Activity 2.2

Time Passages, Constructing a Visual Timeline

- Grade Level
  3-6
- Subject Areas
  Science, History, Social Studies, Mathematics
- Duration
  One to two 40-minute class sessions
- Setting
  Classroom
- Skills
  Graphing, interpreting, inferring, hypothesizing, demonstrating, explaining, correlating
- Vocabulary
  Natural resource, renewable resource, nonrenewable resource, fishery, schooner, dredge, tong, harvest
- Correlation with Next Generation Science Standards
  5-ESS3-1

  Correlation with NJ Core Curriculum Content Standards for Social Studies
  6.1.4.B.4-9, 6.1.4.C.4, 5, 7-9, 14-15, 17, 6.1.4.D.11, 6.1.8.C.4.b-c

Materials:

- ☐ Student Worksheet-Activity 2.2
- ☐ Index cards
- ☐ Ribbon (5 foot per group)
- ☐ Hole punch

Charting the Course
Students will examine the development and decline of the Delaware Bay oyster fishery. Harvest data will be correlated with significant events that affected the oyster resource and industry.

Background
The oyster populations of the Delaware Bay represent an important renewable natural resource. Native-Americans living along the Delaware Bay Shore gathered oysters from inshore waters and used them as food. Later colonists used skiffs, sloops, and schooners to harvest oysters from deeper waters. Hand tongs and mechanical dredges were utilized to scrape the oysters from the bay bottom. During colonial times and through the 1800s oysters were a popular food. Harvest records indicate that in the late 1800s and early 1900s 1-2 million bushels of oysters were landed annually. Port Norris is recognized as the heart of the New Jersey oyster industry and was one of the wealthiest cities in the State at the industry's prime. The development of local canning plants facilitated an expansion of oyster commerce. In the 1930s and 1940s oyster abundance began to decline. The 1940s also saw a technological change as the sailing vessels that were traditionally used by the fishery were replaced by or transformed into motorized vessels. Oyster abundance continued to decline in the later part of the 20th century partly due to overfishing and partly due to environmental conditions which the onset of two devastating oyster diseases MSX and Dermo. Today oyster harvests are a fraction of what they once were. The oyster resource is carefully managed and efforts are underway to help preserve and restore Delaware Bay oyster populations.

Objectives / Students will be able to:
1. Recognize the oyster as a locally important natural resource.
2. Describe methods for harvesting oysters.
3. Understand events that affected Delaware Bay oyster production.
4. Create timeline with images of the history of the oyster industry.
5. Describe images relating to oystering and make inferences as to how the image depicted related to the harvesting of Delaware Bay oysters.

Procedure / Warm Up
Have a class discussion about natural resources. Have the students name some natural resources and identify those occurring within the region. Introduce the Delaware Bay oyster as a natural resource and have them define fishery. Discuss the importance of oysters to the Delaware Bay region and the long history of oystering in the Bay. Have students discuss what things might have impacted oyster production through the years. Construct a chronological outline beginning with colonial times and guide students through key elements of oystering in Delaware Bay.

The Activity

1. Hand out timeline supplies to student research teams. Supplies should include copies of pictorial oyster history cards, index cards, pencils, and a 5 foot length of ribbon.
2. Working in research teams, have students order pictorial images chronologically based on what they see in the image.
3. Students should punch hole in center top of cars and weave them on ribbon in chronological order.
4. Have students write on index cards a brief description of what they see in the image and how what they see may have impacted the oyster resource of Delaware Bay.

Wrap Up / Student research teams should present their observations and speculations to class for comparisons and discussion. Discuss how the decline in the resource came about and how it may have been prevented. Relate observations of visual images with graph depicting Delaware Bay oyster harvests through time.

Assessment / Students may be evaluated on oral presentations, and on their constructions of the oyster fishery history timeline.

Extensions / Take the class aboard the Bayshore Discovery Project's schooner the A.J. Meerwald for a first hand experience of sailing on the Delaware Bay.

For lower grades select images and discuss then and now comparisons.

Host local folk singer Jim Albertson for a celebration of seafaring songs www.members.aol.com/downjerseyjim/

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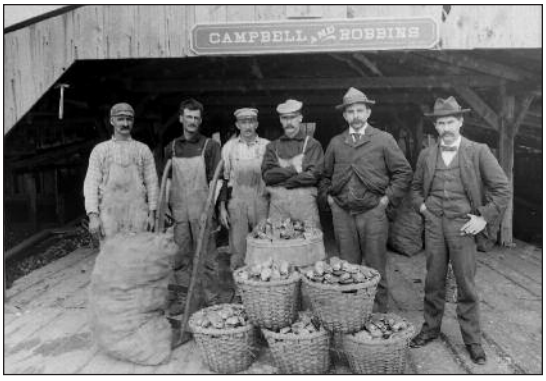

Figure 1-6: far left: Shucking oysters, photograph by Harvey W. Porch, courtesy of Cumberland County Historical Society; left: oyster schooner under sail, photograph by Graham Schofield of the ***Bridgeton News,*** courtesy of the Bayshore Center at Bivalve; bottom: Oyster bushels at dock, photograph by Harvey W. Porch, courtesy of Cumberland County Historical Society; right top to bottom: Canning oysters, photograph courtesy of Walt Canzonier, Haskin Shellfish Research Laboratory; modern vessel loaded with shell for oyster restoration, photograph Gustavo Calvo; and docked diesel powed oyster boat, photograph courtesy, Olin McConnell, Bayshore Center at Bivalve.

Student Handout Activity 2.2 Time Passages Constructing a Visual Timeline