

Clam Identification

Subject

Clam Identification

Objectives

The students will:

- Recognize patterns in order to identify clam species.

Materials

- Clam ID kits (one per table group)
 - Each kit contains 3 of each species (Horse Clam, Eastern Softshell, Cockle, Manila, Native Littleneck, Butter Clam, Macoma)
- Calipers or clam rings (at least one per table group)
- Clam ID guides (one per student)
- [Clam ID powerpoint](#) (and projector)

Size/setting/duration

Full class in table groups/indoors/45 minutes

Background

This lesson is a key way to introduce the students to clam identification before their clam survey at Birch Bay State Park.

Procedure

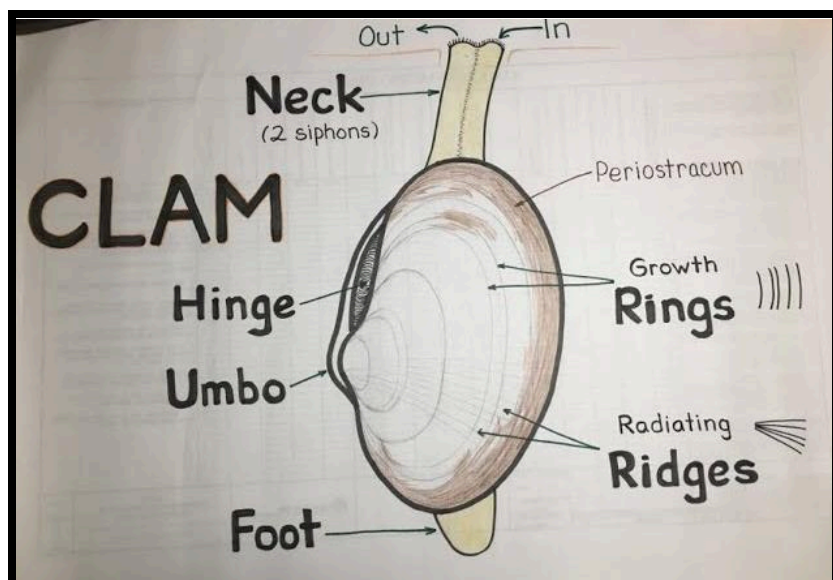
- Give student bag of shells and ask them to sort them into different types (10 minutes)
- Ask students how they sorted the shells (5 minutes)
- Present powerpoint of shell anatomy and ways to identify different species and give introduction of the ID guides. (5 minutes)
- Have students re-sort the shells using the information they just learned. Give guidance to students as they try to sort them all into individual species (7 groups). (10 minutes)
- Have students pick one shell to identify, measure, and draw using the worksheet. (15 minutes)



Next Generation Science Standards

Performance Expectations		
1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.		
Scientific and Engineering Practices	Disciplinary Core Ideas	Cross-cutting Concepts
Constructing explanations and designing solutions Developing and using models Engaging in argument from evidence	LS1.A: Structure and Function LS1.D: Information Processing ET S1.B: Developing possible solutions	Patterns Structure and Function Influence of Engineering, Technology, and Science on Society and the Natural World System and System Models

Graphics & Worksheet



Clam Identification Key

Adapted from King County Beach Assessment program

Anatomy Terms

- Umbo
- Hinge
- Siphon
- Periostracum

Things to Note:

Shape:

Round vs Oval/Elliptical vs Triangular

Patterns:

Concentric Rings vs Radiating Ridges

Color

Can you see a leathery hinge connecting the shells? (Beside the Umbo, the leathery hinge is visible outside of the live clam or closed clam shell.)

If no, go on to “A”

If yes, skip to “B”



A. No leathery hinge visible:



(hinge is hidden inside)

1. Outlines of both shells are mirror images of each other, flaps are present on the tips of siphons. It is a **Horse Clam**.



[two horse clam species: “Horseneck” (*Tresus nuttallii*) or “Fat Gaper” (*Tresus capax*). They are often *misnamed* “geoduck” when large, but these are *not* geoducks!]

2. Shells are not mirror images, one shell overlaps onto the other at the top; no flaps are present on the tips of siphons. The shell has elliptical shape. It is an **Eastern Softshell Clam**.



Both Eastern softshell and horse clams often have a brown-black papery skin (periostracum), on outer (newer) edge of shell, wearing off over time. When small, the shells may seem thin and fragile, when large (as large as an adult’s hand!) the shells can get thick and robust.

B. Yes, leathery hinge visible on outside of shell (next page)

(clam key continued, page 2)

B. Yes, leathery hinge visible on outside of shell



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1. Shell is half circular, half like triangle, pointed on one end. Often has brown or black skin-like periostracum, which may flake off older parts of shell.

- a. Has a more blunt point. Reddish-brown periostracum may cover whole shell or where flaking off, shell may look purplish-white. It is a **varnish clam** (or “purple varnish clam”, “savory clam”)
- b. Triangular edge often more pointed, sometimes tip is curved up. Grayish Periostracum may be worn off or with just a little around edge... It is a **Macoma** (includes many species: “bent-nose”, “pointed”/”polluted”, sand, and Baltic macomas)



2. Shell is **mostly circular or oval, rather thick and strong**. Rings or ribs are easily seen on the shells. No periostracum

- a. Shell has **heavy ribs**, shell is heart-shaped when viewed from on end. It is a **Cockle**. (aka. “heart-cockle”)
- b. **Rings and ribs** are equally visible. Shells may have patterns of color



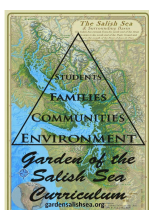
- (1) Shell is elongated, oddly oval. there is a smooth, flattish groove where shells meet near the umbo (non-hinged side of umbo). It is a **Manila clam**. (also called “Japanese littleneck”)



- (2) Shell is rounded, there is no pit near the umbo – more of a ridge that continues all the way to umbo. It is a **native littleneck clam**



3. thick oval shell, rounded on both ends, has faint rings. Plain chalky white or stained gray from mud. Live clams have a noticeably strong leathery hinge. It is a **butter clam**.



Classroom Clam Shell Sort

Sort out the shells given to your group. Divide them up by common characteristics. In the space below, for each clam, record the attributes, and write a brief description with a diagram of the clam. Be sure to label any identifying features.

Description:	Drawing of Shell
Color: _____ Shape: _____ Markings: _____ Bigger than 1.5 inches? Yes No Type of Clam: _____ _____	
Color: _____ Shape: _____ Markings: _____ Bigger than 1.5 inches? Yes No Type of Clam: _____ _____	

