Oysters and The Bay

1. Question & Research Task

One translation of the word "Chesapeake" from the Algonquian language is "Great Shellfish Bay".

For centuries, oysters and other shellfish have been harvested from the bay, providing food and a livelihood for many. However, a variety of threats have affected the oyster population.

Restoring and protecting the Chesapeake Bay, a complex ecosystem, requires a wide range of solutions. One of the key strategies in "bringing back the Bay" is to restore oyster populations using a variety of techniques.

What are the best strategies for restoring the oyster population?

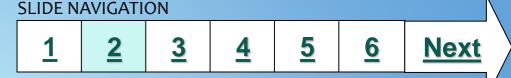Photo by Steve Droter/Chesapeake Bay Program

In this Slam Dunk, you will conduct brief, focused research to respond to the inquiry question:

What is the connection between oysters and a healthy Chesapeake Bay?

2. Information Sources

Choose several of the information sources linked here to complete the Student Activity on Slide 3. When required, see your teacher/librarian for login information.

- Watch Life in the Chesapeake

- Oyster Issues in the Chesapeake: an informational website from the Chesapeake Bay Program.

- Oysters: How are They Doing? (blog from Chesapeake Bay Foundation- ask your teacher to print this out)

- Large-scale Oyster Restoration

- Oyster Restoration: information about restoration projects from NOAA (National Oceanic and Atmospheric Administration)

- Shell Recycling Infographic

- The Billion Oyster Project video

The oyster barges are key to CBF's vital oyster restoration work.

Select the image above to watch a video segment about a one-of-a-kind mobile oyster nursery.

Image taken from the Chesapeake Bay Foundation

3. Student Activity

Use the informational resources on Slide 2 to gather information about strategies that can be used to restore oysters in the Chesapeake Bay.

Possible Strategies:
- oyster gardening
- introduction of non-native oysters
- the use of oyster reef balls

Use this graphic organizer for your comparison:

Restoration Strategy Organizer

Oyster spat (baby oysters) on a shell.
Image taken from PREP.

4. Assessment Activity

You will work in a group for this activity. Each group will choose one oyster restoration strategy from their research that they think is the best. Your group will create a presentation—through Google Slides, Discovery Education Board Builder, or another tool suggested by your teacher—about this strategy and how this method will improve the overall health of the Bay.

Include the following information in your presentation:

- An explanation of why oysters are important to the health of the Bay.
- A description of your chosen oyster restoration strategy
- At least three reasons why this strategy will work.
- A summary of at least two limitations or drawbacks of one other restoration strategy that was not selected.
- Copyright friendly images to enhance your presentation.
- Citation for the sources you gathered your information from using the research platform NoodleTools, available through the BCPS Apps Portal. Be sure to cite information and images. A Works Cited page can be added as a final page or slide in your presentation.

Artificial oyster reef.
Image taken from Reef Innovations.

5. Enrichment Activities

What's the Deal with Oysters?

The Problem:

Because of overharvesting, pollution, and disease, **WE'VE LOST MORE THAN 99%** of the Chesapeake Bay's oysters.

Why it Matters:

One adult oyster can filter **50 gallons of water per day.**

Or, the same amount of water that would fill an average bathtub or the amount of water used in a 10-minute shower.*

Maryland and Virginia's economies have lost over **$4 BILLION DOLLARS** in the last 30 years because of the decline in oysters.* $4B

Oyster reefs provide **habitat and food** for crabs, fish, and other Bay critters. At one time, oysters were so abundant in the Chesapeake Bay that their reefs defined the major river channels.

Select the image above to view a larger infographic about Chesapeake Bay oyster populations. Image from the Chesapeake Bay Foundation.

Create an infographic that summarizes the ways that oysters improve the health of the Chesapeake Bay.

You can create your infographic on poster paper or by using Google Docs. Insert text boxes, shapes, and pictures for visual interest. Try changing the page color and font types and color.

All images, sources and information must be cited using our research platform NoodleTools found in the BCPS Apps Portal.

6. Teacher Resources

Learning Standards Alignment

Next Generation Science Standards

MS-ESS3-3

MS-ESS3-4

MS-LS2-4

MS-LS2-5

Common Core State Standards for English Language Arts & Literacy

Reading: 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Writing: 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

AASL Standards Framework for Learners Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.

Think: Learners display curiosity and initiative by:

    I.A.2 Recalling prior and background knowledge as context for new meaning.

Create: Learners engage with new knowledge by following a process that includes:

    I.B.1 Using evidence to investigate questions. I.B.3 Generating products that illustrate learning.

Share: Learners adapt, communicate, and exchange learning products with others in a cycle that includes:

    I.C.1 Interacting with content presented by others.

Grow: Learners participate in an ongoing inquiry-based process by:

    I.D.2 Engaging in sustained inquiry.

P21 Framework: 21st Century Student Outcomes

3. Information, Media & Technology Skills: Information Literacy: Access information efficiently and effectively; Use information accurately and creatively for the issue or problem at hand.

ICT Literacy: Use technology as a tool to research, organize, evaluate and communicate information.

Grade 8 Science

Time Frame: 1-2 class periods

Differentiation strategies for this lesson:

- Have students use learning supports provided in BCPS Digital Content found in the Apps Portal. Refer to Digital Content Snapshot/Support pages as needed.

Notes to the teacher:

- Collaborate with your school library media specialist to plan and implement this lesson.
- Consider using this YouTube video from the Chesapeake Bay Foundation as an additional resource: *Common Ground, Saving the Chesapeake's Oysters*
- Provide students with login information as needed to authenticate BCPS Digital Content. Login information is available on the **BCPS Digital Content** page found via the Apps Portal