

## The Earthworm Lab

**Purpose:** To examine the external and internal structures of the earthworm, *Lumbricus terrestris*. The earthworm belongs to the phylum Annelida, the segmented worms. The common earthworm's value to humans is considerable.

### Part 1 (Day 1): External Structure of the Earthworm

**Procedure:** A) Examine the specimen carefully. Note that the body is made up of regular muscular divisions called segments, numbered from anterior to posterior, beginning with number 1 at the mouth. Specific segments are used as reference points in order to locate certain structures. The chart at the front of the lab will help you find specific structures in the specimen being examined. Use your text or other reference books to find information about different systems in the earthworm.

#### **Observations:**

1. Count the number of segments in the earthworm being studied. How many?  
B) Rub your finger over the surface of the earthworm. (Although they smell, these are clean specimens preserved in alcohol)
2. Describe the feeling and appearance of the body covering.  
C) Using a hand magnifier to examine a segment for the presence of bristles called setae (seta: singular). Try to determine the number of setae per segment. If you slide your finger along the lower sides of the animal, you should feel these small, projecting bristles.
3. How many setae are present per segment?
4. Suggest a likely role for the setae.
5. Using some reference, describe in detail, how the earthworm moves.  
D) Observe the anterior and posterior ends of the worm.
6. Describe the differences in appearance between the anterior and posterior?  
E) Locate the mouth on the ventral side of the first segment and the anus opening on the last segment. Observe the prostomium, upper lip.
7. What is the advantage of having a digestive tract, or alimentary canal, which runs from the mouth at the anterior end all the way to the posterior end of the organism?  
F) Locate the seminal receptacles, openings at segments 9 and 10, designed to receive sperm from another earthworm. Observe the oviduct opening on segment 14. Eggs leave the body through these two small pores. Locate the sperm duct opening on segment 15, the point from which the sperms are released.
8. Can earthworms self fertilize? Define the term hermaphrodite.  
G) Examine the clitellum, a thick glandular swelling which runs from segments 32 – 37.
9. What is the function of the clitellum?

