Directions for Graphing the Student Pre and Post Test of LAMP Unit based on Indiana State Standards
(Note: These directions work for Excel 2008 for Mac)

Directions to set up the Spreadsheet
1. Open a new Excel Workbook. All of the data sheets and graphs will be contained in this one workbook.
2. Before entering any data, save (File-Save, or "⌘+S") this workbook. Remember to save often while working to avoid loss of data should Excel crash.
3. Make sure that you have the Standard Toolbar (View-Toolbars-Standard Toolbar) and the Formula Bar (View-Formula Bar). Also, have the Toolbox open and moved to the side, out of the way. There is a button on the Standard Toolbar to open this up.
4. At the bottom of the Excel window, you will find the Tabs, or Sheets. You may or may not have more than one sheet visible at this point. You will learn how to add more sheets later. It is easier if you rename the sheets as you go so that you know what information is on each sheet.
5. To rename a sheet, you can either double click on the sheet name and rename it, or right click (Control+click) and select Rename. You will want to rename each sheet after you add it to keep your workbook organized. Rename this first sheet Pre Test.
6. Label your columns in the first row of the data sheet.
   - Column A – Students
   - Column B – “State standard number and name” Pre Test
   - Column C – “State standard number and name” Pre Test
7. Continue to label the columns in this fashion until you have a column for each standard you have assessed. For example, if you assessed 5 standards, then you will have Columns B through F labeled with the State standard number and name.
8. After you have a column for the Pre Test data from each standard, label the next column Pre Test Results.
9. When entering data, make sure not to use any names, etc. to identify your students. The best way is to number you students beginning with 1. (Make sure you know which student is given which number so that your Pre and Post Test data matches per student.) Put the numbers in Column A.
10. After the last student on your list, label the last cell Class Average.
11. Convert all of your data into percentages. If you had 3 questions for one standard and a student got 1 out of those 3 questions correct, you will enter 33.33 in the appropriate cell. (Number correct divided by Total number) Enter all of this data into the appropriate cells.
12. At the top of the Toolbox, there are 7 icons or menus. When you first open it, it will default to the first one, or the Formatting Palette. The options are different in each of the Microsoft applications. In Excel, the third icon from the left is the Formula Builder. When you click on this, the Toolbox will display all of the different formulas Excel is capable of performing. It also provides a description of the formula if you are unsure of which one to use. You will only be using the AVERAGE formula in this workbook.

13. The first formula that you are going to use is AVERAGE. Click on the cell under all of your data for the first Standard, next to Class Average. This is the cell the formula is going to be placed in. If you do not see AVERAGE close to the top, use the Search feature to find it. Once you have found the formula, double click on it to select it. It will automatically select all of the data in Column B. Press Return/Enter on the keyboard to select this formula.
14. Repeat this step for each column of data.
15. Now you are ready to enter the overall test result data. You are going to figure the percent the student received on the overall test like you did for each individual standard. (Number correct divided by Total number) For example. If a student answered 3 questions correct and there were 16 questions total on the test, that student’s percent correct would be 18.75.
16. Find the Class Average of the Pre Test Results following the same steps as you did to find the Class Average for each Standard (step 13 above).
Directions for the Pre Test/Post Test Bar Graph

1. You will now start creating your graph based on the data that you just entered into the Pre Test sheet. For each graph you create, you will be copying and pasting the data you are going to use onto a new sheet. You are going to create a new sheet and graph for each of the standards you assessed to inform your own teaching.

2. To add a new sheet, there is a + button next to the Pre Test sheet. When you click on the +, a new sheet will be added and named Sheet2. You will need to rename the sheet (double click or Control+Click-Rename) Pre Results.

3. Click on the Pre Test sheet at the bottom. You are going to start copying and pasting. (Copy = Edit-Copy OR ⌘+C; Paste = Edit-Paste OR ⌘+V) Select (highlight) all of the information in Column A (Students column) and copy it. Then click on the Pre Results sheet at the bottom, click in cell A1 (first cell of the first column) and paste the information in there.

4. Then go back to the Pre Test sheet at the bottom, select all of the information in the Pre Test Results column, click on the Pre Results sheet at the bottom, click in cell B1 (first cell of the second column), and paste the information in there. This will give you your student identifiers and the overall test results for each student with the class average at the bottom.

5. Select (highlight) the data in the first two columns of the Pre Results sheet. Don’t select (highlight) extra cells! Above the column headers, there are 4 tabs. The second from the left is the Charts tab. This shows you all of the different types of charts/graphs Excel can create.

6. After you click on charts, there are 11 categories that you can choose from or an ALL that shows you all of the charts. You will want to click on Column.

7. You will want to click on the first picture of the side-by-side bar graphs. You do not have side-by-side information, so this will simply create a bar graph.

8. Excel will put this chart/graph directly on the same page that you are working on. You want it on its own sheet/tab. To do this, you will right click (Control+click) on the graph and then select Move Chart...
9. A new window will appear asking you where you want to move it. Click in the circle next to *New Sheet:* and then change the name from *Chart1* to *Pre Results Graph.* This will move the chart off of the *Pre Results* sheet and create a new sheet in front of that with just the chart on it. You can choose to leave it there or drag and drop the *Pre Results Graph* sheet after the *Pre Results* sheet.

10. Make sure that you have your Toolbox opened and click on the graph to select it. On the Toolbox, there will be a section titled “Chart Options.” This is where you are going to do some editing. The first thing in this area is the “Titles.” The chart title is currently selected. If you want to change the title of the chart, double click in the cell under the drop-down menu to edit it.
11. Click on “Chart Title.” This will give you three different titles to edit. Change the Horizontal Axis title to “Students” and the Vertical Axis title to “Percent Scores.”

![Chart Options](image)

12. Check the scale of the Y Axis. If the top number is not 100, then double click on the numbers. This will open a “Format Axis” window. On the left side, click on “Scale.” The only two you need to worry about are the Minimum (0) and Maximum (100). Click “Ok.”

![Format Axis](image)

13. You will need to repeat these steps to create a graph for each individual standard. You will also need to create a set of graphs for the post-test data (results and individual standards).
Stacked Bar Graph

1. You will create a graph for each standard that will compare the pre and post test data for each standard that you assessed. It will be easiest if you create a new data sheet for each standard, like you did for the pre and post test data sets.

2. Add another sheet to the workbook. Change the name to Comp “Standard.” Copy and paste the student indicators into column A. Copy and paste the pretest results into Column B and change cell B1 to “Pretest.” Name cell C1 “Percent Increase.” Copy and paste the posttest data into column D and change cell D1 to “Posttest.”

3. You now need to figure the percent increase for each student. To do this, you are going to type the following formula into column C2: =D2-B2. This formula will calculate the change from the pretest to the posttest. You will need to enter this formula into all of the rows. The numbers will change according to the row you are in. The other thing that you can do is fill the column. To do this, position your cursor in the lower right corner of the cell until your cursor changes to a black +. Then drag and drop down to fill in the entire column.

4. You will highlight the first three columns (Students, Pretest, and Percent Increase). You will again select a column graph, but this time you will choose the second graph, stacked graph.

5. Follow steps 8 through 12 above to move the graph onto a new sheet and change the titles as needed.

6. Repeat this for each standard assessed.