

Lab Report Writing – Examples of Common Mistakes

The following examples are excerpts from student submitted lab reports from Physics and Biology courses. Each example showcases common mistakes that students make when writing the different sections of lab reports. Can you identify the mistakes? How would you help the student to write more like our models?

Introduction

1. “Our lab group first began to conduct the static approach to the spring constant experiment. We found a few equations that would help us in determining the spring constant of a spring by finding the displacement, or stretching of the spring from different masses.”
2. “Many studies have been conducted to evaluate the effects of competition and mutualism between different species of plants. These studies have a large impact on agricultural practices and habitat conservation. Such studies as ours are often conducted to understand the specific effects of crops and weeds on each other as well as the optimum combination of species and density to maximize productivity rates.”
3. “In the initial experiment, I hypothesize that the predicted outcome of test tubes in Part A will vary due to the diverse characteristics and ingredients in each test tube. In Part B, test tubes 1-4 will absorb less light as the time increases and test tubes 5-7, I hypothesize that the color of each test tube will effect the reactions that take place in them.”

Methods/ Procedure

1. “In our experiment, we found the average spring constant of a static system by entering the data we found in the experiment into excel and graphing our results. Figure 1 shows the values we obtained in the experiment and Figure 2 shows those values in a graph form. The slope of the best fit line made by the data gives us a value for the spring constant of the spring.”
2. “To begin our experiment we filled 28 standard potting plants with potting soil to a uniform height of about four inches. Next we counted out the predetermined number of both mustard and wheat seeds as given in Table 1 (Cardon et al. 2007). After scattering the correct number of seeds randomly in their determined pots we added an extra two seed of each in order to help ensure the correct number of plants grew. We then proceeded to bury the seeds with a light soil covering. These pots were then taken and stored in the green house and given supplemental light and water routinely.”

Results

1. “In general all four graphs show that as there are more conspecific competitors, there is a smaller standardized per plant biomass. In figure 1, the data seems to show us that there is intraspecific competition between *Brassica* and *Triticum* plants because both the slopes of each line are negative. In figure two, the *Triticum* plants have a much steeper negative slope and the *Brassica* plants have a more gradual slope. This shows that the *Triticum* plants grew less than when they were planted with more *Brassica* plants. This is a perfect example of an interspecific interaction. In figure three, again both slopes of each line are negative but they are about the same steepness. This could mean that there was even competition between the plants. In figure four, the intraspecific competition on *Brassica* seems to have a steeper slope than that of the interspecific competition.”

Discussion/ Conclusion

1. “In conclusion, the K values for static and dynamic tests were similar. They were not exactly the same but error is expected without perfect equipment and circumstances. Similar spring constants prove that springs have the same K for static and dynamic scenarios. This also proves the hypothesis right. The spring constant should not change because the same spring is being used.”
2. “Many chemical and some biological reasons helped to prove the validity of my hypothesis in this lab. It was obvious to me from the very beginning that the volume of chloroplast suspension would affect the tubes in some way. It was also obvious that the treatment of each tube would play a huge role in determining an outcome. For instance, if I took two of the same tubes with identical materials in each and put one in a dark chamber while the other remained in light it is common knowledge that there might be an eventual difference.”
3. “Many new experiments could be done to further what we learned in this experiment. For example, it could be tested what happens when two different plant species are planted in competition with one another, and whether the competition would be as intense or not. It might be that the better adapted plants would grow better, or the competition might go down as the plants may be competing for different resources. Many questions such as these arise through doing experiments such as the one we did.”