Wormologist: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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*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**

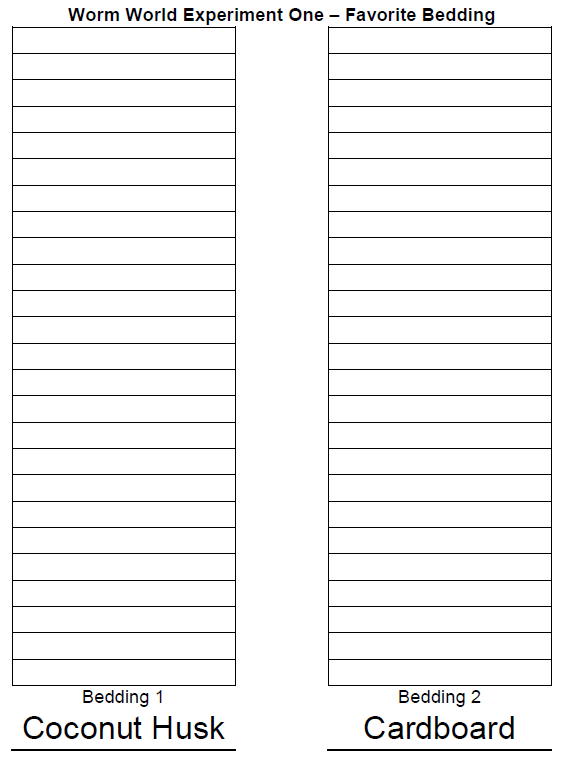
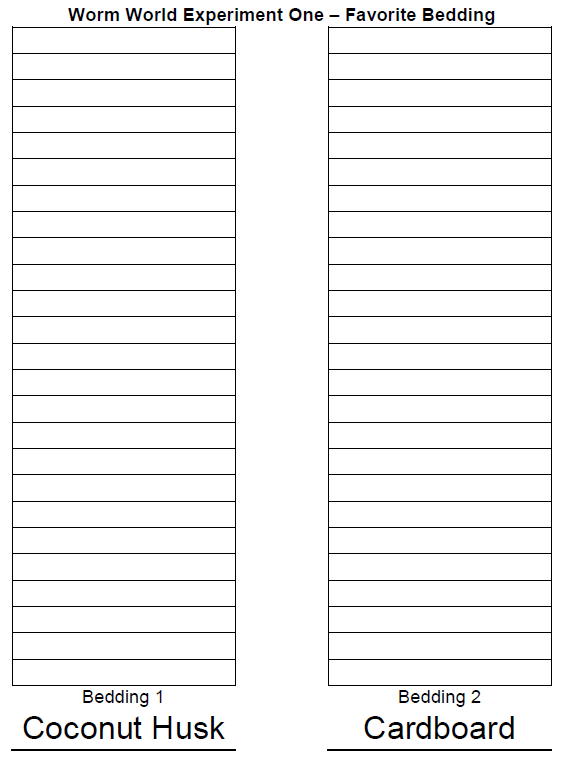
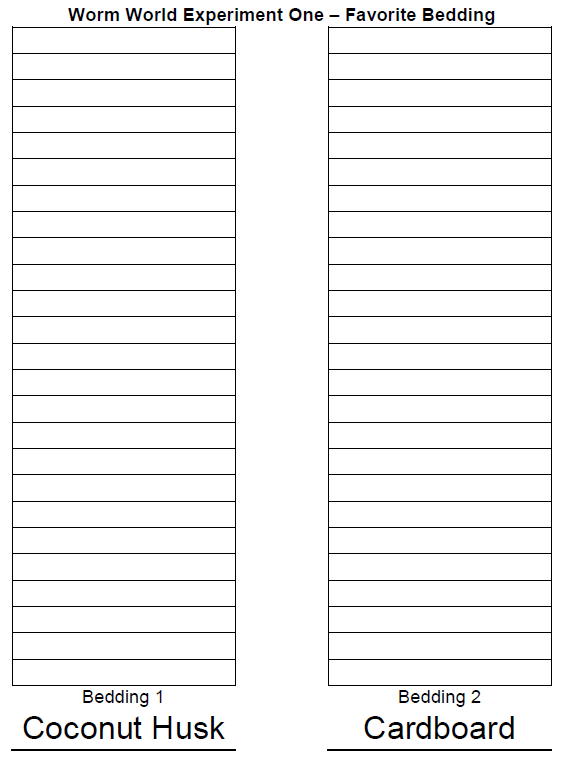
One worm world with half of the bedding coconut husk and half of the bedding shredded cardboard. The worm world should have at least 25 red wigglers (ish).

