

Getting Started with Excel 2008

A University of Michigan Library Instructional Technology Workshop

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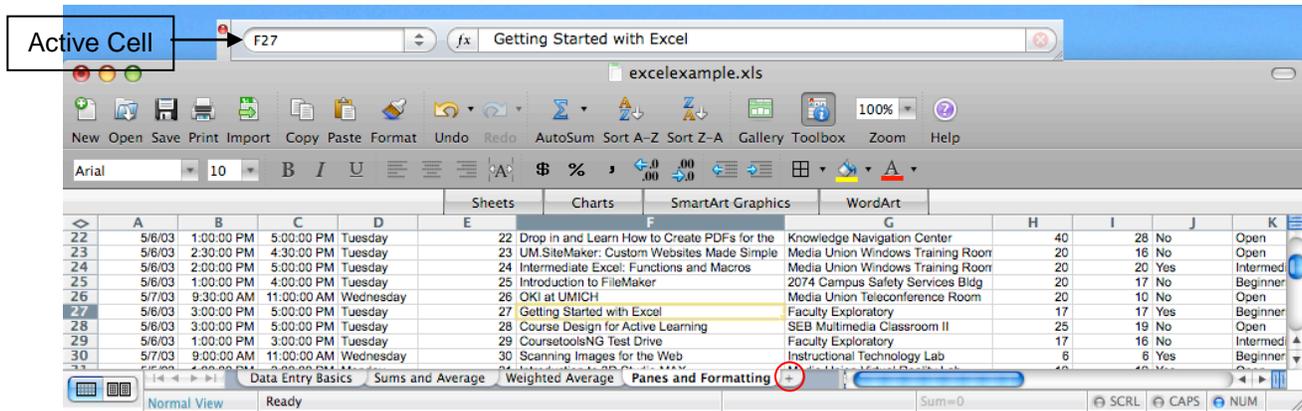
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ELEMENTS OF AN EXCEL DOCUMENT

When you open Excel, a blank workbook is automatically opened. A **workbook** is a file with one or more sheets; each **worksheet** (sometimes called “spreadsheet”) is a “page” in the workbook where you enter and work with your data. Each workbook starts with one sheet, but you can add more by clicking on the Insert Worksheet icon to the right of your last sheet’s tab (circled below). **To change the name, double-click on the sheet’s tab and then type the new name.**

An Excel worksheet is made up of a series of **columns** (named with letters e.g. A, B, C...) and **rows** (named with numbers e.g. 1, 2, 3...) that define the cells – for example, “F27”, as below. To enter data (text or numbers), click in the appropriate cell and start typing. When you type, the data goes into the currently selected cell, called the **active cell**. All the data you enter in the active cell appears in the Formula bar. If you need to change the data, you can double-click on the cell to activate the cursor in the cell, or click in the Formula bar and make the change there.



The Formula bar is not “docked” (connected) to the other toolbars, so you can move it around independently. To navigate more quickly in your worksheet, use the arrow keys on the keyboard to move left, right, up and down. In addition, you can use the following other keystrokes:

- *Return* accepts your entry and moves the active cell down one; hold down the *Shift* key as well and you will move back up.
- *Tab* accepts your entry and moves the active cell to the right. Again, hold down the *Shift* key as well as the *Tab* key and you will move to the left.

The *Esc* key or red X in the Formula bar will abort your change.

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RESIZING AND HIDING COLUMNS AND ROWS

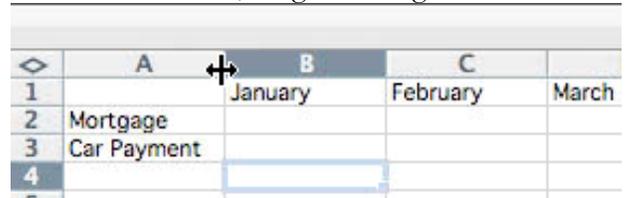
You can change a column's width by putting your cursor between the letter for that column and the next (between A and B at right). When you get the two-headed arrow, drag to the right or left as desired.

Double-clicking on that same spot will "autofit" the column, making the column as wide as the largest piece of text/data in that column.

The same technique works for rows; put your cursor between the two numbers until you see the two-headed arrow, and then drag or double-click.

To hide a column or row, put your cursor on any cell in the column or row, go to the **Format** menu, then **Column** (or **Row**) and choose **Hide**. To unhide a column or row, select the columns or rows before and after the missing column or row, go to the **Format** menu, then **Column** (or **Row**) and choose **Unhide**.

For exact height or width control, go to the **Format** menu, then **Column** (or **Row**) and choose **Width...** (or **Height...**).

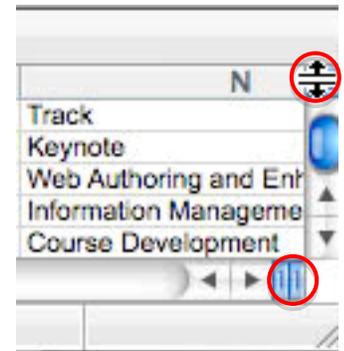


	A	B	C	
1		January	February	March
2	Mortgage			
3	Car Payment			
4				

USING PANES TO CREATE SPREADSHEET HEADERS

If your data set is large and it is difficult to see which values correspond to what heading, you can make the top rows and leftmost columns into headers that will stay put at the top and left as you scroll around the page.

1. At the top of the vertical scroll bar, there is a thick bar. Move your cursor over this bar and it changes to two parallel lines with an arrow.
2. Click and drag to divide the window vertically into panes. Adjust the split so that the first row (or two) is the only row in the top pane.
3. To set a horizontal pane, use the similar thick bar at the lower right corner of the scroll bar and drag it to the left.
4. To freeze the panes in place, go to the **Window** menu and choose **Freeze Panes**.



Note, you don't have to set them both; you can use just the vertical or just the horizontal. Once you freeze the panes, however, you need to unfreeze them to either adjust them or add another pane.

