

# Squid Dissection



## Learning Objectives

- Compare and contrast squid anatomy with that of other animals
- Students will see the parts of squids and understand their functions

## 21<sup>st</sup> Century Skills

- Critical Thinking and Problem Solving
- Communication and Collaboration

## Colorado Academic Standards Addressed

| Grade level | Colorado State Standard(s) addressed   | Activity and description   |
|-------------|--|--|
| 4           | <p>Life Science #1:<br/>All living things share similar characteristics, but they also have differences that can be described and classified</p> <p>Life Science #3:<br/>There is interaction and interdependence between and among living and nonliving components of ecosystems</p>                                    | <p>Squid Comparisons:<br/>Students learn the similarities and differences between squids and other animals</p> <p>Squid Comparisons:<br/>Students learn that squids can use chromatophores to camouflage themselves in their environment</p> |
| 5           | <p>Life Science #1:<br/>All organisms have structures and systems with separate functions</p>  | <p>Dissection Parts 1 and 2:<br/>Students learn that squids have separate organ systems that each carry out a separate function.</p>   |
| 6           | <p>Life Science #1:<br/>Changes in environmental conditions can affect the survival of individual organisms, populations, and entire species</p> <p>Life Science #2:<br/>Organisms interact with each other and their environment in various ways that create a flow of energy and cycling of matter in an ecosystem</p> | <p>Dissection Part 1: Students learn that squids use chromatophores to camouflage themselves in their environment</p> <p>Squid Comparisons:<br/>Students learn that squids are carnivores and are also prey to other sea creatures</p>       |

# Squid Dissection



## Important Squid Facts and Vocabulary

The squid is one of the most highly developed invertebrates. It is in the phylum Mollusca, which is derived from the Latin word meaning “soft body”. It belongs to the class Cephalopoda, meaning “head-footed”, because its head is pushed down toward the foot. This class also includes the octopus, cuttlefish and ancient nautilus.

Arm: Squid have 8 arms that are equipped with suckers that run down the length of the arm. The suckers are lined with small teeth that can grip food to bring the food towards the squid’s mouth

Beak: The mouth of the squid, located at the base of the mantle, in the center of where all the arms and tentacles come off of the squid. It is dark in color, and the hardest part of a squid’s body

Buccal Mass: All the mouthparts in a squid, including the beak and the muscles that open and close the beak

Chromatophores: Pigment cells on the surface of a squid that can change color when a squid is hungry, angry, scared, or communicating. On the outside of the squid, they may look like little dots, making a mottled appearance on the surface

Fin: Located at the top of the mantle, these flaps of skin help stabilize and steer the squid as it jets through the water

Gill: The squid’s respiratory organ, used to take dissolved oxygen from the water in which it lives

Ink Sac: A structure in a squid that contains ink which squid will release through the siphon to cloud water and detract predators

Invertebrate: Squid are invertebrates, meaning that they don’t have backbones, or vertebrae

Mantle: The outside covering of the squid’s body which protects its internal organs

Mantle Collar: The ring-shaped portion at the base of the mantle

Pen: Made of chitin (just like the exoskeletons of lobsters and crabs), this is the feather-shaped internal structure that supports the squid’s mantle and is a place for muscles to attach

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Siphon (funnel): By contracting its mantle, a squid can force a stream of water through the siphon, enabling the squid to quickly jet away from potential danger. Waste, ink, and sperm or eggs leave the squid through the siphon

Tentacle: Squid have 2 tentacles that are equipped with suckers on the large, paddle-shaped clubs at the end of the tentacle. The clubs are used to grab onto prey and bring it close to the mouth

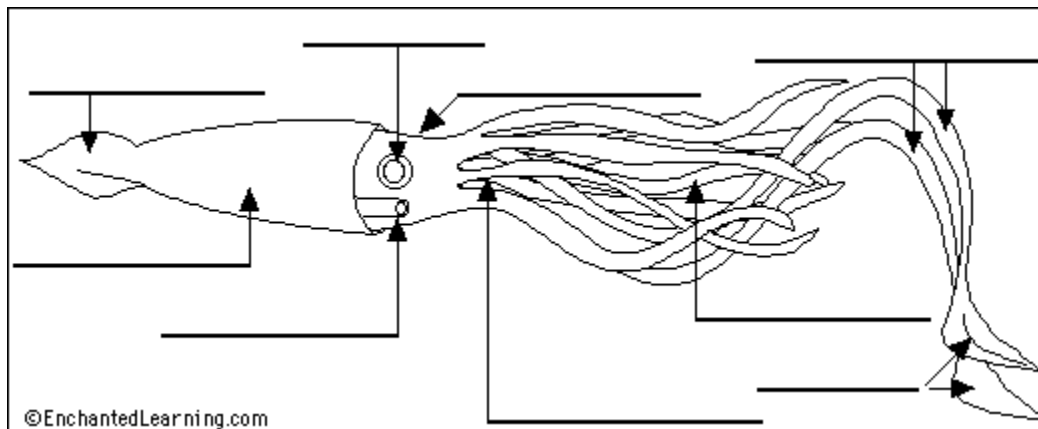
## Optional (and Highly-Recommended) Pre- and Post-Lab Activities

### Pre Lab:

*Squid Recipes*: Have students look up and share squid recipes, they can be how to prepare squid to eat or how to use different parts of squid in food you can eat.

*Squid Drawing*: Students can label the blank squid diagram below with the listed vocabulary words.

1. Label the squid diagram with the following words:
  - Fin
  - Eye
  - Tentacle
  - Club
  - Arm
  - Mouth
  - Siphon
  - Mantle
  - Head



## Squid Dissection Pre- and Post-lab Activities

### Post Lab:

*Squid Analogy Poems:* Write poems or riddles that compare parts of a squid to parts of another animal. For example: My eyes are about the same size as the squid's, but my beak is bigger. He has a lot more arms, but I have a lot more feathers. Who am I? (A bird.)

*Vocabulary Review:* Label a ball with the following words:

- Invertebrate
- Mantle
- Mantle Collar
- Siphon
- Chromatophore
- Tentacle
- Arm
- Beak
- Buccal Mass
- Pen
- Ink Sac
- Fin
- Club

Have students stand in a circle and toss the ball across the circle to a friend. The friend selects one of the words that their fingers are touching and describes the meaning of the word.