

# Microsoft Excel for Windows 10

## Chem1AL, General Chemistry I Lab

---

- 1.) Open Microsoft Excel (Start → All Programs → Microsoft Office → Microsoft Office Excel)
- 2.) Enter data in a tabulated form.
  - a. Enter the data's title in the first box of every **column**.
  - b. Enter each data point in its own box under the appropriate **column title**.
  - c. Excel plots data from **columns**: keep all data meant to be graphed on the x-axis in one column, all data to be graphed on the y-axis in the second column.
  - d. Do not combine **letters** (units or words) and **numbers** (actual data) in the same boxes (exception: the original column title)

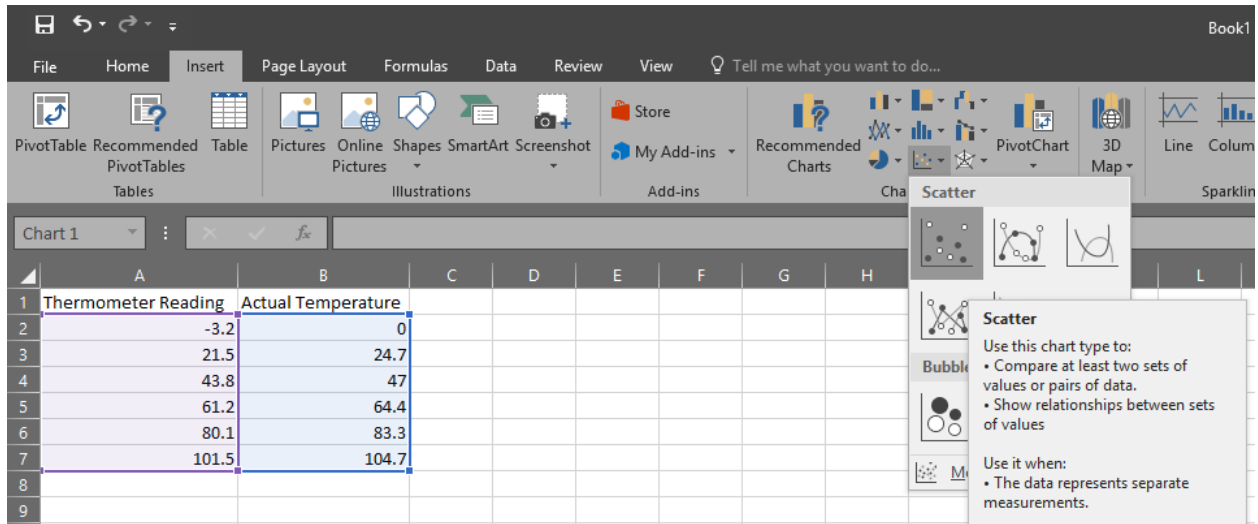
	A	B
1	Thermometer Reading	Actual Temperature
2	-3.2	0
3	21.5	24.7
4	43.8	47
5	61.2	64.4
6	80.1	83.3
7	101.5	104.7

- 3.) Click and drag to select all data you wish to graph.
  - a. Do **not** include your column titles; only include numerical data values.
  - b. A thick green line should box the selected data and all but the very first box will be grayed out.

	A	B
1	Thermometer Reading	Actual Temperature
2	-3.2	0
3	21.5	24.7
4	43.8	47
5	61.2	64.4
6	80.1	83.3
7	101.5	104.7
8		

