

THE OCEAN'S NURSERY

Note to educators : This is an art lesson. Please see background for information on science integration. Science instruction should include watershed management and protection as well as marsh and estuary eco-systems.

Lesson Focus: marsh life, and the impact that pollution in estuaries has on the food chain and local economics

Learning Objectives:

- Students will learn what a marsh is and how changes to the marsh impact the food chain.
- Students will describe in general terms an economic trickle-down effect.
- Students will be able to create a 3-D model depicting a Georgia coastal marsh.
- Students will be able to identify creatures, flora, and fauna that inhabit a Georgia coastal marsh.
- Students will be able to apply design principles in creating a 3-dimensional depiction of flora, fauna, and water-based creatures.

Enduring Understandings for the Lesson:

- How we care for our watershed directly affects the ability of nature to reproduce.
- Human impact on the environment upstream from a marsh directly impacts the aquatic food chain.
- A marsh eco-system is unique due to its location between salt and fresh water.

Georgia Performance Standards Addressed:

1. **Topic:** Artistic Skills and Knowledge: Creating, Performing, Producing
Standard: Plans and creates artworks using the principles of design to organize the elements of art for creating a composition.
2. **Topic:** Artistic Skills and Knowledge: Creating, Performing, Producing
Standard: Creates artworks to depict a mood, emphasize the effects of light as reflected off surfaces and within the atmosphere, or demonstrate proportion
3. **Topic:** Artistic Skills and Knowledge: Creating, Performing, Producing
Standard: Uses art materials and techniques.
4. **Topic:** Artistic Skills and Knowledge: Creating, Performing, Producing
Standard: Creates a series of artworks that is concerned with design and composition (Structuralism/Formalism).
5. **Topic:** Artistic Skills and Knowledge: Creating, Performing, Producing
Standard: Demonstrates proper care and safe use of art materials and tools
6. **Topic:** Connections

Standard: Applies concepts and ideas from another discipline and its topics as sources of ideas for own artworks. (Integration: Earth Science, Math)

7. **Topic:** Critical Analysis and Aesthetic Understanding

Standard: Identifies the interrelationships between elements of art and the principles of design in artworks and the environment.

Grade level: 6th and 7th

Materials:

- Tag Board 9X12
- Tissue Paper in hues of blue and green
- Glue
- Construction Paper
- Corrugated Cardboard (separated)
- Markers
- Watercolor Pencils
- Sketch paper 9X12
- Colored pencils
- Graphite pencils
- Erasers
- Scissors
- Smooth Bristle brushes (nylon/synthetic)
- Optional: Sculpey or other air-dry moldable material in assorted colors
- Geographical map of the coastal Southeastern part of the U.S.
- Video/photographs of Georgia estuaries and wildlife

Time needed: two to three 45-minute class sessions

Background information: *This lesson requires that the science teacher(s) work with the art instructor to integrate the pacing charts for the watershed/ecology unit. It is highly recommended that this information be taught in conjunction with the timing of the River of Words contest (due in February each year). Additional lessons on watersheds can be found on the Georgia Aquarium website.*

1. Students should have already learned about watersheds in earth science, although this lesson can be completed without this information.
2. Students should have prior knowledge of one-point perspective and relative perspective (scale.)
3. Students should have prior knowledge of color harmony, specifically related to analogous greens and blues as well as color temperature for contrast.

Learning Procedure:

DAY 1

1. Provide a map of the state of Georgia/South Carolina/North Florida including the rivers and barrier islands. Have students identify where they are, and where they have vacationed.
2. Have students identify the closest major waterway to their home or school and trace it all the way to the ocean.
3. Define, discuss and view photographs of local coastal marshes.
4. Discuss and visually identify natural wildlife that thrives in the marshes located in these areas. (must include, but is not limited to, shellfish, freshwater and saltwater fish, crabs, shrimp, birds- egrets/heron/pelican, etc.)
5. Discuss what unique kinds of meals students eat when in these areas.
6. Review the concept of food chain. Have the students identify, and place in order of food chain appearance, the wildlife discussed in step 4.
7. Discuss what happens when part of the food chain disappears.
8. Identify impacts humans through industry or tourism can have on a marsh. Be sure to encourage personal connection.
9. View photographs of marshes. Have students describe the trees, grasses and flowers that grow in these areas.
10. Identify, using color temperature vocabulary, as well as geometrical vocabulary, local grasses, trees, water, soil, flora, and indigenous wildlife and water life.

