

Squid Dissection Lab – Alternative Assignment

Name: _____ Date: _____

Dissection Resources:

https://www.biologycorner.com/worksheets/squid_virtual.html

<http://www.bio200.nsm.buffalo.edu/labs/tutor/Squid/>

Dissection Video: <https://www.youtube.com/watch?v=qaNrQrwlCQ4>

Background Information:

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.

All mollusks have a soft body with a special covering called the mantle, which encloses all of the body organs such as heart, stomach and gills. Squid have a large mantle, eight arms with two longer feeding tentacles all with suckers, a beak and mouth, a siphon, a large head (with a brain), two large eyes, and three hearts. The tentacles are long and retractable and have suckers only at the tips. Their large eyes are very similar in structure to people's eyes. The shell has been reduced to a chitinous pen that is embedded in the upper surface of the mantle.

Squid breathe using gills. They move by squirting water from the mantle through the siphon, using a type of movement called jet propulsion. They can move both backward and forward just by changing the direction of the water flow through siphon.

Some of the animal's structures explored in this lesson illustrate the ways in which the squid has adapted to life in the ocean. Its streamlined body and jet propulsion make the squid a fast, active predator. This animal also has a very good defense mechanism.

Squid can change the color of their skin to mimic their environment and hide from predators. When in danger, squid release a cloud of dark ink from their inc sac in order to confuse their attacker and allow the squid to escape.

These fast-moving **carnivores** catch prey with their two feeding tentacles, then hold the prey with the eight arms and bite it into small pieces using a parrot-like beak. The esophagus runs through the brain, so the food must be in small pieces before swallowing. Squid feed on small crustaceans, fish, marine worms, and even their own kind!

Squid reproduce sexually by releasing eggs into the water. After mating, a female squid will produce 10-50 elongated egg strings, which contain hundreds of eggs in each string. In many species, the parents will soon die after leaving the spawning ground. The egg strings are attached to the ocean floor, are left to develop on their own, and hatch approximately ten days later.

Squid are an important part of the ocean food web. Squid are a major food source for many fishes, birds and marine mammals. Squid are gaining popularity as a food source for humans around the world (calamari). However, over-fishing is a growing concern because there are no regulations on squid harvesting.

Squid can be as small as a thumbnail, or as large as a house. The giant squid, *Architeuthis*, can measure 60 ft. in length and weigh three tons! Southern California squid populations spawn mainly in the winter (December to March). Squid are seined commercially at their spawning grounds. About 6,000 metric tons are taken yearly for human food and bait.

Digital Research:

Directions: Use digital sources to answer the following questions about squid and their anatomy.

1. Describe the function of each of the following parts of the squid.

Fin	
Chromatophores	
Eye	
Arms and Tentacles	
Suction Cups	
Pen	
Mantle	
Gonad	
Heart	
Gills	
Ink Sac	
Siphon	

2. How many arms do squid have? _____ How many tentacles? _____
3. Based on the structure of the arms and the tentacles, describe how their purposes differ. (i.e. What do the arms do and what do the tentacles do?)
4. What structures do squid have that are similar to structures in the human body and do they have similar function to those in the human body?
5. Where does the ink sac empty into? Why do you think this placement is important for its use?

6. What is the function of the ink sac?

7. What is the function of the pen? What ancestral structure and lineage did it come from?

8. 4. Describe how the siphon works in the billowing action of the mantle and how this process is also involved with the removal of waste from the squid. Be specific.

9. Do you think that squid have the same type of body organization that humans do? (i.e. cells form tissues which form organs which form systems) Why or why not?

