**Graphing Tips for DBQ Homework #1 (page 134)**

1. Enter data into the Excel spreadsheet. Be sure to place the wavelengths in the first column in ascending order. The second column should be the leaf area; the third column the seedling height.
2. Highlight the entire data table.
3. Go to “Insert” and then “Scatter with Straight Lines and Markers”.
4. When the graph pops up, find the “+” sign on the right of the graph and click it; select “Axes” and “More options.”
5. Under “Axis Options,” change the bounds to better fit the scale of your graph. I changed them to 420 to 650.
6. Now, go back to the graph and left click on one of the lines. This brings up the “Series Options” box. Select “secondary axis” which will give you your right-hand (second) y-axis.
7. Go back to the “+” next to the graph and select “Axis Titles” to label the horizontal and vertical axes appropriately. Also give the chart a main title.
8. Now let’s change the marker style so you can easily tell each data set apart without needing to print in color. Click on one of the data set lines. Click on the paint can icon. Select “Marker”. Select “Marker Options” and change the shape of the marker so it is different than the other data set. You can also change the fill if you want (to make no fill and just an outline to save ink!).

**Graphing Homework #2**

*Data Table 1: ATP Production (umol) by thylakoids incubated in solutions of pH 3.8, 4.8, and 5.2 after being placed in ADP solutions of varying pH.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Thylakoid  Incubation pH | pH of ADP Solution | | | | |
| 6.7 | 7.2 | 7.7 | 8.2 | 8.4 |
| 3.8 | 2.0 | 6.0 | 13.0 | 20.0 | 24.0 |
| 4.8 | 0.5 | 2.0 | 4.0 | 7.0 | 8.5 |
| 5.2 | 0.0 | 0.0 | 2.0 | 3.0 | 4.0 |

This data set is from page 394 in your textbook.

Using the skills learned in Excel today in class, create a graph that presents the data in the table above. Also fit a linear trend line with equation and R2 value displayed on the graph.