

APPENDIX E1: MAKING A SCATTER CHART IN EXCEL

Once you have two columns of linear data follow these steps to add a chart and add a fit.

Note that different versions of excel are slightly different, this is designed for the desktop version of excel used in lab.

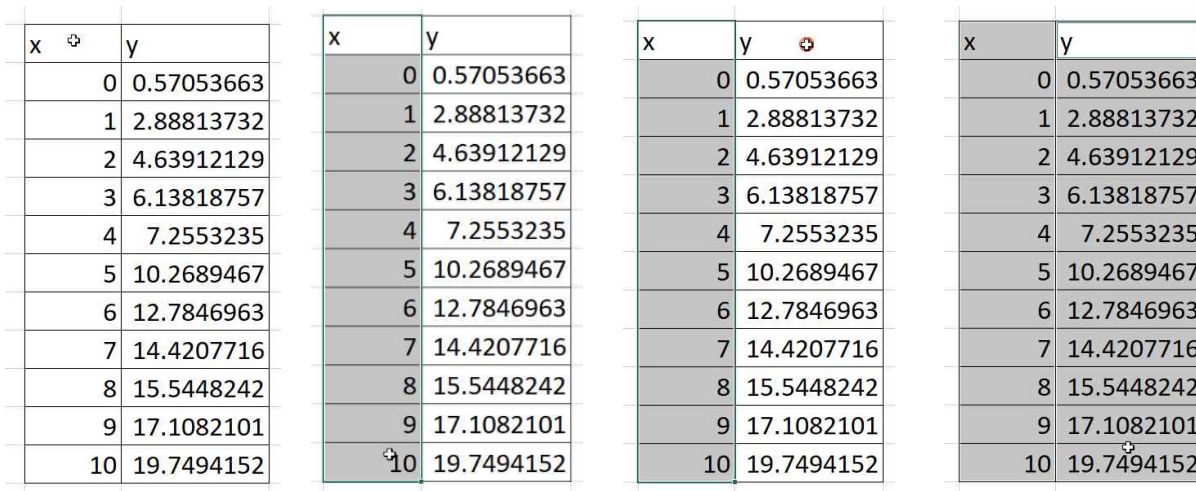
Also do be aware there are a few other ways to accomplish each of the steps here but I'm demonstrating a more user-friendly method.

Provided here is a set of data to practice with that should follow the linear fit $y=2x$ with a little bit of error thrown in. If you want to follow along just copy this into an excel sheet and follow the steps below

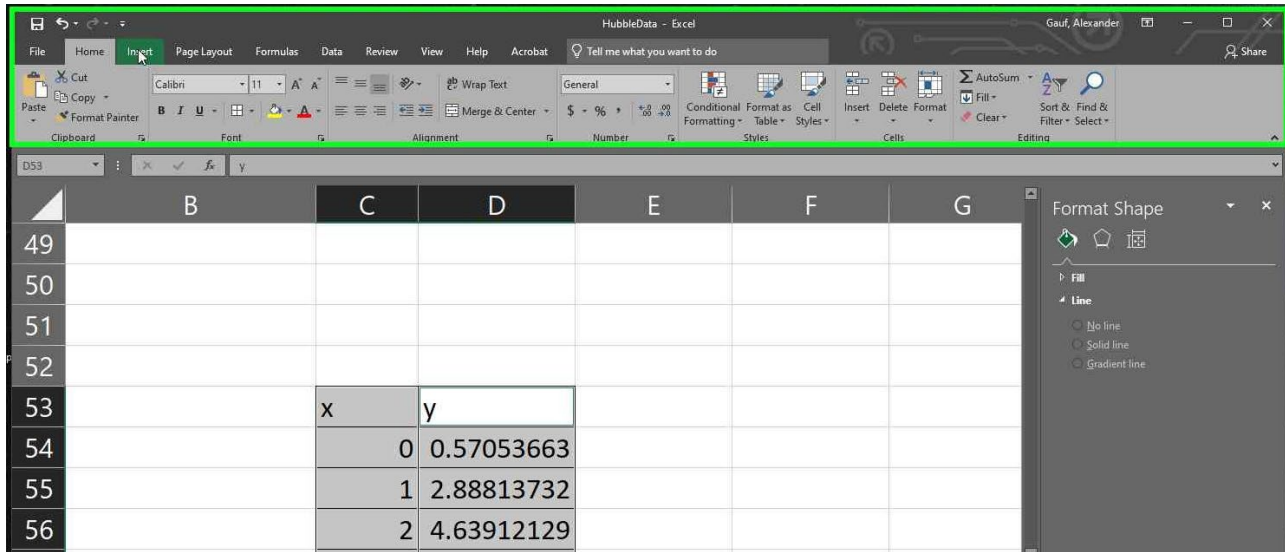
x	y
0	0.57053663
1	2.88813732
2	4.63912129
3	6.13818757
4	7.2553235
5	10.2689467
6	12.7846963
7	14.4207716
8	15.5448242
9	17.1082101
10	19.7494152

- 1) Select the data.
 - a. Find the start of your x values for the horizontal axis then click the center of that cell.
 - b. While holding that click drag your mouse down to the end of the x values.
 - c. Then hold ctrl on your keyboard and repeat for your y values.

