Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Per: 1 2 3 4 5 6

**Background:** As more and more homes, shopping malls, and other businesses are built in Washington, the natural habitat that sustains native plants, insects, birds, and small animals is disappearing. Native plants are mowed down to create lawns. As a result, small mammals, like rabbits, have nowhere to hide from predators. Birds are losing spaces to build their nests and the food they need to feed their babies. Squirrels, chipmunks, raccoons, ducks, quail, blue jays, and woodpeckers cannot find the food they need to survive the winter.

**Designing a research study**

1. Ask a question:

**Question:** How do different locations of a schoolyard affect the biodiversity of that area? You will be comparing two locations.

1. Identify your variables:

**Manipulated Variable** (what are you changing)**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Responding Variable** (prediction)**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Choose two locations:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write your Hypothesis:

**Hypothesis** (Include your locations!)

If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**Materials:**

* 1 foot by 1 foot quadrat
* Thermometer
* ~~Lab Notebook~~ Packet
* Pencil
* Binder

**Roles:**

Director: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Materials Manager: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Procedure:**

Check to make sure all materials are present.

1. Randomly select an area within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Place the quadrat on the ground.
3. Count how many different types organisms are in the quadrat.
4. Record the number of types of organisms in your data section.
5. Repeat steps 2-5 two more times.
6. Move to the next area, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Repeat steps 3-6 within this second area.
8. Bring in all the materials.

**Data:**

Title (mv vs rv): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Area** | **# of Different Types of Organisms** | | | |
| Trial 1 | Trial 2 | Trial 3 | Average |
|  |  |  |  |  |
|  |  |  |  |  |

**Analysis: Show your work and place your calculated values in the data table.**

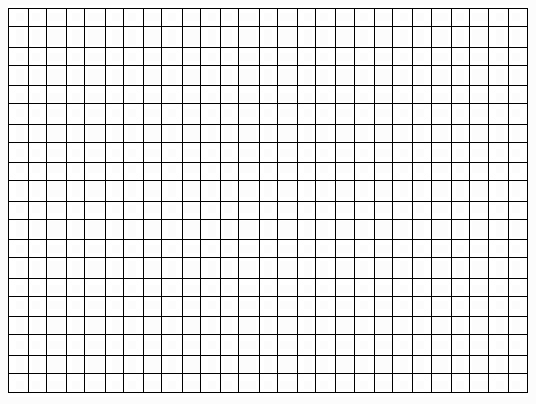
(Quadrat Sample 1 + Sample 2 + Sample 3)/3 = Ave.

Average number of organisms in Area #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Average number of organisms in Area #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Bar Graph:*

Title (mv vs rv): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Conclusion:**

1. In a complete sentence answer the following question… Did the data support your hypothesis?

2. In a complete sentence answer the following question… Describe the data.

3. In a complete sentence use a scientific explanation to describe why the responding variable changed in the way that it did.

4. In a complete sentence explain what might have gone wrong in the experiment?

5. In a complete sentence ask a new question… what is a new test you could propose?