Lesson 14: Beach Exploration

Subject

Intertidal Zone Field Studies

Objectives

The students will:

- Identify clam species and record population data in a clam survey
- Explore local intertidal zone

Materials

- Marine ID Guides
- Clipboards
- Worksheets

Size/setting/duration

Full Class/Birch Bay State Park Beach/30 minutes

Background

In this activity, students will be conducting a local clam survey. The clam surveys will help determine the health of clam populations. Students will learn how the surveys can also help estimate the health of clam populations over time.

Procedure

- Students will work on the food web worksheet and doing the beachfront scavenger hunt to see what organisms they can find and how they relate to each other in the food web.
- Give students an opportunity for free exploration of their intertidal zone. Each chaperone should have a marine ID guide and the instructor can rove between groups answering questions and helping students identify the organisms they find.

Next Generation Science Standards

Performance Expectations		
5-LS2-1: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment		
Scientific and Engineering Practices	**Disciplinary Core Ideas**	**Cross-cutting Concepts**
Developing and using models Science models, laws, mechanisms, and theories explain natural phenomena	LS2.A: Interdependent relationships in ecosystems LS2.B: Cycles of Matter and Energy Transfer in Ecosystems	Systems and System Models

Graphics

To download free field guides visit:
NOAA Intertidal Zones Animals Field Guide
LiMPETS Field Guide

Worksheet

Beachfront Scavenger Hunt

Try to find these five different kinds of clam shells and check them as you find them

- o Native Littleneck Clam
- o Manilla Clam
- o Varnish Clam
- o Butter Clam
- o Cockle Clam

Varnish clam
Nuttallia obscurata

Up to 3", with shiny brown coating on the outside, purple on the inside of shell.

Manila littleneck clam
Venerupis philippinarum

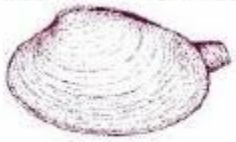
Average size is 1-2", up to 2½". Oblong shell has concentric and radiating lines. May have colored, patterned shells. Siphon tips are split. Found to 4" below surface.

Cockle clam
Clinocardium nuttalli

Prominent, evenly-spaced ridges which fan out from the hinge. Mottled, light brown. Can grow to 5". Found just below surface.

Native littleneck clam
Leukoma staminea

Average size is 1-2", up to 2½". Rounded shell has concentric and radiating lines. Siphon tips are fused. Found 6-10" below surface.



Butter clam
Saxidomus giganteus

Average size is 3-4", up to 6". Shells have no radiating ridges and are usually chalky-white. The siphon can be pulled into its shell. Usually found 12-18" below surface.

Did you find any other animals? If so, list them below.

_____

_____

_____

_____

Low Tide Food Web Hunt

Search along the intertidal zone to find the animals and plants below; once you have found one, draw a solid line to connect them to what they eat or what eats them to create a food web of the nearshore ecosystem. If you didn't find a plant or animal on this worksheet draw a dotted line to connect them into the food web. Find something not on the food web? Draw it in and connect it to other plants and animals with a solid line.