



DISCOVERING THE WETLANDS!

Summary

This is the first field trip for all visiting groups to the Fitz WERC. Students become acquainted with the importance of wetlands and how their actions can impact them. They also become familiar with the various types of plants and animals that one might encounter while visiting a wetland through various activities including bird watching, art, microscope use and a computer exercise.

Objectives

Students will:

- Name specific wetland plants and animals.
- Have an understanding of why wetlands are important and how to help preserve them.
- Communicate information to others in the class.
- Interpret native plants through art.
- Explore the ESHA's through observation and bird-watching.

California Content Standards Addressed

Grade Five- Earth Sciences 3e: "Students know the origin of the water used by their local communities."

Grade Six- Life Sciences 5.e: "Students know the number and type of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition."

Grade Six- Creative Expression 2.1: "Use various observational drawing skills to depict a variety of subject matter."

Grade Seven- Evolution 3.1: "Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms."

The Basics:

Grade Level:

5-7

Subject areas: Science, Art

Duration: 70-80

Materials:

For the Icebreaker

1. Wildlife card necklaces and key sheets for whiteboard. Found in a manila folder in the Discovering the WERC kit.
2. Nametags for the students.

For rotation activities

1. Classroom station:

- a. Computers, clipboards, pencils, colored pencils, copies of the "Discovering the Wetlands" handout, "Birds of the Watsonville Wetlands" PowerPoint presentation at: www.fitzwerc.org/wlinks/mslessons.htm
- b. Labeled animal skulls on one table
- c. Feathers, photo of male vs. female bird and microscopes with lamps on another table.

2. Binocular Station: binoculars, spotting scope if available, bird guides, a whiteboard drawing of binoculars for describing the different parts.

3. Greenhouse Station: clipboards, colored pencils, copies of the greenhouse coloring handouts.

Outline

There are four parts to this lesson.

- 1) Icebreaker: Who am I (10 minutes)
- 2) Introduction to the Watsonville Wetlands (20 minutes)
- 3) Rotation of WERC stations (45 minutes; 15 minutes at each station)
- 4) Closing Circle (5 minutes)

Procedure

1) Icebreaker: Who Am I? (10 minutes)

- Wildlife Cards Key is taped to the whiteboard.
- Explain that each student and mentor will wear a wildlife card around his/her neck but the picture will be on their back. Assign a few mentors to place wildlife card necklaces around the students' necks facing backwards.
- Explain that all of the plants and animals on the cards represent those that live in the Watsonville Wetlands. Have all of the students and stewards move around the room and ask others "yes" or "no" questions about their plant and animal to determine what it is that is on their back.
- Show the students a "cheat sheet" on the board. Tell them that if they are stumped they can look at the pictures on the board to determine who they are.
- Play for no more than ten minutes. If not everyone has figured out who they are allow them to run up to the front of the room and use the cheat sheet.

2) Introduction to the Watsonville Wetlands (20 minutes, or less)

- Have all the students gather in the visitor center and sit on the floor facing the interpretive mural.
- The activity leader (adult) gives a talk about wetlands using the mural as an aid. Cover these topics:
 1. What is a Wetland? Take ideas from the student audience. Has anyone been to a wetland? What about the sloughs around Watsonville? Use the map on the mural to show where we are and where the sloughs are.
 2. Where does the water come from? Take ideas from the audience. Describe rain, ground water, river, runoff from the streets and hills.
 3. What animals depend on the wetlands? Does anyone know some of the animals on the mural? Has anyone seen some of the animals? Describe how wetlands are great habitat for mammals, birds, reptiles, amphibians, and fish. Which of these animals are you likely to see? What do you do when you see an animal?
 4. Why are wetlands important? Take ideas from audience. Main points should be: they are habitat for wildlife; they filter pollutants from the land and air and clean

- water before it flows into the ocean; they prevent flooding by absorbing excess storm water, and they provide recreational opportunities for people.
5. What are some negative human impacts on the wetlands? Describe large-scale agriculture, paving over wetlands for houses and roads.
 6. What can we do to help? Take suggestions from audience.
 - Conservation- the setting aside of land so that it can't be paved over or destroyed.
 - Restoration- returning the wetlands to a more natural setting by removing non-native weeds, planting native wetland plants, picking up litter, and reducing pollution.
 - Education- spreading information about wetlands so there is a greater understanding in the community.
 - The Fitz WERC participates in all conservation, restoration, and education. So all of you can tell your family and friends about how cool the wetlands are and you will be helping to protect them.

3) **Station Rotation** (45 minutes; 15 minutes at each station)

- Break the students up into three smaller groups. Have them rotate between three stations every 15 minutes.
- Assign at least one high school mentor and/or docent to each station.
- Give each student a clipboard with the "Discovering the Wetlands" handout and a pencil.
- **Classroom Station:**
- Computer Sub-station: Set up the "Birds of the Wetlands" PowerPoint presentation on all the classroom computers and have students go through it in pairs and answer the related questions on the hand out.
- Feather Sub-station: Students observe the feathers under the microscopes and answer the appropriate questions on the handout. Mentors and docents should encourage discovery by prompting the students and asking them observational questions.
- Animal Skull Sub-station: Students explore the differences between the skulls of carnivores and herbivores as well raptors and shore birds. Mentors and docents should encourage thought by prompting the students them to think about how and why animal skulls may have adapted to look like this.

Binoculars Station: Birdwatching.

- Spotting scope is set up at the top of the ESHA (Environmentally Sensitive Habitat Area) along with binoculars and field guides.
- One of the mentors gives a brief introduction on the ESHAs- talks about how it used to be a strawberry field and is now being restored to provide habitat for wildlife.
- Next, the mentor hands out binoculars to each student and walks them through how to use and take care of them. Stewards and students walk down the ESHA and look for birds.

Greenhouse Station: Drawing native plants.

- Brief introduction to why we grow plants at the WERC and the difference between native and non-native.

- Explain that all of the plants in the demonstration garden and greenhouse are native. Have the students find two plants they want to draw with colored pencils. Show them where the plants are labeled so they can write down the scientific and common names.

4) **Closing Circle** (5 minutes)

- Have the students sit in a circle in either the indoor or outdoor classroom.
- Have a steward or interns ask the students to go around in a circle and say their favorite thing that they did today. But every student has to say something different. Then the steward says thank you for coming and this has been a great day.



Name _____

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COMPUTER STATION:

Name one feature that all birds of prey have in common: _____

Name one feature that all water birds have in common: _____

MICROSCOPE STATION:

Hold your favorite feather under the microscope and draw what you see.

What can you see with the microscope that you can't see without it?

Hold the great-tailed grackle feather to the light. What do you notice?

Look at the picture of birds on the table. Why do you think some birds have only brown feathers and other birds are much more colorful?

SKULL STATION:

Which bird is better equipped to catch fish in the water? Why?

Why do you think the teeth of the bobcat and the deer look so different?
