

Mussel Shell Parts and Pieces

Adapted from: An original Creek Connections activity.
Creek Connections, Box 10, Allegheny College, Meadville, PA 16335.

Grade Level: Intermediate or advanced

Duration: 15-30 minutes

Setting: classroom

Summary: Students match internal and external parts of a mussel shell to the appropriate parts on the board.

Objectives: Students study the internal and external anatomy of a mussel shell

Vocabulary: Anatomy, Anterior, Beak, Beak Cavity, Dorsal, Growth lines, Interdentum, Lateral hinge teeth, Muscle Scars, Nacre, Pallial line, Periostracum, Posterior ridge, Posterior, Pseudocardinal teeth, Ventral.

Related Module Resources:

- Mussel Reference Collection Boxes.

Materials (Included in Module):

- 1 External mussel shell anatomy poster
- 1 Internal mussel shell anatomy poster
- 19 Name pieces
- 19 Green and yellow covers

Additional Materials (NOT Included in Module):

- None

ACADEMIC STANDARDS:

4th Grade

- 3.3.4.B. Know that living things are made up of parts that have specific functions.

7th Grade

- 3.3.7.A. Describe the similarities and differences that characterize diverse living things.

10th Grade

- 3.3.10.A Explain the structural and functional similarities and differences found among living things.

12th Grade

- 3.3.12.A Explain the relationship between structure and function at all levels of organization.

BACKGROUND:

A mollusk is any one of a group of animals having no backbone (invertebrate), soft bodies not composed of segments, are usually covered with a hard shell of one or more parts. A mussel is a type of mollusk with two outer shells hinged together (bivalve). The purpose of the shell is to protect the sensitive internal organs that comprise the living animal. The shells of bivalves are usually slightly open, but when the animal is frightened, strong muscles pull the shells shut and hold them closed until danger has passed.

Freshwater mussels have been important to humans since the Native Americans began populating North America. Historically, mussels were a source of food and their shells were used for making utensils, tools, and jewelry. In the late 1800's they were harvested to make mother-of-pearl buttons. However, after the wide spread use of plastic buttons, mussels populations were given a chance to recover.

Beyond having economic significance, freshwater mussels are important to the life of a stream. Animals such as muskrats, fishes, and some birds feed on clams. Also, mussels filter the water for the benefit of all organisms.

OVERVIEW:

Students will examine a poster of mussel shell anatomy and match the pieces to the appropriate spot. Students should, with some practice, be able to remember the basic features of a freshwater mussel shell.

PROCEDURE:

Teacher Preparation:

1. Make sure that green labels are covering the answers on the posters before students start.

Student Activity:

1. Remove the parts cards from the envelope labeled “External and Internal Anatomy of a Mussel shell matching game.”
2. Try to correctly match the name of the part to the correct part by sticking them on Velcro. **DO NOT LOOK UNDER GREEN LABEL!!!! CHEATERS NEVER PROSPER!**
3. Once all the cards have been stuck to board, lift the green labels to check your answers.

DISCUSSION:

What anatomical structure can be used to tell a mussel's age?

The growth lines, like tree rings, can be used to tell the age of a mussel.

Which part is the shiny layer of a mussel shell?

The nacre is located on the internal part of a shell, can be colored anywhere from purple or pink to gray or white.

EVALUATION:

- Go over answers as a class.
- Use words like Identify, Explain, Describe
- You can also quiz students on the parts of a shell

EXTENSIONS AND MODIFICATIONS:

- Use the Ward Biological Mussel Anatomy Model to identify parts of a mussel's soft body.
- Identify the parts of shells using the reference collection.
- Use this activity as a quiz.
- Time students to see who is the fastest.
- Students can fill out worksheet along with the matching poster.

NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):

Name _____ Date _____

Mussel Shell Parts

Try to guess the parts of a mussel shell! Listed below are descriptions of various internal and external parts that you would find on and in a mussel shell. Fill in the blank with the correct parts of a shell from the matching poster.

1. The _____ are elongated, raised and are interlocking structures along the interior hinge of the shell.
2. The _____ is the raised portion in the hinge area of the dorsal margins (the peak on the top) of the shell. All mussels have this.
3. The _____ are raised or darker concentric circles on the outside of the shell (similar to tree rings).
4. The top or the back of a shell where the hinges are is the _____ end.
5. The _____ is the shiny layer on the interior of the shell.
6. The _____ is an indentation on the inside of the shell; the pocket on the top of the shell.
7. The front or the forward end of a shell is the _____.
8. The _____ is the area where the muscle was attached to the inside of the shell.
9. The hind or the rear end of a shell is the _____.
10. The _____ is the indented groove or line approximately parallel with the ventral margin of the shell where the mantle attached to the shell.
11. The _____ is the open side of the shells opposite the hinge.