

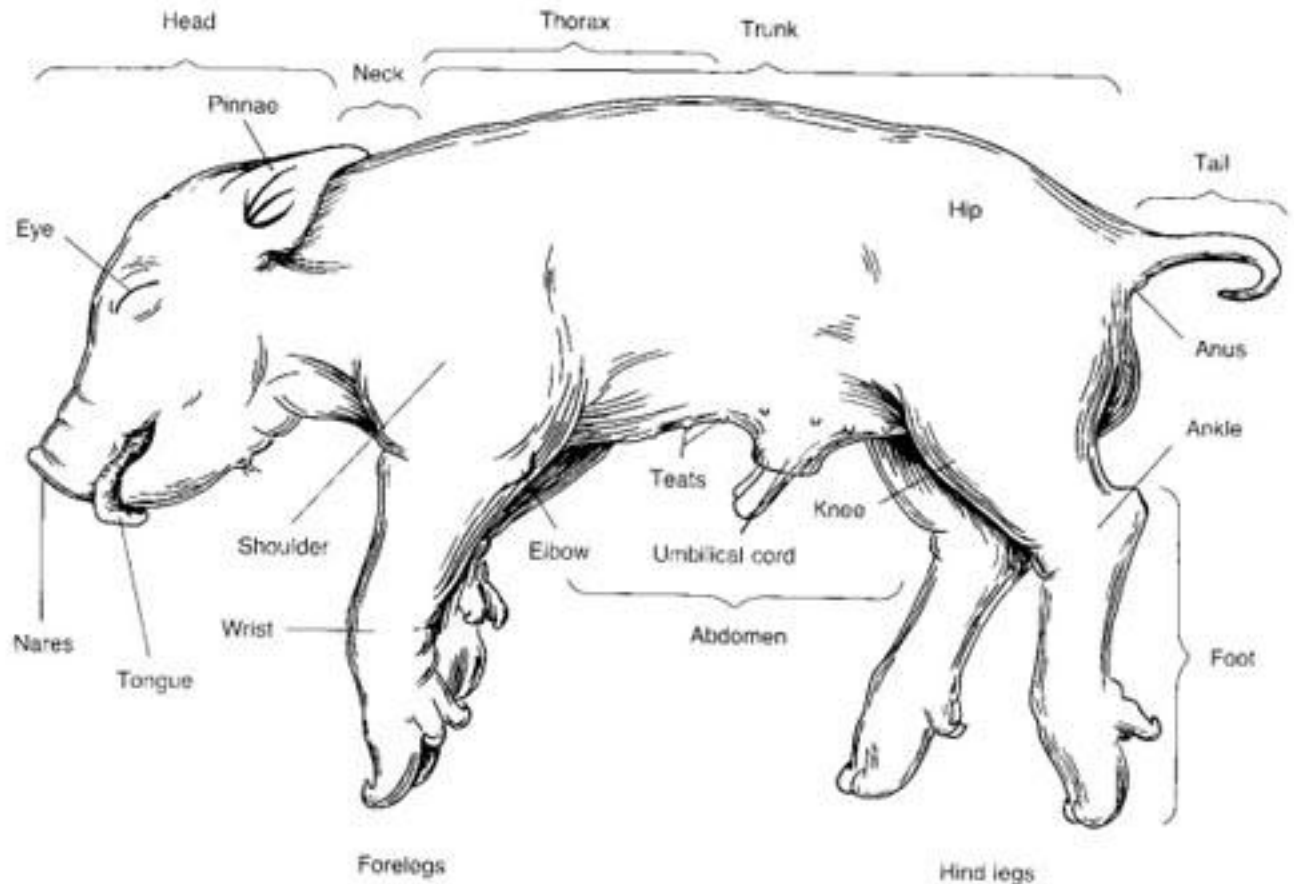
Fetal Pig Dissection:

REMEMBER: *Dissection involves disassembling and observing something to determine its internal structure and develop an understanding of the relationship of those structures to function.*

SAFETY AND HYGIENE

1. Practice safe hygiene when dissecting.
2. Do not place your hands near your eyes or mouth when handling preserved specimens. Although most preservatives in use today are non-toxic, some may cause minor skin irritations. If preservative does get on your skin, wash with soap and warm water.
3. You will wear eye protection to prevent any preservative from splashing into your eyes.
4. Never splash the preservative.
5. Wear gloves when handling your pig.
6. Paper towels will go in the regular trash. Skin and pieces of pig go into the red plastic bags at the front of the room (not into the sinks).
7. After wrapping and bagging your pig, place it into the blue cooler. Be sure the bag is labeled with you and your partner's name.

External Anatomy



1. Determine the sex of your pig. On females, look for the urogenital opening just ventral to the anus. A prominent genital papilla projects from the urogenital opening. On males, look for the scrotum, a sac-like swelling containing the testes and located ventral to the anus. Both males and females have rows of nipples and the umbilical cord is present in both.
2. Make sure you are familiar with the following terms of reference: dorsal, ventral, anterior, posterior, lateral, medial, proximal, distal, superficial and deep.
 - a. Dorsal: toward the back
 - b. Ventral: toward the stomach/belly
 - c. Anterior: toward the head
 - d. Posterior: toward the tail
 - e. Lateral: toward the side
 - f. Medial: toward the middle
 - g. Proximal: close to the point of reference
 - h. Distal: farther from the point of reference
 - i. Superficial: lying closer to the surface
 - j. Deep: lying under or below

