

## Making Graphs in Excel

**Introduction:** Excel is a powerful tool for making graphs to analyze any trends in your data.

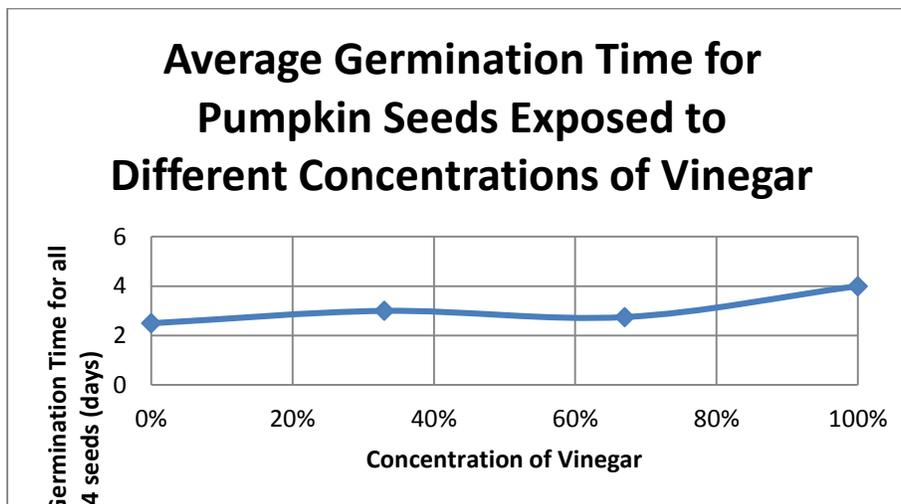
### Steps:

1. Choose the data you wish to graph and the type of graph to use. Usually, your calculated values (averages) are the best data to use.

### As for graphs:

-A scatter plot graph is best to use for a "line" graph. This option should be used when your Manipulated Data is continuous. Examples of these could be: Concentrations, Time, Amounts (grams, pounds, etc.). Continuous data would mean that every point on the line within the graph means something.

Example:



-A bar graph should be used if the Manipulated Variable is not continuous but categorical instead. Examples of this would be: Brands of a product, grit of sandpaper (the values are not continuous), gender, colors, etc.

### Making the graph:

#### Step-by-step guide to making a simple graph in Excel

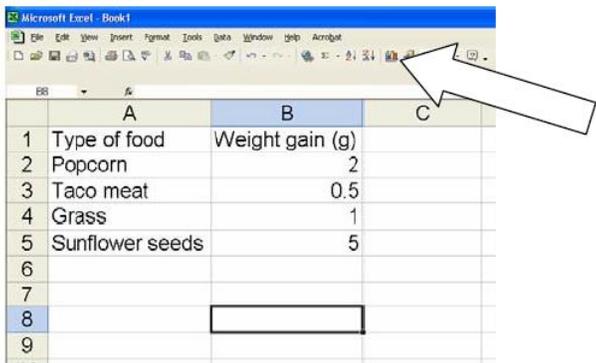
(Modified from [http://www.pleasanton.k12.ca.us/avhsweb/library/excel\\_graphs.pdf](http://www.pleasanton.k12.ca.us/avhsweb/library/excel_graphs.pdf))

The following tutorial includes bare-bones, 6-step instructions for using Excel to make two types of simple graphs: bar graphs and line (XY) graphs.

### A. Bar Graphs

Bar graphs are for data collected in an experiment in which the independent variable (the one that goes on the X-axis) is qualitative (categorical), not quantitative (numerical). As an example, perhaps you designed an experiment to determine which type of food produces the most weight gain in your parakeet.

