

Name: _____ Block: _____ Date: _____

Virtual Sheep Heart Dissection Lab

Log on to:

1. <http://www.gwc.maricopa.edu/class/bio202/cyberheart/anthrt.htm>
 - Use the various views of the heart to identify various structures
2. <http://anatomycorner.com/main/image-gallery/sheep-heart/>
3. http://www.zerobio.com/dissectlab_intro.htm
 - Scroll down to and click on “Dissection Videos” (yellow font)
 - Watch “Sheep Heart Anatomy” video
 - Watch “Sheep Heart Video”
4. On youtube.com, there are two additional videos that may help:
 - “The Dissection of the Sheep Heart” posted by Shannon Muskopf
 - “Mrs. Johnson’s Sheep Heart Dissection” posted by stacyelambert

Purpose: To examine the major features of a mammalian heart.

The following is the procedure for the actual dissection. Read through the lab and answer the questions using the websites above as resources.

Procedure:

1. Observe the sheep heart ventral surface up
2. On the outside of the heart is the *visceral pericardium*, which is a thin, transparent layer on the surface of the heart. Under this is the *myocardium*. Also note the abundance of fat along the paths of various blood vessels. This adipose tissue occurs in the loose connective tissue that underlies the visceral pericardium.

Study the images. How can you tell which side of the heart is the ventral surface?

3. The line running diagonally down from the left side of the heart to the bottom right side of the heart is the *anterior interventricular sulcus*. Within this sulcus lies the largest branch of the *coronary artery*. The coronary artery supplies blood to the heart muscle tissue. The pointed bottom of the heart is called the *apex*.

What do you think is the purpose of the coronary artery and what results if there is blockage in this vessel? _____

4. Hearts from packing houses usually come with the major blood vessels trimmed very close to the heart itself. Although this is less than ideal, identification of the vessels and their entrances into the heart can easily be accomplished.

Identify the structures (1-4 are chambers, 5-10 are vessels) on the external surface of the heart in Figure 2: The sheet with the pictures are in class. You will find it where the YODA poster is on the shelf.

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Which chambers are the pumping chambers of the heart? _____

Which chambers are the receiving chambers of the heart? _____

5. On the dorsal surface of the heart are the stumps of two relatively large but thin-walled blood vessels that enter the right atrium. They are connected, and you would be able to pass a slender probe continuously through them. The upper vessel is the *superior vena cava*, and the lower one is the *inferior vena cava*.

6. Observe the *right atrium*. To do this, the dissector inserted a blade of the scissors into the *superior vena cava* and cut downward through the atrial wall.

7. In the chamber, locate the *tricuspid valve* and examine its cusps.

If the right ventricle was filled with fluid, describe what would happen to the tricuspid valve when the right ventricle was squeezed. Why does this happen?

8. To observe the *right ventricle*, the dissector would continue cutting downward through the *tricuspid valve* and the *right ventricular wall* until the apex of the heart. Once the right ventricle is opened, you can observe the *pulmonary trunk* and *pulmonary valve*. Examine the valve and its cusps.

Do you notice any difference between the structure of the tricuspid valve with that of the pulmonary valve? Explain. _____

How do the walls of the atria compare with the walls of the ventricles and why are they different?

9. Observe the left side of the heart. To do this, the dissector would insert the blade of the scissors through the wall of the *left atrium* and cut downward to the *apex* of the heart. Once the *left atrium* is open, you can locate the four openings of the *pulmonary veins*. You can also examine the *bicuspid valve* (mitral valve) and its cusps.

What is the purpose of heart valves? _____

10. Examine the string like structures attached to the edge of the cusps of the valves. These are called the *chordae tendinae*.

Where is the other point of attachment of these structures? _____

What do you think is the function of the chordae tendinae? Hint: They do not pull the valves open.

11. Examine the *left ventricle* and compare the thickness of its wall with that of the *right ventricle*.

What is the reason for this difference? _____

12. Locate the *aorta*, which leads away from the *left ventricle* and the *pulmonary trunk* which leads away from the right ventricle. If you look closely and were able to feel them, you would notice that the wall of the aorta is significantly thicker than that of the pulmonary trunk.

What accounts for this difference? _____

Can an artery carry deoxygenated blood? Explain. _____

Using words, trace blood flow through the major blood vessels, heart, and lungs starting AND ending with deoxygenated blood returning from the body.

Label the interior structures of the heart in **Figure 3**:

Pick up the document from class; the pics were too large to upload.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____