



## Videoconferencing pre/post materials

Dear Teacher,

We are looking forward to our interactive videoconference with you and your students. During the program your students will have the opportunity to explore the unique animals of the Pacific Ocean.

In order to better prepare your students for their virtual visit to the Aquarium of the Pacific, we have compiled both pre- and post materials. These materials will provide your students with fun activities that will enrich their knowledge of ocean life and challenge what they learned. We have placed the activities in the following categories based on California standards. However, feel free to look through all the materials and use anything that you deem appropriate for your current curriculum.

### Squid Dissection (grades 9-12)

* Label external body parts	Activity Sheet	Post
* Label internal body parts	Activity Sheet	Post
* Dichotomous Key	Activity Sheet	Pre or Post
* Label external body parts	Answer Sheet	
* Label internal body parts	Answer Sheet	
* Dichotomous Key	Answer Sheet	

You may find additional activities for your students in pre/post materials from other programs. The programs conducted by the Aquarium, pre-visit materials and post-visit materials incorporate parts or all of the following California Science Standards:

Biology/Life Sciences:

6c,e,g

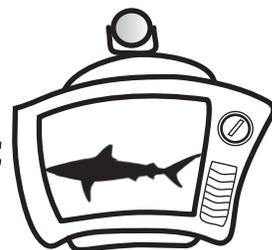
8b,d

9a,g

Thank you for your interest in our programs. We are excited to connect with your school!

Sincerely,

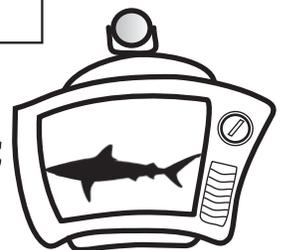
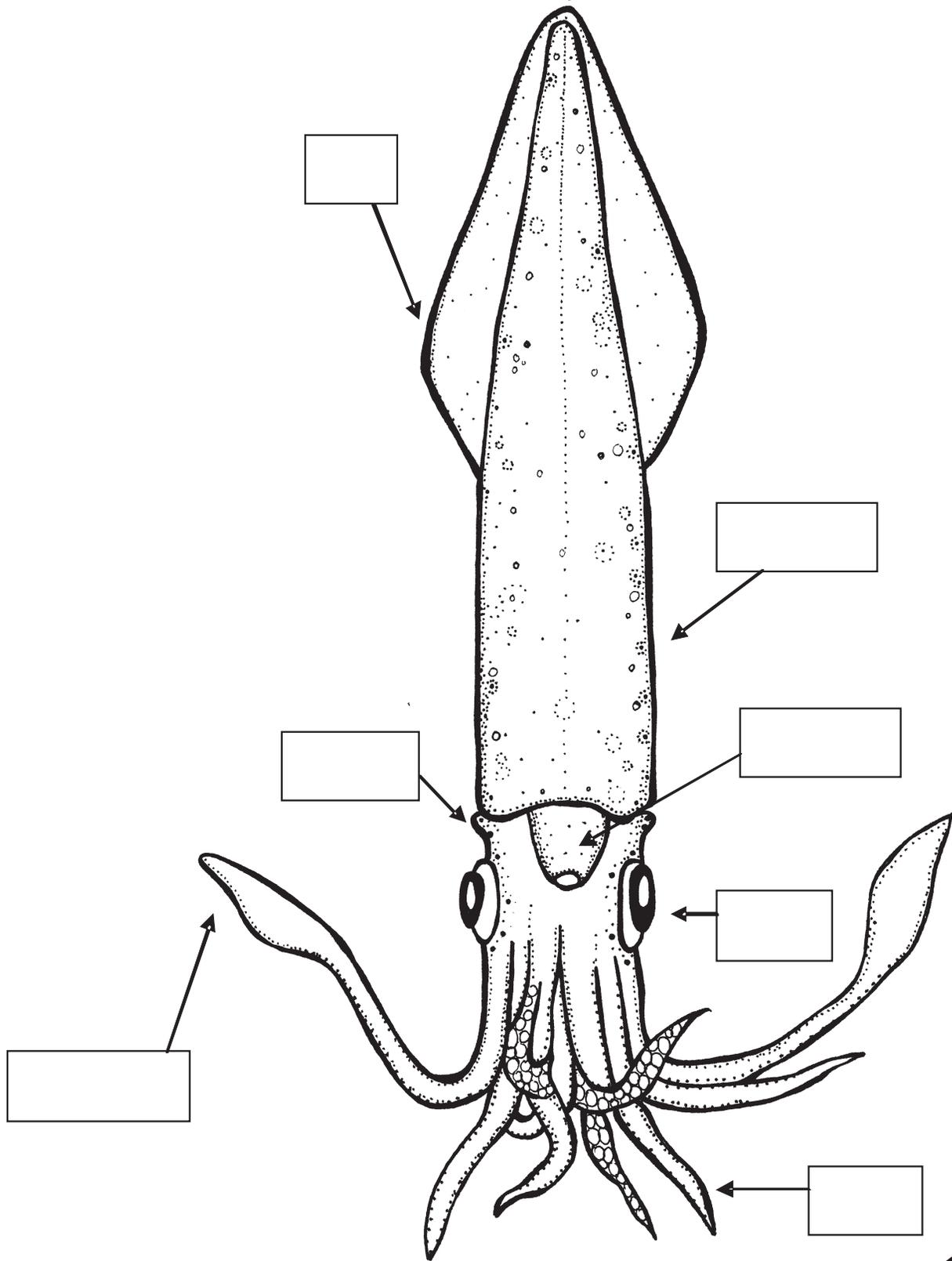
Aquarium of the Pacific Education Staff



