**Introduction**

* 1. Background
     1. This section explains the purpose of doing this lab. Ex. The purpose of this \_ lab is to…
     2. It is here that you give background information on the general topic that the lab is studying to help a reader of your lab report to understand the problem. You may need to refer to your textbook, notes from the teacher, library books, credible Internet sources, etc. Include as much as you can find that is relevant to the topic. \*Keep track of all sources for your bibliography.
  2. Experimental Design
     1. The experimental question/problem that accurately states what is being investigated. What is the question you are going to answer/ or state the goal of the experiment. The problem should be stated as clearly as possible and written as a question that cannot be answered with “yes” or “no.”
     2. The independent variable. The variable that you are going to alter or change throughout your experiment, identified after the word “if” in your hypothesis.
     3. The dependent variable. The variable that you are measuring, identified after the word “then” in your hypothesis.
     4. Also, note the operational definition of how you will measure your dependent variable (time in seconds, distance in meters, etc.).
     5. The control. What are you using for a comparison? The control condition can be thought of as the “baseline” or “normal” condition. (didn’t really have one with the egg lab.)
  3. Hypothesis
     1. The hypothesis suggests an answer to the above experimental question. It is an educated, scientific guess taking into consideration the background information you researched, prior knowledge or evidence that you have.
     2. You write a hypothesis in the if/then/because format. If…(independent variable), then…(dependent variable), because….a reason for your prediction. Ex: If different types of racquetballs are dropped, then they will bounce to different heights, because they are made of different materials.

**Methodology and Procedure**

* 1. This section can be in a narrative format or numbered format. A descriptive paragraph will suffice, simply tell the reader what you did in the experiment. Be sure to give amounts for solutions and describe the measurements collecte

We focused on Yeast on this experiment. We had everything else on the same condition as we did 4 experiment. By only changing the grams of yeast. We figured out that yeast affects the length growing over time. The solution on 0 grams of yeast had 0cm, 1gram 0.7cm, 2gram 1cm, and 3gram 1.5cm so we can tell yeast affect the growth rate. The conclusion we got was more yeast more length that will grow.

We did 4 experiment with different grams of yeast.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | Control |
| Yeast | 3gram | 2gram | 1gram | 0gram |
| Sugar | 2gram | 2gram | 2gram | 2gram |
| Water | 25ml | 25ml | 25ml | 25ml |
| Time | 10min | 10min | 10min | 10min |
| Growth | 1.5cm | 1cm | 0.7cm | 0cm |

**Data and Results**

* 1. This section contains a summary of your data in the form of graphs, tables, diagrams, calculations, etc. All of these should be labeled appropriately. This section is just for graphs, tables, and diagrams. Do not give interpretations, explanations, or inferences of your data as this belongs in the discussion section.
  2. Written observations. Qualitative observations – descriptions such as sights, sounds, smells, etc. you have observed during your experiment. This can be written as a paragraph or bulleted sentences.
  3. Graphs representing data. Quantitative observations – this could be any type of graph (bar, line, circle) you choose that represents your data properly. You may do this on the computer. Be sure to include a title, labeled axes, and proper data points. Also include a data table you make to organize and record measurements during your experiment. Some examples of information that might be recorded in data tables are frequencies, times and amounts.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | Control |
| Yeast | **3gram** | **2gram** | **1gram** | **0gram** |
| Sugar | 2gram | 2gram | 2gram | 2gram |
| Water | 25ml | 25ml | 25ml | 25ml |
| Time | 10min | 10min | 10min | 10min |
| Growth | **1.5cm** | **1cm** | **0.7cm** | **0cm** |

We observed that the yeast stuck in the bottom if you don't mix it well.

**Discussion and Analysis**

* 1. The discussion is based on your actual results, whether they were expected or not. Explain the significance of your results. Were they what you predicted? Why or why not? How do your results relate to the “because” portion of your hypothesis?
  2. Do NOT re-write your results.
  3. This section is where you are to EXPLAIN YOUR RESULTS and what they mean. You should develop inferences based both on your experimental observations and on your prior knowledge of the topic. Your inferences must logically follow and be supported by your results. Discuss trends observed throughout your experiment.
  4. Explain why certain data was important and decide if and how the data supported your hypothesis.
  5. Discuss any weaknesses/problems in the experimental design. Identify sources of error.
  6. Suggestions for improvement and design changes to remedy errors or weakness in the design.
  7. This section is where you state whether or not the data supported the hypothesis. Ex: The data collected did not support the hypothesis. (Do not use the word “my” in this sentence.)
  8. Talk about significant results, and explain how your data fits into the body of knowledge on the topic. Avoid indicating a definite cause-and-effect relationship.
  9. Identify limitations. There are always factors outside of your control that influence your results. It’s important to identify these factors before, during, and after the investigation.
  10. Generate new questions. A good experiment raises as many or more questions than it answers. List further questions that you have and suggestions for further research.

**Works Cited**

* 1. It is extremely important that you cite any and all sources that you use for your experiment. This includes any graphics that you use. Refer to the MLA Citation Guide in the Writing Handbook for proper format. You may skip this section if the only materials used were instructions given by your teacher (verbal or written).