting it to the needs of the plants and animals in a wetland.
3. Build a terrarium to observe the water cycle.
4. Write diamante or cinquain poems about wetlands.

## Resources Available

Aquatic Project Wild. Western Regional Environmental Education Council, P.O. Box 18060, Boulder, CO 80308-8060.

Elements of Ecology, 3rd edition. 1992. Robert L. Smith. Harper Collins Publishers Inc., New York, N.Y. (Figures on pages 398 and 544.)

Fabulous Wetlands. Washington State Department of Ecology, Wetlands Section, MS PV-11, Olympia, WA 98504. \$15.00 or borrow.

Journey of the Blob. 1989. Oley: PA Bullfrog Films.

Jumbo Science Yearbook, Grade 3. Jack Houston. ESP Publishers, Inc.

South Carolina Wildlife - Wetlands...Magic Lands. Jan.-Feb. 1992, Vol. 39, No.1. S.C. Wildlife Circulation Dept., P.O. Box 167, Columbia, S.C. 29202-0167. Reprints \$4.00.

Walking the Wetlands: A Hikers Guide to Common Plants and Animals of Marshes, Bogs and Swamps. 1989. Janet Lyons and Sandra Jordan. John Wiley and Sons Inc., N.Y.

Wetlands, An Audubon Society Nature Guide. 1985. William A. Nering. Alfred A. Knopf, N.Y.

Wetlands. 1993. Emilie U. Lepthein and Joan Kalbacken. Childrens Press.

WOW!: The Wonder of Wetlands. 1991. B. E. Slattery. Environmental Concerns, Inc., P.O. Box P, St. Michaels, MD 21663.

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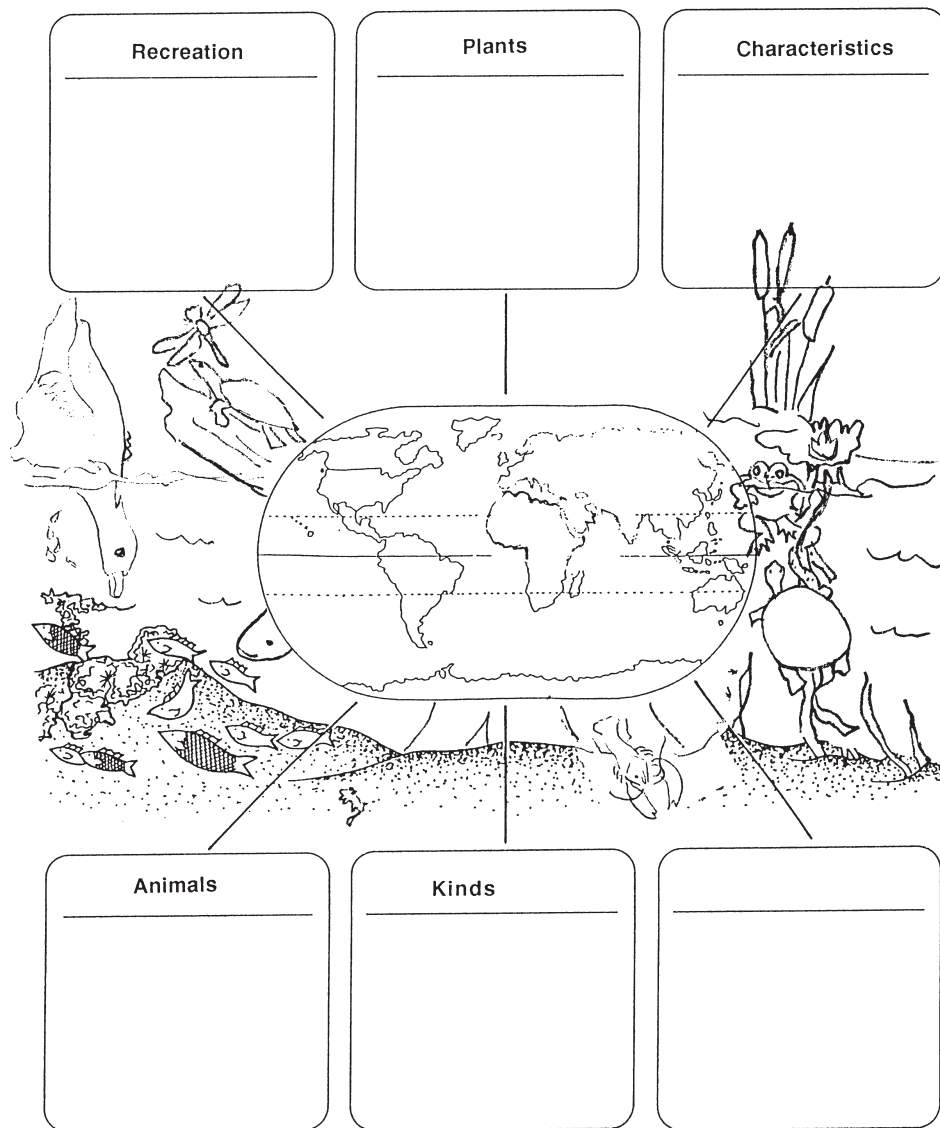
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WETLANDS WEB DIAGRAM

Name:

WETLANDS



Web

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WONDERFUL WETLANDS

WETLANDS VENN DIAGRAM

Name:

