



High School Science Virtual Learning

Biology

Mollusks

May 8, 2020



High School Applied Biological Science

Lesson: Mollusks

Objective/Learning Target:

Students will be able to describe a mollusk anatomy, physiology, reproduction, and metabolism.

Bell Ringer Activity

1. Do you think the organism in the picture is a fish? Explain your thinking.
2. True or False Mollusks are only found in oceans.



Bell Ringer Answers

1) Shellfish is a colloquial and fisheries term for exoskeleton-bearing aquatic invertebrates used as food, including various species of molluscs, crustaceans, and echinoderms. Despite the name, shellfish are not actually fish, but are simply water-dwelling animals.

2) False

Molluscs occur in almost every habitat found on Earth, where they are often the most conspicuous organisms. While most are found in the marine environment, extending from the intertidal to the deepest oceans, several major gastropod clades live predominantly in freshwater or terrestrial habitats.

Let's Get Started!

Lesson: Mollusks

The phylum Mollusca includes snails, slugs, clams, squids, and octopi. Mollusks are soft-bodied animals that typically have an internal or external shell. Like annelids, mollusks have true coeloms surrounded by mesoderm. They also have complex organ systems. Why are the animals as different looking as snails, clams, and squid in the same phylum? One answer lies in the behavior of their larvae or immature stages. Many mollusks have a free-swimming larval stage called trochophore. The trochophore is also characteristic of many annelids, indicating that annelids and mollusks are closely related.

Lesson continued:



Although there is no single feature that all molluscs possess, three features are so common in molluscs that they are used to distinguish them from organisms in other phyla.

Follow this link, [Phylum Mollusca](#), to read more and write down the 3 features.

Lesson Question Answers

The three features common in molluscs are:

1. a specialized foot used in digging, grasping, or creeping
2. a mantle or mass of soft flesh that covers the soft body and encloses the internal organs
3. a radula, which, in most species, is a rasp-like scraping organ used in feeding

Lesson continued:

There are over 50,000 known species of Mollusks, which makes them second only to the Arthropods in invertebrate phylum size. Mollusks are typically divided into ten classes, of which two are extinct. The major classes of living mollusks include gastropods, bivalves, and cephalopods.

- Gastropods include snails and slugs.
- Bivalves include clams, scallops, oysters, and mussels.
- Cephalopods include the octopus and squid.

Read more about these [Types of Mollusks](#) and then answer the practice questions on the following slides.

Practice Questions

1. Gastropod use this to scrape food
 - A. mantle
 - B. Foot
 - C. radula
2. Which part of the Mollusk body is specialized for burrowing, feeding, and movement?
 - A. trochophores
 - B. visceral mass
 - C. mantle
 - D. foot



3. Which of the following is a function of the mantle in many mollusks?

- A. Mantle covers the internal organs, may also create shell.
- B. Mantle enables the mollusk to move.
- C. Mantle helps the mollusk digest food.
- D. Mantle removes wastes.



4. What mollusk is thought to be very intelligent and why?

5. What is the defining feature of a bivalve?

Answers to Practice Questions

1. C- Radula
2. D-Foot
3. A-Mantle covers the internal organs and may create shell.
4. Cephalopods are thought to be the most intelligent of invertebrates. This is because they have eyes and other senses that rival those of humans. Cephalopods also have a prominent head and a well-developed brain.
5. As their name implies, they have two parts of their shell, which can open and close. This is a defining feature.

Common Misconceptions

- It is a common misconception that hermit crabs make their shells. Hermit crabs are crustaceans (crab/shrimp family) and merely move into shells made by mollusk.
- Some molluscs are part of ancient myths and legends. The most famous of them is the kraken, the legendary sea monster that sailors believed capable of attacking and sinking ships. Today, we know that giant squids (Architeuthis) really exist in the depths of the oceans, but their meeting is very rare.

More Practice

Follow the links below to do more practice.

1. Complete the reading below and answer the five review questions.

[Mollusks Reading](#)

2. Complete this worksheet

[Comparing Mollusks Chart](#)



Additional Resources

[Mollusks](#)

[EOL Mollusks](#)

