

Adaptations

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Subject: Science

Skills: observation, description, listing, research, communication

Duration: 1-2 hours

Group size: varied (an even number)

Setting: classroom

Vocabulary: bivalve, univalve, adaptation, mollusk, habitat, operculum, radula, predator

SC Science Standards: Grade 2-7 –

Inquiry: IA1a, IA2a, IB1b. Grade 2 – IIA2a,

b. Grade 3 – IIA1b, IIA2a, IIC2a. Grade 4 –

IIA1c, IIA2c, IIA3b. Grade 5 – IIB1b.

Grade 7 – IIB1a, b. Grade 8 – IIA2b.

Objectives

Students will learn:

- 1) what an **adaptation** is; and
- 2) to research a specific **mollusk**.

Background

All animals living on this planet have some sort of adaptation to help them survive in their specific **habitat**. To adapt means to make suitable or fit. Whether it is the webbed feet on frogs or the hollow bones in birds, these are adaptations to help the frogs swim and birds fly more efficiently. Even mollusks have adapted over time to become more suitable for survival in their habitats, as habitats can change over time as well. Lakes can fill in or dry up, rivers can change course, and the ocean level can rise. If mollusks, along with all other species, are going to survive while the world changes around them, they must change themselves. Some examples of mollusk adaptations include an **operculum** that most univalves have for protection, the **radula** of the moon snail that is used to drill through other shells to get their food, and the jet propulsion movement of

particular bivalves, which help them to escape **predators**.

Materials

- reference books on adaptations and mollusks
- shells for the students to observe
- craft supplies (construction paper, glue, scissors, markers, pipe cleaners, wiggly eyes, etc.)

Procedure

Ask the students to define the word adaptation and to form a list of all the adaptations they can think of. Make sure they not only think of animals, but plants as well. Stress the fact that even humans have adapted over time (skin color, incisors/molars, etc.). Have the general science reference books available for students to go through if they need any guidance. After a few minutes of brainstorming adaptations, ask the class if any of them listed a mollusk adaptation. Take a few more minutes to have the class think about clams, snails, and other mollusks and the adaptations they have in order to survive in their habitats. Now, make the mollusk reference books available for them to look at pictures of shells and living mollusks and to read about some adaptations they may have (list of reference books listed on page #). This is also a good time to let them explore the shells. After discussing the adaptations that have listed, start the creative part of this activity. Have each student make his or her own make-believe mollusk! List certain adaptations on the board such as a large, thick shell to protect from predation or a

big foot that enables them to move quickly to prevent predation. Have each student use at least three adaptations for their creation. After the creations are completed, have each student pass their mollusk to someone else and see if the other person notices the adaptations and can understand why the adaptations exist. Have the students create a habitat for the mollusk they were given. For example, a fragile mollusk may not survive where waves would crush it, therefore, an appropriate habitat for a fragile mollusk may be in calm waters or buried in the mud/sand.

Extension

Objective: To show how animals get their common and scientific name and to familiarize students with Latin.

Background: Each animal has a common name and a scientific Latin name. The common English name may not be the same name that people use in other countries because people in all countries have learned the name of animals in their own language. In order to have a universal language, Latin names are used. The first part of each Latin name is the genus of the animal; the second part is the species. Each animal has both parts to their name. Latin names are always italicized with the first letter in the first name capitalized and the first letter in the second part in lowercase (example: *Homo sapiens*). Latin names may be in reference to the individual who discovered the animal or it could be a physical description or behavior. In this activity, feel free to use the name of the student who created the shell or use descriptive characteristics.

Materials: English to Latin Dictionary, crayons or colored pencils, white paper, sets of fashion cards (laminated for longer

use), available to print online at <http://oceanica.cofc.edu/shellguide.htm>

Note: These cards are double-sided. Print the second page of cards on the back of the first, the fourth page of cards on the back of the third, and so on. Or, print all pages separately and tape or glue together.

Procedure: Make enough fashion cards so that all students can make their own mollusk species. There are 24 cards total. Each student gets four doubled-sided cards to start with. When handing out cards, make sure not to give two contradicting cards, such as bivalve and univalve. Hand out a piece of blank paper to each student and ask them to draw their shell (mollusk) based on the cards they have received. It is easier to have groups of four cards already separated before the activity begins. Shell related words that may not be familiar have a definition on the back. The diagram in the section "What is a Mollusk" can also be used as a guide. Once their drawing is complete, they need to name their invented species in English using just two words that describe their shell. Look up those two words in the English to Latin Dictionary. If the words are not in the dictionary, ask them to choose another descriptive word. The two words in Latin will become the scientific name. For example, if I made a white, thick-shelled, univalve with a large aperture, I may name my shell Ghostly One because it is white with only one shell (univalve). When I look these words up in the dictionary, I get *Inanis unus*. I could also name my shell Big-mouthed Loner because it has a large aperture and has a single shell. This name translates into *Vastus-riktus solitarius*. Get creative and have fun!

Adapted from SC Marine Phytoplankton Monitoring Network's "Fashion a Phytoplankton" and Project Wild's "Fashion a Fish."