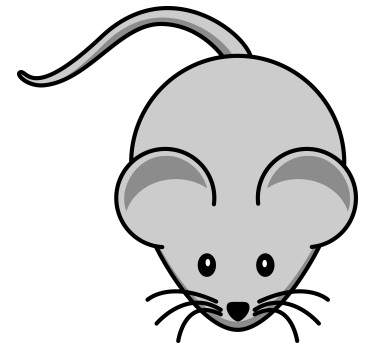


Name: _____ Period: _____

Field Mouse Dissection - Continued

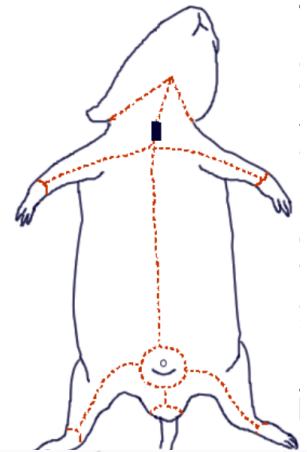
The field mouse is a small mammal that has many anatomical structures that are similar to human structures, however much smaller! Because the mouse is a mammal like humans, it is warm-blooded and has a four-chambered heart. It is also a vertebrate animal, like humans, frogs, and fish, and therefore has a spinal cord connected to its brain. In this lab, you will observe both the external and internal anatomy of a field mouse to observe the best representation of human anatomy.



Day 2: Internal Anatomy

During this portion of the dissection, draw and label each **bolded** item on the mouse diagram below.

1. Remove your mouse from its plastic bag. Using scissors carefully cut through the abdominal wall of the mouse following the incision marks in the picture on the right. Be careful not to cut too deeply and damage the underlying structures.

