BIO 162 Plant Signaling
Homework

Name: _____

Introduction
Make sure your hypotheses and predictions refer axillary bud length in stems treated with and without auxin.

Alternative Hypothesis:

Null Hypothesis:

Prediction:

Results

1. Using **your data**, make a graph showing the **weekly growth** of axillary buds in stems treated with and without auxin.

2. Using the applet your TA showed you in class, run a T-test on the **full class data** comparing the **final axillary bud length** collected in Week 9 in stems treated with or without auxin.

Steps:

1. Make sure "Unstacked", "Boxplots", and "Show Shuffle Options" boxes are checked. Clear the existing data, then copy/paste your class' week 9 data into the box then click "Use Data." Remember: The applet won't work if your column labels are too long! Name your column labels "A" for "Auxin" and "L" for Lanolin.
2. On the left-hand side of the screen is a pull-down menu labeled "Statistic." Use this pull-down menu to select "*t*-statistic."
3. Enter your observed *t*-statistic in the "Count Samples" box and use the pull-down menu to select "Beyond." Press Count.

Use this test to answer the question below:

Are axillary buds on stems treated with and without auxin significantly different from each other? Your answer should include the calculated T value, the p-value, and the correct interpretation of the statistical test.

Discussion Questions

1. What do your results indicate about the role of auxin in apical dominance in mint plants? Do they confirm or conflict with pre-existing scientific consensus?

2. What are some sources of error in the experimental design and/or data collection?

3. What might happen to the experimental plant if auxin was accidentally applied to the side of a stem in the middle of the shoot?

4. What kind of experiment could be a “next step” in determining the role of hormones in apical dominance (Hint: Auxin isn’t the only hormone involved)?