

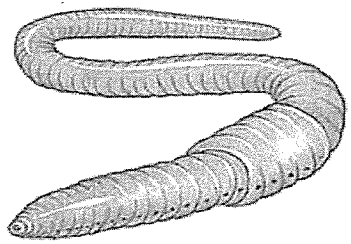
Name(s) \_\_\_\_\_

## Observation of a Living Earthworm

1. Earthworms belong to the Kingdom \_\_\_\_\_ the Phylum \_\_\_\_\_.

2. List two characteristics of Annalids

3. Name two other organisms in the same Phylum Annalida.



4. Place the earthworm on a moist paper towel in a dissecting pan. **Observe the worm as it moves.** The leading end is the anterior end, the opposite is the posterior end. Roll the worm over and observe what happens. The side that the worm prefers UP is the dorsal side. The side it prefers down is the ventral side. which side was dorsal/ventral/anterior/posterior. What other clues on the earthworm would tell you which end was which?

5. **Observe the Earthworm for five minutes.** Write your observations of its activity in the space below.

What is a hydrostatic skeleton?

Describe how the worm movesówhat muscles are necessary for the earthworm to move. Use your book as a reference to sketch the 2 muscles.

Now that you are familiar with your worm, it is time to give it a name. Make sure the name you choose is appropriate for the earthworm's sex.

Name of your worm \_\_\_\_\_

6. **Earthworms Sizes**--Use a ruler to measure the length of your worm in centimeters. Worms are divided into segments. Count the number of segments on your worm (hint you may want to count a small portion of the worm and multiply). Compare your worm to three other worms in the room

Your worm Worm 2 Worm 3 Worm 4

Length (cm) \_\_\_\_\_

Number of segments \_\_\_\_\_

Longer worms have \_\_\_\_\_ segments. (more, or less, or the same)

7. **Locate the thickening of the earthworm's body at about segment 30.** (Segments are numbered 1 to 30, one being the first segment on the head. This swelling is called the **CLITELLUM**

Is the clitellum located more toward the anterior or posterior of the worm?

8. On the ventral side of the earthworm are small bristles called **SETAE**. They are too tiny to see, but you can **feel them by running your fingers along the ventral side of the worm**. Also note the tiny openings at around the **14th segment**. These are the **SEMINAL RECEPTACLES**, where sperm is exchanged between two mating worms.

What is the function of setae?

What is the function of the openings at segment #14?

9. Sketch the earthworm in the space below. Label the dorsal side, ventral side, posterior and anterior ends. Also label the clitellum, setae, and seminal receptacles.

10. **Study the earthworm's head**. Does it appear to have any sense organs, such as eyes, ears, nose, or mouth? Do you think the earthworm is capable of sensing... (make your predictions below- yes or no)

Light? \_\_\_\_\_ Odor? \_\_\_\_\_ Sound? \_\_\_\_\_ Taste? \_\_\_\_\_ Touch? \_\_\_\_\_

### 11. Response to Touch (stimulation)

---Place a dry paper towel on one side of the pan and a moist paper towel on the other. Stretch the worm so that it lays across both towels. Observe the earthworm's response. Which direction does it move. Perform ten trials, alternating the worm's head so that half the time it lays on the moist, and half the time it lays on the dry to start with. Record the worm's responses in the table below.

Head starts on dry	Response (moves toward wet or dry)
Trial 1	
Trial 2	
Trial 3	
Trial 4	
Head starts on wet	
Trial 1	
Trial 2	
Trial 3	
Trial 4	

Use the data above to **write a conclusion** about whether the earthworm can sense wetness or dryness. You may want to include other initial observations in your conclusions.

12. Remove the dry paper towel from the pan and let the worm just move around for a while. Use a pipette to drop a water droplet on its anterior end. Record its reactions. Drop water on its posterior end and record its reactions

Response to water drop on anterior end

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Response to water drop on posterior end

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Should you revise your conclusions in #11. Does this test indicate that the earthworm can sense being touched?

13. **Response to Odor**---Obtain a Q-tip dipped in acetone (fingernail polish remover). First, wave the Q-tip near the worm's posterior end. and record the worms reaction. Then repeat this process at the anterior end. Important - Do not touch the worm, it is toxic!

Response

Ammonia anterior \_\_\_\_\_

Ammonia posterior \_\_\_\_\_

Does the earthworm have a sense of smell? Based on your data, is the front or hind end more sensitive to odors?

14. **Response to Light** -- For this part of the experiment, you will be given a flashlight and the room will be darkened. Discuss with your partner and develop how you will test the worms response to light.

Describe your experiment.

Collect data and construct data table.

Write conclusions