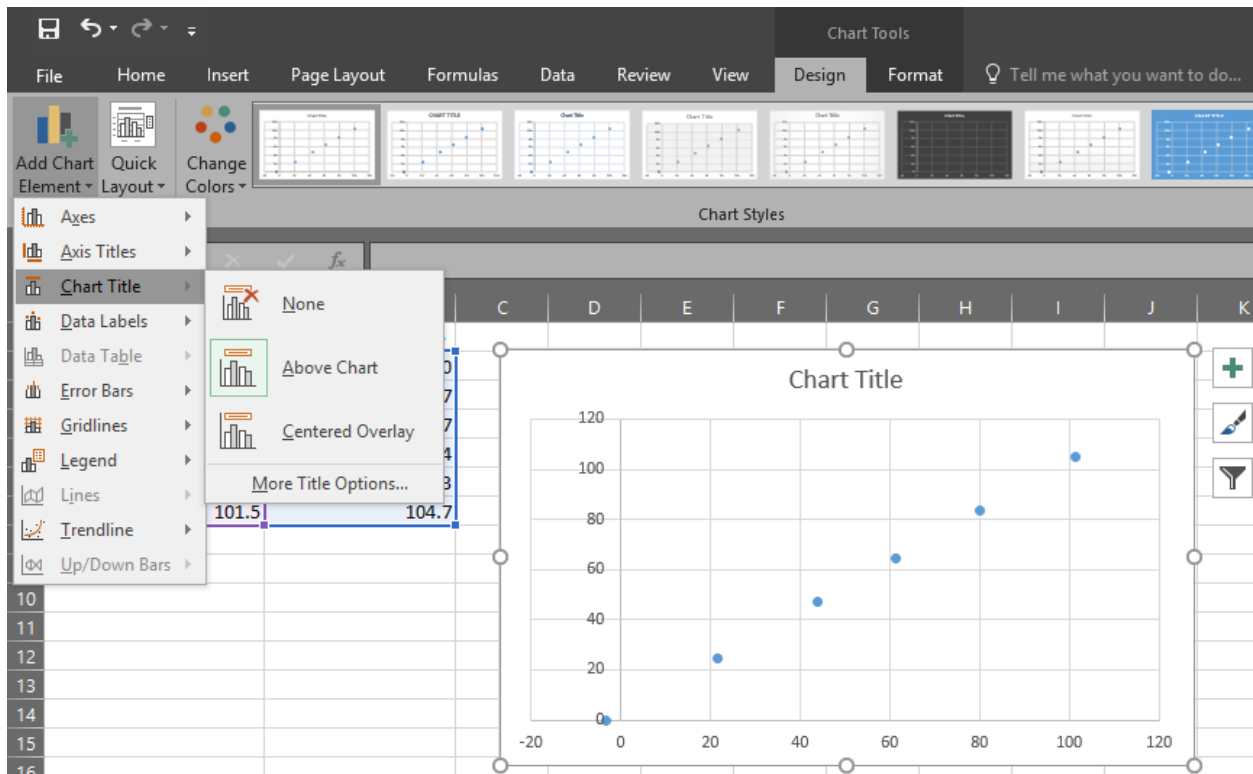
- 4.) Click the **Insert** tab at the top of the screen.
  - a. The **Charts** area of the menu bar will show numerous graphing options.
- 5.) Click **Scatter**.
  - a. A drop-down menu should appear.
- 6.) Select the top left option (only **dots**, no lines).

- a. Excel will plot the data you originally selected with the farthest left column on the x-axis and the column immediately to its right on the y-axis.



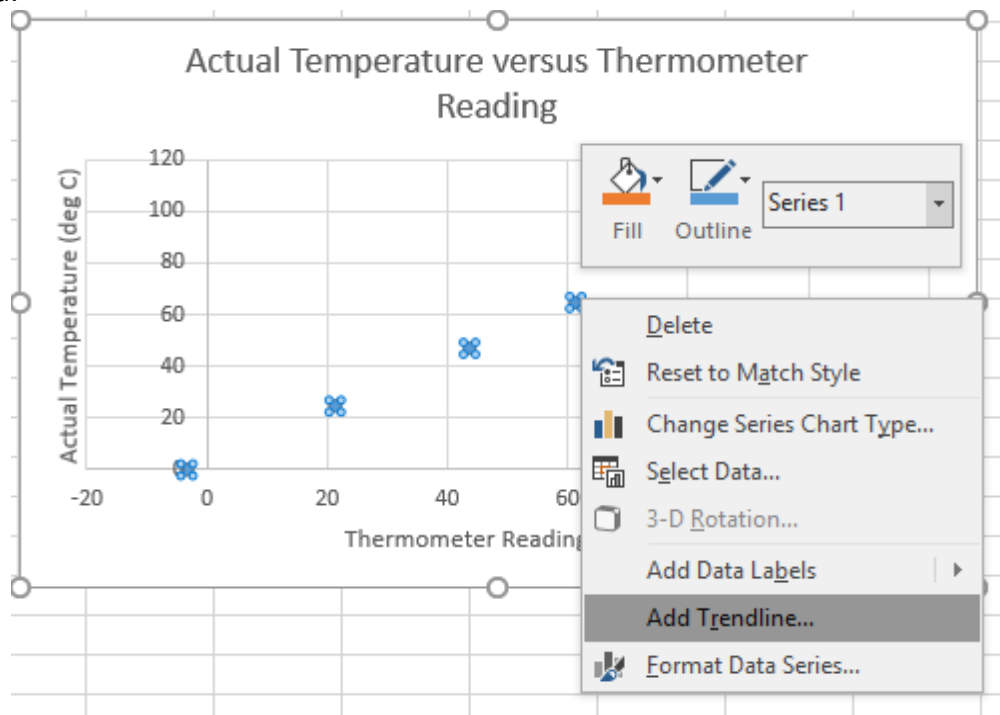
On the new menu bar that automatically appears, go to the **Add Chart Element** section. Select the option to the far left.

