



Microsoft Excel

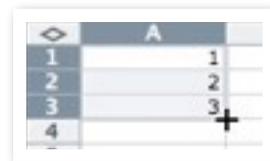
The Swiss Army Knife of the Office Applications



Patterns & Counting

Excel is great when it comes to organizing information, but there are a few tips that may save you some time when you are trying to get that quick list built. If you can establish a pattern with your information, Excel is amazingly good at duplicating that pattern and filling it in for you. Let's give it a try!

- In cell A1, enter 1, followed by 2 in the next cell down and 3 in the cell below that.
- Now, highlight all of the cells, and place your mouse cursor over the bottom right of the selection until the cursor changes to a thin cross-hair (see image at right).
- Now, click and drag your mouse down, and notice what gets filled in to the empty cells!
- Try this again with other patterns you can think of (A B C, Monday Tuesday Wednesday, Jan Feb Mar, etc).



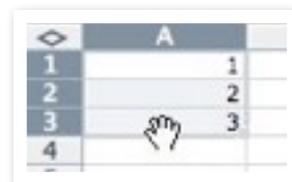
Select, Fill, Un-Fill or Delete & Move

Organizing your information, moving a column of numbers, or deleting a row in your list is easier than you may think. The Fill feature that we just learned has a few more tricks up it's sleeve.

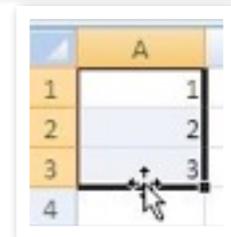
- Use Fill to copy multiple columns or rows of text.
- Use Fill to copy formulas that you have created, and it will automatically change the needed cell references!
- Use Fill to “Un-Fill” or delete an entire selection or any portion that you want to get rid of.

Selecting a range of cells will also enable you to move that selection to any empty area in a worksheet. Here's how:

- Select a group of cells in the same column, row or both.
- Now, move your mouse over the *edge* of your selection until your cursor changes to a hand (Mac) or a 4-Arrow (PC).
- Click and drag the selection to the new location, and drop!



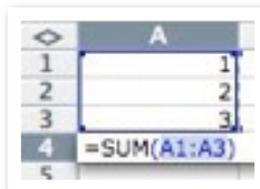
One last tip - click on the diamond (<>) icon on the Mac or the triangle pointing down and to the right on the PC at the top left of the sheet - this selects the contents of your entire spreadsheet if you want to change formatting or just delete it all and start from scratch!



Auto Sum



Excel's main purpose in life is to function like an accountant's spreadsheet, but it does all of the math so that we don't have to. Excel can do an amazing array of math and statistical analysis, but let's start easy. Look for the Sigma symbol (*at left*) - this is the auto sum button. It's job is to quickly add up any cells that it thinks that it can based on what cell you have selected when you click it. If you have the bottom cell in a column chosen, it will try to add everything above it. If you have the right-most cell of a row selected, it will add the contents of the row.



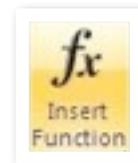
Let's take a look at what Excel has entered for cell A₄ after the Auto Sum button was pressed (*at left*). Notice that the first thing in that cell is an equals (=) sign. When an equals sign is first in a cell, this tells Excel that it will be doing some math with the cells referenced after the function and the equals sign. Directly after equals is

SUM. This means add up all of the contents of the referenced cells. We could also use some of the following common functions:

- AVERAGE - Returns the average of the selected cells.
- COUNT - Will give you how many cells are included in the selection.
- MAX - Returns the highest number in the range selected
- MIN - Shows the lowest number in the selected cells.

Insert Function

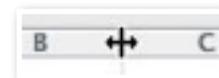
You don't want to have to memorize all of the functions that Excel can perform, nor would you want to. There are seemingly hundreds to choose from. The *Insert Function* button (or the Insert --> Function menu choice) will bring up a window of your choices, categorized by application - Trig, Financial, Statistical, etc. Click on a function, and Excel will show you the syntax or the proper way to formulate the function for it to calculate correctly. There is also a wizard that will guide you through the construction of the function of your choice.



Resizing Columns & Rows

Sometimes a column is not wide enough to display all of the information entered - like a student's name that is *really* long. Or the opposite may be true - cells are mostly empty space because just a single number or letter is entered.

You can resize the width of columns and the height of rows very easily. Move your cursor between the column or row to be changed *at the headings* at the top or sides of the sheet until your cursor changes to a line with arrows (*see right*). Then click and drag until your columns or rows are the size that you would like.



