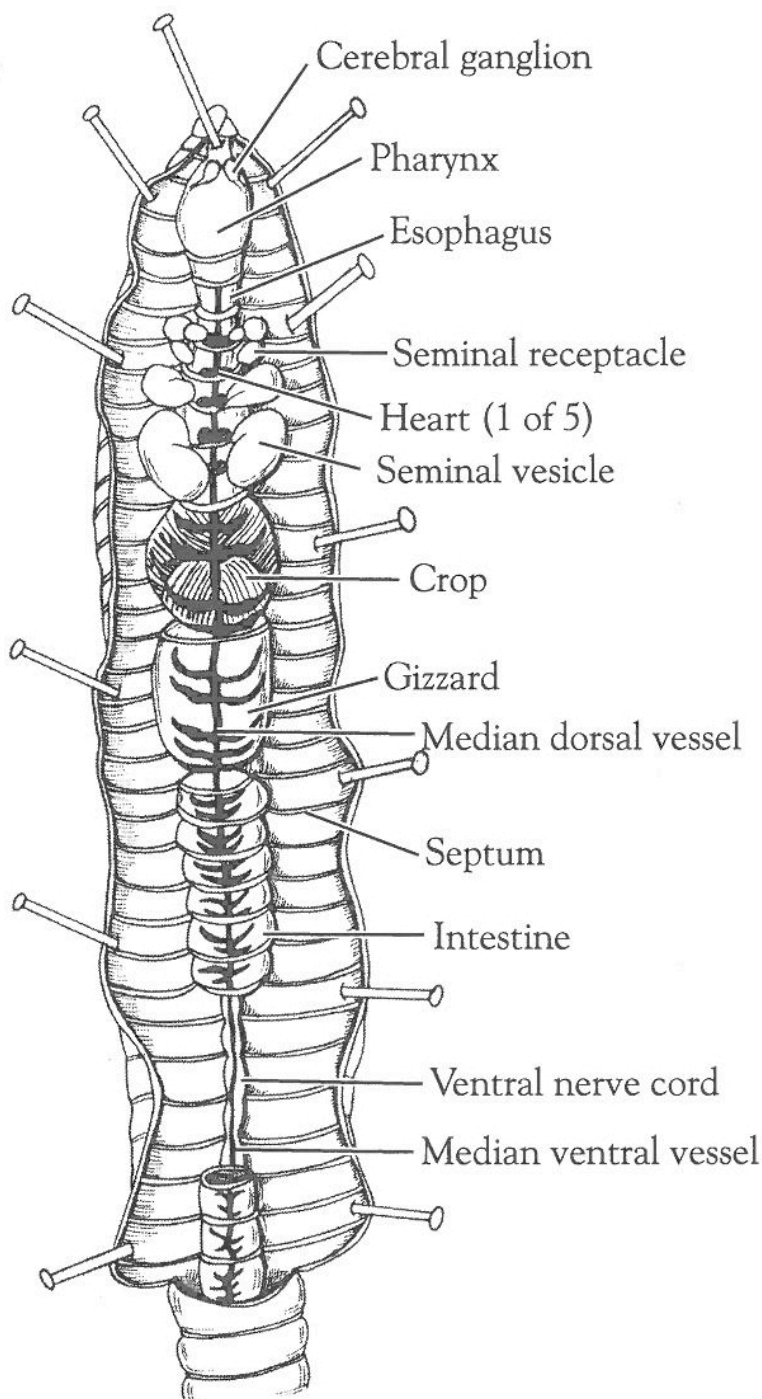


## Earthworm Dissection Guide

Earthworms have a closed circulatory system of tubular blood vessels. The most apparent vessel of the earthworm is the large dorsal blood vessel, which has thick, muscular walls and carries blood posteriorly. Extending laterally from the dorsal blood vessel are numerous lateral vessels, which connect the dorsal vessel with the ventral vessel in certain anterior segments. Five of these lateral vessels are greatly enlarged and are commonly referred to as hearts. The hearts beat with waves of contraction of the smooth muscles within their walls. These rhythmic waves force blood upward to the dorsal blood vessel where further muscle contractions of the vessel wall move the blood posteriorly. Valves in the hearts and in the dorsal blood vessel prevent backflow. The earthworm has no external gills or other respiratory organs. Instead, the body wall has many capillaries and serves in the removal of carbon dioxide and the uptake of oxygen.

### Procedure

1. Place the earthworm dorsal surface up and fully extended. The dorsal surface is darker than the ventral.
2. Locate the clitellum, a band of tissue that covers several segments. Using forceps, lift the body wall about 2 to 5 cm posterior to the clitellum, and cut through the body wall with the scissors. Insert the point of the scissors shallowly into the cut. Extend the cut along the dorsal midline the entire length of the body.



## Earthworm Dissection Guide

3. Gently open the body wall and notice the many cross walls or septa. Begin cutting through the septa on each side with the tip of the scissors. As you cut through the septa, pin the body wall to the tray.
4. Cut through the intestine just posterior to the clitellum and lift up on the cut end. Use the scissors to detach 1 to 2 cm of the intestine from the ventral body wall. Cut off this section of the intestine to reveal the ventral nerve cord and median ventral vessel.
5. Examine the hearts and identify the dorsal and intestinal vessels.