To remove the pane(s), go to the **Window** menu and choose **Unfreeze Pane**.

Once you have the column and row headings in place, you can scroll left to right and top to bottom and they will remain in place. This can be very useful to manipulate your data – see the [Sorting Data](#) section on page [13](#) for more information.

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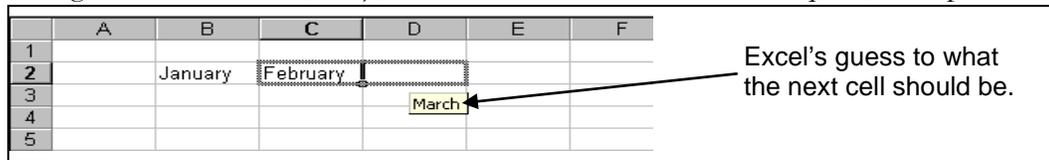
USING THE AUTOFILL COMMAND

Excel has the feature that helps you automatically enter data. If you are entering a predictable series (e.g. 1, 2, 3...; days of the week; hours of the day) you can use the **AutoFill** command to automatically extend the sequence. You can also use this for formulas – set up the formula once, then use the AutoFill to propagate it to the other cells.

USING AUTOFILL FOR SEQUENCES

For Excel to know how to fill in the series, you usually need to provide two or three examples. In the case of months, weekdays, and hours, you only need to provide one example.

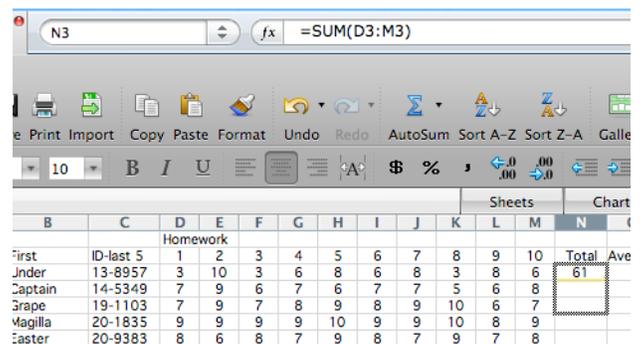
1. Type in either the first element (e.g. January or any month) or the first two elements (e.g. 1, 2) of a series.
2. Select the cell(s) you just typed in.
3. Move the cursor over the little block in the lower right corner of the active cell, and the cursor changes to a hairline plus sign (+), as opposed to the usual block plus sign.
4. Click and hold on the fill handle and drag to the right (or down) to fill in the series. Note that Excel can only extend series by adding to the sequence (that is, the next month, adding the same number, etc.), not other kinds of math such as square, multiplication, etc.



USING AUTOFILL FOR FORMULAS

To use AutoFill with formulas, insert the formula and make sure it works (more about working with formulas later in this document!).

1. Select the cell(s) with the formula and move the cursor over the little block in the lower right corner of the active cell, and the cursor changes to a hairline plus sign (+), as opposed to the usual block plus sign.
2. Click and hold on the fill handle and drag to the right (or down) to fill in the other cells. Excel automatically adjusts the formula for the row it is now on (so, in the example at right, Captain Crunch's total formula would read $=SUM(D4:M4)$ and so on.



A Note about using AutoFill with functions: If you want a constant reference (for example, each column should be divided by a certain cell's data), add a dollar sign (\$) in front of that cell's reference in the Formula bar. For example, if $=D8*P\$8$ is in the Formula bar and you AutoFill from this cell, the next cell would read $=D9*P\$8$, changing the first cell, but keeping the second cell reference constant – otherwise, it would read $=D9*P9$. Another way to accomplish this would be to define the constant and then reference the constant, as seen in the [Creating Weighted Averages](#) section on page Z.

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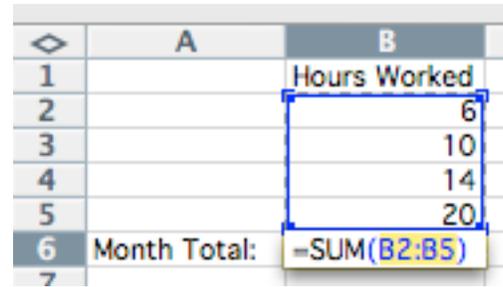
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USING FORMULAS AND FUNCTIONS

Formulas in Excel are useful to perform various mathematical, statistical, and logical operations. You can type in a formula (though you have to be sure it's exactly right) or you can use Excel's preset formulas called **functions**. Excel can perform simple tasks like a calculator; for example, if you typed in `=5*6` then pushed *Enter/Return* on the keyboard, what would appear in the cell would be 30. If you selected the cell again, though, you would see the **formula** `=5*6`. If you type in the formula, you must start with an equal sign, so Excel knows that the data in the cell is a formula. After the `=`, what comes next depends on what you're trying to do. If you were multiplying numbers (like in the above example), you would just type in the appropriate numbers and mathematical symbol (`*` for multiply).

The power of Excel, however, is to do more complicated calculations, including calculations for the cell itself, no matter what the content (meaning, if the content of the cell changes from a 5 to a 8, for example), and more complex formulas (such as averages, sums, etc., beyond basic math). Just like a basic formula, you need to start with the equal sign. After that, you would put the function name, then the range of cells inside parentheses, separated with a colon. For example: `=SUM(B2:B5)`.

Luckily, Excel has many preset functions, so you don't have to remember exactly what to type in – just remember the name of the function.



	A	B
1		Hours Worked
2		6
3		10
4		14
5		20
6	Month Total:	=SUM(B2:B5)
7		

USING THE AUTOSUM COMMAND

Since adding is used so frequently in Excel, there is an icon on the toolbar that will attempt to do it automatically. When you use the AutoSum command, Excel guesses what data you want to sum together (usually a block of cells next to the cell where the formula is).