- a. Go to **Chart Title** and add "Above Graph".
- i. **Chart Titles** should always be descriptive of what is being plotted (i.e., Temperature versus Pressure)
- b. Go to **Axis Titles** and add "Primary Horizontal" and "Primary Vertical".
- i. **Axis Titles** should always name the data plotted on that axis and include relevant units in parentheses (i.e., Temperature (K) )



## TO ADD A TRENDLINE:

- 1.) Right click on any data point on the graph. Select "Add Trendline" from the drop-down menu.



- 2.) On the menu that appears on the right hand side of the screen, select the type of trendline (usually “linear”) and check the box for “Display Equation on chart”. Click “close”.

**Format Trendline** ▼ ×

**Trendline Options** ▼

✎ 📊 📈

---

▲ **Trendline Options**

☐ Exponential

☒ Linear

☐ Logarithmic

☐ Polynomial Order

☐ Power

☐ Moving Average Period

**Trendline Name**

☒ Automatic Linear (Series1)

☐ Custom

**Forecast**

Forward  period

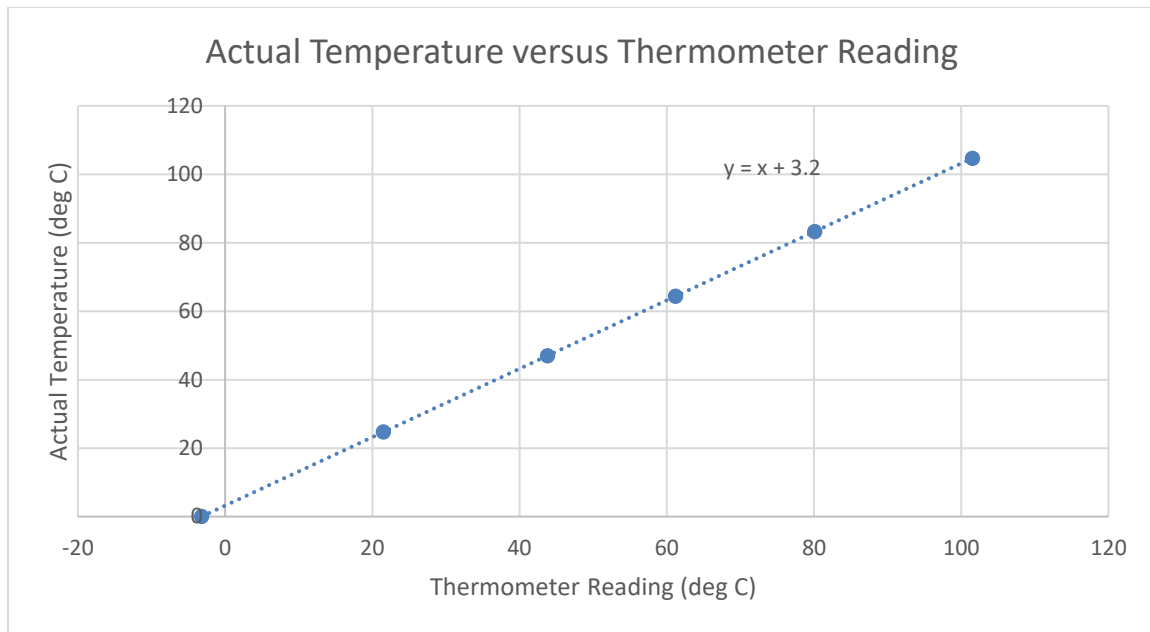
Backward  period

☐ Set Intercept

☒ Display Equation on chart

☐ Display R-squared value on chart

- 3.) Click and drag the equation so that it is not hiding data on the chart.



## DO'S AND DON'TS OF GRAPH PLOTTING

### DO:

- 1.) Make the graph the full size of the page.
- 2.) Include an appropriate chart title that tells the reader exactly what is being plotted.
- 3.) Include appropriate axes labels that tell the reader exactly what data is being plotted on the x-axis and y-axis, and always include units in parentheses where appropriate.
- 4.) Make your graph clear and the data readable
- 5.) Make sure that the chart and axes titles are clearly written in a noticeable font and style.

### DON'T:

- 1.) Make the graph not fit the page, or print half-off the page.
- 2.) Forget to title the chart and all the axes, including units.
- 3.) Connect the data points with a line (this does not include trendlines).
- 4.) Plot more than one data set per graph, unless otherwise instructed.
- 5.) Make the graph unreadable due to coloring, text formatting, background pictures, etc.

### EXAMPLE GRAPH: Zero Order Reaction

