Graphing in Excel

1. The excel program will automatically put the first column of data on the x-axis and the second column of data on the y-axis.

<table>
<thead>
<tr>
<th>Volume</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>55</td>
<td>25</td>
</tr>
<tr>
<td>80</td>
<td>43</td>
</tr>
</tbody>
</table>

2. Highlight your data. Click on the shortcut “Chart” Tab OR click on “Insert” and scroll down to “Chart”.

Click on the “Insert” button if you do not have the short cut on your tool bar.
3. Select the “XY Scatter” then “Next”.

![Excel worksheet with data and chart wizard step 1]

- Column A: Volume
- Column B: Mass

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>43</td>
</tr>
</tbody>
</table>
4. Click “Next” again to go past “Chart Data Source”.
5. If the Title tab does not appear first click on that tab to fill in title, x-axis, and y-axis.
6. Select “As new Sheet”. Once your graph appears, move to the next step.
7. Click on “Chart” on the menu bar. Scroll down and select “Add Trendline”.

![Image of a chart in Microsoft Excel with a trendline added]
8. Select “Linear” then hit “OK”. 
9. Once your final graph appears, you may need to delete the “Legend” box on the right side of the graph. Once you are satisfied, print the graph, make sure the graph makes sense, and attach the graph to your lab report.

Click on this legend box and hit delete. You do not need this information for this type of graph.
**Instruction when using Mac – Applying equation and graphing.**

1. If your graph looks linear, click on chart layout.

2. Then Select “Trendline” and select linear Trendline.
3. You get your linear graph as shown below.

4. Then select the “Trendline” options and you get the following window.
5. Select Custom, Display equation on chart and Display R-squared value on chart.
6. The equation is linear equation

\[ Y = mx + b \]

Y is the concentration, X is the time and m is the slope indicative of how fast compound is dissolving. R is known as the regression value the closes the value to number ‘1’ the better the linear fit. This is indicative of good data.

**How to divide conductivity or TDS by the mass of the sample.**

1. Place the cursor in the first cell of the new column that is going to be your result column. Then go to the formula bar and type in =A1/2 and press enter.
2. The following window is the result after you press Enter.

3. Then to repeat the same process to every single row, highlight the first cell.
4. Place your cursor on the lowest right corner of the first cell and stretch it down to the end of the row that you want. When you release your cursor the new data is generated and each cell is filled with the result.

How to average the values of each row of two columns generating a new column.

1. When you want to average your concentration for two trials. Copy your data of the two trials into two columns. Then type in the formula bar =AVERAGE($A1,$B1) and press enter.
2. Put your cursor at the lower right corner of the first cell and stretch it down and it copies the same operation to all the rows.