



Wetlands: Why Are They Endangered?

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Grade Level	8 and High School
Duration	1-3 class periods

National Standards

GEOGRAPHY

Element 5: 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.

AZ Standards

ELA

Reading

Key Ideas and Details

8.RI.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
11-12.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

Range of Reading and Level of Text Complexity

8.RI.10 By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 8.

Writing

Text Types and Purposes

8.W.7 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting, graphics, and multimedia when useful to aiding comprehension.
- Develop the topic with well-chosen, relevant facts, definitions, concrete details, quotations, or other information and examples.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the information or explanation presented.

11-12.W.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the

Arizona Social Science Standards

GEOGRAPHY

Human-environment interactions are essential aspects of human life in all societies.

8.G2.1 Examine impact of and responses to environmental issues such as air, water, and land pollution, deforestation, urban sprawl, and changes to climate.

Optional: Global interconnections and spatial patterns are a necessary part of geographic reasoning.

8G4.1 Take an active stance on a geographic issue reflecting its scale (local, regional, state, national, or global)

Human-environment interactions are essential aspects of human life in all societies.

HS.G2.1 Analyze interactions within and between human and physical systems.
HS.G2.4 Evaluate the use and sustainability of natural resources.

Optional: Global interconnections and spatial patterns are a necessary part of geographic reasoning.

HS.G4.1 Take an active stance on a geographic issue reflecting its scale

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effective selection, organization, and analysis of content.

a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting, graphics, and multimedia when useful for comprehension.

b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

d. Use precise language, domain-specific vocabulary, and rhetorical techniques to manage the complexity of the topic.

e. Establish and maintain a style and tone appropriate to the norms and conventions of the discipline in which they are writing.

f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

(local, regional, state, national, or global)

SLOP Elements

Preparation Adapting content Linking to background Linking to past learning Strategies used	Scaffolding Modeling Guided practice Independent practice Comprehensible input	Grouping Option Whole class Small groups Partners Independent
Integrating Processes Reading Writing Speaking Listening	Application Hands on Meaningful Linked to objectives Promotes engagement	Assessment Individual Group Written Oral

Arizona ELP Standards

Grade 6-8

Basic

Listening and Reading

Standard 1 By the end of each language proficiency level, an English learner can construct meaning from oral presentations and literary and informational text through grade appropriate listening, reading, and viewing.

B-1: determine the central idea or theme and explain how they are supported by using some text evidence.

B-2: recount specific details and information in a variety of texts.

Speaking and Writing

Standard 3 By the end of each language proficiency level, an English learner can speak and write about grade appropriate complex literary and informational texts and topics.

B-2: compose written narratives using appropriate conventions that include details to develop a topic.

B-3 compose informational text that includes details to develop a topic while using appropriate conventions.

Listening, Speaking, Reading, and Writing

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Standard 7 By the end of each language proficiency level, an English learner can conduct research and evaluate and communicate findings to answer questions or solve problems.
B-1: gather information from multiple provided resources to answer questions.
B-2: paraphrase observations/information notes with labeled illustrations, diagrams, or other graphics, as appropriate.
B-4: restate the main idea using evidence from text or presentations.

Grade 9-12

Basic

Listening and Reading

Standard 1 By the end of each language proficiency level, an English learner can construct meaning from oral presentations and literary and informational text through grade appropriate listening, reading, and viewing.

B-1: determine the central idea or theme and explain how they are supported by using text evidence.

B-2: recount a text including specific details and information.

B-5: utilize visual information to understand the text.

Speaking and Writing

Standard 3 By the end of each language proficiency level, an English learner can speak and write about grade appropriate complex literary and informational texts and topics.

B-3 compose informational text that include relevant details, concepts, and examples to develop a topic while using appropriate conventions.

B-4: integrate graphics or multimedia when useful.

B-5: use examples of precise language and domain-specific vocabulary within informative texts.

Listening, Speaking, Reading, and Writing

Standard 7 By the end of each language proficiency level, an English learner can conduct research and evaluate and communicate findings to answer questions or solve problems.

B-1: gather information from multiple provided resources to answer questions.

B-2: summarize the main idea using evidence from text or presentations.

B-3: paraphrase observations, information notes with labeled illustrations, diagrams, or other graphics, as appropriate.

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

In this lesson, students will learn the damaging effects of human environment interaction on the wetlands. They will also learn why it is important to preserve the wetlands through reading environmental articles, note taking, and writing an expository essay. This lesson contains adaptations for diverse learners (ELLs).

Key Vocabulary

wetlands – land that, at least some of the time, is very wet
nutrients – a substance that plants need to live and grow
species – a group of animals or plants that are similar and can create offspring
sediment – material (as stones and sand) left by water, wind, or glaciers
habitat – place where a plant or animal naturally lives
groundwater – water within the earth that supplies wells and springs

Materials

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

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- Wetlands Vocabulary Organizer and Answer Key
- Vocabulary Cards
- Projection device
- Computer lab or handheld devices
- Wetlands Note Taking
- Wetlands Overview
<https://nepis.epa.gov/Exe/ZyPDF.cgi/500025PY.PDF?Dockey=500025PY.PDF>
- Economic Benefits of Wetlands
<https://nepis.epa.gov/Exe/ZyPDF.cgi/2000D2PF.PDF?Dockey=2000D2PF.PDF>
- Threats to Wetlands
<https://nepis.epa.gov/Exe/ZyPDF.cgi/200053Q3.PDF?Dockey=200053Q3.PDF>
- Wetlands Writing Prompt and Scoring Guide

Objectives

The student will be able to:

- Identify key ideas in informational text.
- Write a new article defining wetlands, explaining why they are important, and giving suggestions on how people can protect wetlands.

Procedures

SESSION ONE

1. Perform the following experiment to demonstrate to the class how wetlands work. Create an artificial wetland in a roasting pan. (**Preparation: Linking to background; Application: Promotes engagement**)

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 the water and slowly releases it, preventing flooding and slowing erosion.)

e) 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.)

f) Discuss the findings with the students. Were they right or were they wrong? (**Integrating Processes: Listening, Speaking**)

2. Project the Vocabulary Cards. Distribute the Wetlands Vocabulary Organizer. Have students define and illustrate the words. (**Application: Promotes engagement; Scaffolding: Comprehensible input**)

SESSION TWO (and perhaps SESSION THREE)

1. Distribute the Wetlands Note Taking worksheet. Explain that they should read the 3 short articles and complete the worksheet. Take students to computer lab or have them use their personal devices to access the readings. (**Application: Promotes engagement; Scaffolding: Independent practice**)
2. Explain the Wetlands Writing Prompt and the Scoring Guide. Allow students to use their Note Taking worksheet and Vocabulary Organizer while writing their news articles. (**Assessment: Individual or Group, Written**)
3. Work not finished in class could become homework.

Assessment

Geography and ELA

Wetlands Vocabulary Organizer and Note Taking worksheet can be graded for completeness and correct answers. Mastery will be considered 80% or higher.

The news article can be graded using the Scoring Guide. Mastery will be considered a score of 40 points or higher.

Extensions

Have student practice take a stance on whether the wetlands should be protected or not. Be sure they identify the scale of this issue (national, global, local, etc.). Their "stance" can take the form of a letter or speech to a policymaker who is deciding how to manage wetlands.

Sources

Environmental Protection Agency
<https://www.epa.gov/wetlands>