

## Essential Question: Who speaks for Nature?



### Act 8 – Red Worm Ranching Lab



- Purpose:** a. I understand a red worms vital role in the cycling of matter in the environment.  
b. I can determine which type of food(s) red worms prefer.

Worm Ranching is done in a special ***silent*** teamwork exercise. At the start of the experiment, the worms will be sorted and massed. Then at the end, the worms will be sorted and massed again to tell if the worms lost or gained mass. Each class member will then develop a bar graph, which shows the growth (positive) or decline (negative) of each group's worm ***population***. Finally you will analyze the results to see which food was the best.

**Procedure:**

1. Complete Part 1 - Pre Lab q's 1 - 8
2. Complete worm ranch and add food per lab instructions.
5. Clean/Mass 15 or 20 (as directed) Red wrigglers. Put worms in ranch on top of food.
6. Mark **Start Mass of Worms on 2L bottle AND on Data tables.**
7. Incubate
8. Later, Mass each ranch's worms. **Enter End Mass in Data Table**
9. Calculate mass gain for each ranch using the formula:  
**Loss/Gain % = 100 ( [end mass / start mass] -1 )**
10. Complete the conclusion below.

**Part A- Pre-lab questions: (1-5)**

1. Record the study subject, manipulated variable, and responding variable below:

**SS** \_\_\_\_\_

**MV** \_\_\_\_\_

**RV** \_\_\_\_\_

2. Explain what type of food **and** which lab station(s) are being used for the class's Control. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. What will YOUR TEAM's experimental trial be? \_\_\_\_\_

\_\_\_\_\_

4. What question is being investigated in this experiment? (*How does the MV affect the SS's RV?*)

\_\_\_\_\_

\_\_\_\_\_

"There is a deep interconnectedness of all life on earth, from the tiniest organisms, to the largest ecosystems, and absolutely between each person."

**Essential Question: Who speaks for Nature?**

“There is a deep interconnectedness of all life on earth, from the tiniest organisms, to the largest ecosystems, and absolutely between each person.”

**Student Review:** 1-Below Standard, 2-Approaching Standard, 3-Standard, 4-Above Standard  
Use the scale to evaluate completeness & correctness of the job. Put score, Initial & date in boxes.

Score

Initial/Date

5. Create a hypothesis to answer your scientific question:

IF (*SS + MV*) \_\_\_\_\_

THEN (*ET + Prediction*) \_\_\_\_\_

COMPARED TO (*CT*) \_\_\_\_\_

BECAUSE (*explanation why ss, mv, rv & WHY*) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THEREFORE (*conclusion*) \_\_\_\_\_

**Part B – Data**

<b>Data Table 1. Earthworm Results *</b>				
<b>Station</b>	<b>Type of Food</b>	<b>Start Mass</b>	<b>End Mass</b>	<b>Loss/Gain % **</b>
1				
2				
3				
4				
5				
6				
7				
8				

\* All mass measured in grams

\*\* **Loss/Gain % = 100 ( [end mass / start mass] -1 )**

**Part C –Analysis Questions:**

1. Tell 1 controlled variable that matters and tell why it was controlled (Not MV or RV!) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Student Review:** 1-Below Standard, 2-Approaching Standard, 3-Standard, 4-Above Standard  
Use the scale to evaluate completeness & correctness of the job. Put score, Initial & date in boxes.

Score

Initial/Date

2. Tell 2 uncontrolled variables that matter and why each matters (Not MV or RV!)

a.

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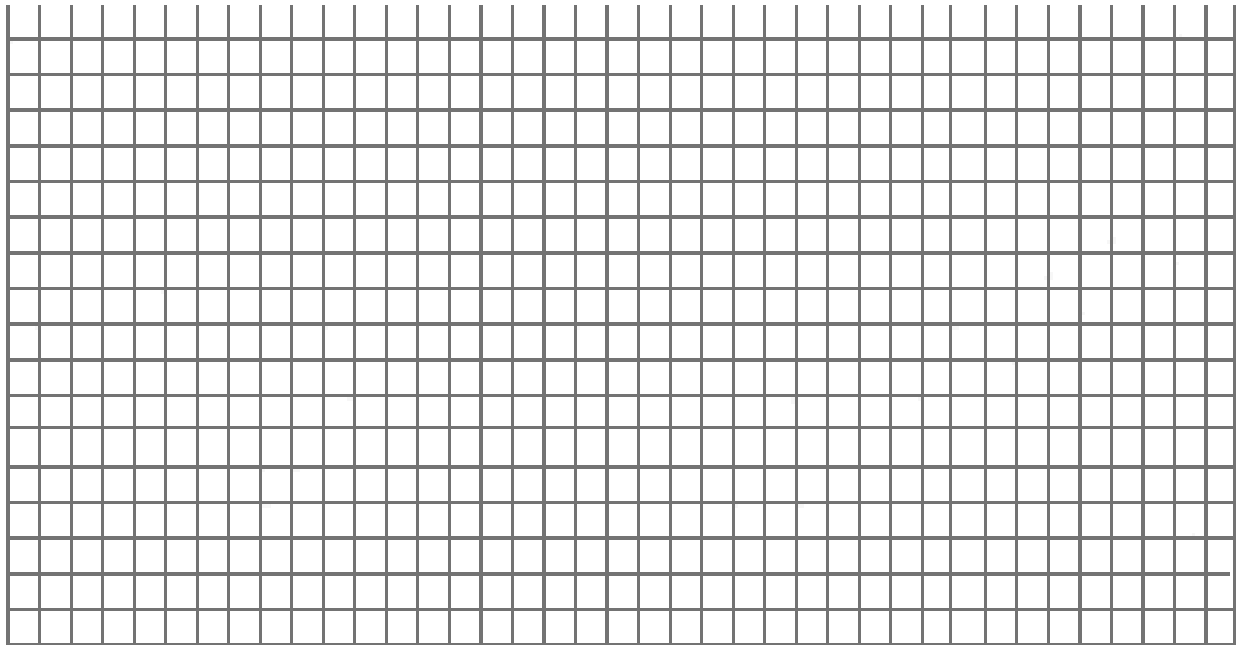
b.

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**Part D - Graph 1. Earthworm Results – Label the X/Y axis and graph the data from your lab.**



**Part E – Conclusion** - This must be typed or completed in blue/black pen.

1. This experiment shows us that...

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2. Tell if the hypothesis was **Accepted or Rejected** & explain why this was so (3+ pieces of evidence...)

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