Earthworm Dissection Lab



Project Weblink

https://learning-center.homesciencetools.com/article/earthworm-dissection/

Earthworm Dissection Kit Here

Background

Earthworms are important helpers in the garden or field! Their tunneling mixes up the soil and brings rich soil to the surface.

You can observe the organs of these tiny creatures by dissecting a preserved earthworm.

Our earthworm dissection guide will walk you through the entire process.

Safety Guidelines

- Work in a place separate from eating and food preparation areas.
- Use disposable <u>latex gloves</u> or <u>nitrile gloves</u> during the dissection and cleanup.
- Use only dissection tools provided. Do not let children use pencils or other personal items for dissection. Kids like to use our economical <u>plastic forceps</u> to take apart the owl pellet.
- Use a sanitizer with paper towels or disposable sanitizing wipes to thoroughly wash hands, work areas, and any dissection tools when finished. Household bleach in a 1:10 solution can be used as a sanitizer.
- Make sure everyone thoroughly washes their hands with soap and water after the dissection and cleanup.

Earthworm Observation: External Anatomy

- 1. Find the **anterior** (front) end of the earthworm by locating the fleshy bump over its mouth, called the **prostomium**. The **posterior** (back) end has a small hole where solid waste is expelled, called the **anus**. The length of the worm is made up of many tiny segments, each separated by a thin wall called a **septum**.
- 2. About one-third of the way back from the mouth you should see a thicker and smoother section of the worm. This is called the **clitellum**, and it is involved in reproduction.
- 3. Notice that the earthworm has a rounded **dorsal** (back) surface and a flatter **ventral** (belly) surface. Usually the dorsal surface is darker than the ventral surface (though sometimes this is obscured in the preservation process). Lightly rub your finger along the ventral side toward the posterior end of the worm. You should feel a roughness caused by tiny bristles called **setae**. Using a magnifying glass, try to see the setae.
- 4. With your magnifying glass look for tiny **pores** on each segment. Liquid wastes are expelled through these pores. Near the front end of the worm you should see some larger pores that can be easily seen without magnification. These are **genital pores** and are important in reproduction.



Earthworm Dissection: Internal Anatomy

- Lay the worm on your <u>dissecting tray</u> with its dorsal side facing up. Use <u>dissection pins</u> to secure each end on the tray. Start your dissection about an inch posterior to the clitellum. Lift up the skin with a pair of <u>forceps</u> and snip an opening with a pair of <u>dissecting</u> <u>scissors</u>. Insert the scissors into the opening and cut in a straight line all the way up through the mouth. Go slowly and be sure to cut just the skin—if you go too deep you may damage the internal organs.
- 2. Using the forceps and dissection pins, carefully pull apart the two flaps of skin and pin them flat on the tray. (You may need to drag a pin along the inside of the skin to sever the septum walls to make it easier to spread the skin.)



- 3. Look at the labeled picture to help you find the following features:
 - **Pharynx**: This is the light-colored organ just inside the mouth. Its muscular contractions pass food on down to the esophagus.
 - **Hearts** (or 'aortic arches'): Behind the pharynx are five dark loops wrapped around the esophagus. These are the blood vessels that serve as the hearts of the worm.
 - **Dorsal blood vessel**: This is a dark line extending from the hearts over the top of the crop.
 - Crop: Food from the esophagus is temporarily stored in the crop.
 - **Gizzard**: Food comes from the crop into the gizzard, where it is ground up.
 - **Intestine**: The intestine is the long tube extending from the gizzard all the way to the anus. Food is digested and absorbed here.
 - **Reproductive organs**: The light colored tissue above and around the hearts are seminal vesicles. Other reproductive parts appear as small white organs on the ventral side of the hearts.
 - Ventral Nerve Cord: With your forceps, gently push aside the intestine to view the long white nerve cord running along the length of the worm beneath it.
- 4. Optional: Finish cutting the rest of the worm open from the first incision through to the anus. Observe how the intestine and ventral nerve cord both continue through the entire length of the worm.

See the rest of our online <u>dissection guides</u> for pictures of cow eye dissections, sheep brain dissections, and more.