

Selected Excel Basics

Excel Tips for Efficient Spreadsheet use

by

John Flaherty

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Selected Excel Basics

Throughout this module it is assumed that course participants have some familiarity with Excel. Because of the diversity of users and potential uses of a general spreadsheet application there are typically some whose knowledge of spreadsheets is well developed in certain areas but may require enhancing in others. More experienced users will have mastered techniques to improve their efficiency while less experienced users are continuing to build skills that will make them *power users* of Excel. In this brief introduction a few skill building techniques are discussed.

Using the Fill Handle

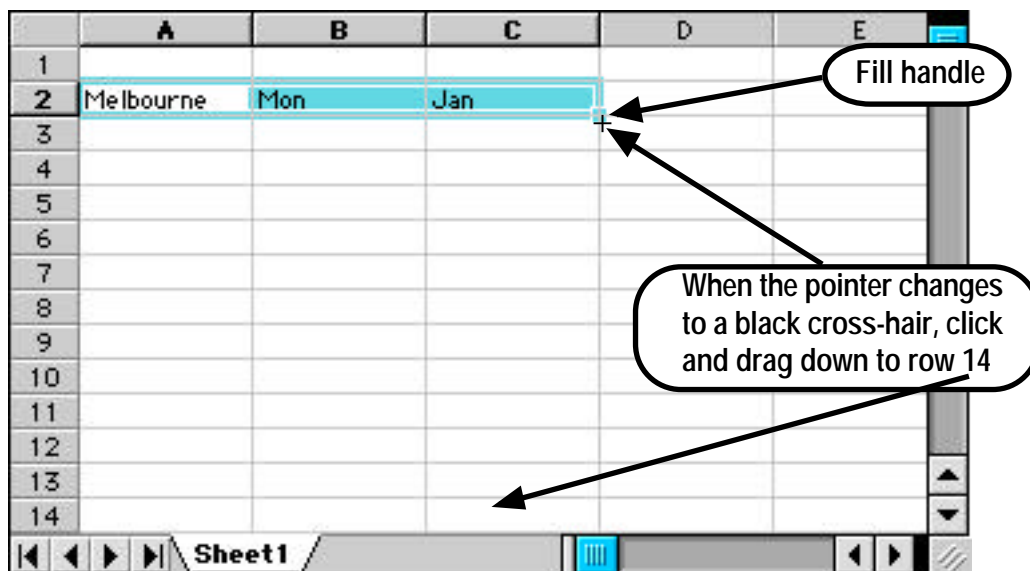
With a cell or range of cells is selected, the *lower right-corner* of the selected cell(s) outline shows a small square with a cross known as the *fill handle*, indicated in the following diagram. When the mouse pointer is placed directly over the *lower right-corner* of the selected cell(s) it forms the shape of a black cross-hair.



Use the *handle* to drag a fill series across adjacent cells. The following types of series may be created using the fill handle:

- to copy the same entry into other cells, type the information into the cell once, select the cell, and then drag the fill handle with the mouse to fill adjacent cells with the same data.
- to enter the month (Jan, Feb, Mar,...) or day of the week (Mon, Tue., ...) type the first entry, and then drag the fill handle to fill adjacent cells with the complete series. Excel's AutoFill feature completes the series in the correct order.

Type the following data in row 2 of a blank worksheet and observe the outcome.



- to use a number series, type the first two entries in the order you wish the series to increase or decrease. Different examples of series are provided in the diagram on the left. The fill handle is visible at the lower-right corner of the selected cells (bottom-right of cell D2). Place the mouse over the *fill handle* (the pointer looks like a small crosshair), click the left mouse button and hold while you drag to complete the series, the diagram on the right contains the completed series.

	A	B	C	D
1	1	1	1	10
2	2	3	6	9
3				
4				
5				
6				
7				
8				
9				
10				
11				

	A	B	C	D
1	1	1	1	10
2	2	3	6	9
3	3	5	11	8
4	4	7	16	7
5	5	9	21	6
6	6	11	26	5
7	7	13	31	4
8	8	15	36	3
9	9	17	41	2
10	10	19	46	1
11	11	21	51	0

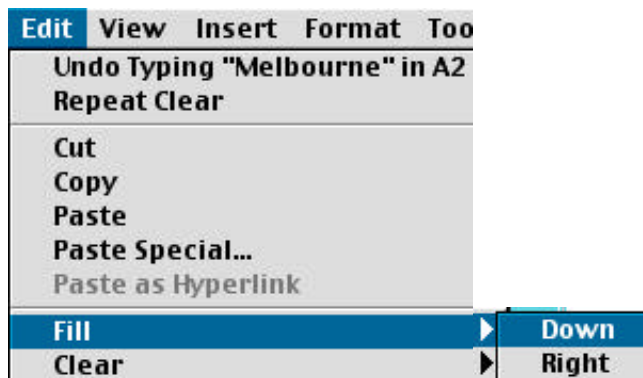
The Fill Command

Another method of creating a fill series is to use the *Fill* command. If you want to use the same data in neighbouring cells (if, for example, you are copying a category heading), select the cell containing the entry, and then drag over the cells you want to fill. Excel fills the cells with a copy of the original data.

