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Biology, North Campus

Everglades Lesson Plan

Subject: Biodiversity in the Everglades

Topic: To study the biodiversity of the everglades more than one lesson is needed. This introductory lesson examines the biodiversity of the Florida Everglades and what is happening to it today. It also assesses the economic value and the ecological implications of biodiversity loss.

Instructional Objective:

The first objective is to begin to explore the Everglades ecosystem and its biodiversity. To develop an understanding about conservation in the context of the Everglades; to understand relationships between species and habitats; and develop an understanding of how people's choices can result in environmental problems and how we have altered the equilibrium in the Everglades

Learning Outcomes Addressed:

Learning outcome number 10: To develop an understanding and an appreciation of the natural world

Content Outline:

Start with a discussion of the natural ecosystem of the Everglades. Describe the five habitats, hammock , mangrove, pineland, sawgrass and slough, and some of its best known inhabitants such as the Florida panther, the alligator and the anhinga. Include endangered animals and plants, invasive exotic species that have been introduced by people and the water cycle.

Emphasize how very close our relationship to the everglades is. How dependent we are on it if you live in Florida even if you think it has nothing to do with you.

Discuss the relationship of the Everglades to the water they use every day.

Talk about the construction going on what used to be wetlands and the consequences of this.

From the Everglades website: *“Native trees, such as mangroves and cypress, are being replaced by exotic species from other countries. Melaleuca, Australian pine, and Brazilian pepper are all serious problems in Everglades National Park. Florida largemouth bass share their nesting beds with tilapia and oscars, fish imported from Africa and South America. To date, there are 140 exotic plant species found in Everglades National Park in addition to the 342 exotic animal species”* All of these and others such as the Cuban tree frog, the feral pig and the Burmese Python have been introduced by us to the detriment of the native species.

List endangered species of animals and plants. Explain why these are becoming endangered and that the main cause is habitat destruction and pollution by man. Talk about what can be done to prevent their extinction. Make sure the students are aware of what *they* can do to preserve these species habitats.

Instructional Strategy:

In order to study the Everglades ecosystem ideally we should take the students to experience it firsthand by taking a ranger led tour on the site. Since this is not always feasible this lesson relies on a virtual tour of the Everglades by visiting its website. After the introduction to the Everglades ask students to go to:

<http://www.nps.gov/ever/index.htm> to take the tour and to answer questions as they explore. Others that can be used are:

<http://www.miamisci.org/ecolinks/everglades/animals.html>

www.shannontech.com/ParkVision/Everglades/Everglades

Have students read about the species of animals and plants that live in the Everglades online. Students must answer in writing these 7 questions and be prepared to discuss it in class.

1. Do you think there is great or little biodiversity in the Everglades? Why is biodiversity important?
2. Is the Everglades similar to a free flowing river? Why is the Everglades called “a river of grass?”
3. How are the Everglades related to our daily water use in all of south Florida?
4. Have each group select three animals and three plants and write a short description of each. Is there any reason to be concerned with this particular species extinction? What is the park doing to preserve it? What is its particular habitat?
5. Describe some of the factors that determine the number of species in an area? Is the Everglades ecosystem in equilibrium and stable? Why or why not?
6. Do you think that as an individual who lives in Florida you should be concerned with the loss of biodiversity in the Everglades? Why should we worry about species becoming extinct in our area?
7. List some examples of how economic growth affects biodiversity? Give examples of how environmental policy can affect biodiversity.

The students can do their research at the Everglades website listed above or any other related website. After students have completed the reading and answered the questions in writing, discuss the answers to the questions with the group.

Assessment:

Describe the ecosystem found in the everglades.

Discuss human induced reasons why biodiversity is decreasing in the everglades?

Materials:

Computers. One for each group of two students

Homework Assignment:

1. Define the following terms:
Species, biodiversity, river of grass, exotic species, interdependence.
2. Do additional reading to find out the importance of fire. Discuss the role of fires in the Everglades ecosystem
3. Why do you think solving environmental problems is so complex?

Extra-Curricular Activities:

Students will be asked to try to visit the Everglades and take the real ranger led tour.

References:

<http://www.nps.gov/ever/index.htm>

<http://www.miamisci.org/ecolinks/everglades/animals.html>

www.shannontech.com/ParkVision/Everglades/Everglades