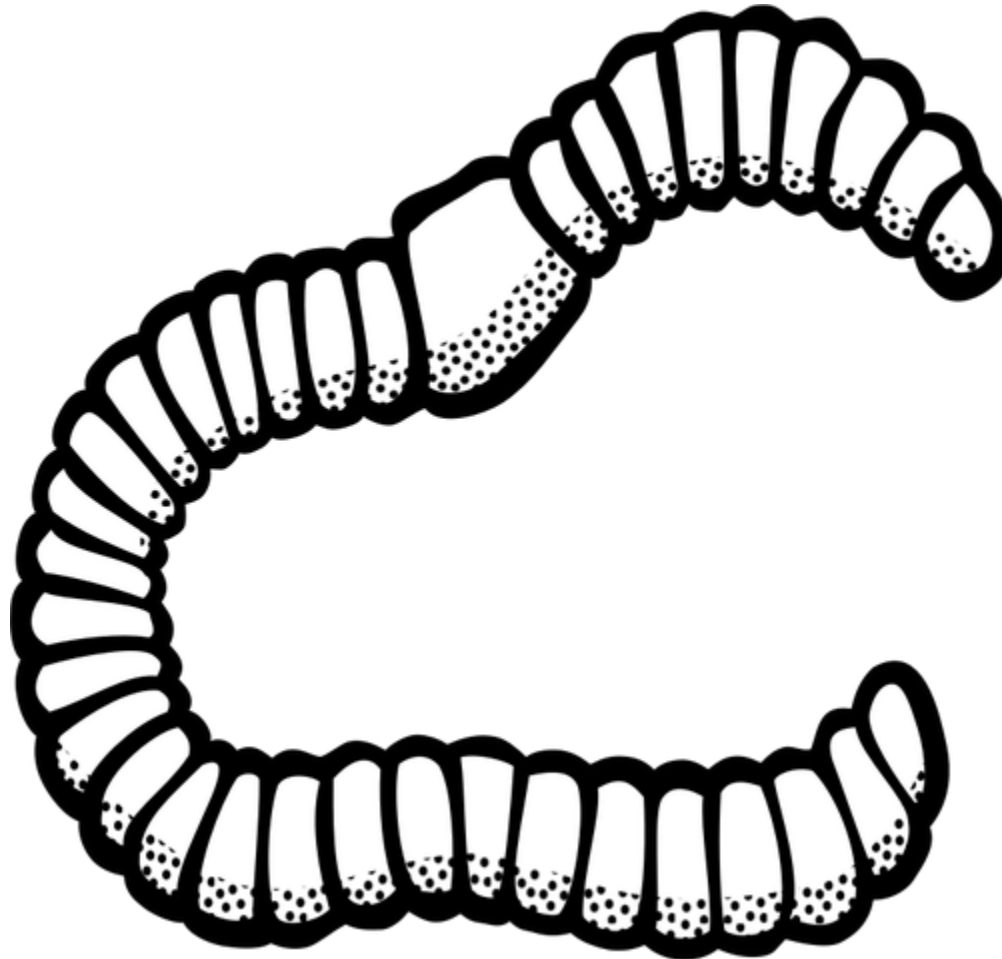


Wormologist: _____

Worm World Science Journal



Worm Rights and Rules

- Every worm will be treated with care.
- Nothing should ever be done on purpose to harm any worm.
- Worms should always be handled gently and returned to their worm world as soon as possible.
- If a wormologist is no longer interested in tending their worms, they are welcome to return them to the teacher.
- If a worm dies, we will understand it is a part of the natural cycle. (Dispose of any dead worms in an outside trash or toss them into a garden/vegetated area for decomposition.)
- Always wash your hands BEFORE and AFTER you touch any of your worms.

Worm Care

- Keep their bedding moist using the spray bottle.
- Check to make sure the worm tea gap is not full of water. This is the gap between the container with the worms in it that has holes in the bottom and the bottom container it is nested in.
- Feed worms as instructed.
- Keep the worms in a Goldilocks location – not too cold (more than 55 degrees) and not too hot (less than 77 degrees).

Worm World Observation – What do you notice?

Using your STEM superpower of observation, use your senses to make observations about the worm world.

