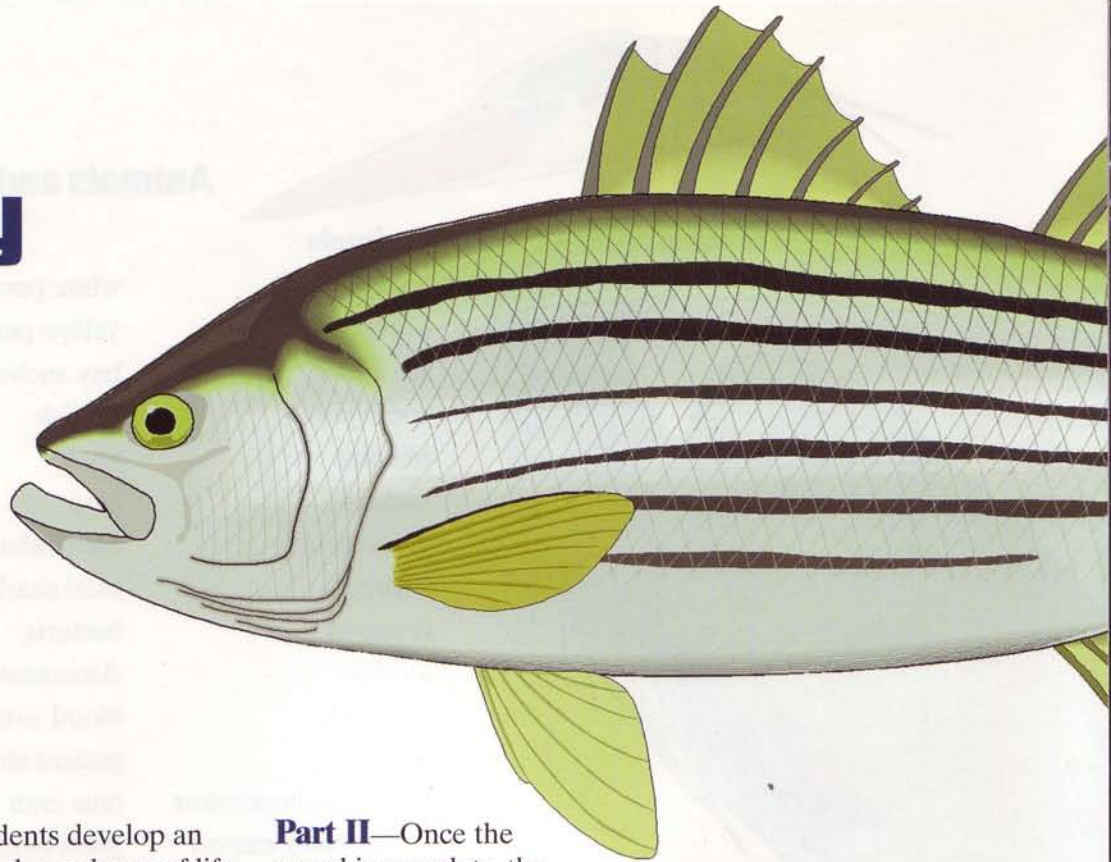


Estuary Food Chain Mural

by Chris Cerino
and Katherine Cooper



Objective: To have students develop an understanding of the interdependence of life in an estuary and how human activity affects these relationships.

Materials: Paper, crayons, markers, scissors, string, and glue.

Part I—Have each student select a plant or animal from the next page and research the following:

1. Organism's habitat—salinity range; deep or shallow water; top, middle, or bottom dweller.
2. Average size of the adult organism.
3. What the organism eats (how it obtains nutrients) and what eats the organism.
4. Location and means of reproduction.
5. Identify organism by phylum, class, and species (optional).

Students proceed by constructing a two dimensional replica of their organism and attaching a 3 by 5 fact card. When the replicas and fact cards are complete, each student gives a brief oral report to the class on their organism. At the end of each report, the replica and fact card are attached to a collective class mural. To complete the mural, use pieces of string to connect organisms that are directly connected in the food web.

Part II—Once the mural is complete, the class discusses the effect of human activity on the estuary food chain. Possible topics of discussion are:

1. Eutrophication.
2. Agricultural runoff.
3. Industrial pollutants.
4. Increased erosion and runoff caused by increased development and clearing of land.
5. Household activities—including water usage and waste, sewage, use of detergents, waste disposal, and recycling.
6. Population density in the watershed—particularly cities and their proximity to the water.

Part III—Students discuss and research what is being done in their communities to combat the problems discussed in Part II. Make suggestions about what steps could or should be taken, and talk about what they could do every day to help lessen their impact.

Optional: Add replicas of pollutants to the mural to enhance discussion of human impact on the ecosystem.



Animals and Plants

Animals

bald eagle
 osprey
 sea nettle
 comb jelly
 bluefish
 rockfish
 grass shrimp
 bryozoa
 copepod
 killifish
 silverside
 catfish
 flounder / hogchoker
 oyster, clam, mussel

white perch
 yellow perch
 bay anchovy
 sunfish
 scud
 carp
 menhaden
 sand shark
 bacteria
 American eel
 blood worm
 gizzard shad
 blue crab
 great blue heron

Plants

phragmites
 (reed grass)
 algae
 eel grass
 coon tail
 cat tail
 saltmarsh
 cordgrass

Recommended References

Bell, *Awesome Chesapeake*

Lippson and Lippson, *Life in the Chesapeake Bay*

White, *Chesapeake Bay: Nature of the Estuary*

Peterson Field Guides

Suggested Use of Class Time

Day 1: Give out and discuss vocabulary.

Day 2: Assign students a plant or animal to research. Review library, internet, and other research sources.