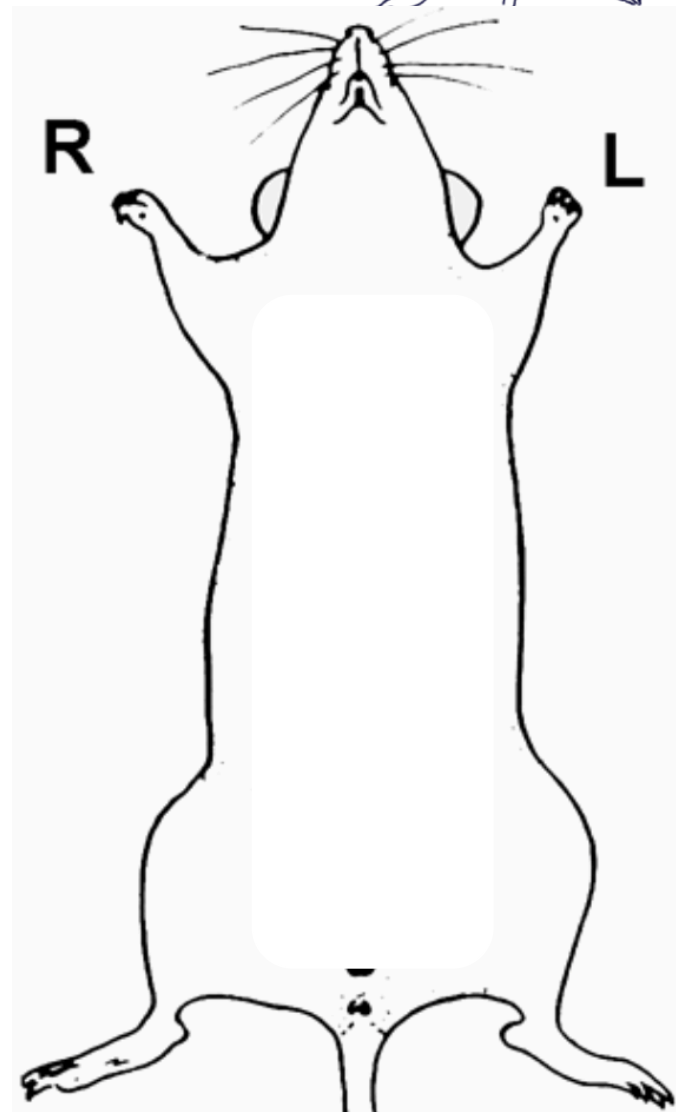


The Abdominal Cavity

2. First, locate the **diaphragm**, a thin horizontal muscle that separates the thoracic cavity from the abdominal cavity. Don't forget to draw and label this on the mouse diagram below.
3. Next, locate the **liver**, a dark, large organ just under the diaphragm. Carefully remove the lobes of the liver and set them aside.
4. The **esophagus** runs through the diaphragm to the stomach. It can be distinguished from the trachea by its lack of cartilage rings.
5. Locate the **stomach** on the right side (usually) just under the liver.
6. The **spleen** is a similar color as the liver and is located just behind the stomach. It filters out old, inflexible red blood cells from the circulatory system.
7. The **small intestine** is attached to the stomach and coils up.
8. The **cecum** is a pouch that connects the large and small intestines. Food is temporarily stored in the cecum while helpful bacteria digest remaining plant material in the mouse's food. Most herbivores such as the mouse have a large cecum, while humans, other omnivores, and carnivores have a much smaller cecum, which is referred to as the appendix.
9. Locate the **large intestine**, which is the greenish tube that extends from the small intestine and leads to the anus.
10. The **rectum** is the very end of the large intestine connecting it to the anus.
11. Carefully cut the top of the stomach (under the diaphragm) and the end of the large intestine to remove the digestive system from the mouse. Carefully cut the connective tissue and blood vessels, called the mesentery, holding the small intestine together to stretch out the digestive tract. Measure the length of the digestive tract from the stomach to the end of the digestive system. **Note the length on your mouse diagram.**
12. Once the digestive tract has been removed, locate the **kidneys** toward the back of the abdominal cavity.

The Thoracic Cavity

13. Above the diaphragm is the thoracic cavity. Locate the **heart**. Carefully remove it from the mouse.
14. Locate the **lungs** originally on either side of the heart. It may be difficult to locate, but attempt to identify the **trachea** going to the lungs.



Comparing the Circulatory and Respiratory Systems of Different Organisms

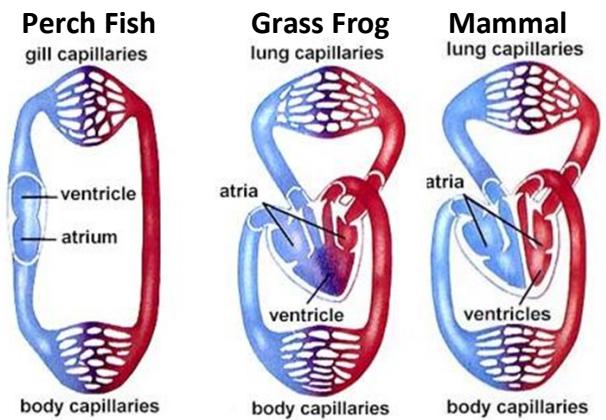
After the dissections labs in class, you will have dissected a worm, a perch fish, grass frog, and a field mouse. In addition, we have discussed human anatomy. All of these organisms have organ systems that are different in structure but similar in overall function in each organism. Answer the questions below. You may need to do some further research using google, your book, your notes, etc.

- Below, describe the structure and function of the circulatory system in all of your dissected animals. Use at least 2-3 sentences. Provide any structures/organs needed and their individual functions as well.

- In the diagram to the right, the circulatory systems of a fish, a frog, and a mammal are compared. There are several differences and similarities among the three diagrams. (Especially note the different numbers of chambers!) Given your knowledge about circulatory system, answer the following questions in COMPLETE sentences.

- Compare the circulatory systems of the fish and the frog.
 How are they different?

How are they similar?



- Compare the circulatory systems of the frog and the human/mammal.
 How are they different?

How are they similar?

- Lastly, choose one other organ system found that we have discussed and is found in all three animal types. Complete the Venn diagram to show how the organ system (its functions and its structures) are similar and different among a fish, frog, and mammal. Your diagram should be FULL!

