

## Using Spreadsheets in the Science Classroom

### Creating a Scatter Plot and Linear Regression Equation

In physics, we will rely heavily on analyzing data collected during experiments to model behaviors and make predictions. These goals require that you are fluent in using spreadsheets to create graphs suitable for scientific use, scatter plots.

For this assignment you will use a spreadsheet program such as Excel or LibreOffice. LibreOffice is a free, open source project available at <http://www.libreoffice.org/download/>.

Follow the link to a step-by-step tutorial on how to create a graph in Excel. If you are using LibreOffice it is very similar to Excel but you will not be able to change the equation on the graph so write out the equation at the bottom of the graph.

**Step-by-step tutorial:** <http://www.clemson.edu/ces/phoenix/tutorials/excel/graph.html>

Now that you have successfully discovered the relationship between the circumference and radius of a circle, follow the following steps to create a text document, copy your graph and rewrite the equation.

1. Create a new text document
2. Copy formal data table, graph, and  $\pi$  section then **paste special** as a metafile or picture into the text document
3. In the text document, insert --> object ---> "Microsoft Equation 3.0" or "Formula"
4. Use this formula editor to restate your functional relationship between circumference and radius (a tutorial can be found at [Equation editor tutorial](#)). Every number should have units so be sure to include units in your equation. In this case the slope is  $\frac{\text{cm}}{\text{cm}}$  so they cancel out for the slope.
5. also use formula editor to type in a sample calculation for a data point that was not in the data table. Is the result what you expected? Why or why not?
6. Save this text document by giving it a name followed by " - " and your last name (e.g., "graphing assignment – gorman")
7. Follow the same sets to determine the functional relationship between grams of salt and density. Add this analysis on the second page of your text document.
8. Before to have your name, date and class period # in your text document.

<b>Grams of Salt</b>	<b>Density (g/mL)</b>
0	1.00
5	1.03
10	1.07
15	1.11
20	1.14

This assignment is due in digital form via Moodle on Friday, Aug 31st.