Lab Practical #5 Winogradsky Columns Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Observation During the Week of: |  |
| Week 1  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 2  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 3  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 4  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

|  |  |
| --- | --- |
| Observation During the Week of: |  |
| Week 5  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 6  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 7  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 8  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

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| --- | --- |
| Observation During the Week of: |  |
| Week 9  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 10  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 11  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Week 12  Actual Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

**Control**

**Start: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 1: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 2: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Control**

**Month 4: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 5: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 6: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Experimental**

**Start: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 1: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 2: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Experimental**

**Month 4: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 5: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Month 6: Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lab Practical: Establishing a sustainable ecosystem**

**Questions:**

1. How do the various columns differ? How are they the same? Explain the differences you see.
2. Did you observe changes in the control column? If so, explain why they occurred.
3. Winogradsky columns form oxygen concentration gradients. Predict the distribution of oxygen

throughout the column. (Consider the entire column: the sediment, the water, and the air.)

1. Discuss how abiotic factors play a role in the stratification (the layering) of the different types of microbes
2. Is this a self-sustained closed system (all the inputs needed by the different organisms are also produced within the system)? What is the one thing that is needed to keep this system going? Explain.
3. Do you consider the Winogradsky column to be an organism, population, community, or ecosystem? Explain your answer.
4. Explain how Winogradsky columns illustrate the diversity of microorganisms found on Earth today

in terms of the diversity of niches they occupy.

1. Explain what the Winogradsky columns illustrate about life on early Earth.