**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**

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| Coconut Husk |  | Cardboard |

**Worm World Experiment One – Favorite Bedding – Day 2**

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**Worm World Experiment One – Favorite Bedding – Day 3**

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| Coconut Husk |  | Cardboard |

**Worm World Experiment One – Favorite Bedding – Day 4**

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| Bedding 1 |  | Bedding 2 |
| Coconut Husk |  | Cardboard |

**Worm World Experiment One – Favorite Bedding – Day 5**

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| Bedding 1 |  | Bedding 2 |
| Coconut Husk |  | 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).

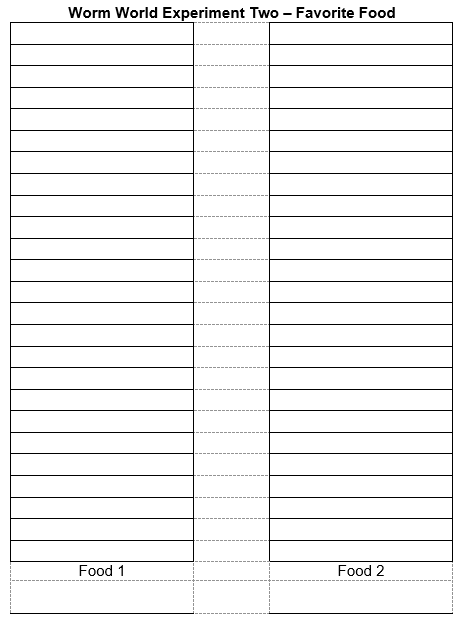
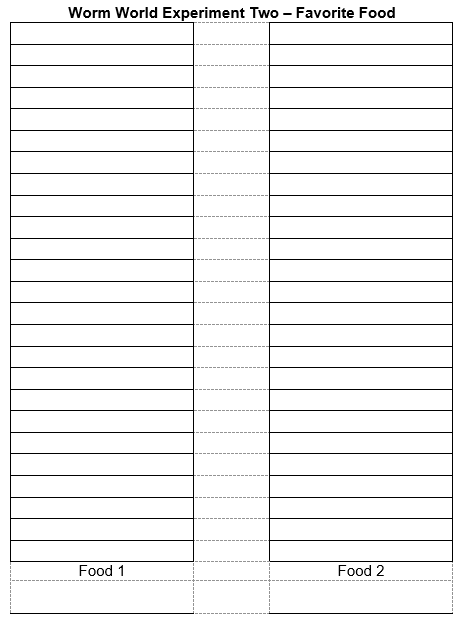
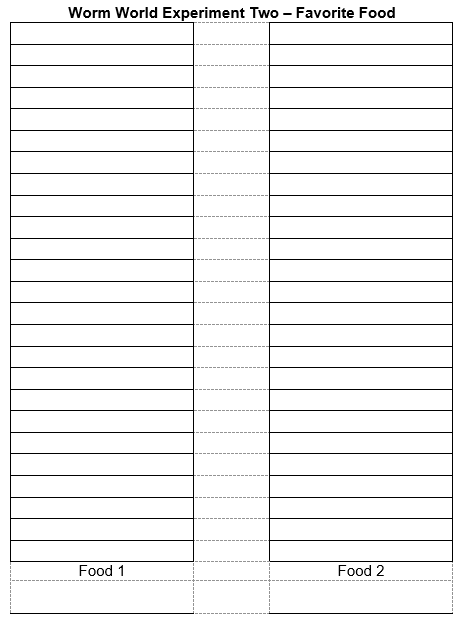
Two food options for the red wigglers – fruits, vegetables, coffee grounds, and tea grounds are good. No meat and no dairy products.