I noticed _____

_____.

I noticed _____

_____.

I noticed _____

_____.

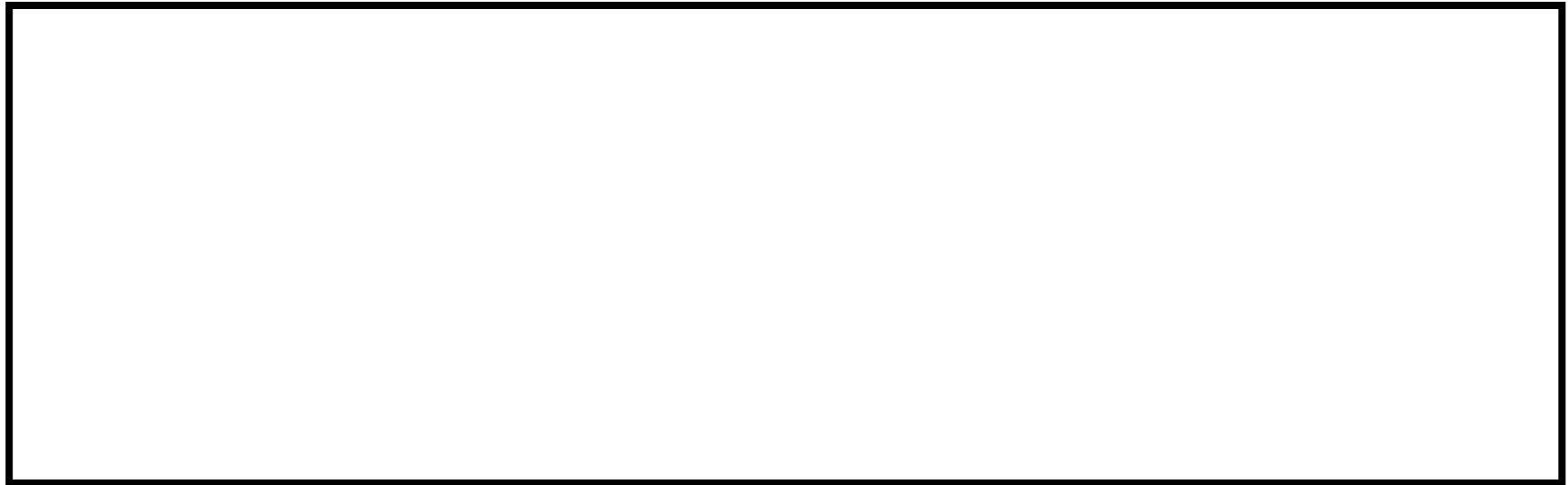
I noticed _____

_____.

I noticed _____

_____.

Carefully draw a picture of a red wiggler and a night crawler below.



Worm World Imagination and Curiosity – What do you wonder?

Using your STEM superpower of imagination and curiosity, record what you wonder about the worms and their world.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

Yucky Worms by Vivian French (Illustrated by Jessica Ahlber)

Where do earthworms live? _____

What do worms eat? _____

What is worm poop called? _____

What other living things benefit from worm poop? _____

How do worm tunnels help plants? _____

What kind of animals like to eat worms? _____

Would you ever eat a worm? _____

What misconception, or wrong idea, does Grandma correct?

What do worms use to breathe? _____

What does a worm do if it is too hot? _____

What does a worm do if it is too cold? _____

Do worms have eyes? _____

Do worms have muscles? _____

Worms are not yucky. Worms are our
_____!

Worm World Experiment One – Favorite Bedding

Testable Question: Which type of bedding do red wigglers like better – coconut husk or shredded cardboard?

Hypotheses – there are three possible outcomes of this experiment.

The red wigglers like **coconut husk** more than **shredded cardboard**.

The red wigglers like **shredded cardboard** more than **coconut husk**.

The red wigglers like **coconut husk** and **shredded cardboard** the same.

Materials List

One worm world with half of the bedding coconut husk and half of the bedding shredded cardboard. The worm world should have at least 25 red wigglers (ish).



