



<b>Lesson Title</b>	Wetlands
<b>Length of Lesson</b>	One (50 minute) class period
<b>Created By</b>	Calista Guthrie
<b>Subject</b>	Earth Science
<b>Grade Level</b>	7 <sup>th</sup> grade
<b>State Standards</b>	7 <sup>th</sup> : 1h (Inquiry); 3a (Life Science); 4d, (Earth Science)
<b>DOK Level</b>	DOK2
<b>DOK Application</b>	Use context clues, interpret, relate, categorize
<b>National Standards</b>	5-8: A (Inquiry); C (Life Science); D (Earth/Space)
<b>Graduate Research Element</b>	How Louisiana Salt Marshes were formed.

**Student Learning Goal:**

MS 7th Grade:

1(h) Students will be given different artifacts and determine how they relate to human use of wetlands. 3(a) We will discuss major characteristics of wetlands and how plants and animals have adapted to live there. 4(d) Nutrient loading results in algal blooms that consume oxygen in the water resulting in fish kills.

National Science Education Standards of Content 5-8:

A: Inquiry: Students will think critically and logically to develop explanations for the human evidence of wetland use.

C: Life Science: Structure and function in living systems with regard to ecosystems; Reproduction and Heredity with regard to organism traits as a result of environmental interactions; Regulation and Behavior with regard to organism behavior evolves through adaptation to its environment

D: Earth and Space Science: Structure of the Earth System with regard to erosion and deposition to create coastal wetlands and living organisms (plants) role in maintaining coastal wetlands by holding sediment in place

**Materials Needed (supplies, hand-outs, resources):**

PowerPoint (INSPIRE\_Guthrie\_04.01.12\_Wetlands)

Materials that represent human uses of wetlands like: canned clam chowder, salmon, blueberries, and cranberries, woven basket, binoculars, fish/ wildlife/ plant guidebooks, a camera, brochures, fishing line, fishing lure, etc.

**Lesson Performance Task/Assessment:**

The PowerPoint (INSPIRE\_Guthrie\_04.01.12\_Wetlands) will be presented first, explaining major processes that control wetland formation, types of wetlands, wildlife and plants, adaptations of wildlife and plants, and human impacts on wetlands. As the PowerPoint is covered, the teacher should present questions to the students that will encourage students to explore their own curiosity and develop their own questions to ask.



After the PowerPoint lesson, students will be asked to role play an archeologist in the year 2100 who is studying human wetland uses in the “ancient 21st century”. Students will break into groups and each group will get a number of artifacts to investigate. Artifacts should be placed in zip-lock bags and labeled with a letter (noting the type of artifact and number; this is more so that you can keep up with artifacts through the day) Groups will present their findings at the end of class.

**Lesson Relevance to Performance Task and Students:**

The capture activity for this lesson is the student’s role play archeologists in the year 2100 who are studying human uses for wetlands during “ancient times of the 21st century.” Through the lecture students will learn about major processes that control wetland formation, types of wetlands, wildlife and plants, adaptations of wildlife and plants, and human impacts on wetlands. They can use this background knowledge to interpret how the “ancient artifacts” in front of them might represent human use for wetlands. Students will present findings at the end of class.

**Anticipatory Set/Capture Interest:**

The initial capture of this lesson is for students to guess what a wetland is. What makes it funny is several students will start to try to come up with elaborate explanations and then someone will finally say “well its wet land.”

**Guided Practice:**

Students will listen and interact throughout the lecture. The instructor should check regularly for understanding by involving the students as much as possible in explaining major processes that control wetland formation, types of wetlands, wildlife and plants, adaptations of wildlife and plants, and human impacts on wetlands. The lecture should be completed with 15 minutes at least remaining for the activity. Human uses for artifacts will then be presented and discussed with the class.

**Independent Practice:**

Students will work in groups or pairs to figure out how artifacts relate to human use of wetlands. Through this process, students will be made to discuss information from the PowerPoint.

**Remediation and/or Enrichment:**

Remediation – Have students draw a diagram showing processes involved in making a wetland. They should label features and processes as necessary and discuss the type of wetland formed. For example a diagrams showing erosion making sediments for rivers to transport and accretion where the river meets the ocean. Sediments are held there by the roots of vegetation and the wetland type is a salt marsh or estuary.

Enrichment- The teacher could have students make a table to classify the artifacts by the type of wetland use they represent (i.e. recreational, research, income, food, etc.)



**Check(s) for Understanding:**

Encourage student interaction in class by asking questions and allowing them to ask questions. Draw diagrams on the board when necessary for instance a diagram of the water table meeting the surface to make a wetland. To explain accretion put some dirt in a water bottle and fill the bottle. Shake up the bottle and ask students to describe what happens when you stop shaking the bottle. The dirt settles out when the water slows down just like when river water sediments settle out when they reach the more quiet waters of the ocean.

**Closure:**

To wrap up the class students will present their artifacts to the class. If there is extra time, Bill Nye's Wetlands video is really great (see Teacher Notes)

**Possible Alternate Subject Integrations:**

Social Studies (human development along coastlines and near water resources)

**Teacher Notes**

Bill Nye's Wetlands Video

<http://www.youtube.com/watch?v=9m7rD6KcuHA&feature=related>

USGS Guide to Wetlands

[http://www.nwrc.usgs.gov/fringe/ff\\_index.html](http://www.nwrc.usgs.gov/fringe/ff_index.html)

USGS Wetland Poster

<http://water.usgs.gov/outreach/Posters/wetlands/grade.html>