**External Body parts:**

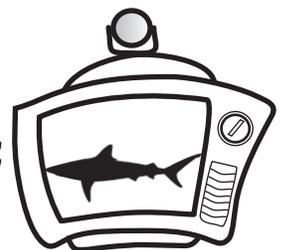
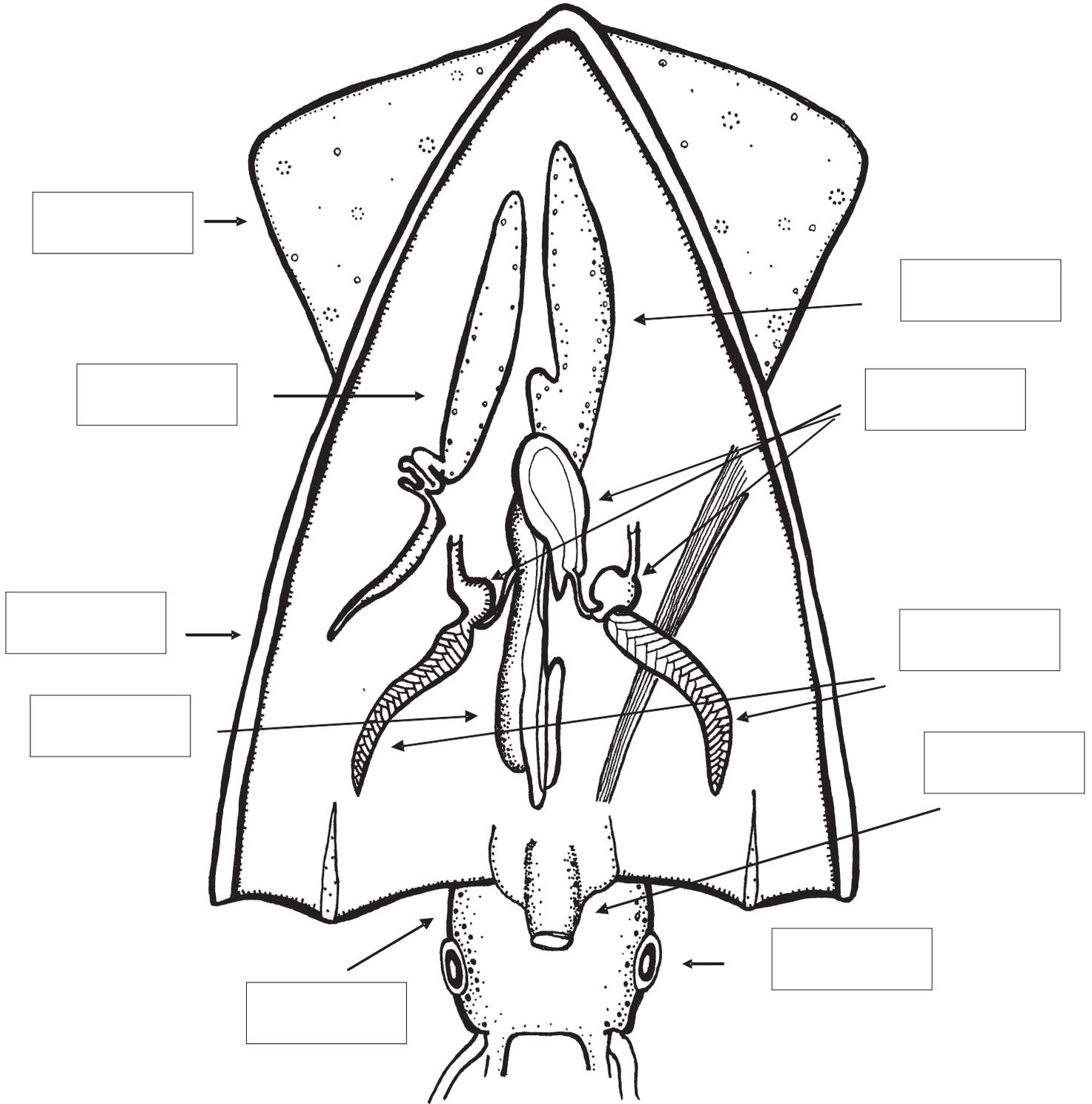
# Squid - external body parts

