Grade 4

Title: Wanted: Invasive Species

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Student Learning Objective(s): • The students will learn about invasive species that inhabit Louisiana. • The students will learn about the problems that face Louisiana's Wetlands. • The students will appreciate the importance of Louisiana's Wetlands, and will learn about things that we can do to help preserve them.
LA GLE's • Grade: 4 # 1: Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E-A1) • Grade: 4 # 2. Pose questions that can be answered by using students' own observations, scientific knowledge, and testable scientific investigations (SI-E-A1) • Grade: 4 # 54: Describe the effect of sudden increases or decreases of one group of organisms upon other organisms in the environment (LS-E-C3) • Grade: 4 # 72: Predict and describe consequences of the removal of one component in a balanced ecosystem (e.g., consumer, herbivores, nonliving component) (SE-E-A2)
Materials needed: • *OH NO! Hannah's Swamp is Changing*, by Marilyn Barrett-O'Leary • Computers • ¼ poster board (for wanted ads) • Markers • Post cards

Detailed Procedure. *Describe what the students will do in each stage. Include guiding questions you might ask to help students.*

1. Engage:

Science Process Skills *Indicate which science process skills students will develop in this part of the lesson.*

☐ Observation ☐ Classification ☐ Communication ☐ Measurement ☐ Estimation ☐ Prediction ☐ Inference
☐ Identifying Variables ☐ Controlling Variables ☐ Defining Operationally ☐ Forming Hypotheses
☐ Experimenting ☐ Graphing ☐ Modeling

- The teacher will engage the students by reading aloud, *OH NO! Hannah's Swamp is Changing*, by Marilyn Barrett-O'Leary.
- The teacher will ask the students what problem Hannah's swamp faced.
- The teacher will say, "We read in the book about non-native and nonindigenous species. Let's see if we can come up with a class definition of these words."
- The teacher will write "Non-native Invasive Species" on the board. The students will work in groups of four to develop their own definition of this word. The students will have five minutes to do this and the teacher will circulate around the room to get a feel of where her students are. The students will record their definition on an 8 ½ x 11 sheet of paper.
- The students will send a group member to tape their paper to the board. A spokesperson from each group will read the definition aloud.
- After each group has shared their explanation/definition, have the class as a whole decide which explanation they like the best, or have them pick bits and pieces from each group's work to come up with one working definition for the whole class.

2. Explore:

Science Process Skills *Indicate which science process skills students will develop in this part of the lesson.*

☐ Observation ☐ Classification ☐ Communication ☐ Measurement ☐ Estimation ☐ Prediction ☐ Inference
☐ Identifying Variables ☐ Controlling Variables ☐ Defining Operationally ☐ Forming Hypotheses
☐ Experimenting ☐ Graphing ☐ Modeling

1. The teacher will place students in groups of three or four. She will give half of the groups literature on nutria and half of the class literature on water hyacinth. She will explain that they are going to do some research about two invasive species that threaten the Louisiana Wetlands.
   URLs:
   http://www.invasivespeciesinfo.gov/aquatics/nutria.shtml
   http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_wsnutria.pdf
   http://www.nationaltrappers.com/nutria.html
   http://www.nutria.com/site.php
   http://icwdm.org/handbook/rodents/Nutria.asp
   http://www.invasivespecies.gov/profiles/nutria.shtml
   http://dirttime.ws/Notebook/Nutria.htm
   http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=1089
   http://www.sgnis.org/kids/
   http://www.sgnis.org/kids/Gulf/suspects/suspect_Nick.html
   http://www.sgnis.org/kids/Gulf/suspects/suspect_cindy.html
   http://en.wikipedia.org/wiki/Water_hyacinth
   http://www.invasivespeciesinfo.gov/aquatics/waterhyacinth.shtml
   http://www.invasive.org/eastern/biocontrol/4WaterHyacinth.html

2. The students will work as a team to make a wanted ad for their assigned animal. The wanted ad will include the following information:
   - Common and Scientific names
   - Distinguishing Features (height, color, leaf, or flower shape, etc.)
   - Crimes committed
   - Reward (what we can gain if the spread of invasive species is slowed)

3. *Explain:*

Outline the line of questioning you will use to assist students in understanding the concept. List <u>at least 5 good questions</u> and identify the question category (Gallagher & Aschner) in which your question falls (see text, Figure 7.6).

The teacher will ask the students:

1. Where did nutria and water hyacinth originally come from? How did they make their way to Louisiana?
2. What are the major problems that these invasive species are causing? Refer back to the book read at the beginning.
3. What can humans do to help slow the spread of invasive species? What did the humans do in the book, *OH NO! Hannah's Swamp is Changing?*
4. What will happen if no one attempts to help with this invasive species problem? What can be done to control them?
5. Refer back to the book, *OH NO! Hannah's Swamp is Changing.* What effects could herbicides and chemicals have on the bio-diversity of an area if it is used to eliminate non-native species.
6. Why are the wetlands so important to Louisiana?

4. *Expand:*

Science Process Skills *Indicate which science process skills students will develop in this part of the lesson.*

☐ Observation ☐ Classification ☐ Communication ☐ Measurement ☐ Estimation ☐ Prediction ☐ Inference
☐ Identifying Variables ☐ Controlling Variables ☐ Defining Operationally ☐ Forming Hypotheses
☐ Experimenting ☐ Graphing ☐ Modeling

1. The students will write a letter to the State Senator, Mary Landrieu, to ask her what Louisiana is doing to combat invasive non-native species such as nutria and water hyacinth that are depleting many of the Louisiana Wetlands. The students will also write why the Louisiana Wetlands are important to them.

5. *Evaluate:*

What exactly will you do, or what evidence/data will you collect, to ascertain whether the students can achieve the objectives you listed at the top of this lesson?

1. The teacher will check to determine if the students understand the meaning of non-native invasive species.
2. The teacher will check to see that the students understand that danger that faces Louisiana's wetlands due to the problem of invasive species.
3. The teacher will determine if students understand the importance of Louisiana's wetlands.
4. The teacher will mail the letters to Senator Landrieu.

Brain Compatible Learning Strategies Used in This Lesson:

☐ Brainstorming/Discussion ☐ Drawing and Artwork ☐ Field Trips ☐ Games ☐ Graphic Organizers
☐ Humor ☐ Manipulatives, Experiments, Labs, Models ☐ Metaphors, Analogies, and Similes
☐ Mnemonic Devices ☐ Movement ☐ Music, Rhythm, Rhyme, and Rap ☐ Project/Problem-Based Instruction
☐ Reciprocal Teaching, Cooperative Learning ☐ Role Plays, Drama, Pantomimes ☐ Storytelling
☐ Technology (student use) ☐ Visualization/Guided Imagery ☐ Visuals ☐ Writing/Journals

Lesson Source:

A Wetpaint Site. Wanted, Dead Not Alive. Retrieved March 30, 2009, from
http://invasivespeciesmslesson.wetpaint.com/page/Project+Options

National Teacher Training Institute. Battlefield Earth. Retrieved March 30, 2009, from
http://www.thirteen.org/edonline/ntti/resources/lessons/science.html

WANTED

Common Name:_____

Scientific Name:_____

Distinguishing Features: (height, weight, color, leaf or flower shape, life span,etc.):_____
_____
_____
_____
_____
_____

Where is it from and how did it get here:_____
_____
_____
_____
_____

Crimes Committed:_____
_____
_____
_____
_____

How can we control you:_____
_____

Reward:_____