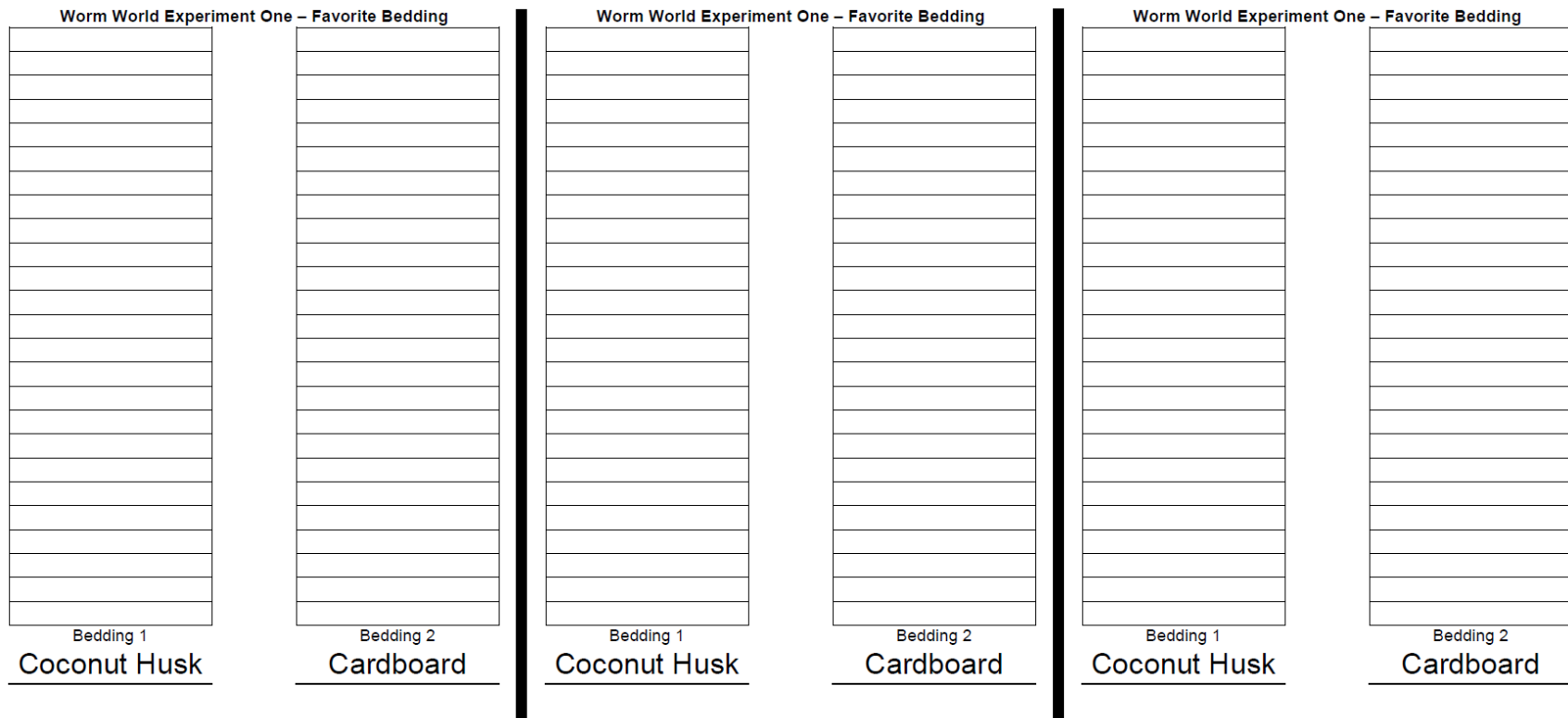
Procedure

- 1) Carefully remove half of the bedding and sift through it to remove all the worms. Be sure to place the worms on a moist paper towel to keep them happy.
- 2) Carefully remove the other half of the bedding and sift through it to remove all the worms. Be sure to place the worms on a moist paper towel to keep them happy.
- 3) Replace the bedding so it is again half-and-half. Place the worms in the middle of the bedding. Moisten the bedding if necessary. Place the lid on the worm world and leave it overnight to allow the worms to choose their favorite bedding.
- 4) After about one day has passed, repeat steps 1 and 2 but this time count the worms on each side and record data. Then repeat step 3 to collect more data.



Worm World Imagination and Curiosity – Imagine the Data

What will the data look like if...



They like coconut husk more than shredded cardboard.

They like shredded cardboard more than coconut husk.

They like coconut husk and shredded cardboard the same.

