

MOLLUSCS - CLASSIFICATION

Oregon Science Content Standards:

- 1.1 Structure and Function: Living and non-living things have characteristics and properties.
- 1.1L.1 Compare and contrast characteristics among individuals within one plant or animal group.
- 1.2 Interaction and Change: Living and non-living things interact.
- 1.2L.1 Describe the basic needs of living things.
- 1.3 Scientific Inquiry: Science explores the natural world using evidence from observations.
- 1.3S.1 Identify and use tools to make careful observations and answer questions about the natural world.
- 1.3S.2 Record observations with pictures, numbers, or written statements.

Ocean Literacy Essential Principles:

- 5. The ocean supports a great diversity of life and ecosystems

Goal: To learn characteristics of Molluscs and their representatives at the rocky coast

Concepts:

- Molluscs are a group of soft-bodied animals that often have shells for protection.
- Molluscs have a big, fat, soft, sticky foot for holding onto rocks or moving.
- Limpets, sea snails, sea slugs, octopuses, chitons, mussels and clams are molluscs.

Materials:

1. Mollusc PowerPoint
2. Video clips from arkive.org or live molluscs (snails, slugs, limpets, chitons, clams, mussels, octopuses). Sea water and containers for the live animals.
3. Mollusc Graphing Worksheet

Lesson Plan:

1. Tell the class that today they are going to learn about another group of invertebrates called Molluscs. Like all invertebrates, these animals do not have backbones.
2. Tell them that all molluscs have a soft-body, fat sticky foot, and most (but not all) have shells.
3. Have the students guess what animals at the rocky seashore are in the group Molluscs.
4. Once they have a list going, show the PowerPoint and have students look for the type of shell each mollusc has (curled, hat-shaped, two shells, 8 shells, or no shell) and the big fat soft sticky foot or soft body.
5. During the PowerPoint, describe different molluscs:
 - Sea snails, chitons, and limpets have a radula (tongue with teeth on it) for eating.
 - Some snails are predators that use their radula to drill into the shells of mussels and barnacles. Others scrape algae.

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- Limpets have a “home scar”-- they go back to the same exact spot on the rock every day. To defend their territory, limpets will lift up their shell and slam it down on a limpet that is invading their space. This often breaks the other limpet’s shell. They can also slip their shell underneath another limpet’s shell to pop it off the rock. Some also keep a “garden” of algae on their backs.
 - Chitons have 8 shells (or plates) that help them flex to fit into cracks. They can also curl up into a ball to protect their big, fat, soft, sticky foot. They have little hairs that act as sensors around their shell plates. Most chitons eat kelp or algae, but some are predatory. They lift up half their body and wait for a small fish or shrimp to come near them. Then they slam down their body to catch them. Along the NW we have the largest kind of chiton (the gumboot chiton) in the world. It is unusual, because it is the only chiton that grows a leathery skin over its plates.
 - Sea slugs do not have shells, so to protect themselves they are often brightly colored to warn predators that they are poisonous. Sea slugs eat sponges and anemones and can “steal” (by ingesting) the toxins and stinging cells from these food items and keep them stored away in their own bodies to use on animals that try to eat them.
6. If you have live animals, split the class into groups to rotate around stations with different kinds of molluscs. Have them look for the animal’s type of shell and for the soft body (fat foot). If you do not have live animals, pictures or videos from arkive.org can be used.
 7. Math Extension: Have the students complete the Mollusc Graphing Worksheet.

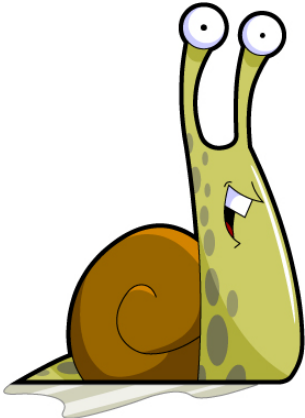
Assessment: Have the students tell you what molluscs have in common,

GK12 Fellows: Maya Wolf, Zair Burris, Erin Morgan (graphing worksheet)

Name: _____

The Magnificent Mollusc Family!

Look at the shell of each mollusc. How many pieces does it have? Circle your answer.



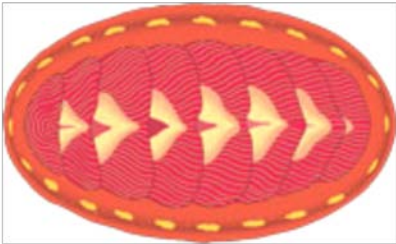
Snail shells have...

1 2 4 8 pieces.



Clam shells have...

1 2 4 8 pieces.



Chiton shells have...

1 2 4 8 pieces.

Graph:

Mollusc Shells

