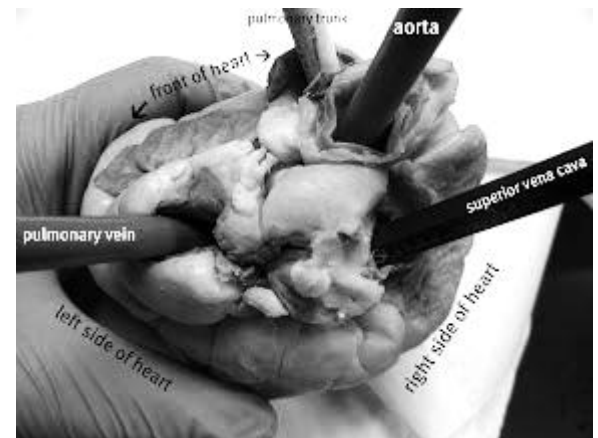
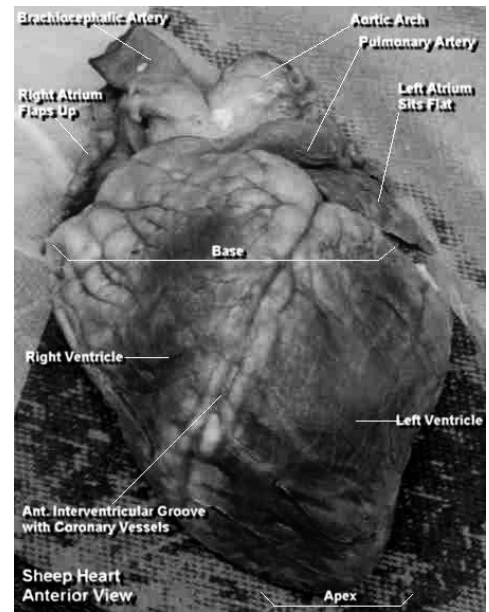


## LAB: Sheep or Pig Heart Dissection

### Observation: External Anatomy

1. Line a dissecting tray with paper towel for easy clean up as the heart is fatty and will make clean up more difficult otherwise. Obtain a preserved heart from the bucket or teacher. Place in the tray with the **apex** (pointed end) towards you and the **coronary artery** lying diagonal as indicated in the diagram.
2. You will not need your scissors or scalpel for this part as you will only be looking at the outside features of the heart and will NOT be cutting the heart today. Your main tools for today will be your blunt probe and fingers!
3. **Identify the right and left sides of the heart.** Look closely and on one side you will see a diagonal line of blood vessels that divide the heart. The half that includes all of the **apex** (pointed end) of the heart is the left side.
4. Find the flaps of dark tissue on the top of the heart. These ear-like flaps are the **left and right atrium** (also known as **auricles**)
5. Turn the heart so that you are looking at its dorsal side (the back of the heart) Find the large opening at the top of the heart next to the right atrium. This is the **superior vena cava**, which brings blood from the top half of the body to the **right atrium**. Stick a probe or your finger down this vessel. You should feel it open into the right atrium. In some of the preserved hearts the atrium are cut off so will just be a large opening. If your atrium is intact, see if you can get your probe or finger to exit through the **inferior vena cava**, which brings blood from the lower tissues,
6. You can also see another blood vessel next to the left auricle. This is a **pulmonary vein** that brings blood from the lungs into the **left atrium**.
7. Sticking straight up from the center of the heart is the largest blood vessel you will see. This is the **aorta**, which takes oxygenated blood from the **left ventricle** to the rest of the body (the ventricles are the lower chambers of the heart).
8. Behind and to the left of the aorta there is another large vessel. This is the **pulmonary artery** which takes blood from the **right ventricle** to the lungs.



**Checkpoint:** Make sure you know the location of each of the following:

- Dorsal Surface:  superior vena cava  inferior vena cava  aorta  pulmonary artery  pulmonary vein  
 Anterior Surface:  left atrium & ventricle  right atrium and ventricle  apex  coronary blood vessels

## Dissection: Internal Anatomy

1. Insert your dissecting scissors or scalpel into the superior vena cava and make an incision down through the wall of the right atrium and ventricle. Pull the two sides apart and look for three flaps of membrane. These membranes form the **tricuspid valve** between the right atrium and the right ventricle.
2. The valves are connected to the **papillary muscles** by tendons called the **chordae tendinae** or "heartstrings." Locate these structures.
3. Insert your probe into the pulmonary artery and see it come through to the right ventricle. Make an incision down through this artery and look inside it for three small membranous pockets. These form the **pulmonary semilunar valve** which prevents blood from flowing back into the right ventricle.
3. Make an incision down through the wall of the left atrium and ventricle, as shown by the arrow. Locate the **bicuspid valve** between the left atrium and ventricle. You can also find the papillary muscles and the chordae tendinae on this side of the heart.
4. Insert a probe into the aorta and observe where it connects to the left ventricle. Make an incision up through the aorta and examine the inside carefully for three small membranous pockets. These form the **aortic semilunar valve**.

## Dissection of the Heart (2 possible cuts)

Incision through each of the chambers,  
two longitudinal cuts.



Single cut exposes both sides of the heart.



