



Earthworm Dissection Pre Lab

TEACHER ANSWER KEY • Earthworm Pre-Lab

Before dissection, watch the Earthworm video and use the matching guide headings. Video times below are approximate.

Meet the Earthworm

An annelid body plan

1. [Video 3:20–3:35] What phylum does the earthworm belong to?

Annelida

2. The annelids are considered **segmented** worms.

Materials

3. Name 6 of the materials required:

Earthworm specimen

Dissecting tray

Dissecting scissors

Probe

Dissecting pins

Gloves

Work Safely

4. What two safety items must you wear when working with preserved worms?

Gloves

Safety goggles / required eye protection

5. What must you do before leaving the lab? **Clean the station; wash hands.**

External anatomy

Orient your specimen

6. [Video 6:21–6:38] Which is the darker surface? **Dorsal surface**
7. [Video 4:58–5:08] What is the external landmark we use on the earthworm?

Clitellum

8. Is the clitellum located closer to the anterior or posterior end? **Anterior**

Segments and setae

9. What are the individual segments called? **Metameres (segments)**
10. What genus does the earthworm we are dissecting belong to? **Lumbricus**
11. What are the tiny bristles called? **Setae**

Draw what you see

12. What are the nine labels required on the external drawing?

Mouth, anus, metameres, clitellum, setae, dorsal, ventral, anterior, posterior.

Open, observe, identify

Open the dorsal body wall

13. What side of the worm faces up when placed in the tray? **Dorsal**
14. What is the function of the clitellum? **Produces material for the egg cocoon.**
15. Where is the first “shallow snip” made? **About 1 inch posterior to the clitellum.**



16. [Video 12:56–13:12] What dissecting instrument is used to separate the septa?

Probe

17. After pinning both ends dorsal side up, what is the next step? **Make the first shallow snip.**

18. Describe the cut that is to be made to the worm, what instrument is to be used?

Scissors: cut anteriorly, just beside the dorsal midline; cut only the body wall.

Internal Landmark

19. Once the worm is opened and pinned, what internal landmark are you identifying? **Seminal vesicles**

Follow the digestive pathway

20. List the digestive organs in order from mouth to anus:

Mouth → pharynx → esophagus → crop → gizzard → intestine → anus

21. In approximately which segments is the pharynx located? **Approximately 3–6**

22. In approximately which segments is the crop located? **Approximately 12–17**

23. In approximately which segments is the gizzard located? **Approximately 17–20**

Circulation and Excretion

24. Is the worm's circulatory system open or closed? **Closed**

25. Where do you find the dorsal blood vessel? **Above the digestive tract**

26. How many pairs of aortic arches are present? **Five pairs**

27. Describe what the nephridia look like: **Small, whitish tubules along the body cavity walls**

28. What is the body cavity called? **Coelom**

Reproduction and Nervous System

29. What are animals with both male and female reproductive organs within the same animal called?

Hermaphrodites

30. What are species with separate male and female individuals called? **Dioecious**

31. Describe the seminal vesicles. In approximately which segment region are they found?

Three pairs of whitish, saclike structures; approximately segments 9–14.

32. Describe what the brain looks like. **Two small, whitish, pear-shaped lobes**

33. Describe how nerves pass from the brain to the ventral nerve cord. **Around pharynx → lower ganglion → cord**

34. What should you do to be able to view the ventral nerve cord? **Move or remove a short posterior section of intestine to expose the cord beneath the gut.**

35. When you finish the dissection, how do you dispose of your worm? **Teacher's designated container**

36. You will be required to locate these external features on your drawing of the earthworm.

a. **Dorsal, Ventral, Anterior, Posterior, Mouth, Anus, Clitellum, Setae, Metameres**

37. You will be required to locate these internal features on your drawing of the earthworm.

a. **Brain (cerebral ganglia), Pharynx, Esophagus, Septa, Aortic arches (hearts), Seminal vesicles, Crop, Gizzard, Anterior intestine ("stomach"), Intestine, Dorsal blood vessel, Ventral nerve cord, Nephridia, Coelom**