**Step 1:** Enter the data in the cells of an Excel spreadsheet, like this:



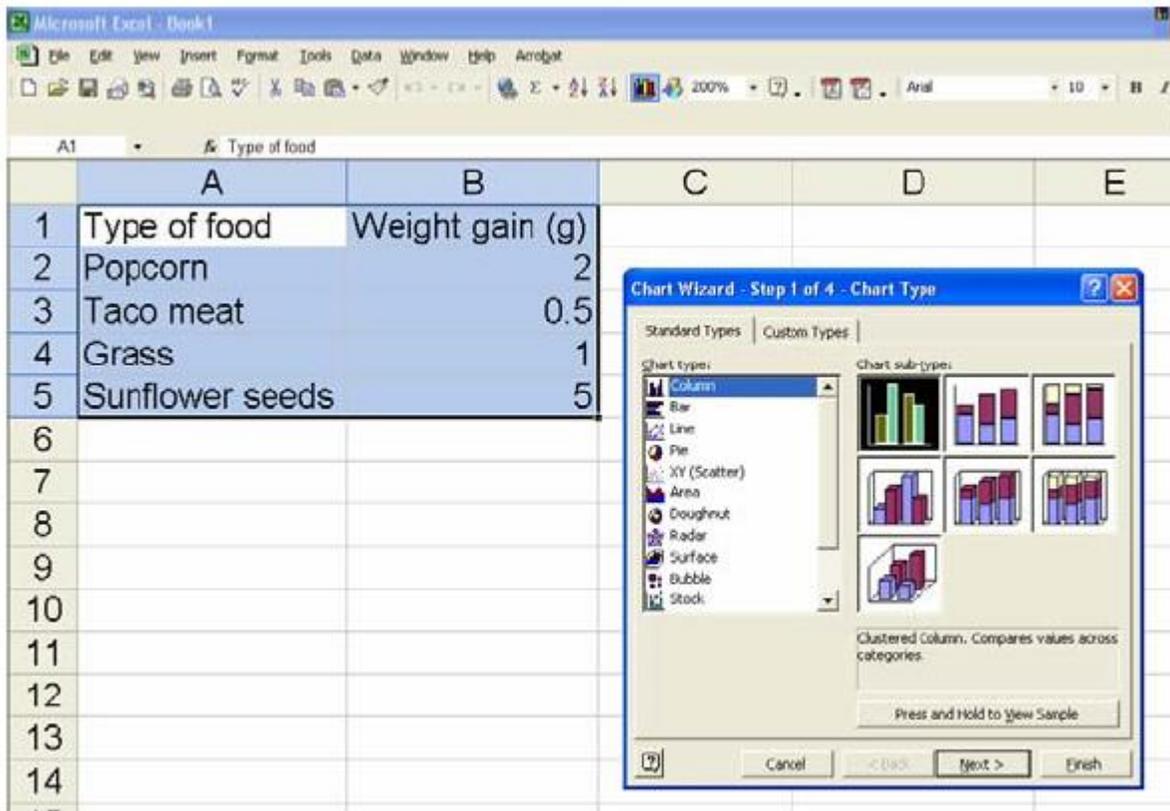
The screenshot shows an Excel spreadsheet with the following data:

	A	B	C
1	Type of food	Weight gain (g)	
2	Popcorn	2	
3	Taco meat	0.5	
4	Grass	1	
5	Sunflower seeds	5	
6			
7			
8			
9			

An arrow points to the Chart Wizard button in the Excel ribbon, labeled "Chart Wizard button".