To use the AutoSum, go to the cell where you want the summation result to appear, click on the AutoSum icon in the Standard toolbar, and verify that Excel's guess is correct. If it is not correct, select the cells you wish to add to the formula by clicking on the first cell and dragging to the last one. Then press *Return* on the keyboard. The sum of the data of the selected range of cells will appear in the cell with the formula. If any of the values in this range of cells are changed, the cell with the summation formula will automatically update to reflect the new sum.



An example of a sum is displayed in the picture above this section.

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INSERTING A FUNCTION

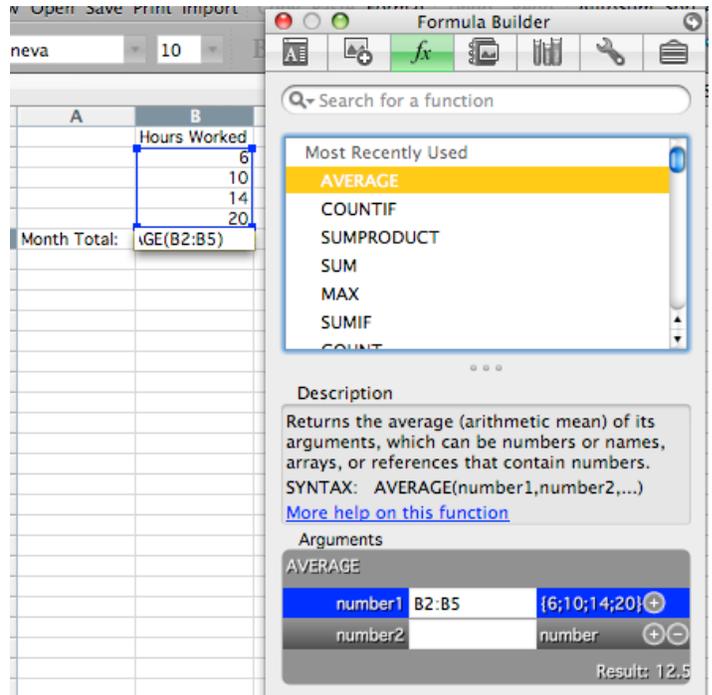
Before anything, you need to make sure your cursor is in the cell in which you want the result. You can insert functions by either going to the **Insert** menu and choosing **Function...** or by clicking on arrow next to the AutoSum icon and selecting *More Functions...*

The **Formula Builder** part of the Formatting Palette become active, and a list of operations that Excel can perform are displayed.

When you choose a function from the list (scroll to it or find it in the *Search* box), the bottom portion of the Formula Builder changes so you can select the cells you would like to involve in the formula. To select, use the mouse to click on the first cell and drag through the cells you would like to add. Note that for each function, this bottom portion will look different.

If you're not sure how to use a particular function, you can click the *More help on this function* below the function description and that will bring up Excel's Help.

Once the function is in the cell, you can copy and then paste it into another cell to do the same function for that different range of cells. You can also use the AutoFill command (click cell with the function, then drag to the right or down). The formula adjusts automatically for the new values.



As mentioned before, if you want a constant reference (for example, each column should be divided by a certain cell's data), add a dollar sign (\$) in front that cell's reference in the Formula bar. For example, if **=D8*\$P\$8** is in the Formula bar and you AutoFill from this cell, the next cell would read **=D9*\$P\$8**, changing the first cell, but keeping the second cell reference constant – otherwise, it would read **=D9*P9**. Another way to accomplish this would be to define the constant and then reference the constant, as seen below in the [Creating Weighted Averages](#) section.

There are so many different functions in Excel that it would be difficult to cover them all, but we will include a few below in addition to the AutoSum that was explained above on page [5](#).

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CREATING WEIGHTED AVERAGES EXERCISE

Suppose the final exam is 50% of the grade, and the homework and midterm are 25% each. To make a weighted average, each score is multiplied by the decimal equivalent of its weight, and the weighted scores are added up. The only restriction on a weighted average is that the weights must sum to 1 (or 100%). You could type this in by hand, for example: $=0.25*q3+0.25*r3+0.5*s3$ but the problem with that is you would have to get into each cell to make the change if you need to alter the weights for a different semester or class.

Quick Reference:

1. Enter weights
2. Select cells and name weights
3. Insert the **sumproduct** function
 - a. *Array 1* = first student's scores
 - b. *Array 2* = Weights
4. Click OK and AutoFill

Excel has a function called **sumproduct**, which adds the products within a range of cells, so by using that function, we can avoid having to type in all that in the example above. In addition, because functions can refer to cell contents – and thereby change as the cell content changes – we use the cell references for our weights, and so if they change, our formula results will automatically change. For example, if the weights change (so the final exam is now worth 40%, and the midterm and homework are now 30% each), as long as the cells themselves are referenced (rather than the specific numeric value), the formula will automatically update.

If we add the weights above each column heading, insert the sumproduct function, choose the student's scores (*Array1*) and then the weights (*Array2*), the formula will be correct **for the first student**. If we try to use the AutoFill command, however, as we discussed in the [Using AutoFill for Formulas](#) on page 4, both cell references will move down – so the second student's formula would be incorrect (as shown at lower right).

We can either use the \$ (dollar sign) to “lock in” the cell references for the weights, or we can define a named area referencing the cells with the weight information, and then use that name in the formula to reference those cells.

Before we define a name, create a new column for the weighted averages for all of the students. This way we can compare the weighted averages with the non-weighted averages.

