

Grade 5

Title: Marsh Metaphors

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Student Learning Objective(s):

The students will describe benefits/roles of marshes, relating these to everyday objects.

LA GLE's

Grade: 5 # 26 : Identify and describe ecosystems of local importance (LS-M-C3)

Materials needed:

Sponge

Small pillow/toy bed

Toy cradle and baby bottle

Strainer/filter

Picture of a zoo

Menu (seafood restaurant)

Speed bump (picture or may make model out of cardboard)

Large box labeled "MMM" in large letters, may also label "Mystery Marsh Metaphors"

Recording Chart (one per group or one per student, as desired)

(Pictures may be used of any objects that are unavailable, but try to use actual objects when possible)

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.

- | | | | | | | |
|--|--|---|---|-------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> Observation | <input type="checkbox"/> Classification | <input checked="" type="checkbox"/> Communication | <input type="checkbox"/> Measurement | <input type="checkbox"/> Estimation | <input type="checkbox"/> Prediction | <input type="checkbox"/> Inference |
| <input type="checkbox"/> Identifying Variables | <input type="checkbox"/> Controlling Variables | <input type="checkbox"/> Defining Operationally | <input type="checkbox"/> Forming Hypotheses | | | |
| <input type="checkbox"/> Experimenting | <input type="checkbox"/> Graphing | <input type="checkbox"/> Modeling | | | | |

1. The teacher will show the class a large box labeled "MMM", and the teacher will state, "This is my triple M box. It is my Mystery Marsh Metaphors box. I have some different items in my box that represent a function of a marsh. Do you know any jobs that a marsh has? How many jobs do you think a marsh has?"

2. Explore:

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

- | | | | | | | |
|--|--|---|---|-------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> Observation | <input type="checkbox"/> Classification | <input checked="" type="checkbox"/> Communication | <input type="checkbox"/> Measurement | <input type="checkbox"/> Estimation | <input type="checkbox"/> Prediction | <input type="checkbox"/> Inference |
| <input type="checkbox"/> Identifying Variables | <input type="checkbox"/> Controlling Variables | <input type="checkbox"/> Defining Operationally | <input type="checkbox"/> Forming Hypotheses | | | |
| <input type="checkbox"/> Experimenting | <input type="checkbox"/> Graphing | <input type="checkbox"/> Modeling | | | | |

1. The students will work in groups of 3-4, depending on the class size.
2. Each group will draw one of the objects from the MMM box.
3. Students will discuss their object with the group. On their recording sheet, they will record what their object is, functions that the object performs, and how a marsh might do a similar thing. (ex: Strainer/filter—separates larger particles from water/purifies water—marshes filter bad things out of the water before it gets to the ocean) If students cannot think of how the object relates to marshes, they should write as much as they can about what they know about the object.
4. Every couple of minutes, groups will exchange objects. This will continue until each group has gotten each object.

3. Explain:

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

(Some students will think about functions of the objects that do not relate to the connection to the marshes. Use discussion to draw out answers that relate.)

1. What does a sponge do? (soaks up/holds water)
2. How might that relate to marshes? (marshes absorb/store excess water from runoff)
3. What helps a marsh absorb water (mud soaks it up, grasses slow it down)
4. What is a pillow/bed used for? (rest) Connection to marshes? (resting place for migratory birds- will probably have to prompt with more questions)

Use these similar questions to discuss cradles, strainers/filters, zoo, and menu

Connections: (object—purpose of object—connection to marshes)

- Cradle and Baby Bottle- Shelter for babies- nursery for young organisms (shelters, protects, and feeds)
- Strainer/filter—separates larger particles from water/purifies water—marshes filter bad things out of the water before it gets to the ocean
- Zoo—home for lots of animals (# and type)—marshes support a wide range of animals and plants
- Menu—eat shrimp/fish—many things that we eat come from marshes
- Speed bump—slows down traffic/cars—marsh grass slows down water run-off

5. How many different jobs of marshes did we identify? (six, and these are not the only things that marshes do!)

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 poem about the purposes of marshes. In their poem, they should include metaphors for the purposes and words that explain the purpose. The students will work in pairs to complete this activity.
2. The teacher will emphasize that poems may rhyme, but rhyming is not necessary. The students will also be encouraged to think of original metaphors as much as possible (at least 2 original) but may use metaphors from the activity, as well.
3. The teacher may supply the class with an example, or part of an example.
4. At the end, students will be able to share their poem with the class, if desired.

Note: If time is short, the class may work together on a class poem, with pairs creating one or two lines that focus on one of the purposes.

Partial Example: A Marsh Is...

A Marsh is a welcoming home,
It offers protections for many families of animals
A Marsh is a warm towel when you get out of the shower,
It waits, ready to soak up the extra water
A Marsh is a fisherman's net
That catches impurities before they reach the ocean

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?

The teacher will evaluate students' understanding throughout the lesson:

Engage—The teacher will assess students' prior knowledge as they discuss purposes of marshes that they already know.

Explore—The teacher will monitor students' discussion in their groups. She will listen to connections students are making, and listen for any misconceptions students might have. She may use additional questions during "Explore" to scaffold students' thinking.

Explain—The teacher will assess student understanding based on their responses to questions. Are they able to make the appropriate connections between the objects and functions of a marsh?

Expand—The teacher can look back over students' written work (or assess as they present) to make sure that students included all of the necessary information. Did they demonstrate an understanding of the different functions of a marsh?

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:

Smith, J. L. (1992) *Marsh classroom Adventure*. Retrieved March 31, 2009, from National Sea Grant Library Web Site: <http://nsgd.gso.uri.edu/scsgc/scsgce94001.pdf>

Group Members: _____

RECORDING SHEET

Object	Purpose/Uses of Object	Similar Purpose of Marsh