Day 3: Research day.

Day 4: Research day.

Day 5: Write a paragraph on the selected plant or animal on a note card (to be posted on the mural when completed).

Day 6: Make a two dimensional replica of the organism (to be posted on the mural as well).

Day 7: Oral presentations.

Day 8: Oral presentations.

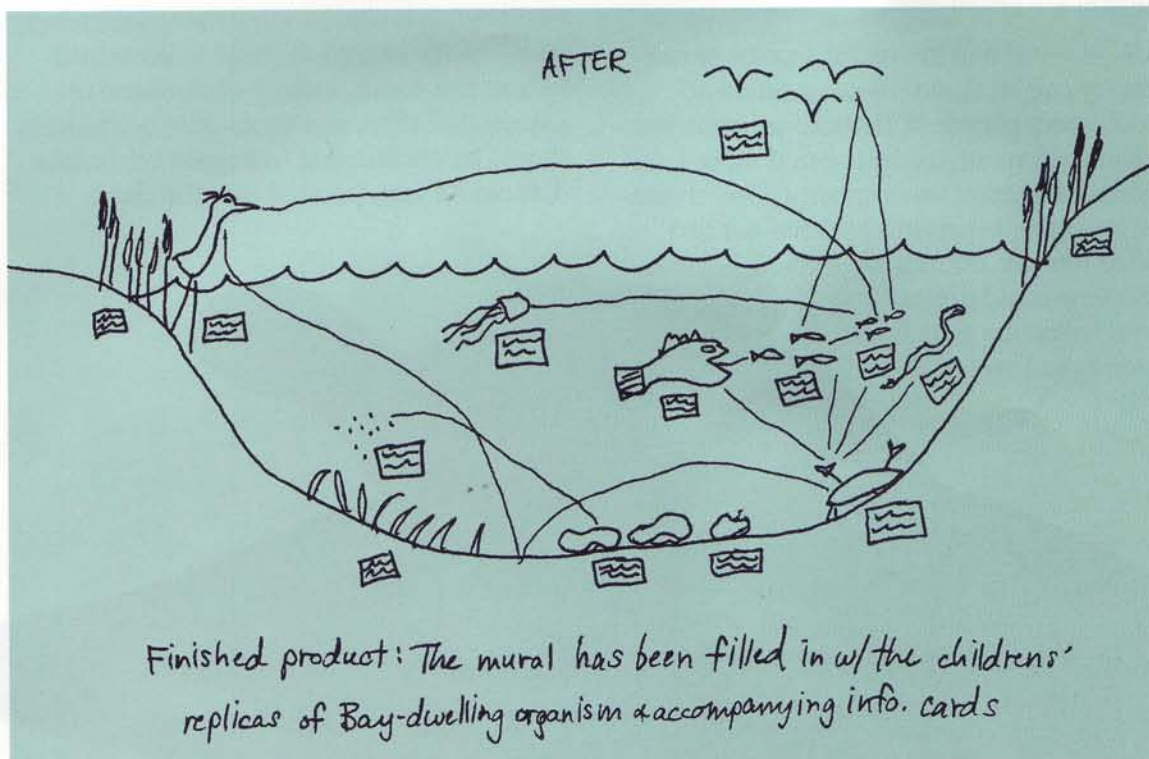
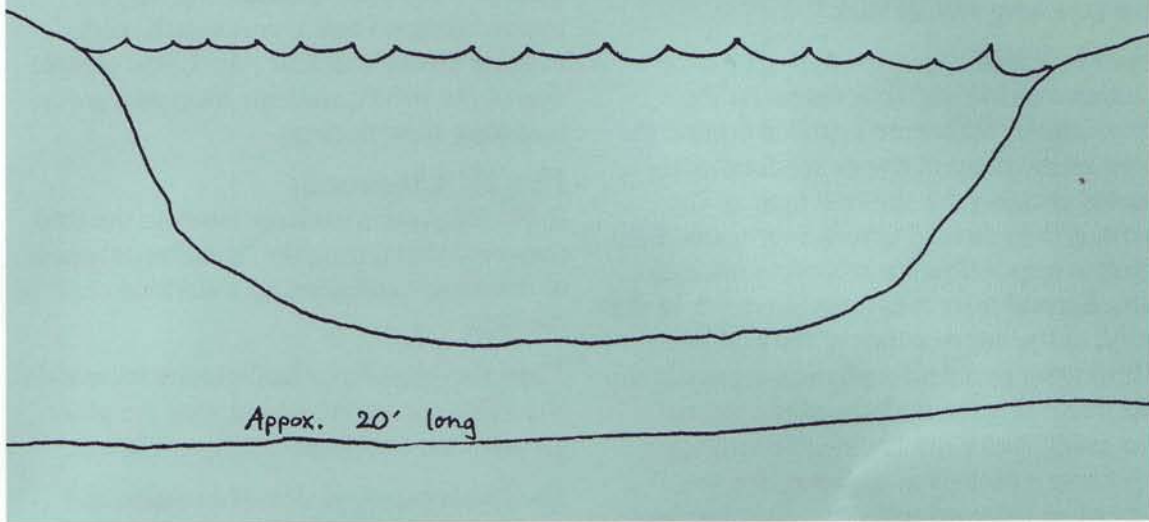
Day 9: Connect organisms on the mural with string according to their place in the food chain/web.

Day 10: Discuss human effects on the food chain/web.

Day 11: Discuss solutions to pollution problems in the community.

Biophysical Survey of a Wetland Ecosystem

What the Mural Would Look Like BEFORE



Finished product: The mural has been filled in w/ the childrens' replicas of Bay-dwelling organism & accompanying info. cards