	B	C	D	E	F	G
		Weights	0.25	0.25	0.5	
First	ID-last 5	HW	Midterm	Final	Weighted S	
Under	13-8957	78	77	68	=SUMPRODUCT(D3:F3,D1:F1)	
Captain	14-5349	71	61	48		
Grape	19-1103	80	86	86		
Magilla	20-1835	91	92	80		
Easter	20-9383	77	94	74		
Santa	30-5167	78	78	77		
Big	30-5234	83	95	68		
Elmer	19-4412	80	72	72		
Wonder	13-1977	89	85	80		
Bill	21-9427	77	70	66		
Joe	13-8435	83	82	88		
Lucky	13-1313	91	75	93		
Charlie	19-2467	72	80	85		

	B	C	D	E	F	G	H	I
		Weights	0.25	0.25	0.5			
First	ID-last 5	HW	Midterm	Final	Weighted Score	Grade		
Under	13-8957	78	77	68	72.75			
Captain	14-5349	71	61	48	=SUMPRODUCT(D4:F4,D2:F2)			
Grape	19-1103	80	86	86				
Magilla	20-1835	91	92	80				
Easter	20-9383	77	94	74				

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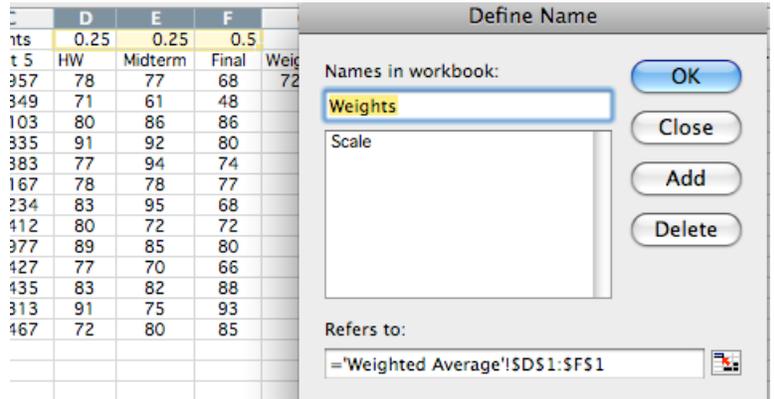
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DEFINING A NAMED AREA

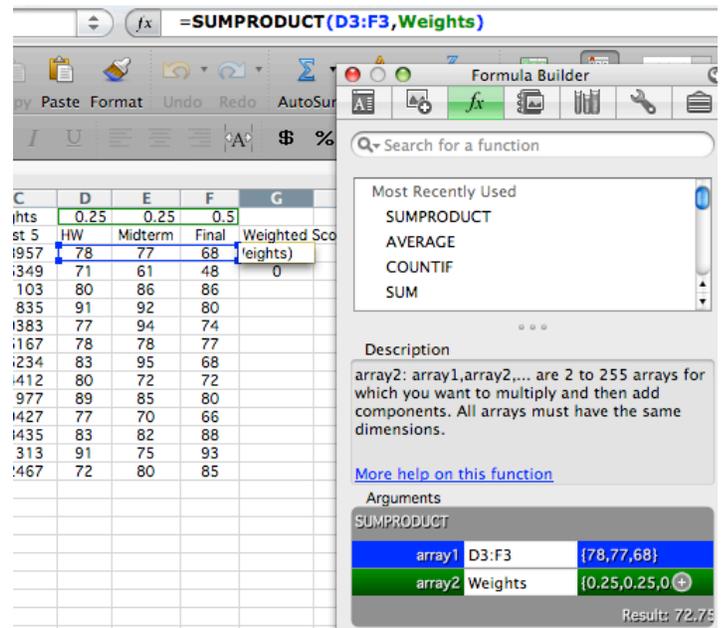
1. Enter a set of weights for each score at the top or bottom of each grade column (e.g. .25, .25, .50). Make sure the weighting adds up to 1.
2. Select the cells containing the weights.
3. In the **Insert** menu, **Name**, and then **Define....**
4. In the Define Name dialog box, type a name in the *Name:* field – note, Excel may guess at a name if an adjacent cell seems to be the label.
5. If you've already selected the cells (as we suggested in step 2), the *Refers To:* field will already have the correct cell information.
6. Click **OK** to accept the name for these cells – in our example here, “Weights”.



USING THE NAMED AREA IN A FORMULA

In the Weighted Score column you created, click in the empty cell for the first student's score. To insert the sumproduct function,

1. Go to the Formulas Builder and type in *sumproduct* in the *Search* box.
2. Select the cells with the first student's scores for *Array1*.
3. Type in the name *Weights* (or whatever you called it) in *Array2*. This field is not case-sensitive - you'll know you have it correct with the contents of the cells displays next to the field, and the result will display in the lower right of the dialog box.
4. Click **OK** to exit the dialog box.
5. Use the fill handle to extend the formula to all students.



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SUBSTITUTING LETTER GRADES EXERCISE

Rather than entering letter grades by hand, Excel can do it for you. This also allows you to try different grading curves with a minimum of effort. We will create a table that has the numeric value of the student scores and the corresponding letter grade, and then use the **vlookup** function (vertical lookup) to compare each student's score to the table and return the proper letter grade.

1. Create a column for the students called **Grade** (or whatever you want).
2. Off to the side, add two other column headings for **Scale** and **Letter Grade**. This area is what we will compare to the student's score.

- a. Under **Scale**, enter a straight scale by typing 0, 60, 70, 80, 90, down the column. For automatic grade assignment, you **must start with the low score** and increase as you go down.

B	C	D	E	F	G	H	I	J	K	L
	Weights:	0.3	0.25	0.5						
					Weighted					Letter
rst	ID-last 5	HW	Midterm	Final	Score	Grade			Scale	Grade
ape	19-1103	78	81	90	84.75				0	E
g	30-5234	71	77	85	79.5				60	D
harlie	19-2467	80	89	86	85.25				70	C
aster	20-9383	91	92	85	88.25				80	B
anta	30-5167	77	94	88	86.75				90	A

- b. Under **Letter Grade**, enter 'E', 'D', 'C', 'B', 'A'. Your scale can be as detailed as you'd like (meaning, you can use A, A-, B+, B, etc.), but you need to set that up before you name the area (as in steps 3-6 below). If you change your mind later, you will need to redefine the area.

To use the same scale for all of the students, we will name that area, and then use the name in the formula (as we did with the weighted averages). Otherwise, if we copy the formula down (or use AutoFill), the references to the cells that contain the scores and grades would change, and the result would be incorrect.