Label each of the parts below.



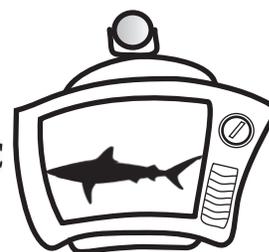
# Squid - internal body parts (male)

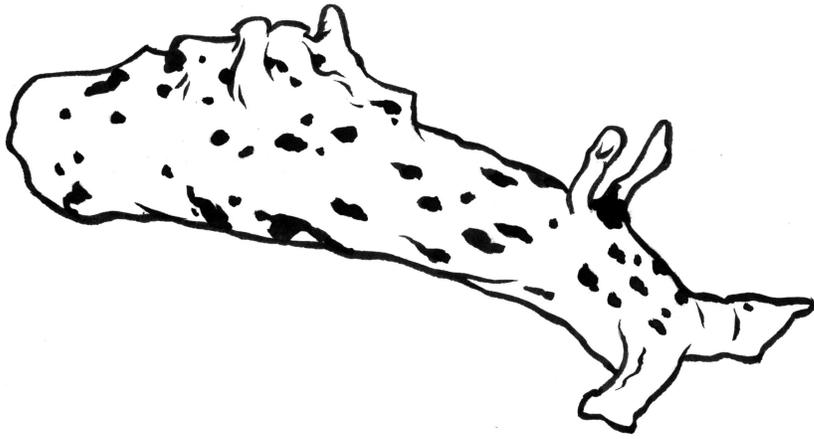
Label each of the parts below.



This classification key was created using the traditional Jelly Belly flavors. Keep in mind that new flavors are always being created! Pick a Jelly Belly, classify it and then taste it to see if you got it right! Good luck!

1a. yellow, orange, red or pink	go to line 2	17a. purple	go to line 18
1b. blue, purple, or green	go to line 16	17b. blue	go to line 19
1c. black, white or brown	go to line 24		
2a. yellow or orange	go to line 3	18a. purple or lavender	Island Punch
2b. pink or red	go to line 11	18b. dark and blackish purple	Grape Jelly
		18c. purple with spots	Plum
3a. yellow	go to line 4	19a. bright blue	Berry Blue
3b. orange	go to line 7	19b. dark blue	Blueberry
4a. solid yellow	go to line 5	20a. solid green	go to line 21
4b. yellow w/ brown spots	Top Banana	20b. green with spots	go to line 22
4c. yellow w/ white/yellow spots	Lemon Drop		
4d. white w/ yellow spots	Buttered popcorn	21a. dark green	Jalapeno
4e. yellow w/green spots	Mango	21b. light or pale green	go to line 23
5a. dark yellow	Lemon	22a. dark green w/ red spots	Watermelon
5b. bright or pale yellow	go to line 6	22b. pale green with dark spots	Juicy Pear
		22c. light green w/ green spots	Margarita
6a. bright yellow	Pina Colada	23a. bright green	Green Apple
6b. pale yellow	Crushed Pineapple	23b. light green	Kiwi
7a. solid orange	go to line 8	23c. yellow green	Lemon Lime
7b. orange with red spots	Peach		
8a. bright orange	go to line 9	24a. black	go to line 25
8b. light or pale orange	got to line 10	24b. brown	go to line 26
		24c. white	Coconut
9a. orange, orange	Orange Juice	25a. black	Licorice
9b. creamy orange	Orange Sherbert	25b. dull purple black	Wild Blackberry
10a. light orange	Cantaloupe	25c. shiny purple black	Dr. Pepper
10b. pale orange	Tangerine		
11a. pink	go to line 12	26a. brown	go to line 27
11b. red	go to line 13	26b. light brown	go to line 28
		26c. dark brown w/spots	Cappucino
12a. bright pink	Cotton Candy	27a. brown	A&W Rootbeer
12b. light pink	Bubble Gum	27b. dark brown	Chocolate Pudding
12c. pale orange pink	Pink Grapefruit		
12d. pink w/ red spots	Strawberry Daiquiri	28a. light brown	Caramel Apple
13a. solid red	go to line 14	28b. light orange-brown	Peanut Butter
13b. red w/ light spots	Sizzling Cinnamon	28c. pale brownish-white	Café Latte
13c. red w/ dark spots	Strawberry Jam		
14a. bright red	Very Cherry		
14b. red	Red Apple		
14c. dark red	go to line 15		
15a. deep red	Raspberry		
15b. cinnamon red	Cinnamon		
16a. blue or purple	go to line 17		
16b. green	go to line 20		