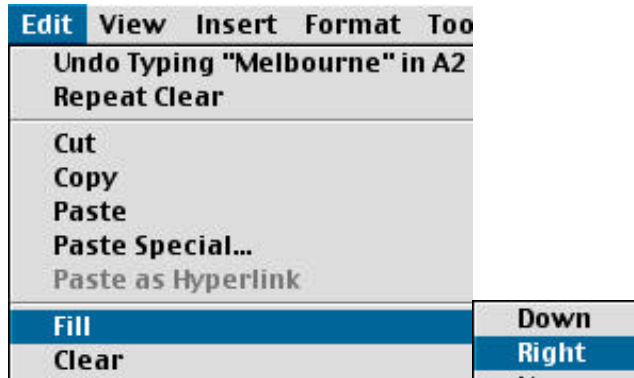
Complete the following series of tasks:

1. Type the word *Melbourne* in cell A2 of the worksheet.
2. Select cell range A2:E11

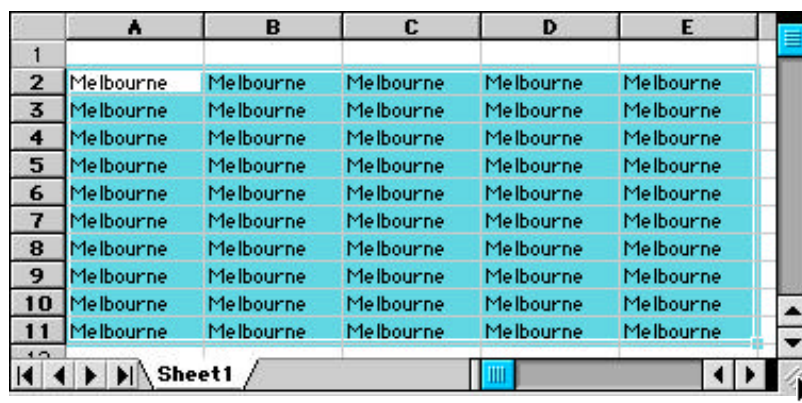
3. From the **Edit** menu choose **Fill** and select **Down**



4. From the **Edit** menu choose **Fill** and select **Right**



The selected area is filled with the text "*Melbourne*".



Entering a Data Series

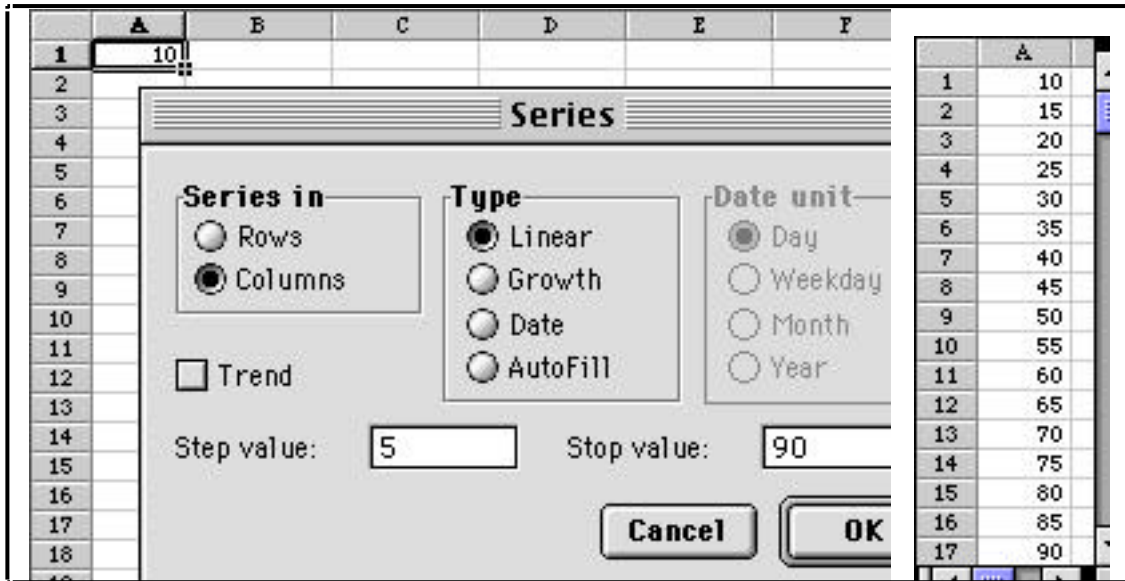
Specific start and stop values may be entered for a data series using the Series dialogue box. The following steps demonstrate how to use the Series dialogue box to create a data series in column A, the start value is 10 (entered in cell A1), the stop value is 90 and the step value is 5.

