

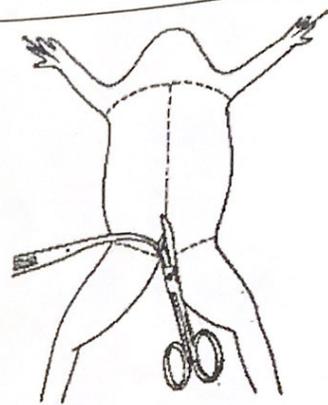
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## Student Guide to the Frog Dissection

### Dissection Instructions

1. Place the frog in the dissecting pan ventral side up.
2. Use scissors to lift the abdominal muscles away from the body cavity. Cut along the midline of the body to the forelimbs.
3. Make transverse (horizontal) cuts near the arms and legs.
4. Lift the flaps of the body wall and pin back.

\*If your specimen is a female, the body may be filled with eggs. You may need to remove these eggs to view the organs.



Locate each of the organs below. Check the box to indicate that you found the organs.

1. **Fat Bodies** --Spaghetti shaped structures that have a bright orange or yellow color, if you have a particularly fat frog, these fat bodies may need to be removed to see the other structures. Usually they are located just on the inside of the abdominal wall.

2. **Peritoneum** A spider-web like membrane that covers many of the organs; you may carefully pick it off to get a clear view.

3. **Liver**--The largest structure of the the body cavity. This brown colored organ is composed of three lobes. The **right lobe**, the **left anterior lobe**, and the **left posterior lobe**. The liver is not primarily an organ of digestion, it does secrete a digestive juice called bile. Bile is needed for the proper digestion of fats.

4. **Heart** - at the top of the liver, the heart is a triangular structure. The **left and right atrium** can be found at the top of the heart. A single **ventricle** located at the bottom of the heart. The large vessel extending out from the heart is the **conus arteriosus**.

5. **Lungs** - Locate the lungs by looking underneath and behind the heart and liver. They are two spongy organs.

6. **Gall Bladder** --Lift the lobes of the liver, there will be a small green sac under the liver. This is the gall bladder, which stores bile. (hint: it kind of looks like a booger)

7. **Stomach**--Curving from underneath the liver is the stomach. The stomach is the first major site of chemical digestion. Frogs swallow their meals whole. Follow the stomach to where it turns into the small intestine. The **pyloric sphincter valve** regulates the exit of digested food from the stomach to the small intestine.

8. **Small Intestine**--Leading from the stomach. The first straight portion of the small intestine is called the **duodenum**, the curled portion is the **ileum**. The ileum is held together by a membrane called the **mesentery**. Note the blood vessels running through the mesentery, they will carry absorbed nutrients away from the intestine. Absorption of digested nutrients occurs in the small intestine.

9. **Large Intestine**--As you follow the small intestine down, it will widen into the large intestine. The large intestine leads to the cloaca, which is the last stop before solid wastes, sperm, eggs, and urine exit the frog's body. (The word "cloaca" means sewer)

10. **Spleen**--Return to the folds of the mesentery, this dark red spherical object serves as a holding area for blood.

11. **Esophagus**--Return to the stomach and follow it upward, where it gets smaller is the beginning of the esophagus. The esophagus is the tube that leads from the frogs mouth to the stomach. Open the frogs mouth and find the esophagus, poke your probe into it and see where it leads.

**STOP!** If you have not located each of the organs above, do not continue on to the next sections!

**Removal of the Stomach:** Cut the stomach out of the frog and open it up. You may find what remains of the frog's last meal in there. Look at the texture of the stomach on the inside.

What did you find in the stomach? *POOP*

**Measuring the Small intestine:** Remove the small intestine from the body cavity and carefully separate the **mesentery** from it. Stretch the small intestine out and measure it. Now measure your frog. Record the measurements below in centimeters. Frog length: *6.1* cm Intestine length *7* cm

## Urogenital System

The frog's reproductive and excretory system is combined into one system called the urogenital system. You will need to know the structures for both the male and female frog.

**Kidneys** - flattened bean shaped organs located at the lower back of the frog, near the spine. They are often a dark color. The kidneys filter wastes from the blood. Often the top of the kidneys have yellowish stringy fat bodies attached.

**Testes** - in male frogs, these organs are located at the top of the kidneys, they are pale colored and roundish.

**Oviducts** - females do not have testes, though you may see a curly structure around the outside of the kidney, these are the oviducts. Oviducts are where **eggs** are produced. Males can have structures that look similar, but serve no actual purpose. In males, they are called vestigial oviducts.

**Bladder** - An empty sac located at the lowest part of the body cavity. The bladder stores urine.

**Cloaca** - mentioned again as part of the urogenital system - urine, sperm and eggs exit here.

Label the parts of the urogenital system.

