

Observing and Identifying Characteristics of Wetlands

Name of Lesson Author: Ashley Tekuelve

School or Agency: Northern Kentucky University Student

Grades: 7-8

Subject Areas: Science, Social Studies, Language Arts, Performing Arts

Science Topic: Wetlands/Nature

Summary: Students will be divided into teams to observe the different stations of St. Anne's Wetland. Afterwards there will be a classroom discussion comparing and contrasting all the stations.

National Standards Core Content: Science: NS.5-8.1 Science as Inquiry.
NS.5-8.3 Life Science.

Objectives:

1. Students will be able to identify and understand the scientific method, such as comparing scientific elements of wetlands.
2. Students will also be able to better understand the ecosystem within a wetland.
3. Students will have gained further knowledge about wetlands.

Materials:

- Students should bring their notebooks to take notes.
- Markers or colored pencils
- Pens or pencils
- 5 cameras
- 5 sheets of graph paper (provide extra if needed)
- Several clipboards
- 5 magnetic compasses
- 2 packs of flagging material (More may be purchased if class is large.)
- 5 field guides each for trees, shrubs, flowers, and grasses
- Chart paper
- Several jars
- 5 long-handled dip nets
- 5 sieves
- 5 magnifying glasses
- 5 white enamel trays
- 5 field guides on animals
- 5 ph testing kits or sets of litmus paper
- 5 test kits for dissolved oxygen (if possible)
- 5 thermometers
- 5 meter sticks
- 5 long tape measurers
- 5 soil moisture testing kits

Procedures:

1. Teach students background information on wetlands, including important terms they should know.
2. Take a field trip to St. Anne's Wetland.
3. Once you have arrived at the wetland, explain to your students that there are five different stations in the wetland. Station one includes native pawpaw trees and the non-native honeysuckle which shows the impact of invasive species on the native species. Station two includes the sycamore trees, cottonwood trees, and frogs-frogs are likely to be found everywhere in the wetland. Station three includes the pin oak trees has the lowest elevation in the wetland. Station four shows secondary growth and succession, which includes the tulip poplar and invasion of the honey suckle. Station five has beach grove trees and is at the end of the trail.
4. Once the stations are explained, divide the students into five groups, each assigned to a different station.
5. In each group, choose a photographer, map creator, plant captain, animal captain, and water quality captain. Remind students that some plants and animals are dangerous or poisonous and shouldn't be handled. Point out the poison ivy in case students do not know what it looks like.
6. Divide all the materials evenly among each group.
7. Explain to each group that the photographer is in charge of taking pictures of anything that stands out to them. The team should tie flagging material around anything they take a picture of so that it can be easily distinguished. The groups should all take notes on the pictures taken by their photographer so that they can be used for discussion.
8. Then explain to the groups that the map creator is in charge of sketching the map of their area. They will use graph paper, clipboards, magnetic compasses, flagging material, a long tape measure, a compass, and markers or colored pencils. They will need to be sure to include distances, and approximate measures of the organisms in their station. Once they are finished sketching, they can use colored pencils or markers to make the map more colorful and to add details.
9. Give clipboards and tree, shrub, flower, and grass field guides to each of the plant captains in the group. The plant captain will take notes on all the plants that are found in the station, while the photographer takes pictures of them. They may also sketch pictures of the plants they find the most interesting.
10. Divide out the jars, long-handled dip nets, sieves, magnifying glasses, white enamel trays, and animal field guides to the animal captains in each group. The animal captains will identify and catch the animals in their stations using their jars and dip nets. The photographer should take pictures of these animals. Remind them that they may need to use their magnifying glasses to identify some animals. Inform them that they should fill the enamel trays with water while observing the water creatures. They may also sketch pictures of the animals they find most interesting. The group should take notes on the animals by creating a chart with columns with animal name, description, immediate environment, location, and whether it is a mammal, bird, insect, amphibian, reptile, vertebrate or invertebrate. Warn the students that they should not touch the animals because they may be

dangerous. They should be careful not to harm these organisms. They will more likely find bugs, amphibians, and reptiles more than any other animal species. Do not recommend they try to capture the birds because they could trip and fall, leading to a possible injury.

11. Then, issue out the pH testing kits, dissolved oxygen test kits, soil testing kits thermometers, meter sticks, and clipboards to each water captain in the groups. Inform the water quality captains that they will be in charge of using the pH testing kits, and dissolved oxygen test kits to test the soil moisture in each station. If they are near water, tell them to stay at least 5 meters away from the edge while testing the water, if this is possible to measure the pH levels. The thermometers will test the temperature of the water. The group will record the measure of the depth of standing water, the color of the water, the smell of the water, the movement of the water, and the soil's moisture by using a soil testing kit. Instruct the students that when they are testing the water to be sure an adult is nearby for safety precautions.
12. Once all the groups are finished recording all their data, check their information to be sure they properly understood. Then have them walk around and get a look at all the other stations before leaving the wetland.
13. Once you have arrived back at the classroom, start a classroom discussion comparing and contrasting all the different things found at the wetland. Have students look at all the pictures and sketches taken. Compare and contrast all the plants and animals found, while also comparing and contrasting the station maps and the water tests done in each station.
14. After plenty of discussion has been held and it seems like the students have a good grasp of everything that is going on, explain to them that wetlands are being threatened and ways that they can help wetlands. Also show them pictures of other wetlands around the world.

Assessment Techniques: Students will earn participation points for the project. They will be graded by how much of an effort they put into helping their group.

Resources: This activity was adapted from Project Learning Tree, 2009.

American Forest Foundation, Project Learning Pre K-8 Environmental Education Activity Guide, "Watch on Wetlands", copyright 2009, 2008, 2007 2006.