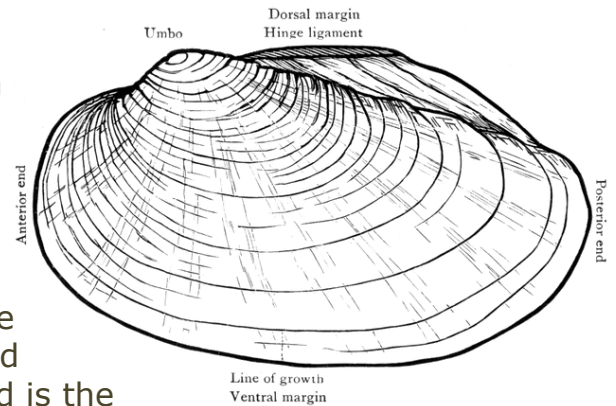


Dissection 101: The Clam

➤ Lesson Plan: Clam Dissection

Background: The clam is an invertebrate in the phylum Mollusca; it is a bivalve, having two shells connected by a hinge. The shells provide protection for the clam and are opened and closed by two adductor muscles located on either side of the hinge. The hinge is located on the dorsal side of the clam next to a structure/location called the umbo. The umbo is circular in shape and is the oldest section of the shell. Many times the umbo appears worn with the dark outer layers of the shell removed, exposing the iridescent nacre/mother of pearl. Additional rings are produced by the mantle of the clam as it grows.



The clam has a complete digestive system with a mouth and anus. Clams are filter feeders, sifting through water and sediment on the bottom of streams, rivers and lakes. They separate the organic material from the inorganic. The clam moves through the sediment with a

muscular foot that extends outward from the body, between the two shells. The clam uses the foot to burrow into the sediment.

The clam removes oxygen from the water with gills. The oxygen and nutrients are moved throughout the body with a circulatory system. Unlike the human circulatory system, the clam has an open system resulting in less pressure and efficiency.

Reasons to Use the Dissection Video and Accompanying PowerPoint Presentation

- Reduce the number of specimens used by a class
- Increase the quality of the dissection for the students
- Review opportunity, increasing the learning experience for the students
- Student unable to dissect due to pregnancy or hypersensitivity to the preservatives
- Student chooses not to dissect due to ethical/moral reasons

Materials:

- Clam dissection [PowerPoint](#) (Wait for the "Click" sign in lower right corner)
- Clam quiz [PowerPoint](#) (Handout: [Teacher/](#) [Student](#))
- Preservative MSDS for reference
- Eyewash station available
- Shower available
- The following are for each student, pair or group.
 - Dissection tray and pointer
 - Dissection scissors
 - Scalpel
 - Eye protection
 - Protective clothing (apron, lab-coat)

Advance through the PowerPoint slides slowly for the PowerPoint presentations to work properly. (Wait for the "Click")

Dissection 101:

Freshwater Clam

(continue – page 2)

- Gloves (latex free)
- Clam identification [Handout](#)
(One for use in lab, extra copy for reference)
- Clams
 - Example biological suppliers
 - WARDS (<http://wardsci.com>)
 - Carolina (<http://www.carolina.com>)

Safety Considerations

- Age appropriate activity for the children in your care
- Material Safety Data Sheet (MSDS) available for accident reference
- Poison control number/phone readily available
- Latex free gloves, eye protection and apron/lab coat
- Eyewash station, shower and sink
- Sharp instruments (cut away from self and others)
- Sharps and specimen(s) disposal
- Encourage students to report all accidents
- Basic science laboratory rules (strictly enforced)

Procedure:

1. The teacher should view the accompanying dissection [Video](#).
(The video is not designed to be viewed by the students; it is designed for the teacher to review the dissection. The students may view the video if appropriate/necessary.)
 - ❖ Video time code:
 - Time: 00:00 to 02:50 – Clam basics/orientation
 - Time: 02:50 to 17:59 – Clam dissection
2. Gather the materials listed above.
 - ❖ Include the interactive [PowerPoint](#) presentation for the laboratory projector/screen.
3. Review safety concerns/rules with students.
4. Lead the dissection by advancing through the [PowerPoint](#) presentation; the students should identify the parts shown.
5. The students should check off the clam parts on the student [Handout](#) once they are identified. An extra, clean copy should be given to the students for review.
6. Clean the laboratory and dispose of specimens properly.
7. Quiz the students during the next class period.
 - ❖ Save the clams and pin the actual parts.
 - ❖ Clam quiz [PowerPoint](#) (Handout: [Teacher/](#) [Student](#))

As an educator you are responsible for the implementation of the dissection activity described in the video and PowerPoint. You must have safety procedures and rules established for your classroom and make sure all of the students follow the rules to ensure a safe environment. South Dakota Public Broadcasting and Dakota State University cannot in any way be responsible or liable for any injury as a result of performing the described dissection. Complete the dissection if you feel it is appropriate and safe for your individual class. Have fun and stay safe!



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<http://www.sdpb.org/scienceiq> ([Click](#))



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