3. Select the cells containing the scale and the letter grades, but not the headings themselves (as shown in the picture above).
4. In the **Insert** menu, **Name**, and then **Define....**
5. In the **Define Name** dialog box, type a name in the *Name:* field – for example, “scale.”
6. If you've already selected the cells, the *Refers To:* field will already have the correct cell information. Click *OK* to accept the name.

Quick Reference:

1. Create columns for scale and grades
2. Select the scale and letters and name them
3. Insert the vlookup function
 - a. *Look_up value* = first students score
 - b. *Table_array* = Scale
 - c. *Col_index_num* = 2
4. Click OK and AutoFill formula

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Now we're ready to use that newly named area to assign grades. The **vlookup** function looks up a value in the first column of a table (where the values in the first column are increasing) and returns the value in any other column of the table. In our case, then, we will compare the student's weighted score to the first column of the table (our scale) and return the value in the second column (the letter grade). Because we have defined this area with a name, if we change the scale to grade on a curve (so, to get a B you only need 75 instead of 80, for example), the letter grades will automatically adjust.

7. Put your cursor in the **Grade** column for the first student then go to the Formula Builder and type *vlookup* in the *Search* box. Double-click on it when you see it.
8. In the Formula Builder,
 - a. Click in the *Lookup_value* field, and then click on the first student's weighted score.
 - b. In the *Table_array* field, type in what you called the scale and letter grades area – remember, you'll know you're correct if the scale and letter grades appear to the right of the field .
 - c. In the *Col_index_num* field, put in the column number that has the result you would like to appear – in our case, it's column **2** that has the letter grades we want to appear next to each student's weighted score. The correct letter grade should appear to the right and below the fields in the dialog box.
 - d. Note the *range_lookup* argument is not bold. That means it's optional.
 - e. Click **OK**, and the grade that corresponds with the student's score should appear.
9. Use the fill handle to fill the formula in to the rest of the students. Note that we don't have to worry about the reference to our scale because we used a name.

You can change the curve to something else (e.g. 55, 65, 75, 85) and see how that influences the grades.

The screenshot shows the Excel 2008 interface with the Formula Builder dialog box open. The dialog box displays the VLOOKUP function with the following arguments:

- lookup_value: G3
- table_array: scale
- col_index_num: 2
- range_lookup: logical

The result shown is "C". The background spreadsheet shows a table with the following data:

Final	Weighted Score	Grade	Scale	Letter Grade
68	72.75		60	F
48	57		60	D
86	84.5		70	C
80	85.75		80	B
74	79.75		90	A
77	77.5			
68	78.5			
72	74			
80	83.5			
66	69.75			
88	85.25			
93	88			
85	80.5			

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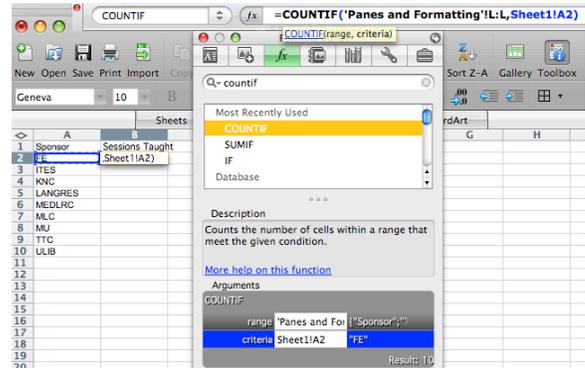
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COUNTIF EXERCISE

COUNTIF is a useful function that will only count the data if the data meets certain criteria. As with any function, place your cursor in the cell where you would like the result to display.

1. Go to the Formulas Builder and type in *countif* in the *Search* box.
2. Once you see *COUNTIF* as an option in the Formula Builder, double-click it to activate the lower portion of the Formula Builder.
3. Click in the *Range* field and then select the data you wish to count – in our example, the *Panes and Formatting* sheet, column *L*. Notice that items in the column will display to the right of the *Range* field.
4. Click in the *Criteria* field and then click on the cell that contains the data you wish to count – in our example, cell A2. Again, the contents of that cell should display to the right of the *Criteria* field, and the result should display below.
5. Press Return on the keyboard to accept the formula.

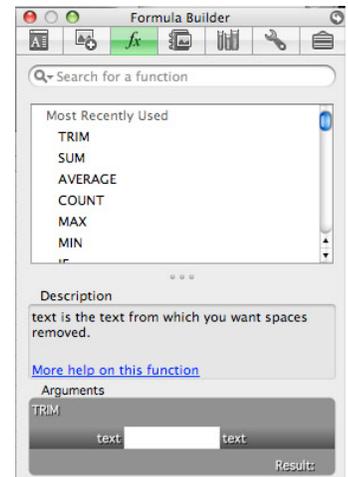


Since we've referenced cells in both fields of the dialog box, you can use the AutoFill feature as we've discussed before.

TRIM EXERCISE

Sometimes your data has extra spaces at the beginning of the cell, so it won't sort or filter properly. You can use the **TRIM** function to get rid of them.

1. Create a new column heading (for example, "Fixed").
2. Go to the Formula Builder, and type *trim* in the *Search* box. Double-click on *TRIM* to activate the lower portion of the Formula Builder.
3. In the *Text* field, click on the cell that you would like to change, then press *Return* on the keyboard to accept.
4. Use the AutoFill feature to fill in this formula for the rest of the column.
5. Select and copy the cells in the Fixed column, then in the first cell in the original column, **right-click** and choose **Paste Special** from the shortcut menu.
6. Make sure the *Values* radio button is selected, and press *OK*. Delete the fixed column.



