

Day 3 *Respiratory System*

1. Examine the **diaphragm**, a sheet of muscle that stretches across the **abdominal cavity** and separates it from the **thoracic cavity** where the lungs are located. The diaphragm isn't used by the fetal pig because gas exchange occurs through the umbilical cord. The diaphragm in adult pigs moves up and down changing air pressure in the chest cavity causing air to move into and out of the lungs.
2. In order to see the upper part of the respiratory system, you will need to extend cut #1 up under the pig's throat and make two more lateral incisions in order to fold back the flaps of skin covering the throat.
3. In the thoracic cavity, carefully separate the **pericardium** (pronounced per-ih-card-ee-um) or sac surrounding the heart and the diaphragm from the body wall.
4. Locate the two, spongy lungs that surround the heart. The tissue that covers and protects the lungs is called **pleura** (pronounced p-luh-uh). The lungs haven't been used by the fetus so they have never contained air.
5. Find the **trachea**, a large air tube that lies anterior to the lungs. The trachea is easy to identify because of the **cartilaginous rings** (pronounced cart-ill-aj-in-us) that help keep it from collapsing as the animal inhales and exhales.
6. Notice that the trachea branches into each lung. These two tubes are called **bronchial tubes**. Inside the lungs these branch into smaller **bronchioles** that end with a grape-like cluster of air sacs or **alveoli** (pronounced al-vee-oll-eye) where oxygen and carbon dioxide are exchanged with capillaries.
7. Lying ventral to the trachea or windpipe, locate the pinkish-brown, V-shaped structure called the **thyroid gland**. This gland secretes hormones that control metabolism.
8. At the top, anterior end of the trachea, find the hard, light-colored **larynx** or voice box. This organ contains the **vocal cords** that enable the animal to produce sound.
9. Locate the **epiglottis** at the top of the trachea. This flap of skin closes over the trachea whenever you swallow to keep food down. Find the area called the **pharynx** (pronounced fair-enks) at the back of the nasal cavity. Air enters an adult pig through the mouth or nose before passing through the pharynx and down the trachea to the lungs.
10. Label the diagram of the respiratory system on your day 3 hand-in.

Clean up your materials and work area. Wrap the pig in damp paper towels and put it in a zip-lock plastic bag. Return your lab equipment and pig and then thoroughly wash your hands with soap.