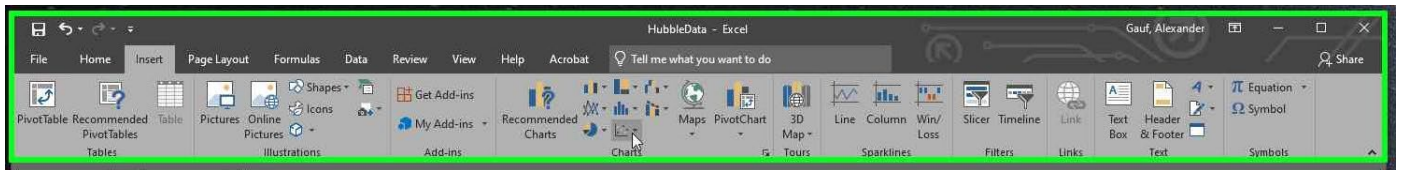
Note that if your data is in the right order and right next to each other you can just click and drag to select them all, but if they aren't together or are out of order use this ctrl select method.



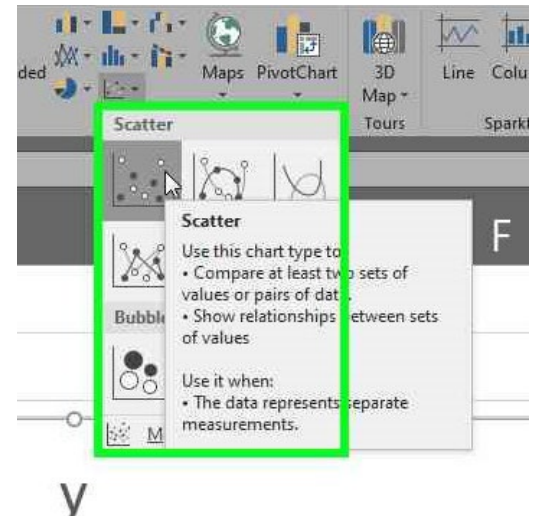
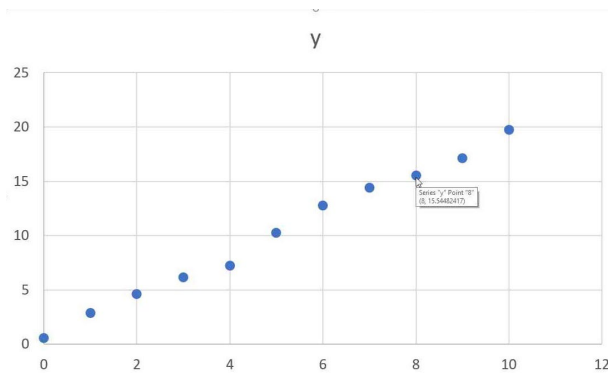
- 2) Create the Chart
 - a. Once you have the data selected navigate to the insert tab at the top of the page.



b. Once you're in the insert tab, find the charts section, there are many options here but generally for these labs we'll select the scatter one shown.

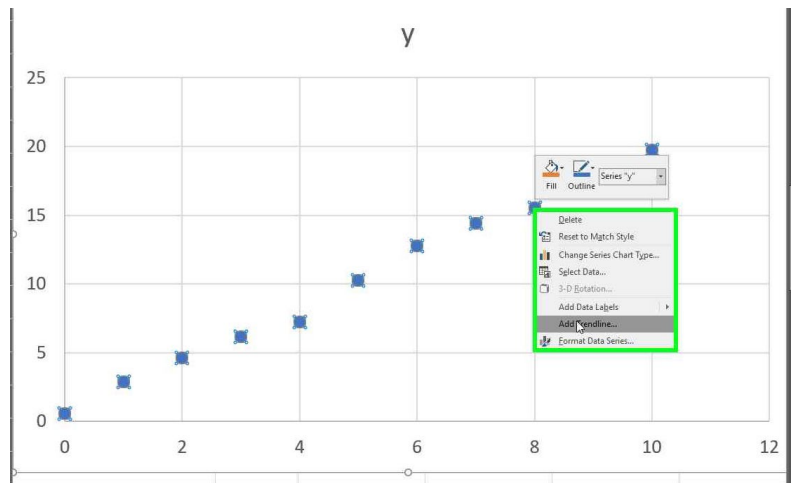


c. Click that scatter and select the one that is only points, this is generally the choice if you have discrete(separated) data points. This lead to a graph similar to this one showing up.



3) Add a linear Trendline

- Now that you have a graph just right-click on any of the points and select "Add Trendline".
- This method should open up the Format Trendline menu at the right showing options for the trendline, verify Linear is selected.
- Find the checkbox for Display Equation on chart near the bottom and check it. This will give you the equation for that line including the slope and y intercept.
- Also check the R squared value checkbox, this will tell you how close your data points are to a line.



The image shows two screenshots of the 'Format Trendline' task pane in Excel. The left screenshot shows the 'Trendline Options' section with 'Linear' selected. The right screenshot shows the 'Display Equation on chart' checkbox checked, resulting in the equation $y = 1x + 0.6886$ being displayed on the chart.

4) Use that trendline and polish up your graph

- Now that you have a trendline you can get your slope and intercept (or any other coefficients for nonlinear fits). Note the linear equation shown is in the form $y = slope * x + intercept$.
- If you need a zero intercept you can also set it in the trendline menu with the first checkbox above Display equation.
- You can also click the plus menu on the graph for a shortcut to add other features like axis titles, legend, errors, etc.
- Note you can also right click the data points and pick "Select Data" to manually type/select your data series, very useful if your x and y are switched for some reason.

