

Names: _____

Purpose: To observe the behaviors of an earthworm in response to stimuli.

Pre-Lab Questions (50 points)

1. Where should you keep the earthworm?
2. What unit do you use to record the length of the earthworm?
3. What is the definition of phototaxis?
4. What is the definition of chemotaxis?
5. How many points is this lab worth?

Materials

- | | | |
|----------------------------|----------------------------|--------------------------------|
| • Earthworm | • Wet piece of paper towel | • Light source (may use phone) |
| • Paper plate | • Q-tips | • Ruler |
| • Dry piece of paper towel | • Vinegar in small cup | • Index Card |

Keep earthworm on paper plate!

Be gentle with the earthworms!

Be careful with rulers!

Observation 1: Response to being flipped over

1. Measure the earthworm with a ruler measuring in centimeters.
2. Record earthworm's measurement here: _____ cm
3. Gently flip over earthworm
4. Record observations of the earthworm's response to being flipped over here:

Observation 2: Response to running into index card

1. Place index card in front earthworm (anterior end)
2. Record observations of the earthworm's response to running into the earthworm here:

3. Place index card behind earthworm (posterior end)
4. Record observations of the earthworm's response to the index card behind them here:

Observation 3: Response to touch

1. Touch the earthworm with dry piece of paper towel
2. Record observations of the earthworm's response to the dry piece of paper towel here:

3. Touch the earthworm with a wet piece of paper towel
4. Record observations of the earthworm's response to the wet piece of paper towel here:

Names: _____

Observation 4: Response to odor

1. Dip Q-tip in vinegar
2. Place the Q-tip at the anterior end of the earthworm (DO NOT TOUCH THE EARTHWORM WITH THE VINEGAR)
3. Record observations of earthworm's response to vinegar at its anterior end here:

4. Place the Q-tip at the posterior end of the earthworm (DO NOT TOUCH THE EARTHWORM WITH THE VINEGAR)
5. Record observations of earthworm's response to vinegar at its anterior end here:

6. Does the earthworm exhibit positive chemotaxis (moving toward the vinegar) or negative chemotaxis (moving away from the vinegar)?

Observation 5: Response to light

1. Shine your flashlight on the earthworm's anterior end.
2. Record observations of the earthworm's response to the light here:

3. Does the earthworm exhibit POSITIVE PHOTOTAXIS (moves toward the light) or NEGATIVE PHOTOTAXIS (moves away from the light)?

Observation 6: Response to gravity

1. Gently tilt the paper plate with the earthworm on it.
2. Record the observations of the earthworm's response to gravity here:

-

Post-Lab Cleanup

1. Return earthworm back to Mrs. Osborne.
2. Return ruler back to Mrs. Osborne.
3. Dump out unused vinegar in sink.
4. Place wet paper towel, dry paper towel, paper plate, Q-tip, index card, and cup in trash.
5. Answer Post-Lab Questions.

Post-Lab Questions (50 points)

1. What responses to stimuli does a human have in common with an earthworm?

2. Based on your observations, do earthworms prefer a wet or a dry environment?

3. Based on your observations, do earthworms prefer bright or dark environments?