Activity 2.3

- Grade Level
4-5

- Subject Areas
History, Social Studies, Mathematics

- Duration
One 40-minute class session

- Setting
Classroom

- Skills
Interpreting, inferring, demonstrating, explaining.

- Vocabulary
Shuck, market, commerce.

- Correlation with Next Generation Science Standards
3-5-ETS1-1

Correlation with NJ Core Curriculum Content Standards for Social Studies
6.1.4.B.4 -9, 6.1.4.C.1, 4, 5, 7-9, 14, 15, 17, 6.1.8.C.4.b-c

Materials:

- ☐ Sudent Worksheet-Activity 2.3
- ☐ Paper
- ☐ Pencils
- ☐ Calculators

A Look at the Numbers by Rail

Charting the Course

At the boom of the Delaware Bay oyster fishery 1-2 million bushels of oysters were harvested each year. In the following exercise students will examine the harvest numbers through mathematical word problems and view the harvest numbers in terms of number of railcars needed for shipping that many oysters. They will then compare the number of railcars needed to ship the same number of canned oysters.

Background

In the 1870s and 1880s several railroad lines extended rail transport to the New Jersey Delaware Bayshore. The rail lines had a significant impact on the oyster industry of New Jersey making land transportation of oysters cost effective and rapid. The town of Bivalve became the shipping center of the New Jersey oyster industry. Adjacent towns became residential and commercial centers for the industry as merchants and tradesmen relocated from Philadelphia, New England, and other areas. The area became very prosperous. Some 56 million oysters were shipped out of Bivalve in 1925 with a value of more than 5 million dollars. Early on, most of the oysters were shipped first to Baltimore where they were removed from their shells and packed in cans. In 1922 the first shucking plant in Bivalve was opened. The ability to shuck directly where the oysters were landed greatly reduced freight and handling costs. Within a decade packing houses lined the Maurice River waterfront. In the packing houses men and women lined long wooden stalls, quickly shucking as many oysters as possible. Many immigrants came from Maryland and Virginia to work in New Jersey's oyster shucking houses. The packing houses played an important role in shaping the cultural and economic life of the Bayshore region.

Objectives / Students will be able to:

1. Gain an appreciation of the number of oysters harvested from Delaware Bay during the oyster industry's boom days.
2. Calculate the number of railcars needed to ship the oysters harvested from the Delaware Bay in 1925.
3. Calculate the number of railcars needed to ship the same number of oysters if they were all shucked and canned.
4. Compare the relative costs of shipping whole oysters (in shells) versus canned shucked oysters (meats only).

Procedure / Warm Up

Revisit the New Jersey oyster landings graph. Focusing on the boom years discuss how the ability to ship oysters by rail and later the ability to can shucked oysters impacted the commerce or marketing oysters. At the industry's peak 1-2 million bushels (about 300 oysters per bushel) of oysters were harvested per year. **Ask: "How many railcars of oysters would be needed to transport that many oysters?"**

The Activity

1. Hand out the worksheet and scrap paper. Have students take out their pencils and calculators.
2. Have students complete the math word problems on the Student Worksheet-Activity 2.3, or using the numbers in the A Look at the Numbers Box create and have them solve your own word problems.
3. Discuss the results.

Wrap Up / Have an open discussion about how technological changes, such as the establishment of railroads and canning in the case of oysters, can affect the demand for and on a natural resource. Have students suggest other changes that could impact the resource. Discuss the economic benefit to the oyster industry of locally packing (canning) oysters.

Assessment / Student's mathematical computations. Participation in class discussions.

Extensions / Invite the folklorist from the Bayshore Discovery Project to visit your class for a presentation on the history of oystering in Delaware Bay.

Select curriculum materials from *Down Jersey Celebrating Our Sense of Place.*

A look at the numbers:

The year: 1925

7,000 railcars from Bivalve

100 bags oysters in shell per railcar

800 oysters per bag

560 million oysters

$8.00 per bag

$5.6 million wholesale worth

What if the oysters were shucked before shipping?

746 railcars

1.8 million oyster cans

300 shucked oysters per gallon can

560 million oysters

895,680 cubic feet of shells on shell pile at shucking house

How many football fields would this be?

Figure 1: Railcars at the Bivalve wharf, photograph courtesy of the Bayshore Center at Bivalve.

Student Worksheet   Activity 2.3 A Look at The Numbers

Name_____Date _____

Complete the following word problems. You may use a calculator, but show your calculations on this worksheet. You may need the answer from a previous problem to determine the answer for a later problem, so solve the problems in the order that they are presented.

1. In 1925, 1.8 million bushels of oysters were harvested from Delaware Bay. Assuming there were 300 oysters per bushel, how many oysters were harvested?

2. The oysters were transported to market in bags. Each bag held 800 oysters. Assuming that all of the oysters harvested were shipped in bags, how many bags of oysters were shipped in 1925?

3. The bagged oysters were shipped by railroad. Each rail car could hold 100 bags of oysters and a lot of ice. How many railcars were needed to transport the oysters from the docks at Bivlave, NJ in 1925?

4. Each bag was sold for $8.00. What was the price of a single oyster? Remember there were 800 oysters per bag.

5. What was the wholesale value of all the oysters harvested in 1925?

Student Worksheet   Activity 2.3 A Look at The Numbers

Name_____**Date** _____

Super Number Challenge

1. If in 1925 all the harvested oysters were shucked and shipped to market in cans. How many cans would be shipped if each gallon contained 300 oysters?

2. A railcar could hold 2000 cans. How many railcars were needed to ship the canned oysters? Were more cars needed to ship the oysters in bags or cans?

3. What was the benefit to the oyster company of selling shucked oysters (canned oysters)?

The Ultimate Number Challenge

Shucking all those oysters resulted in a huge pile of oyster shells beside the packing house. The total volume of shells was 895,680 cubic feet. If the shell was spread out in a pile 1 foot high, how many football fields would it cover? (Hint: a football field is 300 feet by 160 feet)