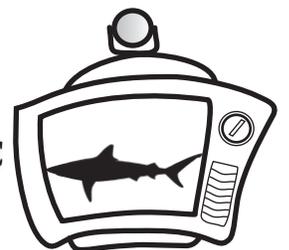


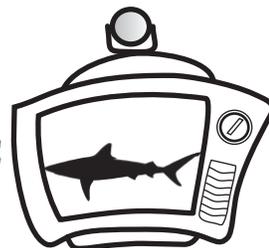
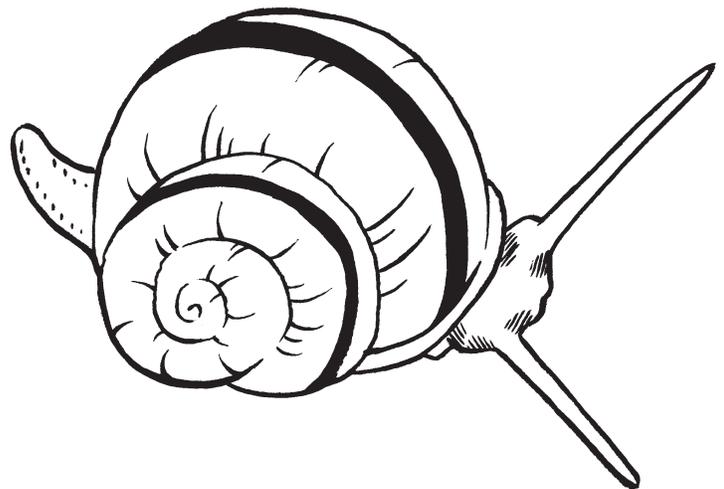
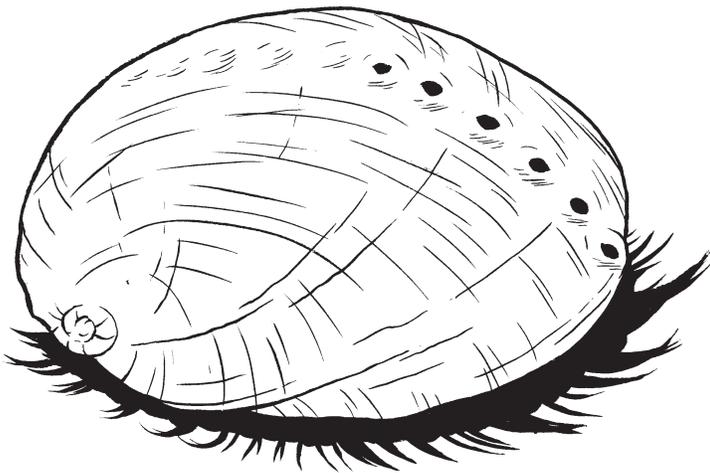
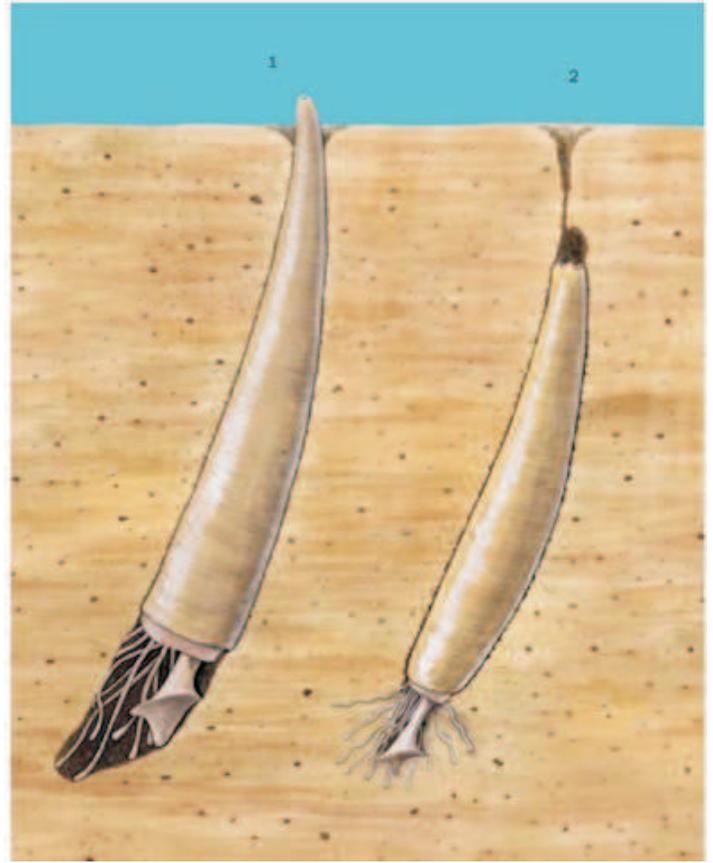
# Dichotomous Key