If you are a conformist and want all of the rows/columns to be a uniform size, select the columns or rows that you want to change at the headings. To show that it has been selected, the entire column/row will highlight. Now, resize one column/row to the desired size, and the areas that you had selected will now all be the same!

Sorting Your Information



Curious who the top 5 performers on a test are or need your students names alphabetized from Z to A? Excel is what you need! The Sort command (under the Data menu/tab) will sort your selected information based on the criteria you specify.



A couple of tips to make this smoother. First, make sure that you select the headers of any column/row that you are trying to sort. This will make choosing the correct information to sort by much easier. Also, select *ALL* of the information that you want to remain together. Don't just select a column of test scores without selecting the entire set of data, otherwise *ONLY* the test scores will be rearranged. You will have no idea who got those top 5 scores!!!

Conditional Formatting

What if you want those top 5 test scores (or more importantly the *lowest* scores) to *jump out* at you with a different color or other type of text formatting? This is easy and immensely helpful.

- Start with a range of numbers - could be scores on an assignment or a class average column - and select the entire column (click the header once) or just the cells to apply the analysis to.
- Head to the Format Menu and choose Conditional Formatting... (In Office 2007, click on the Home tab and the Conditional Formatting button is in the Styles section and choose New Rule).
- Now, define the rules or conditions for the formatting changes. In my example, I told Excel to make everything *greater than 85%* green and bold, and all scores *lower than 40%* red, bold-italic and underlined. Change the text by clicking on the Format button.
- Now, when a students grade changes, the spreadsheet will alert me instantly that they are in a range of scores that I have set - good and bad.



Graphs & Charts

The best way to look at a large set of numbers is to create a chart or graph. This will easily show trends and relationships at a glance. I don't know about you, but I would much rather look at a graph than a glob of numbers!

- To create a chart, make a selection of the numbers that you would like to make a graph of.
- Unfortunately, the next step is different for just about every version of Office you are probably using. Your best bet is to look for the Insert menu/tab and select Chart...
- A window will open, a menu gallery will appear, or you will see chart types to choose from in some way.



- Select the type of graph that you would like to insert, and follow any directions presented if any.
- You can add the chart as an object in your current spreadsheet which is good for printing the numbers and the chart, or as a page in your "workbook" that will be better for viewing full-screen.
- Charts will also easily copy & paste into any other Office program like Word or PowerPoint in case you want to use it in handouts or class discussions.



Freeze Right Where You Are

Have you ever been viewing a larger spreadsheet and the column or row titles scrolled right off of the page! You are then stuck with scrolling back and forth between the information you are interested in and the headings???

Scroll no more! Freeze Panes is the answer!

- Select the cell at the bottom right of the area of where you want your cells to remain. For example, If I always want to be able to see Cells A1 - A3, I would select cell B4.
- Head to the Window Menu (or the View tab in Excel 2007) and select Freeze Panes or Split.

	A	B
1	1	
2	2	
3	3	
4		
5		

•Freeze Panes will keep everything above and left of the selected cell frozen on the sheet. Scroll anywhere, and you will still always see these rows & columns.

•Split will create different “mini windows” that you can scroll through independently if you still want to be able to change which cells are viewable in the frozen areas.

- To return to the regular view, head back to the Window menu, and unfreeze or unsplit your worksheet.

Getting External Data Into Excel

Excel is a great tool for data analysis, and perhaps the only tool like this in your “arsenal.” Can you bring in data or information from other sources such as PowerGrade, SIS, or other online sources?

Absolutely. Most programs that deal with large charts of information will have a way to *export* that information into a format that Excel can handle and understand. Let’s walk through an example.

- Head to CultureGrams, which is a great place to get information on other states and countries from the Pioneer Online Library (pioneer.uen.org):
- <http://online.culturegrams.com/world/comparison.php?bc=w>
- The above link will take you directly to the “Build Your Own Comparison Table” page.
- Select any number of countries in the left hand column (hold down the Control key on the PC or the Command/Apple key on a Mac to choose multiples) and any number of categories in the right hand column.
- Click “Create Comparison Table” and a new window with your information will appear.
- Now, let’s get this information into Excel. At the top of the window, look for a link called “Download Table as a CSV File.” This is a comma-separated file that Excel can open as a spreadsheet. Note: if the file does not open automatically in Excel, open it from within Excel.
- You can now do all of the sorting, averaging, charting and graphing that you would do with your own data.



Additional Resources

- Pre-built (and useful!) templates can be found at:
<http://www.microsoft.com/mac/templates.mspix> for the mac and at
<http://office.microsoft.com/en-us/templates/default.aspx> for the PC