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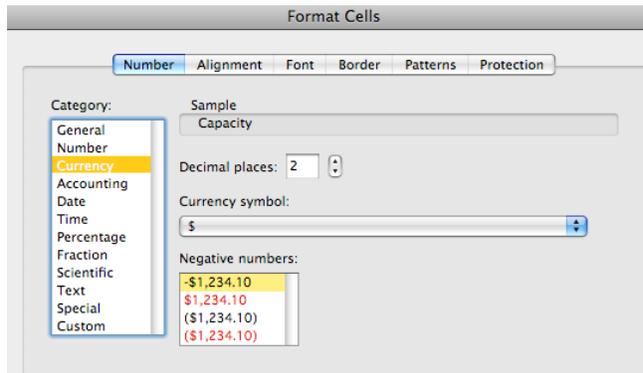
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FORMATTING

CELLS, COLUMNS AND ROWS

You can format the font, number, alignment, border, pattern, and protection of your cells, rows, and columns by going to the **Format** menu and selecting **Cells...** or by using the **Formatting Palette**.



Font Tab/Section: change the font, size and color text.

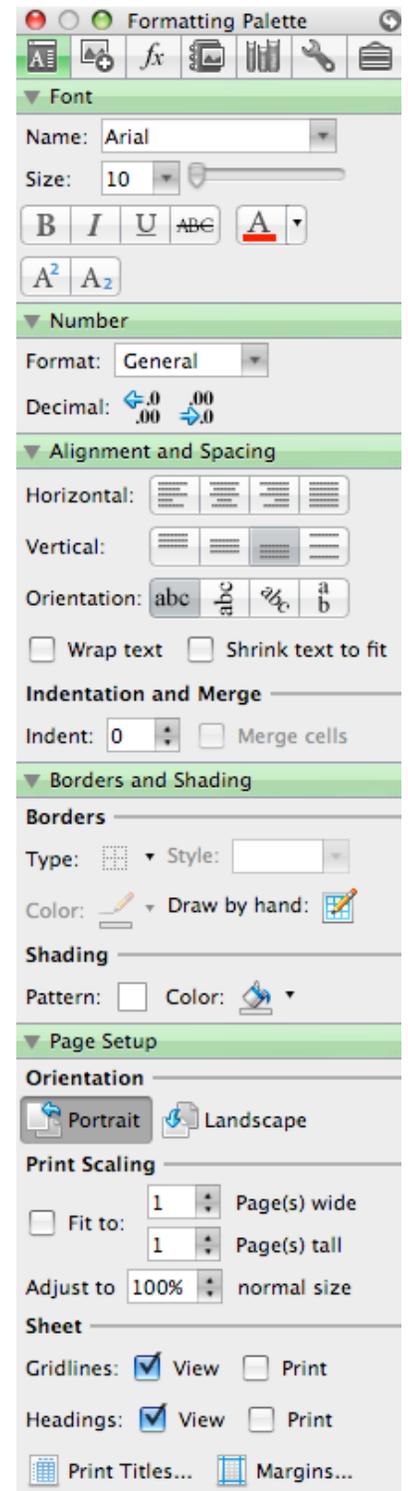
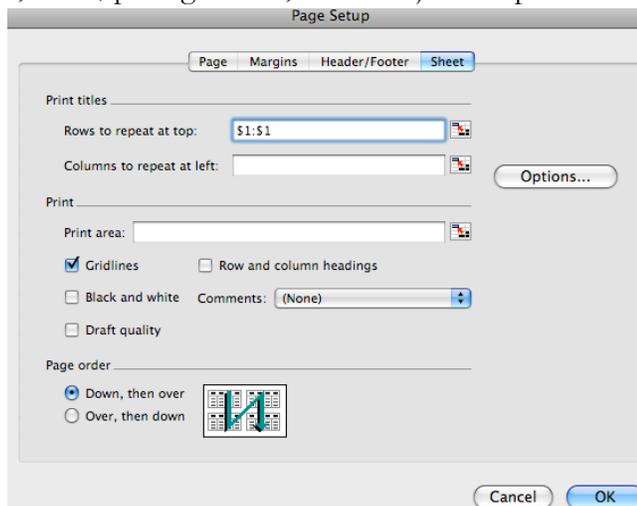
Number Tab/Section: specify the format of the cell (such as currency, time, etc.)

Alignment Tab/Section: set the alignment and orientation of the text. You can also choose to wrap text in a cell or merge cells.

Border Tab/Section: change the color (fill color) and border of the cell.

SETTING UP THE PAGE

Go to the **File** menu and choose **Page Setup...** or go to the **Page Setup** section of the **Formatting Palette** to change the margins, page orientation, show/print gridlines, and to adjust the print size.



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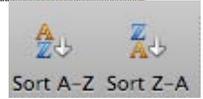
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SORTING DATA

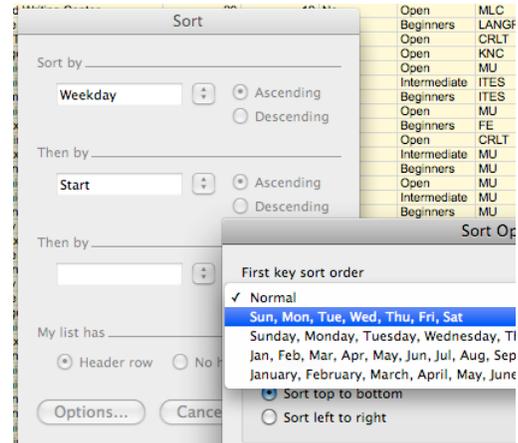
For a quick sort, click the **Sort** icons in the **Standard** toolbar (see right). For a more complex sort, go to the **Data** menu and choose **Sort...**



If your columns have a header row (meaning, the label for what's in the column is in the top row), then you can choose the column in the pulldown menus. Otherwise, the menus say *Column A*, *Column B*, etc.

You can sort by up to three factors; if you only need one, just leave the other two blank. Note that for the **first** sort order, you can click the *Option* button to bring up special options.

Click *OK* when you are done.



