

Frog Dissection

1. Place a paper towel on the dissecting tray and then come to the back sink and place a frog on the paper towel. **DO NOT PIN THE FROG AT THIS TIME.**

EXTERNAL

2. On the outside of the frog, locate and observe the following structures. Turn the frog as needed and refer to the diagrams.

Mouth – large opening at the front of the head end of the frog. It has both upper and lower jaws

Nostrils (external nares) – the two small openings just above the mouth

Eyes – note the upper and lower eyelids on each eye and, if possible, observe the nictitating membrane that can extend from the lower eyelid to cover and protect the eye

Eardrum (tympanum) – the eardrum is a round membrane just in back of, and lower than, the eye on each side. Note the frog has no external ear structure

Cloacal opening – the hole at the tail end of the frog

Forelimbs – short extension from the front end of the trunk that provide support

Digits – four fingers on the hand and a medial nonfunctional (vestigial) thumb. Note the male frog, especially during mating season, has an enlarged pad on the most medial digit of each hand. This helps to distinguish the male from the female

Hind limbs – longer extensions from the tail end of the trunk for locomotion

Digits – five webbed toes and a vestigial sixth toe on the inside (toward the middle) of the foot

ORAL

3. Pry open the mouth with the probe and observe the oral and pharyngeal cavities. To loosen the jaw, cut the joint between the upper and lower jaws on each side with your scissors or scalpel.

Maxillary teeth – found on the margin of the upper jaw

Vomerine teeth – found in the front of the mouth near the center

Internal Nares – internal openings for breathing

Eustachian Tube – opening of this tube is found near the hinge of the jaw at each side

Esophagus – the opening of this tube is shown in the diagram

Glottis – the opening for the windpipe

INTERNAL

4. Turn the frog over on its back with the head away from you. Hold the frog in place by pinning each hand and foot to the dissecting tray.
5. Using a forceps, lift the skin of the lower abdomen and make a slit with your scalpel just to the left of the center line (midline). Insert the scissors into the slit and cut an opening from near the cloacal opening up to the lower jaw.
6. Make cuts to the right and left side just in back of the forelegs and in front of the hindlegs. Pin the skin flaps back away from the opening.
7. Make similar cuts into the muscular body wall of the abdomen. Do not cut any deeper than necessary.

8. Fold back these flaps to make the internal organs of the coelomic cavity visible. The coelomic cavity is the cavity of the chest and abdomen that contains the internal body organs. It is lined with a membrane called the peritoneum. Peritoneum also covers each of the organs in the cavity.
9. Observe the size, shape and structural design of the internal organs in the coelomic cavity.

Heart – a three chambered muscular organ in the center of the chest

Liver – brownish organ which has three lobes and is the largest of the internal organs. It covers the area around and below the heart and over the lungs.

Spleen- dark, reddish round organ found near the back body wall of the abdomen

Lungs- the two lungs lie to the right and left of the heart in the chest area.

Stomach – long white organ on the left side of the abdomen beginning at the esophagus under the heart and lungs and extending near the lower end of the abdomen. Cut open the stomach to observe the food eaten by the frog.

Small Intestine – this begins at the stomach and extends as a coiled tube of small diameter. It ends near the lower end of the abdomen at the large intestine. Not the supporting membrane (mesentery) which holds the intestine in place.

Large Intestine (colon) – this is a short tube of larger diameter that opens into the cloaca at the anus

Cloaca – this is a chamber for receiving urine, digestive wastes and reproductive cells. It opens to the outside through the cloaca opening.

Gall bladder – a small, round, dark (often green) sac attached to the back surface of the liver. The bile duct connects the liver and gall bladder to the small intestine.

Pancreas – flattened organ between the small intestine and the stomach. It has a duct to the bile duct to allow pancreatic juice to flow into the small intestine.

Spleen – this is a small round body in the mesentery on the midline near the pyloric sphincter

Kidneys – two flattened, elongated organs lying on the dorsal surface of the abdomen and covered with a membrane (peritoneum)