### Lab: Sheep or Pig Heart Dissection External Anatomy - Questions

**LAB MARK: Identification of external features**

- Anterior Surface (5)
- Superior Surface (5)

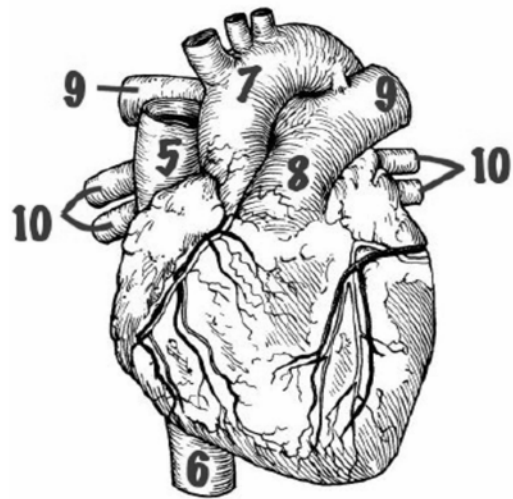
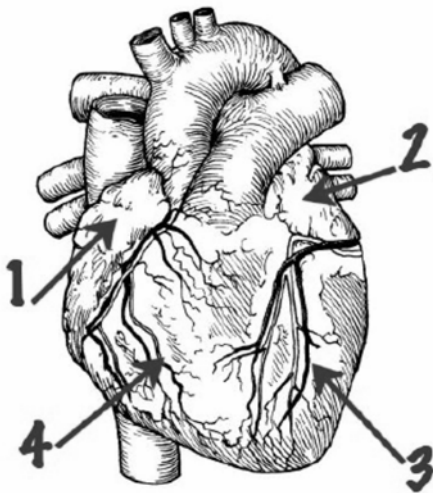
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**TEACHER SAMPLE: Name the 5 structures indicated on the heart provided**

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_
- E. \_\_\_\_\_

/5

**External Features**



Identify the structures on the external surface of the heart.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. (chamber) \_\_\_\_\_
4. (chamber) \_\_\_\_\_
5. \_\_\_\_\_

6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

11. Name the membranous sac that surrounds the heart.
12. The blood vessels leaving the right ventricle are the \_\_\_\_\_ which lead to the \_\_\_\_\_.
13. The superior and inferior vena cava enter into what chamber of the heart?
14. When you place a probe through the aorta, into what chamber will it enter?
15. What is the only **vein** in the adult body that carries **oxygenated** blood?
16. Name the next four structures that blood will pass through after the right atrium.

Look it up...

17. What does the term "auricle" mean?
18. Name the large gland which extends into the neck region and partially covers the heart.
19. What is the first major branch of the aorta?
20. What is the name of the diagonal depression on the surface of the heart that contains the coronary artery?

### Lab: Sheep or Pig Heart Dissection Internal Anatomy - Questions

**LAB MARK: Identification of internal features**

- left atrium
- left ventricle
- right atrium
- right ventricle
- septum
- tricuspid valve
- bicuspid valve
- pulmonary semilunar valve
- aortic semilunar valve
- aorta

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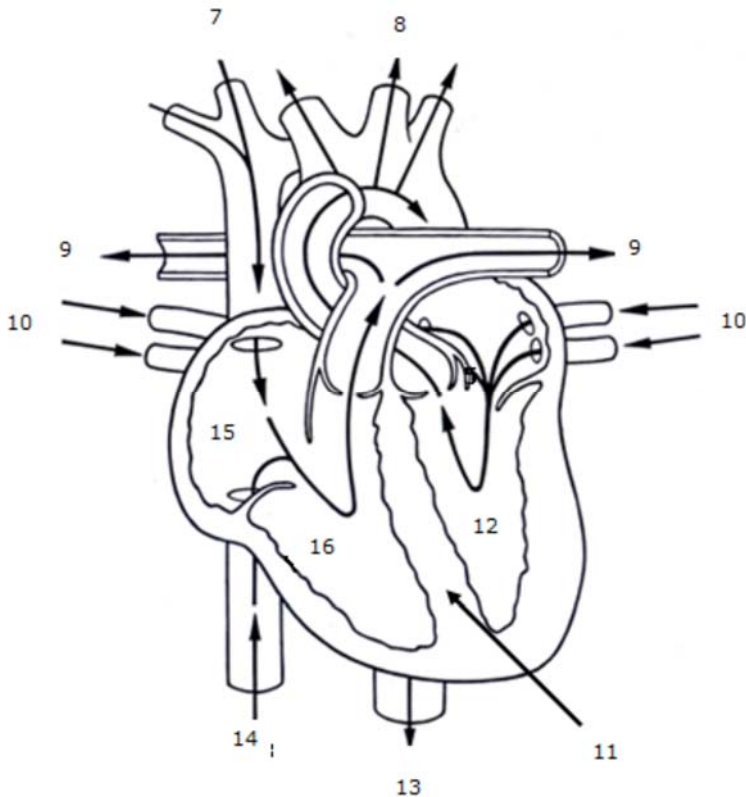
**TEACHER SAMPLE: Name the 5 structures indicated on the heart provided**

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_
- E. \_\_\_\_\_

/5

**Internal Features**

1. In the blanks beside the picture below, write the name of the part and in brackets indicate whether the blood should be "blue" (deoxygenated) and where it should be "red" (oxygenated).



- 7. example: superior vena cava (blue)
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_
- 15. \_\_\_\_\_
- 16. \_\_\_\_\_

2. Which ventricle has thicker walls? Why?
3. What are the valves at the bottom of the atria called?
4. Name the tendons that connect the valves to the muscles and describe their purpose.
5. What muscles hold the above tendons in place?

Look it up...

6. What is another name for the "bicuspid" valve?