FILTERING DATA

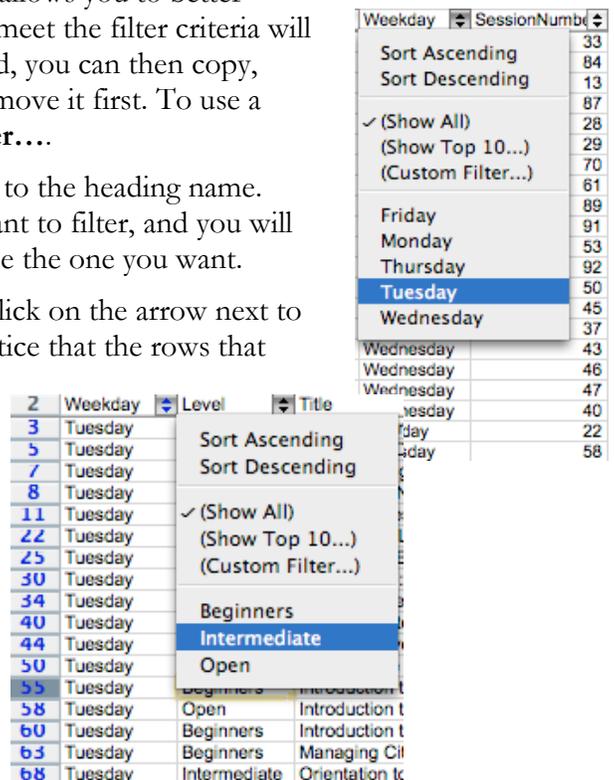
In addition to sorting, you may find that adding a **filter** allows you to better analyze your data. When data is filtered, only rows that meet the filter criteria will display, and other rows will be hidden. With data filtered, you can then copy, format, print, etc., your data, without having to sort or move it first. To use a filter, go to the **Data** menu, then **Filter**, then **AutoFilter...**

The column headings all now have a double arrow next to the heading name. Click on the arrow next to the heading by which you want to filter, and you will see a list of all the unique values in that column – choose the one you want.

Now the double arrow for the filtered column is blue; click on the arrow next to another heading to further filter the data. You'll also notice that the rows that don't meet the criteria are hidden, as indicated by the blue numbers for the rows.

In the example at right, first the data was filtered by the day *Tuesday*, and now will be filtered by the level *Intermediate*, so the only ones that will display are *Intermediate* ones that occur on *Tuesday*.

To clear the filter, choose (*Show All*) from the double arrow in the column you want display again, or go to the **Data** menu, then **Filter** and **Show All**.



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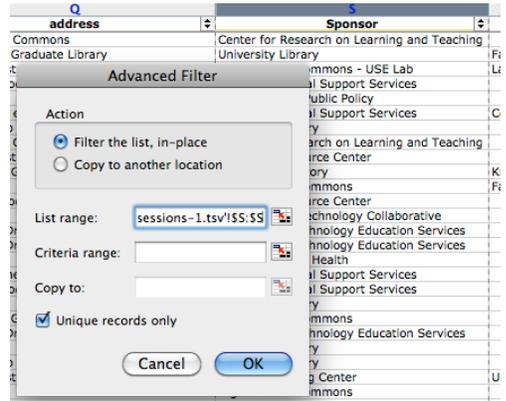
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ADVANCED FILTER

To employ an advanced filter, go to the **Data** menu, **Filter**, and then **Advanced**; the Advanced Filter dialog box will display. This dialog box allows you to set a particular criteria, copy results to another location (the other location must be in the same sheet), and capture unique values. In the example at right, unique values for the Sponsor column are now displayed to be copied to a new location.



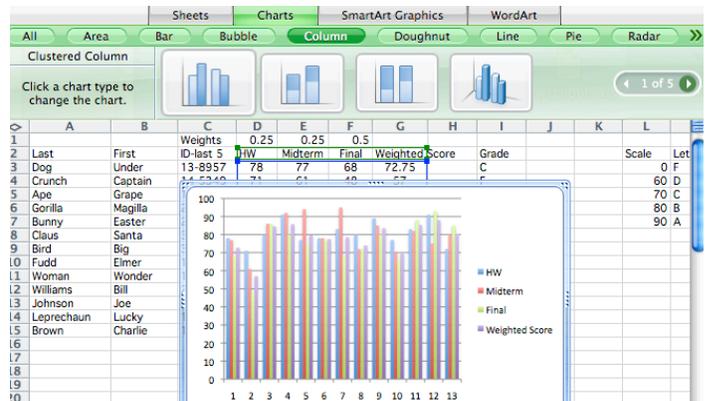
ADDING A CHART

To add a chart, select the data you wish to appear in the chart. If the data is noncontiguous, select one set, then hold down the *Command/Apple* key on the keyboard to select the second set.

Click on the **Charts** tab in the Elements Gallery and click on the type of chart you want.

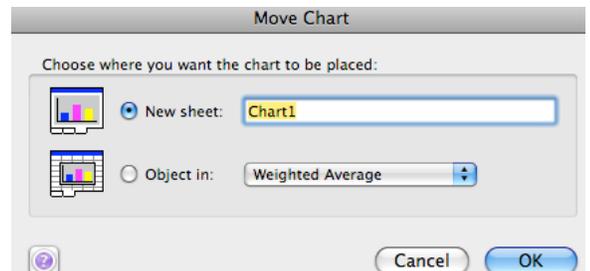
By default, the chart will just appear on the spreadsheet, and now you can move or modify it as described below.

To change the chart type (from *Column* to *Area*, for example), click once on the chart then click on a different icon in the **Charts** tab of the Elements Gallery.



MOVING THE CHART

You can move the chart around on the spreadsheet by clicking on it and then dragging it with a mouse. To move it to its own worksheet (so you can see it more clearly, print it easily, etc.), use the menu that appears only when the chart is selected – the **Chart** menu – and select **Move Chart...**



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MODIFYING A CHART

Whether the chart is an object on the worksheet with the data or on it's own sheet, there are many ways to modify the way it looks and it's location. A few ways are described below, but explore to find more! In all cases, you have to select the chart first.

Add a title, move the legend and so on in the Chart Options section.