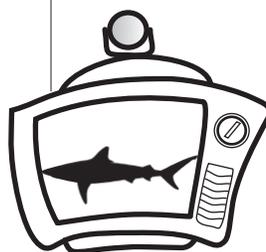
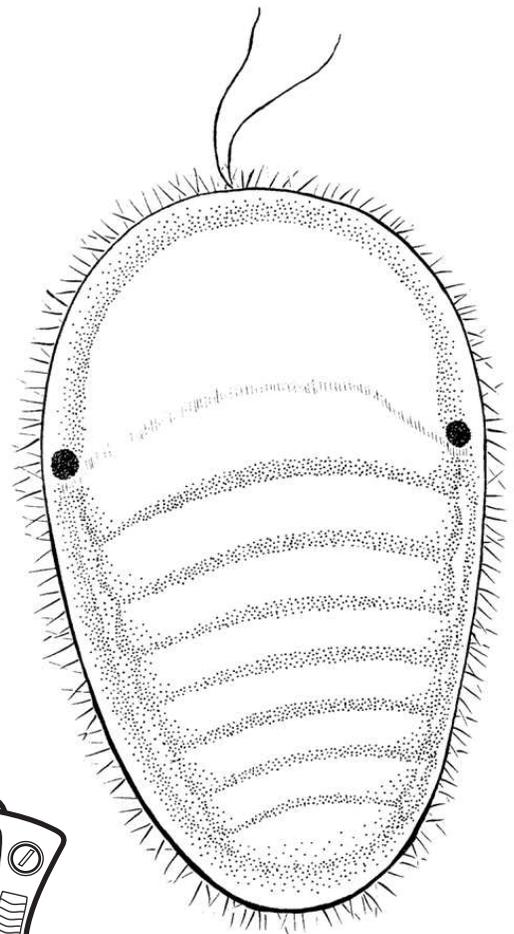
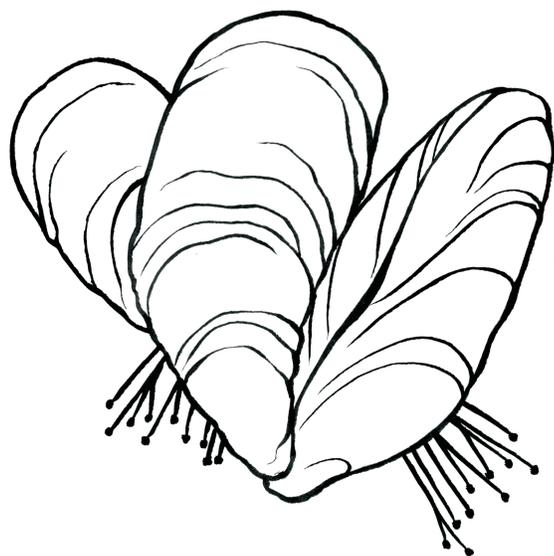
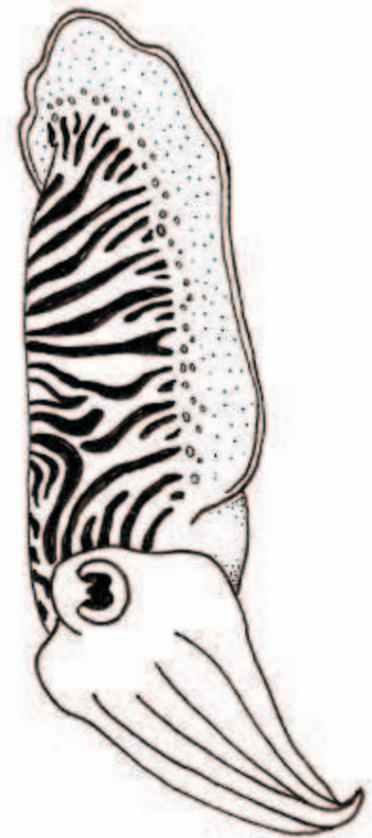
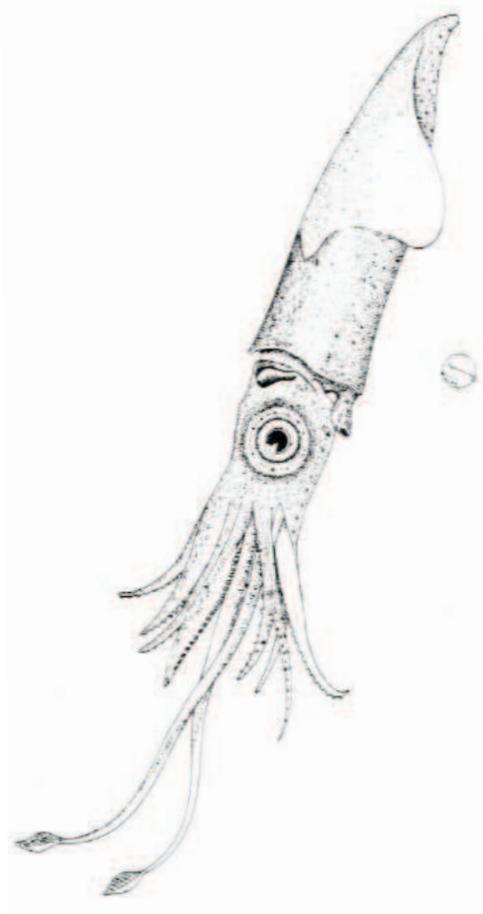
Scientists often use dichotomous keys to identify and classify different types of animals. Use the dichotomous key below to identify this animal and the ones on the following two pages. Select one animal at a time and answer each of the "questions" below as you use observe each animal.

