

Oyster History in New York Harbor

Summary: In this interactive history lesson, students review data spanning the last 400 years of NY Harbor history, and discuss the events and decisions of people in the past to consider the impact those choices have on resources today. Students then examine images and review a brief history of the harbor to create a timeline of these changes.

Outline

- **Observe and infer from New York Harbor maps (15 min)**
- **Use and combine historical data to observe changes over time (15 min)**
- **Arrange New York Harbor events in sequence (15 min)**
- **Reassess timeline with more information on New York Harbor (35 min)**
- **Discuss and reflect (10 min)**

LESSON OVERVIEW

Objectives (Students will be able to...)

- Analyze data and to infer relationship of human population and resource use over time, and use images and additional images to create a timeline of events in New York Harbor based on their observations and inferences.

Standards

- MS-ESS3-4: Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

BOP Connections

- Standalone Lessons: Pairs well with "Oysters are Keystone Species" which provides overview of the ecosystem functions oyster provide.
- ORT / ORS: Supplements the Oyster Research Tank or Oyster Research Station by providing context for the history of oysters in New York Harbor.
- Middle School Unit (coming in January 2026)

BEFORE YOU GET STARTED

Supplies

- [Grades 6-8: Slides](#)
- [Grades 6-8: Handout](#) (for each student)
- [Grades 6-8: Historical Images](#) (for each group)
- [Grades 6-8: Guided Reading](#) (for each student or each group)
- Tape

Tips for Teachers

Review with students:

- The Lenape people were the original human inhabitants of the New York City region, which they called Lenapehoking
- Norms (what it may look like and sound like) for groups to work together productively

Decide:

- Whether students review historical images in groups or independently.
- If the historical images should be provided to students with or without captions.
- Whether students will complete the guided reading independently or as a jigsaw.

Heads up:

- Check out the other grade band versions of this lesson ([K-2](#), [3-5](#), [9-12](#)) for other formats and lexile levels to explore this content!

Materials Preparation

- Identify a large wall surface that students can attach historical images to and see clearly.
- When making the timeline with students, it may be helpful to some “wayfinding” events such as 1609 (the year the Dutch sailed into New York), 1776 (the year of the US Revolution), 1827 (New York bans slavery), 1861 (The US Civil War), 1865 (the national abolition of slavery), 1914-1919 (World War I), 1941-1945 (World War II), 1972 (Passage of the Clean Water Act), 2014 (BOP is founded), and any other time periods that gives your class more context.
- The Historical Images are included in chronological order, with dates visible in the speaker notes of each slide. Maps and particular years are included as well if printing. Mix up the order of these images before sharing them with students. (The correct order of images by the number at the bottom of the image is: Pre-1609, Map 1, 8, 1650 6, 2, 7, 5, 1950, 1, 200, 4, 3, Map 2)

Vocabulary

- Observation: using senses to take in information about the environment
- Inference: a guess or conclusion based on facts and observations

INSTRUCTION PLAN

Observe and infer from New York Harbor maps. (10 min)

1. **Display:** Show two images of New York Harbor. On the board, or another central location, create a list of student comments.
 - **Ask:** *What observations (something you notice) do you have? What inferences are you making (what you think it means)?* [slide 2]
 - **Ask:** *What are you looking at in these maps? What do you think these maps represent?* [slide 3]
2. **Explain:** Map 1 depicts Lenapehoking (NYC) before European colonists arrived in 1609, and map 2 shows NYC today. There is a lot more natural life in the first map, many more buildings and industrialized areas in the second. [slide 4]
 - **Ask:** *What events might've taken place between then and now to cause these changes?*
3. **Explain:** Over the last 1,000 years, people have interacted with the harbor and its resources in different ways. There are many plants and animals that live in the harbor - including oysters! Oysters are an animal that have two shells and live in reefs. [slide 5]
 - **Ask:** *How could animals like oysters be impacted by the changes in the harbor? (destruction of habitat, less area for the oysters to live, etc.)*

ACTIVITY:

Use and combine historical data to observe changes over time. (15 min)