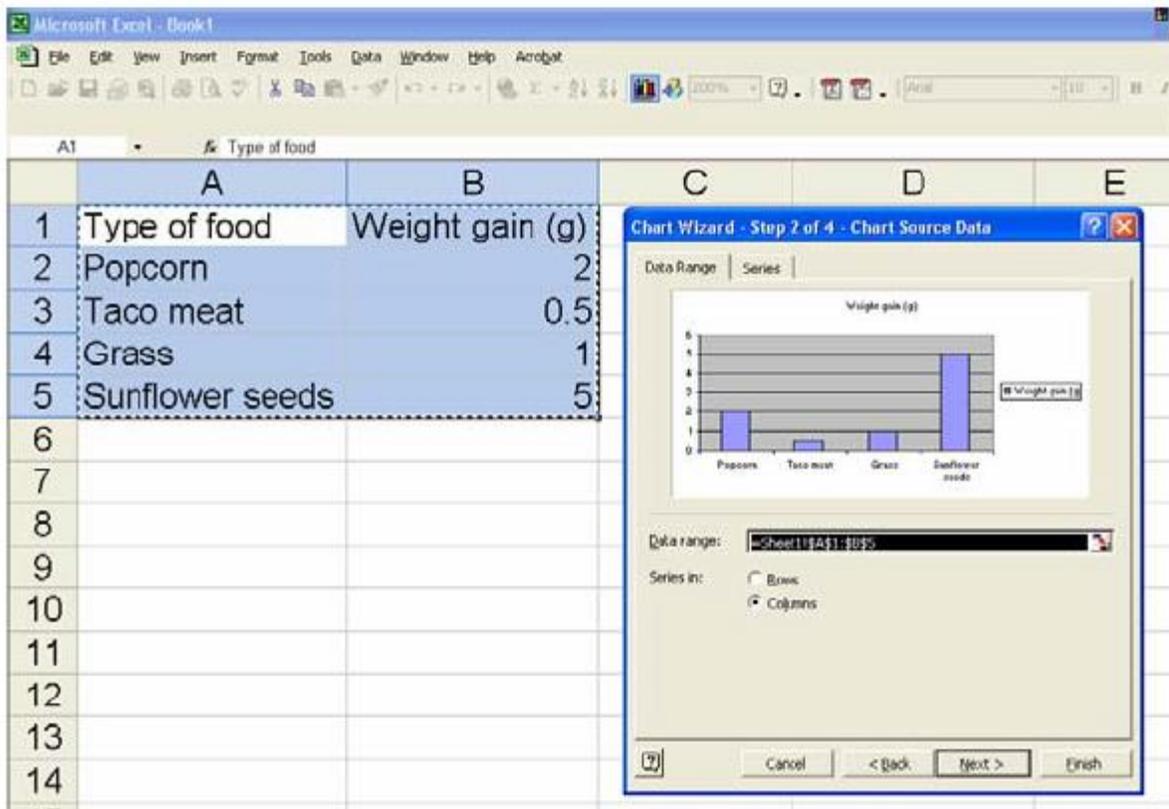
**Step 2:** Use the mouse to highlight the block of cells containing your data, then click the Chart Wizard button (illustrated above).

**Step 3:** When the Chart Wizard comes up, choose column graph and a subtype that seems correct for your data. If you want to see what your graph will look like, click the button that says “Press and Hold to View Sample.” When you like your selection, click Next



The screenshot shows the Chart Wizard dialog box open over the spreadsheet data. The dialog box is titled "Chart Wizard - Step 1 of 4 - Chart Type". It has two tabs: "Standard Types" and "Custom Types". Under "Standard Types", the "Column" chart type is selected. Under "Chart sub-types", the "Clustered Column" subtype is selected. The description for "Clustered Column" reads: "Clustered Column. Compares values across categories." There is a button labeled "Press and Hold to View Sample". At the bottom of the dialog box, there are buttons for "Cancel", "< Back", "Next >", and "Finish".

**Step 4:** Excel will then show you what it thinks is the correct chart, like this:



If it looks right to you, click Next. Otherwise, go Back.

**Step 5:** The Chart Wizard next gives you a series of options for changing the look of your chart. In the example below, I have added axis labels and a title. I also went to the Legend tab and deleted the default legend. When you've messed with your graph to your heart's content, click Next.

**Step 6:** Your last step is to choose where you want Excel to put your new graph. I think it looks best when Excel puts the chart in a new sheet. The default name of the sheet is "Chart 1"; I have changed it to "Parakeet food" in the example on the following page. When you're satisfied, click Finish. That's it!