

Name: _____

Date: _____

Life Science

Period: _____

Invertebrates – *Worms*



Lab: Earthworm Dissection

Viewing the external and internal anatomy of an invertebrate

Objectives

1. To learn about the external and internal anatomy of the earthworm.
2. To understand the structure and function of the external and internal organs.
3. To identify the organs of the digestive system of the earthworm.

Materials

- Earthworm
- Dissection pan
- Dissection scissors
- Dissection pins
- Probe
- Disposable gloves
- Protective eyewear
- Metric ruler

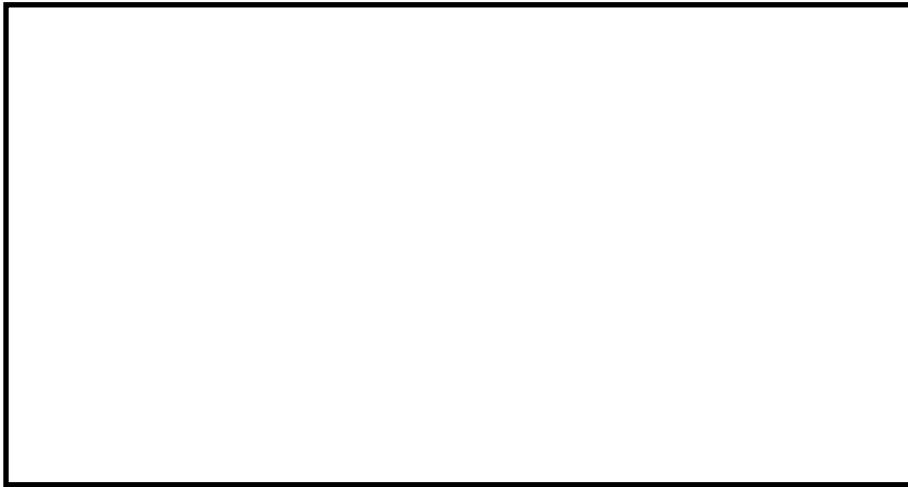
Procedure

One lab partner will read the procedure aloud while the other follows the instruction. Lab partners should take turns performing both these roles during the dissection.

External Anatomy

1. Straighten the earthworm out across the dissection tray, placing the **ventral** side down.
 - a. The **ventral** side appears flatter than the other sides of the earthworm.
 - b. The **dorsal** side is the worm's rounded top.
2. Identify the **anterior** and **posterior** ends of the earthworm.
 - a. The **anterior** end features the *prostomium*, which is a fleshy lobe that extends over the mouth.
 - b. The **posterior** end feature the *anus*, the end of the digestive tract.
3. Locate the **clitellum**, which extends from segment 33 to segment 37. The clitellum is a swelling of the earthworm near its anterior side.

4. Place a dissection pin in both ends of the earthworm to secure it in place.
5. Sketch your earthworm in the space below. Label the following parts of the worm:



- Anterior
- Posterior
- Clitellum
- Mouth
- Anus

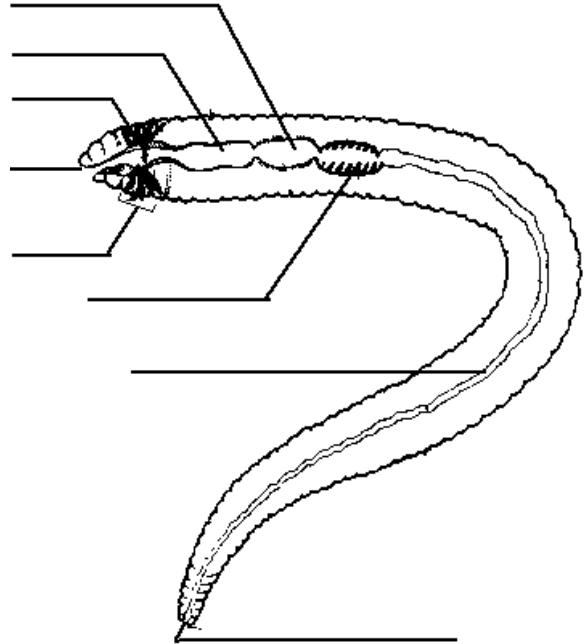
6. Record the following data:
 - a. Number of segments from anterior end to clitellum: _____
 - b. Length of earthworm: _____ cm

Internal Anatomy

7. Locate the **clitellum** and insert the tip of the scissors about 3 cm **posterior**.
8. Cut **carefully** all the way up to the head. Try to keep the scissors pointed up, and only cut through the skin. **Be careful not to damage any of the internal organs.**
9. Spread the skin of the worm out, use a teasing needle to gently tear the **septa** (little thread like structures that hold the skin to organs below it)
10. Place pins in the skin to hold it apart.
11. The **digestive system** starts at the mouth. You will trace the organs all the way to the anus and identify each on the worm.
 - a. Find the mouth opening, the first part after the mouth is the **pharynx**, you will see stringy things attached to either side of the pharynx (pharyngeal muscles).
 - b. The **esophagus** leads from the pharynx but you probably won't be able to see it, since it lies underneath the heart.
 - c. You will find two structures close to the clitellum. First in the order is the **crop**, followed by the **gizzard**. The gizzard leads to the intestine, which is as long as the worm and ends at the anus.

12. Describe the function of each digestive organ and label the diagram below:

Digestive Organ	Function
Crop	
Mouth	
Pharynx	
Intestine	
Gizzard	
Anus	
Esophagus	
Pharyngeal Muscles	



13. Use your scissors to open the crop and gizzard. Examine the contents of these organs.

14. Clean your work area as directed by your teacher.

Post-Lab

Answer the following questions in complete sentences.

1. In which organ (crop or gizzard) did you find the contents to be most ground up and why?

2. How could you find out whether an earthworm eats soil or not?