1. **Frame:** Today, we are going to look at data available from different points in New York City history, and predict what happened to the harbor over time, including the people and the oysters that lived there.
2. **Facilitate:** Split students into groups and provide a [handout](#) to each student. Outline the procedure for how students will analyze graphs, and complete Part 1 of the handout. [slide 6]
 - Make an observation and inference about the graph on NYC Population
 - Add two data points of the graph using the data chart provided
 - Discuss and record what you notice happening over time
 - Repeat for the graph on New York Harbor Oysters Eaten
 - Consider how the graphs are related
3. **Discuss as a whole group:** [slide 7]
 - *What do you notice happening to the population of people in NYC over time?*

- *What do you notice happening to the number of oysters eaten over time?*
 - *How might the two graphs be related to each other?*
 - *What are possible explanations for what happened over time?*
4. **Explain:** The population in New York City grew exponentially. With more people came a greater demand for oysters and overall more eaten over the years, especially in the 1800s. However, something happened in the early 1900s where the population continues to grow but the number of oysters eaten drops to none. [slide 8]

Arrange New York Harbor events in sequence. (15 min)

1. **Frame:** We can see that there are not many oysters in New York Harbor now. But looking back at decisions that people made gives us more information on how there became less oysters available. Now, we are going to build a timeline to sequence events and see how these events are connected.
2. **Discuss as a whole group:** To demonstrate how students will analyze images, show and discuss Image 1 as students write responses on Part 1 of their handout. [slide 9]
 - *What do you observe about this image? What can you infer from this observation?*
 - *Do you agree with each other's observations and inferences? Why or why not?*
3. **Facilitate:** Outline the procedure for how students will analyze the [historical images](#). As students work, circulate to ask students to share reasoning. [slide 10]
 - Receive a set of 7 other historical images that are out of order
 - For each image, write observations and inferences on Part 2 of the handout
 - Place the images in chronological order and write predictions down
4. **Facilitate:** In a designated area where everyone can see, affix Map 1 at the start of the timeline and Map 2 at the end. Add years to the timeline, like: pre-1609, 1650, 1950, 2000. Outline the procedure of how students will add images to the timeline. It's okay if they put the resources in the incorrect order. [slide 11]
 - Estimate with the group in which time period the images likely take place
 - Each group brings up 1-2 images to place them in a more exact location on the wall based on where you think it falls on the timeline
5. **Compare:** When students finish sequencing the images, lead a gallery walk and full group discussion to share what students think is the correct order and why. [slide 12]
 - **Ask:** *What information do you now have that explains the difference between map 1 and 2? What changed in those 400+ years?*

Reassess timeline with more information on New York Harbor. (35 min)

1. **Frame:** Using additional information to supplement and assess our understanding of history can give us a fuller picture of how there became less oysters and how the water got so polluted over time. Now we will complete a reading for more information on oyster history and reconsider the timeline we created.
2. **Facilitate:** Distribute the [guided reading](#) to students. Provide students time to read the brief history and answer the stop and jot questions as they read. [slide 13]
3. **Discuss in small groups:** Students record notes on Part 3 of the handout. [slide 13]
 - *Based on the reading you just completed, do you still agree with the order your images are in? Which ones might you shift? Why or why not?*
4. **Facilitate:** Support students in moving images as needed.

CLOSING:

Discuss and reflect. (15 min)

1. **Discuss as a whole group:** [slide 14]
 - *Would our timeline have been as complete if we only used the data, the images, or the reading? Why or why not?*
 - *Was your prediction of the relationship between the 2 graphs accurate?*
 - *How did the growth in population impact New York's oyster population?*
 - *What impact did the loss of oysters have on the people and New York Harbor?*
 - *What did you find most surprising about the history of New York Harbor?*
2. **Explain:** Oysters provide many ecosystem functions. With fewer in New York Harbor, there became less support to clear the water of floating particles, provide habitat for many other species, and protect shorelines from erosion and flooding. Not to mention, people are no longer able to eat healthy oysters from New York Harbor! [slide 15]
3. **Recall:** As one effort to clean the harbor, Billion Oyster Project was founded with the goal to restore (bring back) one billion oysters to New York Harbor through the engagement of one million people. [slide 16]
 - **Ask:** *Why would Billion Oyster Project also focus on people as part of its mission? (people were responsible for the pollution, involves people in the work to restore the harbor, makes changes longer lasting, etc.)* [slide 17]
4. **Reflect:** Students write independently on Part 4 of their handout. [slide 18]
 - *What role can we play in restoring and protecting resources like the water and oysters in New York Harbor?*