DAY 2

1. Briefly review linear perspective and relative perspective.
2. Have each student sketch a miniature cut-away version of a marsh, including a minimum of 5 living creatures, and 3 different landscape components.
3. Peer critique for accuracy of drawing and composition (balance, rhythm, division of space.)
4. Use colored pencils to plan color harmony within the image.
5. Suggest that the students tear tissue paper and paint torn corrugated cardboard for grasses, use watercolor for water, construction paper/tissue paper for wildlife.
6. Demonstrate how to layer materials for more realistic perspective.
7. Begin building the 3-D version based on the peer-approved rough draft.

Evaluation: Use the attached rubric

Extensions:

1. Utilize this project as an entry for the River of Words Contest.

Resources:

- Adopt-A-Stream – www.georgiaadoptastream.org/home.html - for maps, listing of workshops, Educator Guide, and other resources.

- EPA website at www.epa.gov/OWOW/watershed/ - for more information about watersheds and additional lessons and resources.
- River of Words & Project WET (Water Education for Teachers) - <http://www.gaprojectwet.org/> - for more information on the River of Word contest, River of Word Teacher Guide, water education and workshops.
- Georgia River Network – www.garivers.org - for fact sheets about the 14 major watersheds in Georgia.
- Gray’s Reef National Marine Sanctuary: Rivers to Reefs Video (author Cathy Sakas, NOAA) www.graysreef.noaa.gov
- Nature Conservancy in Georgia, Altamaha Riverkeeper’s Photojournal: “Shoreline Wildlife” (DVD) www.altamahariverkeeper.org

Lesson developed by: Michelle Stein, Middle School Visual Arts Instructor
The Alfred and Adele Davis Academy



This activity is a product of the Rivers to Reef Teacher Workshop sponsored by the Georgia Aquarium and NOAA Gray’s Reef National Marine Sanctuary that the author participated in. For more information about this workshop, Georgia Aquarium, or Gray’s Reef National Marine Sanctuary, please visit our websites at www.georgiaaquarium.org or <http://graysreef.noaa.gov/>

RUBRIC: OCEAN'S NURSERY

CONCEPT	4	3	2	1	0	Your score
Class Participation	You displayed respectful behavior throughout the project, and added meaningful content to the discussion.	You were respectful most of the time, and added some meaningful content during the discussion.	You were respectful at times, and added minimal content to the discussion.	At times, you were respectful, but you did not add meaningful content to the discussion.	You did not display respectful behavior. You did not add meaningful content to the discussion.	
Balance and Weight	Your image is shows Western weight, interesting balance, and a focal point located in a 'sweet spot.'	Your image shows Western weight, acceptable balance, but the focal point is in the center.	Your image shows Western weight, but the balance is inappropriate, or focal point is centered.	Your image shows Western weight, but no sense of balance.	Your image shows no sense of balance or Western weight.	
Color Harmony	Your image displays analgous colors, consideration for complementary tones& temperature.	Your image displays consideration for complementary tones and temperature.	Your image displays consideration for either complements or temperature but not both.	Your image displays some color harmony in a small area, but not for the whole image.	Your image does not display thoughtful consideration to overall color harmony.	
Perspective: 1-pt or relative (scale/overlap)	Your image demonstrates both 1-pt and relative perspective, used appropriately.	Your image uses relative or 1-pt perspective appropriately.	Your image uses relative or 1-pt perspective, but contains one or two errors.	Your image uses relative or 1-pt perspective incorrectly.	Your image does not demonstrate either 1-pt perspective or relative perspective.	
Drawing/ Painting Skills	Your plant and animal life are proportionate and look realistic.	Your plant and animal life are proportionate, but some do not look realistic.	Some parts of your plant and animal life are not proportionate and do not look realistic.	Most of your plant and animal life are not proportionate and many do not look realistic.	Your plant and animal life are not proportionate, and do not look realistic.	
Variety in Materials Use	You used three or more different media, and obtained excellent adhesion.	You used three or more different media, but had minimal difficulty with adhesion.	You used three different media, and had great difficulty with adhesion.	You used two different media, parts fell off.	You used only one media.	