Worm World Experiment One – Favorite Bedding

Bedding 1

Coconut Husk

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Bedding 2

Cardboard

Worm World Experiment One – Favorite Bedding – Day 2

Bedding 1

Coconut Husk

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Bedding 2

Cardboard

Worm World Experiment One – Favorite Bedding – Day 3

25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Bedding 1

Coconut Husk

Bedding 2

Cardboard

Worm World Experiment One – Favorite Bedding – Day 4

Bedding 1

Coconut Husk

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Bedding 2

Cardboard

Worm World Experiment One – Favorite Bedding – Day 5

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Bedding 1

Coconut Husk

Bedding 2

Cardboard

Decision Based on Data Collection and Analysis

Using your STEM superpower of data collection and analysis, record which choice the red wigglers like the best and explain how the data you collected supports this choice.

Based on the data I collected from my experiment:

Evidence suggests red wigglers like

_____ more than _____.

OR

Evidence suggests red wigglers like

_____ and _____ the same.

Here is what I noticed about the data that helped me come to this conclusion:

1) _____

2) _____

3) _____

This is a Book to Read with a Worm by Jodie Wheeler-Toppen (Illustrated by Margaret McCartney)

Is your worm an adult or still a kid? _____

How do you know? _____

Draw a picture of what your worm's digestive system looked like when you shined the flashlight through the worm's body.



What did the worm sounds like when it was inside the paper cone you made? _____

What was your favorite part of reading this book with a worm and why? _____

Worm World Experiment Two – Favorite Food

Testable Question:

Which type of food do red wigglers like better – _____ or _____?

Hypotheses – Using your STEM superpower of imagination, describe the three possible hypotheses for this experiment.

The red wigglers like _____ more than _____.

The red wigglers like _____ more than _____.

The red wigglers like _____ and _____ the same.

Materials List

One worm world with all the bedding mixed together so it is the same throughout the worm world. The worm world at least 25 red wigglers (ish).

Two food options for the red wigglers – fruits, vegetables, coffee grounds, and tea grounds are good. No meat and no dairy products.

