Wetlands: Why Are They Endangered?

Students learn important information about wetlands while reinforcing study and writing skills.

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Grade Level: 6-8
Duration: 3 class periods

National Geography Standards
ELEMENT FIVE: ENVIRONMENT AND SOCIETY
14. How human actions modify the physical environment.
16. The changes that occur in the meaning, use, distribution, and importance of resources.

Arizona Social Studies Standard
Grade 6
Strand 4 Geography
Concept 2 Places and Regions
PO 1 Identify regions studied using a variety of criteria, (e.g., climate, landforms, culture, vegetation).

Concept 5 Environment and Society
PO 2 Describe the intended and unintended consequences of human modification (e.g., irrigation, aqueducts, canals) on the environment.

Grade 7
Strand 4 Geography
Concept 5 Environment and Society
PO 7 Compare different points of view and research on environmental issues (e.g., land use natural resources, wildlife, biomes).

Grade 8
Strand 4 Geography
Concept 5 Environment and Society
PO 2 Describe why humans modify ecosystems (e.g., resources, economic livelihood).
PO 5 Analyze changing ideas and viewpoints on the best use of natural resources (e.g., value of oil, water use, forest management)

Arizona Language Arts Standards
READING STANDARD:
Grades 6, 7, and 8
Strand 1: Reading Process
Concept 4: Vocabulary
PO 5. Identify the meanings, pronunciations, syllabication, synonyms, antonyms, and parts of speech of words, by using a variety of reference aids, including dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

Concept 6: Comprehension Strategies
PO 4. Use graphic organizers in order to clarify the meaning of the text.
PO 5. Connect information and events in text to experience and to related text and sources.

Grades 6
Strand 3: Comprehending Informational Text
Concept 1: Expository Text
PO 7. Interpret graphic features (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) of expository text.
PO 8. Identify the organizational structures (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order) of expository text.

Grades 7 and 8
PO 7. Differentiate between primary and secondary source material.
PO 8. Interpret graphic features (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) of expository text.

WRITING STANDARD:
Grades 6, 7, and 8
Strand 2: Writing Components
Concept 1: Ideas and Content
PO 1. Use clear, focused ideas and details to support the topic.
PO 2. Provide content and selected details that are well-suited to audience and purpose.
PO 3. Develop a sufficient explanation or exploration of the topic.
PO 4. Include ideas and details that show original perspective.

Grades 6, 7, and 8
Strand 3: Writing Applications
Concept 2: Expository
PO 1. Record information (e.g., observations, notes, lists, charts, map labels and legends) related to the topic.

Concept 4: Persuasive
PO 1. Write persuasive text (e.g., essay, paragraph, written communications) that:
   a. establishes and develops a controlling idea
   b. supports arguments with detailed evidence
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Overview

The wetlands are the "lifeblood of our planet" and must be preserved for the future of animals, plants, and humans. It is important for students to read current factual information about the plight of this endangered ecosystem. By examining the critical role that wetlands serve in the delicate balance of Earth's interdependent physical systems, we appreciate the crucial need to conserve and protect them.

Purpose

This lesson will familiarize students with the damaging effects of human environment interaction on the wetlands. It will also address why it is important to preserve the wetlands through a variety of modalities, including reading of current environmental articles, viewing of a wetlands slide show, note taking, and writing an expository essay.

Materials

- National Geographic Picture Show CD "Earth's Endangered Environments" (for Mac computers or IBM computers with Windows 95 or older ONLY) This CD ROM is recommended but the lesson is still doable without the CD ROM.
- NGS Wetlands Picture Show Guided Notes and Answer Key (See CD ROM)
- Wetlands Vocabulary and Answer Key Transparency
- EPA Article "Status and Trends"
- EPA Article "Wetlands and People"
- Note Taking Chart and Answer Key
- Wetlands Writing Prompt
- 6 Traits Writing Rubric
- Wetlands Ideas and Content 6-point Rubric

- Modeling clay
- Large roasting pan
- Two quarts of water
- Sprinkling can
- Piece of carpet
- Paper towel

Objectives

The student will be able to:
- utilize a guided outline to take notes on "Earth's Endangered Environments" Wetland Slide Show.
- categorize main ideas and details on a note taking chart.
- write an expository essay on the current status of the wetlands, the various ways people have destroyed them, and strategies for protecting this endangered environment.

Procedures

SESSION ONE
1. Perform the following experiment to demonstrate to the class how wetlands work. Create an artificial wetland in a roasting pan.
   a) Using modeling clay, make a gentle slope that stretches about three-quarters the length of the pan, leaving a clear space at one end.
   b) Using a watering can that sprinkles like rain, pour water on the clay to show the class how freely the water flows down the slope.
   c) Drain out the excess water, pouring it back into the watering can. Put a piece of carpeting at the bottom of the slope and sprinkle the water on the clay again.
   d) Have students predict, "What will happen to the speed and direction of the water flow?" (The carpeting, like a real wetland, absorbs
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- The water and slowly releases it, preventing flooding and slowing erosion.
- Next, remove the carpeting, put a paper towel at the bottom of the slope, and sprinkle the recycled, dirty water on the clay. Students should predict, "What will happen to the water?" (The towel, like a real wetland, cleans the water by filtering out much of the sediment.)
- Discuss the predictions with the students. Were they right or were they wrong?

2. Distribute the Wetlands Vocabulary handouts. Use Wetlands Vocabulary Answer Key for students to copy the 7 vocabulary definitions on the Wetlands.

3. Before showing the "Earth's Endangered Environments" Wetlands Picture Show, distribute the Wetlands Picture Show Guided Notes. During the slide show, students should record the missing key words onto their Guided Notes handout.

4. Correct the answers to Guided Notes after the Picture Show.

5. Have students write down 3 facts they learned about the wetlands. Have them share their ideas with a partner.

SESSION TWO
1. Students read the article Wetlands and People orally, in pairs, or by themselves. Fill out the "Wetlands and People" Note Taking Chart together as the article is read.

2. Students next read the Status and Trends article independently and make up a chart on their own, using a similar format to the previous chart.

3. Students share their note taking information. Encourage students to record facts presented by other students.

SESSION THREE
1. Distribute the Wetlands Final Assessment Writing Prompt and discuss the criteria for the writing assignment.

2. Distribute and discuss the Organization and Ideas and Content 6-Point Rubrics for the expository essay.

3. Direct students to use their Wetlands Picture Show Guided Notes, Wetlands Vocabulary, and two Note Taking Charts to write their essay.

Assessment

Utilize the 6 Traits Writing Rubric to assess organization. Use this rubric to assess ideas and content or use the rubric specifically made for this lesson: Wetlands Ideas and Content 6-point Rubric. Mastery will be considered a score of 4 or higher on each of the traits.

Extensions

Have students research wetland areas in their state.

Have students use the rainforest slide show on the CD-ROM to compare and contrast the wetlands and rainforest ecosystems.

Sources

Environmental Protection Agency
http://www.epa.gov/owow/wetlands/

National Geographic Society "Earth's Endangered Environments Picture Show" CD ROM Order # JB81181 (for Mac computers or IBM computers with Windows 95 or older ONLY)