

Earthworm Anatomy KEY

External Anatomy

Examine your earthworm and determine the dorsal and ventral sides. Locate the two openings on the ventral surface of the earthworm

The openings toward the anterior of the worm are the **sperm ducts**

The openings near the clitellum are the **genital setae**. Label them on the worm pictured to the right.

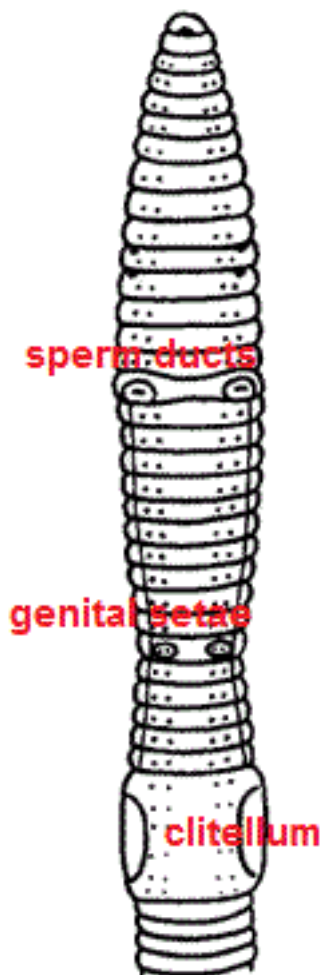
Locate the dark line that runs down the dorsal side of the worm, this is the **dorsal blood vessel**. The **ventral blood vessel** can be seen on the underside of the worm, though it is usually not as dark.

Locate the worm's **mouth** and **anus**.

Note the swelling of the earthworm near its anterior side - this is the **clitellum**. Label the clitellum.

Internal Anatomy

1. Place the specimen in the dissecting pan **DORSAL** side up.
2. Locate the clitellum and insert the tip of the scissors about 3 cm posterior.
3. Cut carefully all the way up to the head. Try to keep the scissors pointed up, and only cut through the skin.
4. Spread the skin of the worm out, use a teasing needle to gently tear the **septa** (little thread like structures that hold the skin to organs below it)
5. Place pins in the skin to hold it apart, angle the pins out so that they are not in your way.



Reproductive System

The first structures you probably see are the **seminal vesicles**. They are cream colored and located toward the anterior of the worm. These are used for producing sperm. Use tweezers to remove these white structures from over the top of the digestive system that lies underneath it.

Circulatory system

The **dorsal blood vessel** appears as a dark brownish-red vessel running along the intestine. The **heart (or aortic arches)** can be found over the esophagus (just posterior to the pharynx). Carefully tease away the tissues to expose the arches of the heart, they run across the worm. If you are careful, you can expose all 5 of them.

The **ventral blood vessel** is opposite the dorsal blood vessel, and cannot be seen at this time because the digestive system covers it.

Label the diagram (use the bold words from above)

Does the earthworm have a closed or open circulatory system?

_____closed_____

Digestive System

The digestive system starts at the mouth. You will trace the organs all the way to the anus and identify each on the worm.

Find the mouth opening, the first part after the mouth is the pharynx, you will see stringy things attached to either side of the pharynx (pharyngeal muscles) . The esophagus leads from the pharynx but you probably won't be able to see it, since it lies underneath the heart . You will find a two structures close to the clitellum. First in the order is the crop , followed by the gizzard . The gizzard leads to the intestine which is as long as the worm and ends at the anus .

Describe the functions of each of the organs and label them on the drawing . (The words are listed for you)

1. Crop - food storage
2. Mouth - opening for food to enter
3. Pharynx - muscle to suck in food(dirt)
4. Intestine - digestion of food
5. Gizzard - grinding food
6. Anus - where wastes exit
7. Esophagus - tube where food is passed from mouth to crop
8. Pharyngeal Muscles - supports pharynx, sucks in food

*Use your scissors to cut open the crop and the gizzard. In which organ would you expect the contents to be more ground up. _gizzard_

Color the Organ Systems

For the picture below, color code the organ systems for the earthworm using the following key:

Circulatory System - Red | Reproductive System - Blue | Digestive System - Green | Nervous System - Yellow

