

Earthworm Anatomy

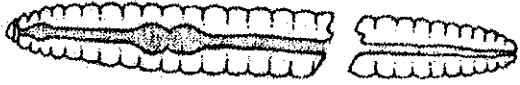
EARTHWORM ANATOMY

Digestive System

The digestive system is a tube extending from segment one to the last segment. Organs of this system are shaded in Figure 38-4 to help you identify them in Figure 38-3.

- Use the "map" on page 150 to identify each specific part.
- Label the organs of the digestive system on Figure 38-3 and color them green.

FIGURE 38-4

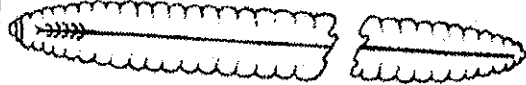


Circulatory System

A thin blood vessel extends the entire length of an earthworm. It is located above the digestive organs and is called the dorsal blood vessel. A second vessel, the ventral blood vessel, also extends the entire length of the worm. However, it is below the digestive organs and not visible unless part of the intestine is removed. The ventral blood vessel is the thinner of two strands under the intestine. A series of five "hearts" connect the dorsal and ventral blood vessels. The "hearts" surround the esophagus.

Organs of this system are diagrammed in Figure 38-5 to help you identify them in Figure 38-3.

FIGURE 38-5



- Use the "map" on page 150 to identify each specific part.
- Label the organs of the circulatory system on Figure 38-3 and color them red.

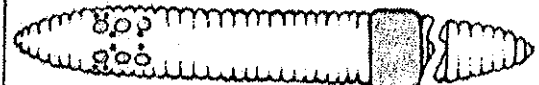
Reproductive System

The reproductive system consists of seminal vesicles, seminal receptacles, ovaries and testes, and the clitellum. The seminal vesicles are three pairs of saclike structures along the esophagus. Two very small almost dotlike structures, on each side near the seminal vesicles, are the seminal receptacles. Ovaries and testes are present in your worm but are difficult to observe. They are shown in Figure 38-3 with dotted lines. The clitellum produces a mucous slime tube during mating.

The reproductive system also includes two sets of pores visible on the exterior of the worm. Segment 14 has a pair of female pores and segment 15 has a pair of male pores.

Organs of this system are shaded in Figure 38-6 to help you identify them in Figure 38-3.

FIGURE 38-6



- Use the "map" on page 150 to identify each specific part.
- Label the organs of the reproductive system on Figure 38-3 and color them yellow.

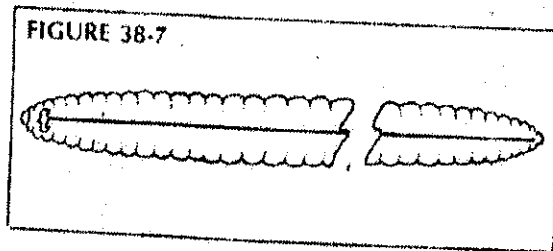
Nervous System

A "brain" (ganglion mass) is a small mass of white tissue in segment 3. It may be destroyed when dissecting a worm. The ventral nerve cord is seen as a white "thread" extending along the worm's ventral surface from segment 3 to the last segment.

Because of its ventral location, the nerve cord cannot be seen well except where organs have been removed.

- Remove part of the intestine to see the nerve cord beneath.

Organs of this system are shaded in Figure 38-7 to help you identify them in Figure 38-3.



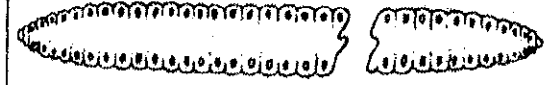
- Label the organs of the nervous system on Figure 38-3 and color them blue.

Excretory System

The excretory system consists of paired organs called nephridia. These are small organs against the lateral [side] walls of the worm. You may need a hand lens to see them. They are present in almost every segment.

Organs of this system are shaded in Figure 38-8 to help you identify them in Figure 38-3.

FIGURE 38-8



- Label the organs of the excretory system on Figure 38-3 and color them orange.

External Structures

Besides the male and female pores, other external structures are the prostomium and setae. The prostomium is like an upper lip. It is attached to the first segment and is above the mouth. It appears to be the first segment but is not a true segment. Setae are groups of tiny bristles which project from most of the segments. They may not be visible, but they can be felt by rubbing your finger along the side of the worm.

- Complete Table 38-2 summarizing annelid characteristics while observing your worm. Check the characteristics that describe earthworms.

TABLE 38-1. EARTHWORM "MAP" OF ORGANS

SEGMENT	DIGESTIVE SYSTEM	CIRCULATORY SYSTEM	REPRODUCTIVE SYSTEM	NERVOUS SYSTEM	EXCRETORY SYSTEM		
Prostomium							
1	} Mouth						
2							
3	} Pharynx			} Brain			
4					} Nephridia		
5					} Nephridia		
6					} Nephridia		
7			} Heart		} Nephridia		
8			} Heart		} Nephridia		
9			} Heart		} Nephridia		
10		} Esophagus	} Heart		} Testes	} Seminal vesicle	} Nephridia
11			} Heart				} Seminal vesicle
12						} Seminal vesicle	} Nephridia
13				} Ovaries	} Seminal vesicle	} Nephridia	
14					} Nephridia		
15	} Crop				} Nephridia		
16					} Nephridia		
17						} Nephridia	
18	} Gizzard	Dorsal (and ventral) blood vessel		} Ventral nerve cord	} Nephridia		
19						} Nephridia	
20							} Nephridia
21	} Intestine						} Nephridia
22							} Nephridia
23							} Nephridia
24							} Nephridia
25							} Nephridia
26							} Nephridia
27							} Nephridia
28					} Nephridia		
29					} Nephridia		
30						} Nephridia	
31			} Clitellum		} Nephridia		
32					} Nephridia		
33					} Nephridia		
34					} Nephridia		
35					} Nephridia		
36					} Nephridia		
37						} Nephridia	
110					} Nephridia		
111							
Last Segment	} Anus						

