

# Phylum Annelida

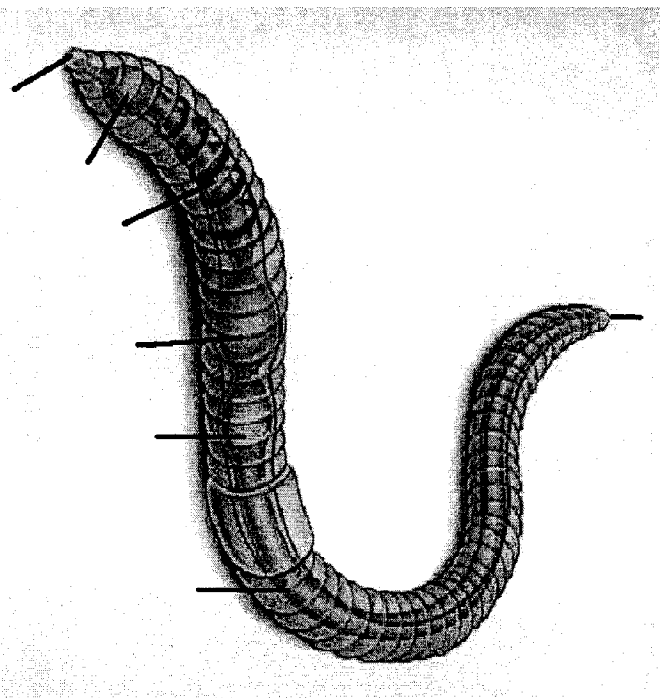
**Characteristics of Annelids:** Refer to pages 594.

- Body is long, round, and \_\_\_\_\_, etc.
- Range in size from \_\_\_\_\_ mm to \_\_\_\_\_ m long.
- Vary in \_\_\_\_\_, number of \_\_\_\_\_, which are internal walls. Most body segments are identical to each other, however some are modified to perform special functions.

**Feeding:** Refer to pages 594-595 (including all figures).

Label the following structures of the digestive system of the earthworm:

- (a) crop (c) intestine (e) anus (g) pharynx
- (b) esophagus (d) mouth (f) gizzard



In the earthworm, after food enters the mouth, it passes through the \_\_\_\_\_ and is then stored in the \_\_\_\_\_. From there it passes to the \_\_\_\_\_ where it is mechanically broken down by grinding. After this, it is chemically broken down in the \_\_\_\_\_. Undigested material is egested (i.e. removed) through the \_\_\_\_\_.

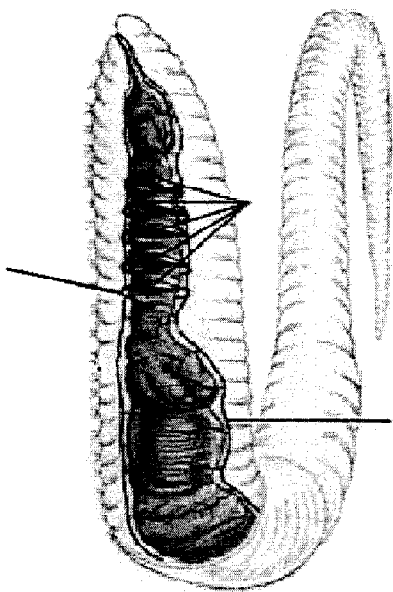
**Respiration:** Refer to pages 595-596 (including all figures).

Aquatic annelids respire through structures called \_\_\_\_\_, whereas terrestrial annelids respire through their \_\_\_\_\_. This occurs by diffusion.

**Internal Transport:** Refer to page 596 (including all figures).

Label the following structures of the circulatory system of the earthworm:

- (a) aortic arches (i.e. "hearts")
- (b) ventral blood vessels
- (c) dorsal blood vessels



1. (a) Is the circulatory system of the earthworm open or closed? \_\_\_\_\_

(b) Support your response with an explanation. \_\_\_\_\_

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2. What do the aortic arches act as? \_\_\_\_\_
3. Blood flows toward the head of the worm in the \_\_\_\_\_ vessel and toward the back of the worm in the \_\_\_\_\_ vessel.
4. How is blood moved through the bodies of annelids? \_\_\_\_\_

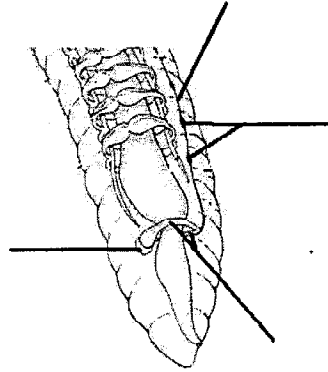
**Excretion:** Refer to pages 596-597 (including all figures).

Water, mineral salts, and urea (all metabolic wastes) are filtered out of the body fluids of annelids, into the \_\_\_\_\_, and then are excreted. There are \_\_\_\_\_ nephridia in each body segment.

**Response:** Refer to page 597 (including all figures).

Label the following structures of the nervous system of the earthworm:

- (a) brain
- (b) nerves
- (c) ventral nerve cord
- (d) ganglia



In the earthworm, two nerves run from the brain, along each side of the gut and connect with a pair of \_\_\_\_\_. Here they join to become a \_\_\_\_\_ cord which runs to the last segment. In each segment, \_\_\_\_\_ enter and leave the ventral nerve cord to help carry messages from \_\_\_\_\_ and coordinate the movement of \_\_\_\_\_.

**Movement:** Refer to page 597 (including all figures).

1. What are the two major groups of muscles found in annelids? \_\_\_\_\_
2. Complete the following chart:

Muscle Group	Location	Function in Movement

**Reproduction:** Refer to pages 597-598 (including all figures).

Some annelids reproduce asexually by \_\_\_\_\_, however most reproduce \_\_\_\_\_. Some annelids have separate sexes and fertilization occurs \_\_\_\_\_, whereas others are hermaphroditic and fertilization occurs \_\_\_\_\_.

Earthworms are hermaphrodites, however they rarely self-fertilize. Worms will pair up with each other and swap \_\_\_\_\_. The sperm gets stored in specialized sacs for future use. When ready to reproduce (i.e. eggs are mature), the \_\_\_\_\_ (a band of thickened, specialized segments) secretes a mucous ring. The \_\_\_\_\_ and \_\_\_\_\_ are released into the mucous, where the eggs are fertilized. As the worm moves, the mucous ring slips off the body of the worm, and it now serves as a cocoon for the fertilized eggs.