## Mollusk Dichotomous Key

- 1A. No shell apparent.....go to 2
- 1B. Hard shell.....go to 5
  
- 2A. Arms or tentacles present.....go to 3
- 2B. No arms or tentacles present.....Sea Slug (gastropod)
  
- 3A. 8 arms and 2 tentacles present.....go to 4
- 3B. 8 arms and no tentacles present.....octopus (cephalopod)
  
- 4A. Long, finger-like mantle.....squid (cephalopod)
- 4B. Rounded mantle.....cuttlefish (cephalopod)
  
- 5A. single shell.....go to 6
- 5B. Shell has multiple parts.....go to 8
  
- 6A. single shell spiral shape..... snail (gastropod)
- 6B. single shell is not spiraled.....go to 7
  
- 7A. shell is concave.....abalone (gastropod)
- 7B. shell is elongated and tapered.....tusk shell (scaphopod)
  
- 8A. Two distinct shells, hinged on one side.....clam (bivalve)
- 8B. Multiple plates.....chiton (polyplacophora)





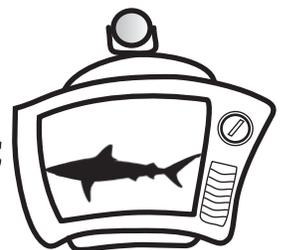
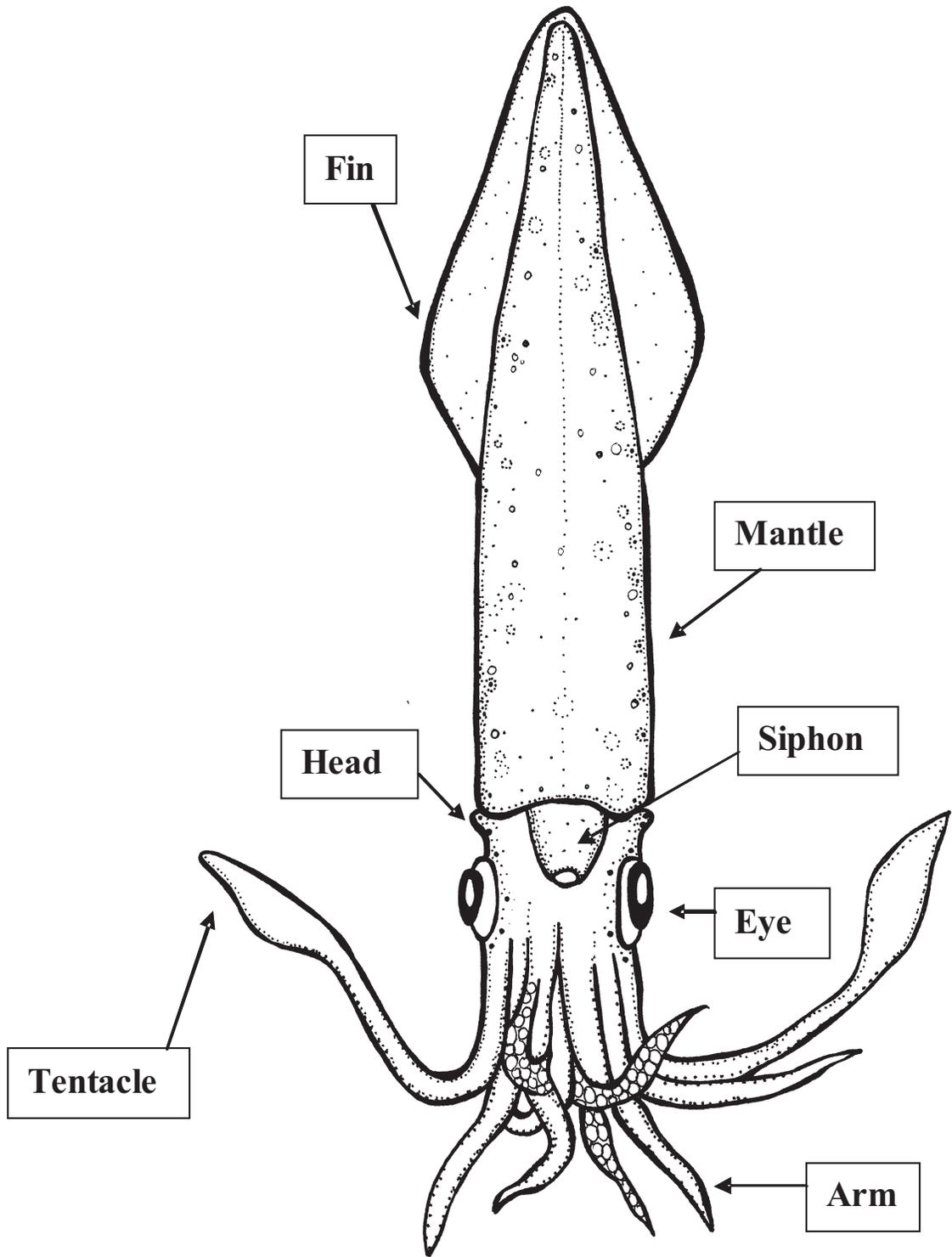