**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 2

Food 1

Food 1

Food 2

Food 1

Food 2

Food 1 is their favorite.

Food 2 is their favorite.

They like both the same.

**Worm World Experiment Two – Favorite Food – Day 1**

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**Worm World Experiment Two – Favorite Food – Day 2**

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**Worm World Experiment Two – Favorite Food – Day 3**

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**Worm World Experiment Two – Favorite Food – Day 4**

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**Worm World Experiment Two – Favorite Food – Day 5**

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**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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I wonder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**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**

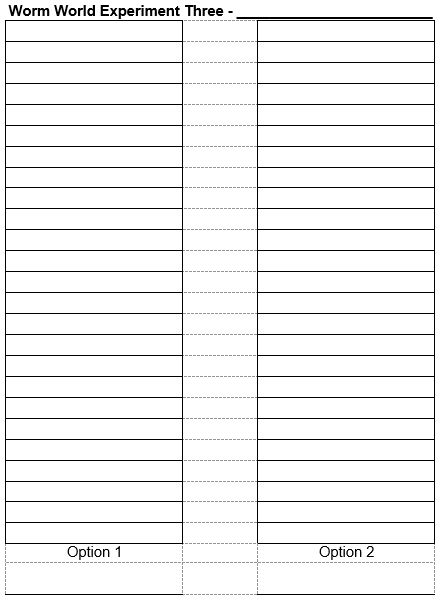
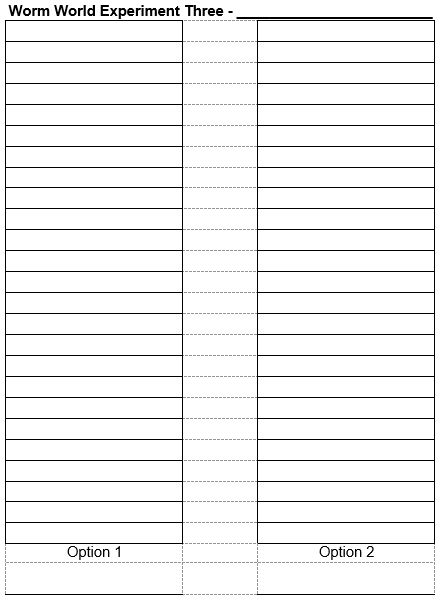
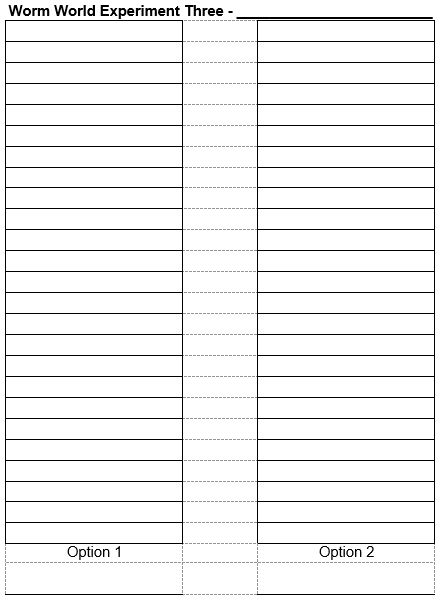
1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Procedure (continued)**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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.

Choice 2

Choice 1

Choice 2

Choice 2

Choice 1

Choice 1

Choice 1 is their favorite. Choice 2 is their favorite. They like both the same.

**Worm World Experiment Three – Day 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Worm World Experiment Three - Day 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Choice 1 |  | Choice 2 |
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**Worm World Experiment Three - Day 3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Choice 1 |  | Choice 2 |
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**Worm World Experiment Three - Day 4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Worm World Experiment Three - Day 5 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Choice 1 |  | Choice 2 |
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**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:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_