Edit the data by just changing it directly in the datasheet, or by clicking on the *Edit...* button in the Chart Data section. Clicking this button will jump you to the data in the chart.

Change the style of the chart in the Chart Style or Quick Styles and Effects sections of the **Formatting Palette**.

Change the color, etc. of the data series, by selecting it and changing it in the Colors, Weights, and Fills section of the **Formatting Palette** or by double-click on it to open the Format Data Series dialog box (shown below).

The screenshot shows the Excel 2008 interface. At the top, the title bar reads "excelxample (version 1).xls [Reco...". Below it is the ribbon with tabs for "Import", "Copy", "Paste", "Format", "Undo", "Redo", and "AutoSum". The main area shows a worksheet with columns B through H. The data in the worksheet is as follows:

	Weights	0.25	0.25	0.5	
st	ID-last 5	HW	Midterm	Final	Weighted Score
der	13-8957	78	77	68	72.75
ptain	14-5349	71	61	48	57
ape	19-1103	80	86	86	84.5

The chart, titled "End of Term Results", is a grouped bar chart with six categories on the x-axis (1-6) and a y-axis from 0 to 100. The legend indicates four series: HW (blue), Midterm (red), Final (green), and Weighted (purple). The Formatting Palette is open on the right, showing the Chart Options section with the title "End of Term Results" and the Chart Data section with the "Edit..." button. The Format Data Series dialog box is also open, showing the Fill section with a color selection tool.

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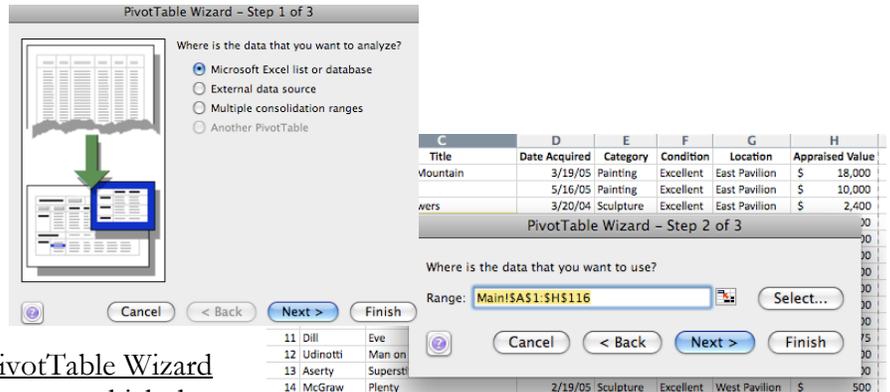
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WORKING WITH PIVOT TABLES

A pivot table is a way to summarize and view large amounts of raw data in an easy to read format. The pivot table doesn't change your raw data, but rather creates a new view of it. While there are many more things you can do with pivot tables than the below, let's look at an example.

SELECTING THE DATA

1. Put your cursor anywhere in your data set (you don't have to select it all), then go to the **Data** menu and choose **Pivot Table Report...**
2. If you choose *Microsoft Excel list or database* in the PivotTable Wizard and click *Next*, Excel will guess at which data should be included; if it's wrong, select the correct data in the *Range:* field of the *PivotTable Wizard – Step 2 of 3* dialog box.
3. In Step 3, choose where you want the pivot table to appear - it's most common to put the pivot table in a new sheet, but you could change the radio button to *Existing sheet* if you want. You could edit the layout at this point, but we'll do that in the next step. Click *Finish*.

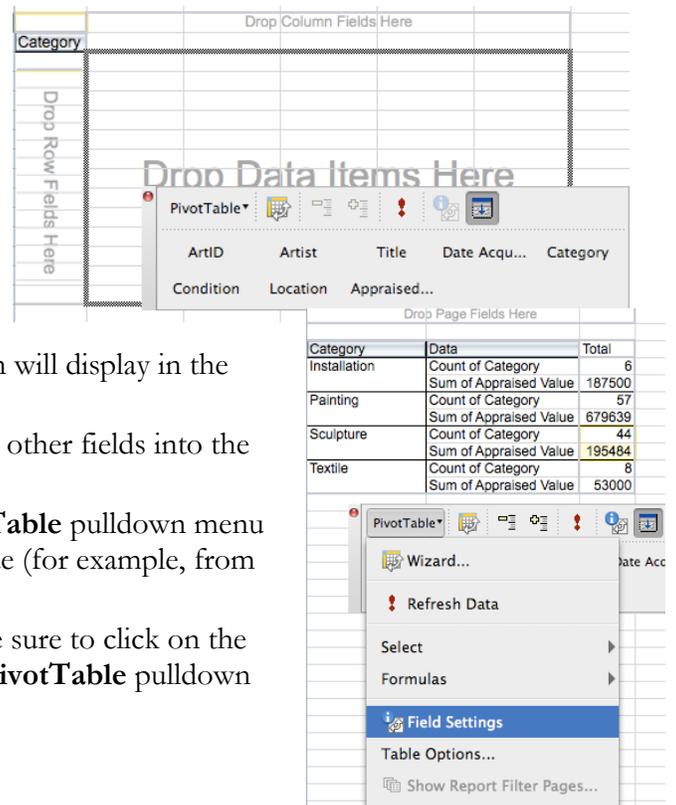


CREATING THE REPORT

When you click *Finish*, you will be brought to a new sheet, and the PivotTable toolbar will display. The PivotTable toolbar lists your column headings, while the sheet itself prompts you create your pivot table by dragging fields into place.

1. To create the pivot table, drag the fields from the PivotTable toolbar into the **Drop Row Fields Here** area – items in that column will display in the sheet area.
2. Depending on what you are trying to do, drag other fields into the **Drop Data Items Here** area.
3. In the PivotTable toolbar, click on the **PivotTable** pulldown menu and choose **Field Settings** to change the value (for example, from count to sum) .

If you change your data on the source spreadsheet, be sure to click on the Refresh icon in the PivotTable toolbar, or from the **PivotTable** pulldown menu.



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