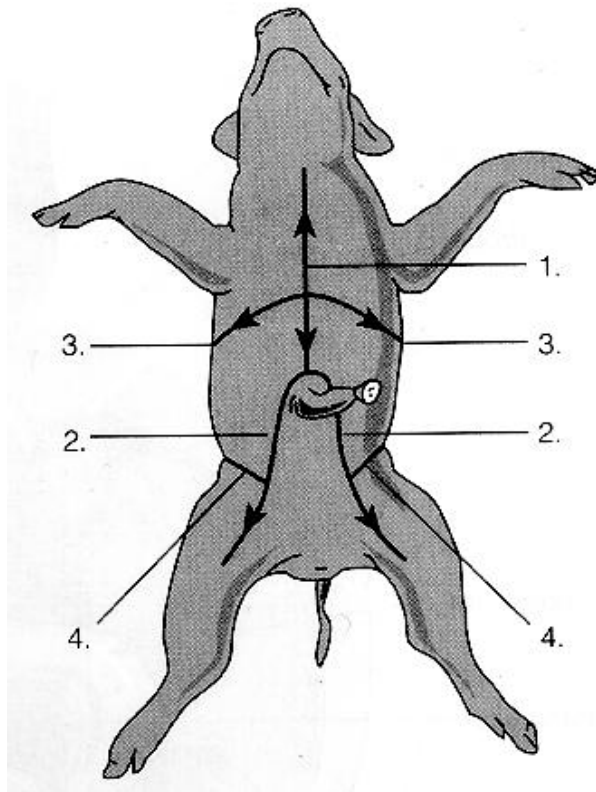
3. Gestation for the fetal pig is 112 to 115 days. The length of the fetal pig can give you a rough estimate of its age.
 - 11 mm – 21 days
 - 17 mm – 35 days
 - 2.8 cm – 49 days
 - 4 cm – 56 days
 - 22 cm – 100 days
 - 30 cm – birth
4. Observe the thin peeling layer of tissue covering the body of your pig. This layer is the epitrichium, a layer of embryonic skin that peels off as hair develops underneath it.
5. Identify the regions of the body:
 - Head (cranial) region
 - Neck (cervical) region
 - Trunk (thoracic) region
 - Tail (caudal) region
6. Appendages: Examine the legs of your pig. Identify the following:
 - a. On the forelimb find the shoulder, elbow, wrist and digits.
 - b. On the hind limb find the hip, knee, ankle, heel and digits.
7. Observe the toes of your pig. The middle two digits form hooves. Ungulates (hooved) animals like the pig walk with the weight of their body borne on the tips of their digits (unguligrade locomotion). Cats and dogs use digitgrade locomotion (walking on the balls of their feet). Humans typically use their entire foot for walking. What form of locomotion do you use when you sprint?

The Internal Anatomy of a Fetal Pig

In this activity, you will open the abdominal and thoracic cavities of the fetal pig and identify structures. Remember, that to dissect means "to expose to view" a careful dissection will make it easier for you to find the organs and structures. Be sure to follow all directions.

The Incision

Place the fetal pig in the dissecting pan, ventral side up. Use string to hog tie your pig so that the legs are spread eagle and not in your way. Use scissors to cut through the skin and muscles according to the diagram below. **DO NOT REMOVE THE UMBILICAL CORD.** In the first section you will examine the abdominal cavity (the area below the ribcage).



After completing the cuts, locate the umbilical vein (it contains blue latex) that leads from the umbilical cord to the liver. You will need to cut this vein in order to open up the abdominal cavity.

Pin the skin and muscle to the side so that the internal organs are visible.

Your pig may be filled with water and preservative, drain over the sink if necessary and rinse with water. Please rinse your pig each day before tying to your dissecting tray.

Abdominal Cavity

- Be able to identify examples of function to structure relationships in the fetal pig.
- Be able to identify the following organs and their functions.
- Be able to identify major arteries and veins and their functions.

Locate each of the following:

Name	Structure	Function	Check
Diaphragm			
Liver			
Gall bladder			
Stomach			
Esophagus			
Small intestine			
Pancreas			
Spleen			
Cecum			
Large intestine			
Kidneys			

Activity:

- ✓ Carefully cut through the mesentery and uncoil the small intestine. Measure and record its length in centimeters.
- ✓ With scissors remove a 3 cm section of the lower small intestine. Cut it open and rinse it out.
- ✓ Observe the inner surface of the small intestine. Run your finger along it and note its texture. Using a dissecting microscope, examine the **villi**, the tiny projections that line the small intestine. What function to structure relationship exists here?

Thoracic Cavity

You may need to cut through the pig's sternum and expose the chest cavity (thoracic cavity) to view. You will need to cut all the way up into the pig's neck, almost to the chin and open the thoracic cavity.

Identify each of the following:

Name	Structure	Function	Check
Diaphragm			
Pericardium			
Heart <ul style="list-style-type: none">• Atria• Ventricles			
Aorta			
Vena cava			
Lungs			
Bronchial tubes			
Trachea (cartilaginous rings)			
Thyroid gland			
Larynx			

This is to be done each day.

- ✓ Check the job responsibilities. Have you completed your assignment?
- ✓ Clean up your dissection instruments and work area.
- ✓ Wrap the pig in damp paper towels and put in a zip-lock plastic bag.
- ✓ Using a Sharpie marker, label your bag with your names.
- ✓ Return your fetal pig to the cooler, place the dissection instruments in bleach solution and then THOROUGHLY WASH YOUR HANDS WITH SOAP.