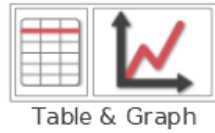# Using PASCO Capstone to
Graph Data and Develop Mathematical Models

1. In Capstone, click on "Table & Graph"

2. In the data table, click on "<Select Measurement>", then "Create New", then "User-Entered Data". ------------------------->

3. In each column, click on the column title (ie. "User Data 1") and type in an appropriate variable name. Press Enter. Then type in the unit (right click on the unit for other options such as subscripts and special characters) and press enter again. If you need to change the title/unit, you can right click on the name and select "Rename."

4. Enter your data.

5. Select your data and use the buttons above the data table so that all values are given to an appropriate number of decimal places:

6. Click on "[Table title here]" above the data table and give your table an appropriate title.

7. Click on the "<Select Measurement>" option on the both graph axes and select the appropriate data set from the list.

8. In the toolbar above the graph, select "Auto scale from zero" from the auto scale drop-down option:

9. On your graph, click on a data point and then right click on it. From the drop-down menu, de-select "Show Connecting Lines."

10. **If you need to calculate data or linearize your data...**

    a. Above the data table, click the "Insert Column" button: If the new column appears in the wrong place, you can click and drag it to where you want it.

    b. Click on the column title (which should be "<Select Measurement>", then click on "Create New", then select "Calculation." -->

    c. Type in the name for your calculated variable (ie. Inverse Time). And press Enter. Then type in the units and press Enter. If you need to change the title/unit, you can right click on the name and select "Rename."
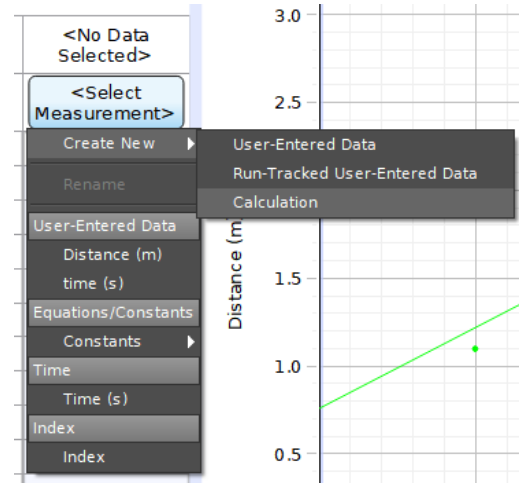
    d. Now you should see a box at the top left of the data table that displays the name of your calculated variable in red font, followed by an equal sign. Click in this box to type your equation. When you want to use a data set in the equation, type in a bracket: [and a drop-down menu will appear. Select the appropriate data set from this menu. ->

e. If you need another graph for your calculated and/or linearized data: click and drag a "Graph" icon from the menu on the right-hand side and hover over the bottom of your graph. Two rectangles should appear. Release your mouse on the bottom rectangle to drop the new graph below the original graph. --->
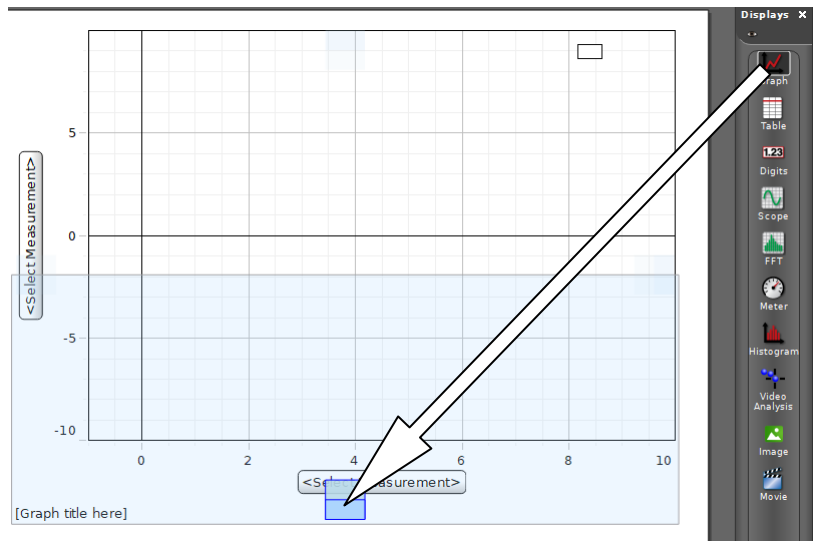
11. From the "Curve Fit" drop-down menu (above the graph), choose the simplest curve that still fits the data well. Note that this button is actually two buttons in one. The drop-down menu: is where you select your curve fit. The main part of the button: is where you can choose to display it or not. Your final graph should always have the line of best fit displayed.

12. Right click on the box that appears for the line of best fit. Select "Curve Fit Properties", then "Numerical Format," then "Coefficients." From this menu, adjust the information so that your line of best fit is presented in an appropriate number of significant figures. ------------------------------------>
Note that the image shown here is an example, and is not necessarily the appropriate number of sig figs for all labs.
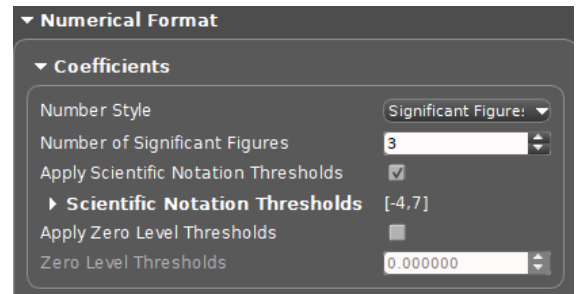
13. If appropriate, right click on the graph and de-select "Show Legend." While in this menu, make sure "Auto Scale from Zero" is still selected.

14. Beneath your graph, click on "[Graph title here]" to give your graph an appropriate name. Your graph should be titled in the format: "(vertical axis variable) vs. (horizontal axis variable)".

15. Under File → Print Page Setup, set the page orientation to **landscape**.

16. Use the "Snipping Tool" to take a **screenshot** of your data table and graph. **Email** the screenshot **and** PASCO Capstone file to each member of your group.