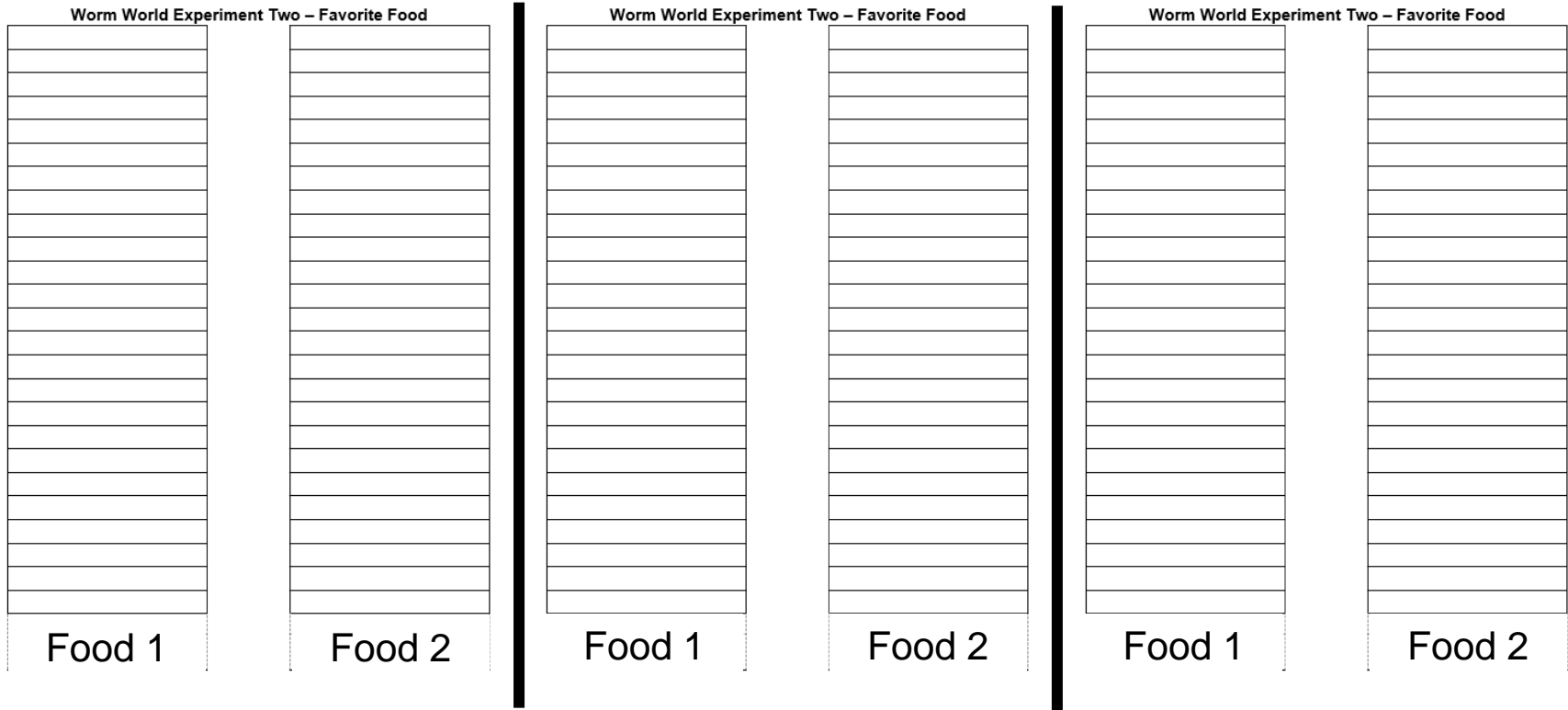
Procedure

- 1) Place the two food options about 1 inch from either side of the worm world.
- 2) Place the worms in the middle of the worm world. Moisten the bedding if necessary. Place the lid on the worm world and leave it overnight to allow the worms to choose their favorite food.
- 3) Carefully remove Food 1 and place it aside so it can be reused.
- 4) Remove the bedding on the Food 1 half of the worm world. Sift through it to remove all the worms. Count the worms that chose Food 1 and record your data.
- 5) Carefully remove Food 2 and place it aside so it can be reused.
- 6) Remove the bedding on the Food 2 half of the worm world. Sift through it to remove all the worms. Count the worms that chose Food 2 and record your data.
- 7) Replace the bedding so it is again consistent across the worm world.
- 8) Replace the two food options. If one food option has run out, replenish it.
- 9) Repeat steps 2-8.



Worm World Imagination and Curiosity – Imagine the Data

Using your STEM superpower of imagination, show what the data might look like for each hypothesis below.



Food 1 is their favorite.

Food 2 is their favorite.

They like both the same.

Worm World Experiment Two – Favorite Food – Day 2

Food 1

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Food 2

Worm World Experiment Two – Favorite Food – Day 3

Food 1

25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Food 2

Worm World Experiment Two – Favorite Food – Day 4

Food 1

25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Food 2

Decision Based on Data Collection and Analysis

Using your STEM superpower of data collection and analysis, record which choice the red wigglers like the best and explain how the data you collected supports this choice.

Based on the data I collected from my experiment:

Evidence suggests red wigglers like

_____ more than _____.

OR

Evidence suggests red wigglers like

_____ and _____ the same.

Here is what I noticed about the data that helped me come to this conclusion:

1) _____

2) _____

3) _____

Worm World Imagination and Curiosity – What do you wonder?

Using your STEM superpower of imagination and curiosity, record what you wonder about the worms and their world now.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

I wonder _____

_____.

Testable Question

Rewrite one of your “I wonder...” questions below that is testable. _____

What will the two choices for the worms be? _____

How will you design this test? _____

Worm World Experiment Three – _____

Testable Question:

Will red wigglers like/prefer _____ or _____?

Hypotheses – Using your STEM superpower of imagination, describe the three possible hypotheses for this experiment.

The red wigglers like _____ more than _____.

The red wigglers like _____ more than _____.

The red wigglers like _____ and _____ the same.

Materials List



Procedure

- 1)

- 2)

Procedure (continued)

3)

4)

5)

6)

7)

Worm World Experiment Three – Day 1 _____

25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Choice 1

Choice 2

Worm World Experiment Three - Day 2 _____

Choice 1

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Choice 2

Worm World Experiment Three - Day 5 _____

Choice 1

- 25
- 24
- 23
- 22
- 21
- 20
- 19
- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Choice 2

Decision Based on Data Collection and Analysis

Using your STEM superpower of data collection and analysis, record which choice the red wigglers like the best and explain how the data you collected supports this choice.

Based on the data I collected from my experiment:

Evidence suggests red wigglers like

_____ more than _____.

OR

Evidence suggests red wigglers like

_____ and _____ the same.

Here is what I noticed about the data that helped me come to this conclusion:

1) _____

2) _____

3) _____

My Advice to Another Wormologist

Here is what worms need to survive:

Information for a Worm Hater

Here is why worms are our friends:
