TASK 1: Asking a Testable Question

**1. What are some observations of your Ecocolumn based on your data?**

*Example: Our dissolved oxygen started out high, then dropped. Around the same time that our dissolved oxygen dropped, our fish also died. Our aquatic temperature was pretty much the same every day. Our pH was also pretty much the same.*

Our observations from our data:

**2. What are questions that you could test that are based on your data? Generate at least five questions (not including these examples).**

**There are a lot of ways to approach this. You might choose to:**

**a)** **examine something that happened in your Ecocolumn in more detail;**

*How does fish decomposition impact dissolved oxygen levels? How does dissolved oxygen impact fish survival?*

**b)** **ask whether changing how the Ecocolumn was set up would yield different results;**

*Does the number of plants in an Ecocolumn impact whether or not the dissolved oxygen changes? How does increasing the amount of water in the aquatic chamber impact dissolved oxygen levels?*

**c)** **ask whether adding something to your Ecocolumn would impact the system.**

*How would introducing an acid in the terrestrial column impact the pH in the aquatic chamber?*

The questions must be: relevant to your observations and testable.

Our questions from our data:

1.

2.

3.

4.

5.

**3. Choose one question from your brainstorm. What background information could help you refine your question?**

*Example: What factors influence dissolved oxygen? How do dissolved oxygen levels change in other ecosystems, and why? What levels of dissolved oxygen are considered dangerous?*

**4. Gather a few pieces of information related to your question. Refine one of your questions based on the background information you gathered. Write your refined question down and explain how background information helped you refine it.**

*Example:*

*We learned that different species of fish can tolerate different levels of dissolved oxygen in the water. We also learned that often low dissolved oxygen in an ecosystem often causes fish to die. We refined our question to be specific to the type of fish we used in our Ecocolumn.*

*Refined question: How does lower dissolved oxygen impact fish survival in minnows?*

What we learned:

Refined question:

**5. Pair share: Share your refined question with another group. Have them write feedback here.**

Is the question Relevant to their Ecocolumn Data?

Is the question Testable (are the independent and dependent variables measurable)?

Has the question been Refined with background information?

Is the question phrased in a scientific format? (How does \_\_\_ affect \_\_\_\_?)

What could this group do to improve their question (at least 1 thing)?