Urinary Bladder – small sac connected by a short tube to the cloaca

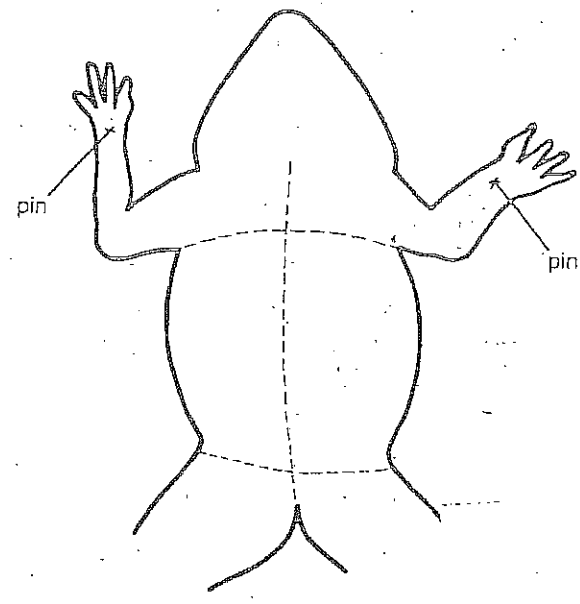
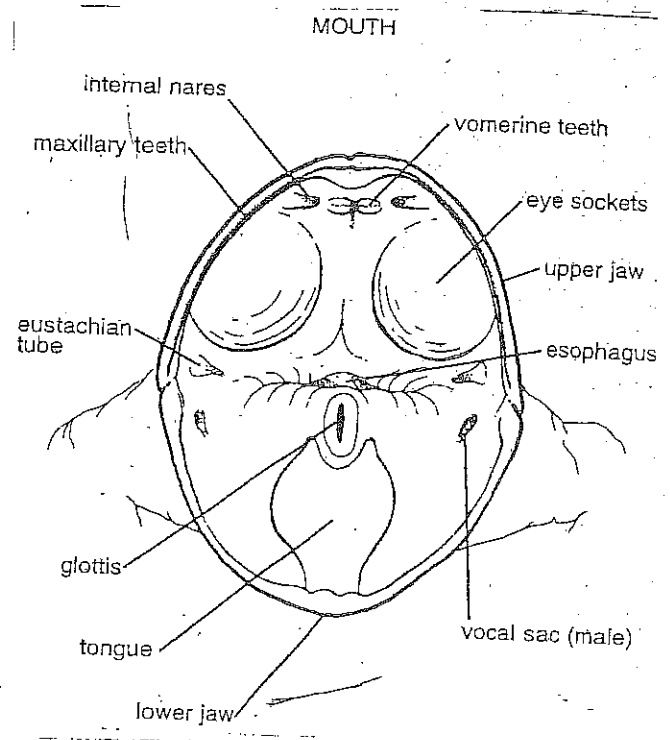
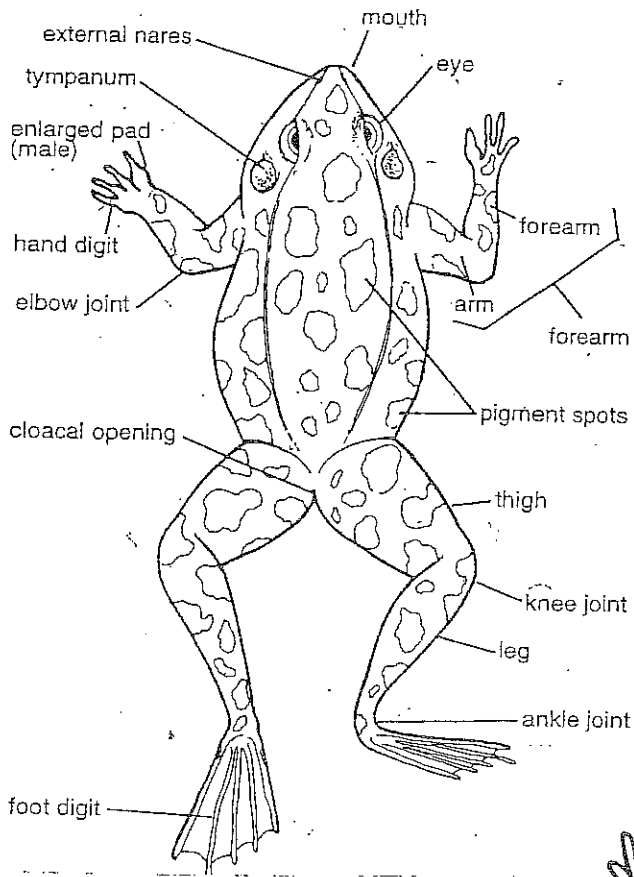
Ovaries (female frog) - many lobed organs of the female frog which, in the spring, contain thousands of ripe eggs. When the eggs are ripe, the ovaries may fill much of the space in the abdomen

Oviducts (female frog) – thin, white, coiled tubes along each side of the female frog

Testes (male frog) – each testis is a small organ of the male frog attached by mesentery to the front surface of the kidney. The testes produce the sperm cells

Fat bodies – yellowish tissue with long finger-like lobes above the testes or ovaries

10. **Conclusion** – when you are complete with the lab make sure I have checked your dissection and signed your lab sheet.
11. **Cleanup** – at the conclusion of the dissection, throw your frog in the trash can and wash and dry the dissection instruments. **Make sure all equipment and station are dried and ready for the next class.**



CUTTING DIAGRAM