10. What do you think is the most interesting feature of the squid? Why?

On the attached squid diagrams label the following:

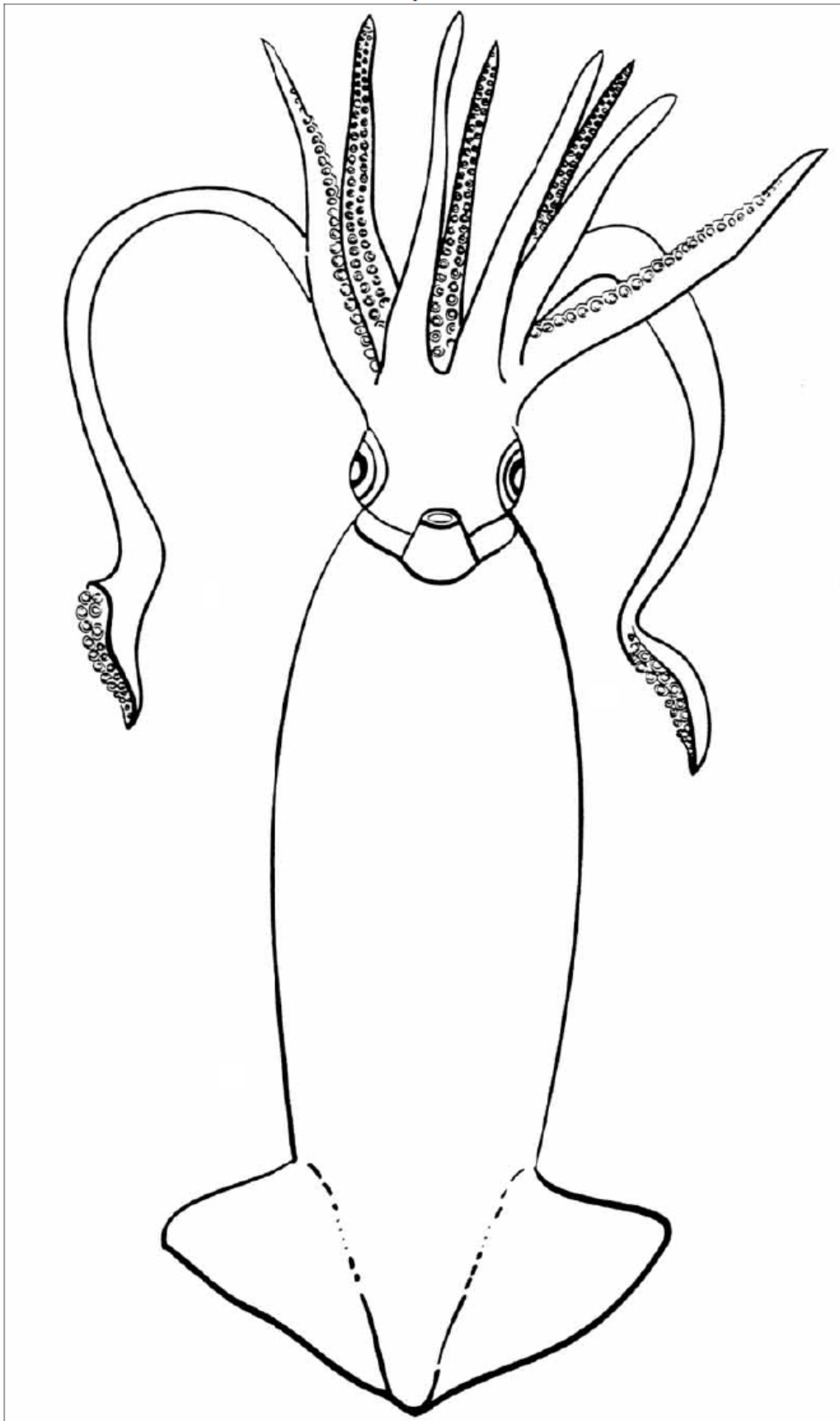
External squid diagram

FINS
EYES
BEAK
MANTLE
CHROMATOPHORES
TENTACLES
ARMS
SUCTION CUPS
SIPHON

Internal squid diagram

FUNNEL
ESOPHAGUS
GILLS
INK SAC
STOMACH
HEARTS
GONAD
PEN

EXTERNAL SQUID ANATOMY



INTERNAL SQUID ANATOMY

