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Carolina's Perfect Solution® Squid Dissection

Squid are invertebrates belonging to the phylum Mollusca and class Cephalopoda ("head-foot"). Squid dissection allows students to examine structural adaptations and observe the relationship between form and function. Squid are complex, intelligent invertebrates that allow comparison to higher- and lower-level animals. The activity supports 3-dimensional learning and builds toward the following:

- NGSS Scientific and Engineering Practices: Developing and Using Models or Constructing Explanations
- NGSS Core Idea: LS1: From Molecules to Organisms: Structures and Processes and LS4: Biological Evolution: Unity and Diversity

Materials Required

Carolina's Perfect Solution® Squid, Double Injection (224925)
Adjustable Safety Glasses (646705)
Laboratory Aprons Value Pack (706245)
Dual Plastic Magnifier, 3× and 6× (602276)
Nitrile Disposable Gloves (706335, 706336, 706337)
Disposable Tray
Scissors

Safety

Have students wear safety glasses or goggles, gloves, and lab aprons when dissecting.

Activity Procedure

1. Examine the exterior of the squid, and note the 2 fins located at the dorsal end. These fins assist locomotion and are used primarily to help the squid orient and steer itself through the water. In some squid, the fins also help to propel the animal. You may have to pull the fins away from the body to better observe them. Notice the thickness, texture, and size of the fins.
2. Observe the tube-shaped, muscular, protective mantle of the squid. The mantle begins with the collar, just dorsal to the head, and extends all the way to the fins. Turn the squid so that its tentacles are facing you, and then look inside the mantle cavity.
3. Look at the posterior side of the squid. Near the eyes, locate the siphon, which helps the squid move. The squid draws water into the mantle, the mantle contracts, and the water is forcefully expelled through the siphon. This method of water-jet propulsion moves the squid in the direction opposite the jet stream.
4. Look at the head of the squid. Locate the eyes, which are structurally similar to human eyes. Ventral to the eye is the small aquiferous pore, which is thought to help equalize intraocular (internal eye) pressure. Apply slight pressure to the eyeball. Fluid should flow out through this pore.
5. Observe the suction cups, or suckers, on the arms and tentacles. Each sucker is a round cup attached to the arm or tentacle by a stalk called a pedicle. Notice how the suckers are positioned on the arms and tentacles. Use a magnifying lens to closely examine the suckers.
6. Move the arms and tentacles aside, and look into the mouth of the squid. Inside the mouth is a 2-part beak that is used to tear food. Open and close the beak and note how sharp it is.
7. Using scissors, carefully cut through the mantle from the cavity opening at the collar down to the fins. Spread the mantle apart, and press the sides down onto the dissecting tray.
8. Observe the internal anatomy of the squid, and identify the following structures: gills, branchial hearts, systemic heart, ink sac, and pen.

Results/Summary

Students should observe and identify major external and internal features of the squid. Several body systems are present, and they are relatively easy to access and view. Students should gain a better understanding of structure and function, and be able to identify several unique characteristics of this invertebrate.

Additional Information

View more information, content links, and products related to this activity at **www.carolina.com/takeaways**.

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