**Plant Growth and Colors of the Visible Light Spectrum Virtual Lab**

Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In this lab, you will conduct a series of virtual experiments to investigate the effects of different colors of light on plant growth. You will “grow” three plant species (spinach, radishes, and lettuce) under various light conditions for 30 days, and record the height of the resulting plants. For each plant, you will grow a total of 6 replicates under each of the 5 colored filters.

Before you begin, answer this first set of questions:

1. Formulate a hypothesis about which color in the visible spectrum causes the most plant growth, and which color in the visible spectrum causes the least plant growth. Give an explanation for your predictions.
2. How will you test this hypothesis?
3. What is the independent variable in your experiment?
4. What is the dependent variable?
5. Why is it important to grow more than one plant under each of the various conditions?

Now, conduct the experiment, using the online virtual lab activity found here:

<http://www.glencoe.com/sites/common_assets/science/virtual_labs/LS12/LS12.html>

Do not use the “journal” or “data” table on the website. Instead, you will enter your data into the data table provided by Professor St. John.

After completing the data table, enter the overall averages into the website’s “Table” function, which will allow you to create a graph of your results. Take a screenshot of the resulting graph, and email a copy to stjohnw@sonoma.edu. Then, answer the following questions:

1. Analyze the results of your experiment. Did your data support your hypothesis? Explain.
2. Did you find the same result across all three experiments? Describe any similarities or differences you discovered between the different species of plants.
3. What conclusions can you draw about how the way different colors in the visible spectrum affect plant growth?
4. Given that white light contains all colors of the spectrum, what growth results would you expect under white light?