# Label the Squid

Squid – external body parts

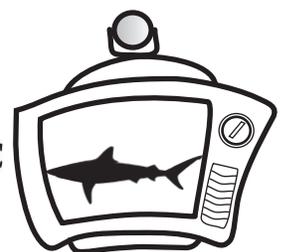
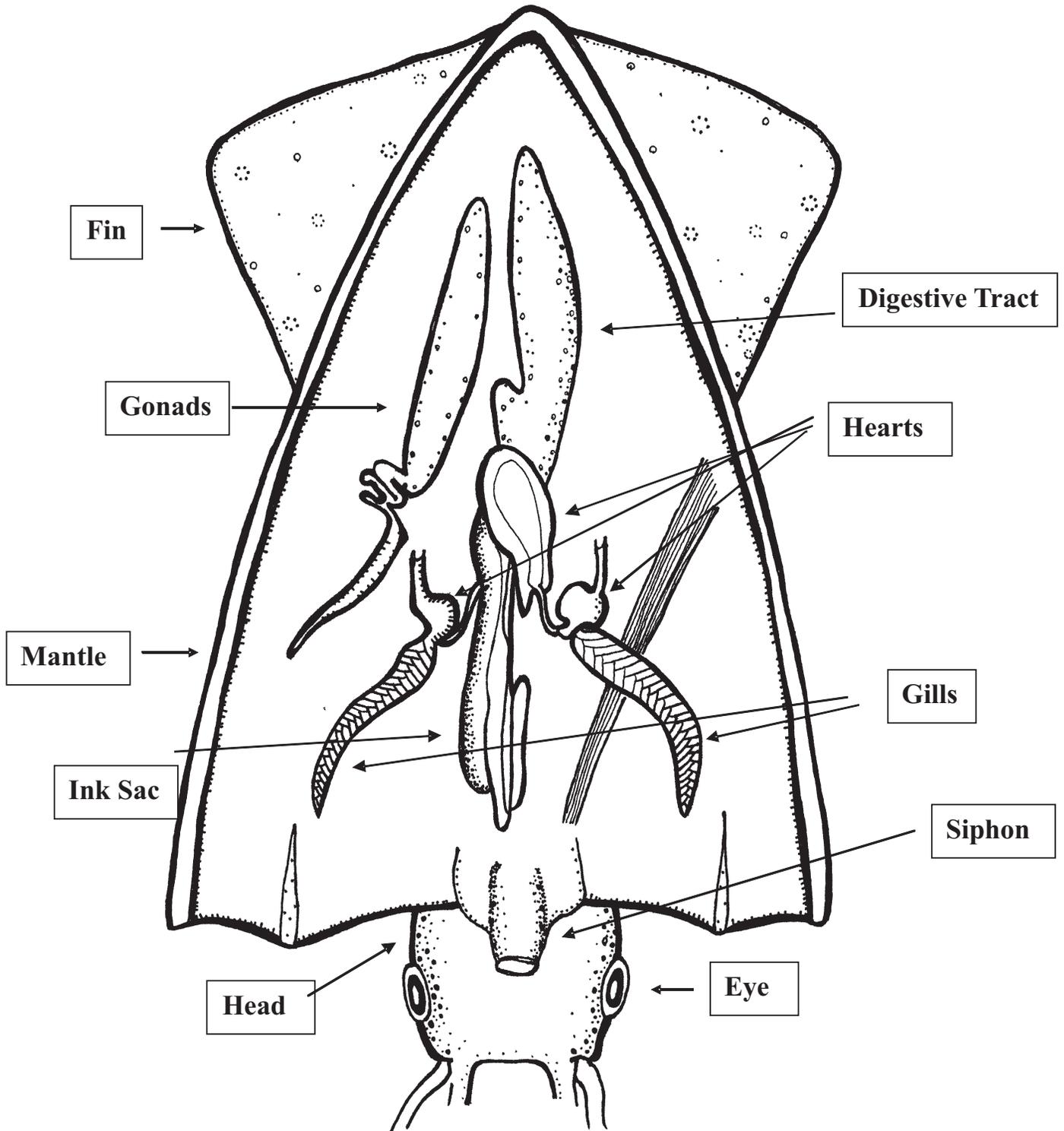
External Body parts:

Answer Key



# Squid - internal body parts (male)

## Answer Key



# Dichotomous Key Activity

"Dicho-" is a prefix coming from Greek origin that means two or divided.

What is a dichotomous key? A dichotomous key is a tool used in identification. The dichotomous key is a series of questions, and each question is a choice between two characteristics. For example, the identity of an organism can be determined through the process of eliminating characteristics that do not apply to it.

Dichotomous keys can be used for shapes, wildflowers, trees, animals and a variety of other objects, including jelly beans! In this activity, you will use a dichotomous key to identify different flavors of Jelly Belly beans.

## Materials:

- Small bag of Jelly Belly brand jelly beans  
(at least one or two jellybeans per student)
- Jelly bean dichotomous key
- Various online or field guide pictures of Mollusks
- Mollusk dichotomous key

## Procedure:

(1) Have students use the dichotomous key for jelly beans to identify several colors/flavors. Discuss as a class the challenges in identifying certain beans. Did anyone have any trouble identifying their jelly bean? What made it difficult?

(2) Can a dichotomous key be used to identify different types of animals? Scientists often use dichotomous keys to identify and classify different types of animals. Give each student, or group of students, a set of included mollusk pictures. Encourage the students to identify each animal using observations of the pictures and the dichotomous key. What are some common characteristics of this animal group?

(3) Challenge your students to design their own dichotomous key: Have each student put one shoe in a pile in the center of the room. Guide students in grouping the shoes in different categories. Once categories are established, encourage students to design a dichotomous key for shoes. Give the students guidance if necessary, but allow them to go through the process of designing the key. See what challenges arise and discuss these once the students have completed the exercise.

