

Lesson 3: Drayton Harbor Oysters and Salish Sea Challenge

Subject

Student Action

Materials/Teacher Preparation

- Print half a class set of “Drayton Harbor Oysters Video” sheet
- Set up youtube projection video
- Print class set of Salish Sea Stewards Challenge Bingo sheets in color, if possible
- *Community Sources for Clean Water* Poster hanging for reference (GSSC provides)

Size/setting/duration

Full Class/Classroom/40 minutes

Background

Shellfish harvest areas in Drayton Harbor started getting downgraded in 1995 due to nonpoint source pollution. Since then, community actions have helped reopen a large portion of the harvestable areas. Our actions in the watershed make a huge difference to the health of the watershed, and the harvestability of the shellfish that are in the bay.

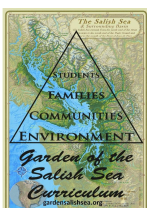
Overview

Students will:

- Choose actions they can take to help improve water quality.

Procedure

1. Briefly review the *Community Sources for Clean Water* Poster, and have a student hang somewhere in the room.
2. Optional: Pass out Cognitive Content Dictionaries and have them write “steward”. Display your copy for everyone to see; students write a prediction and then the teacher guides them to a correct sketch of the word meaning and gives the final definition. Model how to use it correctly in a sentence and ask for volunteers to do the same. Model how kids should add a “check” in the “oral sentence” box with however many times the class used it correctly.
3. Introduce the Salish Sea Stewards Challenge. Pass out the Salish Sea Stewards Challenge Bingo sheet and have students store in folders. *This whole unit is about*



human action and the watershed. We have the knowledge that pollutants are getting into our watershed and we also have a responsibility to take care of what is ours.

Read through the Bingo Sheet directions with kids. Explain that the idea is to be mindful about when they are doing something that helps keep the watershed clean. For example, if they help parents garden, they are helping to upkeep greenery/a pervious surface, so they can cross off the "tree" image on the bingo sheet. Take a few minutes to talk through what kids could do to cross off boxes.

4. Add vocabulary to to word bank or CCD:
 - a. Steward - a person who takes care of something
 - b. Shellfish industry - all the businesses related to turning raw shellfish into goods. Examples include jobs related to food service or oyster farming; related to gardening, crushed shellfish shells mixed into soil for fertilizer; jobs related to tourism in the area, lively sea life is world famous and oysters filter the water, which benefits all organisms.
 - c. Ecosystem services - benefits from healthy ecosystems. (Teacher note: services include how plants produce O₂, shellfish filter water, oyster shells provide a base for other organisms to grow off of, roots prevent erosion.)
5. (5 min) Pass out *Poop in Drayton Harbor Video Question* half-sheets to keep in notebooks. Preview the video questions. Explain that Blaine Harbor is part of the bigger Drayton Harbor that touches Semiahmoo.
6. (3 min) Play [News Story About Drayton Harbor Community Shellfish Farm](#).
7. (5 min) Review answers to the Question Sheet with students.
8. Shellfish are filter-feeders. That means that they eat microscopic things like plankton from the water, and clean it in the process. Adult oysters can filter up to 50 gallons of water in a day. If we want to be able to harvest oysters and other shellfish we need to be careful about what gets into the water. Pollutants like fecal coliform bacteria, which is in poop that can come from animals or faulty septic systems, can make us very sick.
9. Explain that we should never collect shellfish without checking the Washington Department of Health's biotoxin hotline (1-800-562-5632) for paralytic shellfish poisoning and pollutant closures or look at the [shellfish safety map](#).
10. (5 min) Reflection: Salish Sea Steward Challenge Bingo. Lead students to take out their bingo sheet and reflect on anything they've done recently. *What can I do to keep my watershed clean?* Remind them to X off any they've done since the last lesson, (they can cross off multiple.) When they've gotten four in a row they should let the teacher know, they can share if they choose to, and they can sign the Salish Sea Stewards Classroom poster, hanging on the wall. "Let's be stewards



today, tomorrow, and every day that we live here!” or other reward you have in mind. The idea of the Bingo game is that you will create a habit of connecting actions during the week with how it affects the watershed. You could limit students to placing three "Xs" per day that you review the game. Have a few students explain the connection between the action and the water quality. (Students often refer back to the Watershed model here).

Next Generation Science Standards

Performance Expectations		
5-ESS3-1: Earth and Human Activity. Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.		
Scientific and Engineering Practices	Disciplinary Core Ideas	Cross-cutting Concepts
Developing and using models	ESS3.C: Human Impacts on Earth Systems	Systems and System Models Science Addresses Questions About the Natural and Material World

Other Standards

Standard 2: The Natural and Built Environment

Standard 3: Sustainability and Civic Responsibility

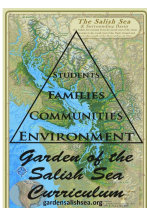
Graphics

None

Vocabulary

**Teacher Note: focus on students understanding of the big ideas. For example, rather than having them memorize “impervious,” remind them of what effects those surfaces have.*

- fecal coliform bacteria: tiny living things that live in poop. If eaten, often cause disease
- shellfish industry: all the businesses that convert raw shellfish into goods for consumers
- Stormwater run-off: water that washes into a water body when it rains, carrying substances with it (for example: rain from our parking lot goes into the storm drain outside our classroom and directly into Drayton Harbor)



- Steward - someone that takes care of something
- Ecosystem services - the important benefits that come from healthy functioning ecosystems such as cleaning the water or production of oxygen.

Extension

- If you have time you can watch these other videos about Blaine's oysters:
 - [Growing Oysters at the Drayton Harbor Oyster Farm Video](#)
 - [Drayton Harbor Oyster Video](#)

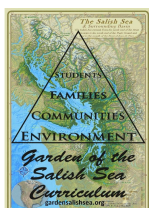
Worksheet



Salish Sea Stewards Challenge Bingo

Let's try to create a habit by adopting certain routines in our daily lives because we care about protecting our oceans. Every few days we'll re-visit this sheet and X off the actions you/your family have done during this unit... Whoever gets a bingo by the end of the unit gets a Salish Sea Sticker!

I want to protect my Salish Sea because... (Use words or pictures)



Drayton Harbor Oysters Video Student Question Sheet

What are some of the pollution sources that caused the shellfish closures?

Think back to the watershed model. Why do you think shellfish harvest closes when it rains?

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Drayton Harbor Oysters Video Answer Sheet

What are some of the pollution sources that caused the shellfish closures?

Leaking sewer systems and pollution from storm drains.

Think back to the watershed model. Why do you think shellfish harvest closes when it rains?

Water picks up pollutants as it goes through the watershed.