Step 1 Select the first cell of the series (Cell A1) and enter the starting value (10)

Step 2 Select the range of cells to fill (not required for the present example)

Step 3 From the **Edit** drop-down menu, choose **Fill** and from the cascade menu select **Series**

Step 4 Complete the **Series** dialogue box as follows and click **OK**. This will produce the completed series shown in the right of the diagram.



Combining the *Fill Handle* with the *Fill Command*

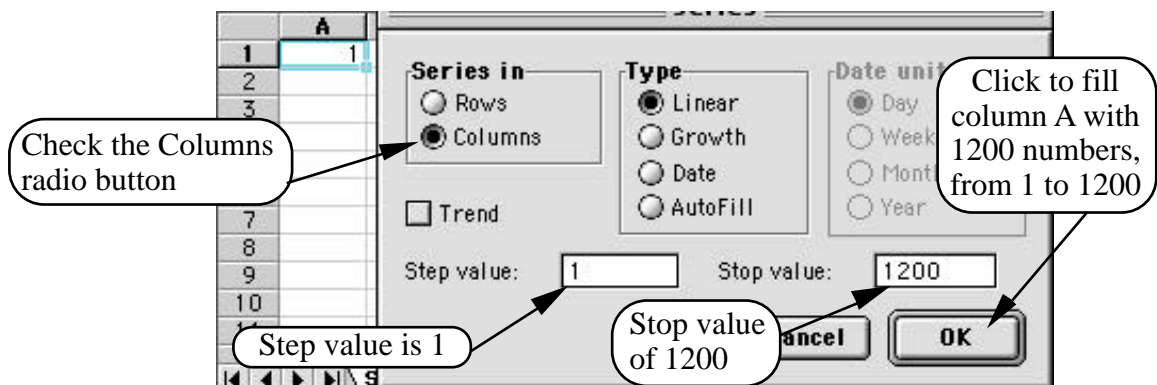
A useful application of the **Fill Command** is in conjunction with the *Fill handle*. Suppose that the contents of a particular cell had to be replicated a large number of times across consecutive rows. If the cell contents in the adjacent column, either to the left or the right, contain data of any description, then **double-clicking** the **fill handle** will replicate the cell's contents automatically, in line with the adjacent column. The following example, which requires replication of the contents of cell **B1** 1200 times, illustrates this feature.

Place the number 1 in cell A1 and select cell A1.

From the **Edit** drop-down menu, choose:

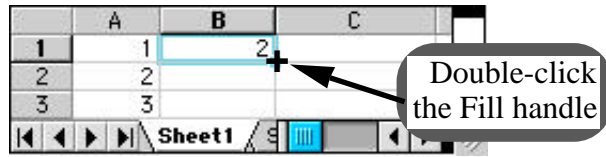


Complete the **Series** dialog box as follows:



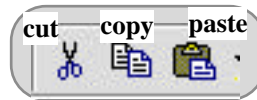
Now enter the following formula in cell **B1**: $=2*A1$

Select cell **B1** and double click the fill handle to enter 1200 formulae in column B.



The Cut, Copy and Paste Icons

The toolbar icons for copy, cut and paste are:



Keyboard shortcuts are:

cut
Ctrl+X

copy
Ctrl+C

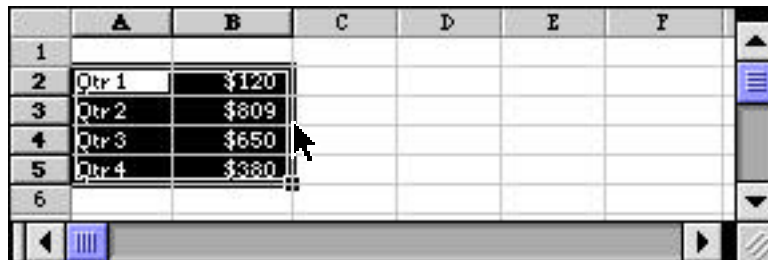
paste
Ctrl+V

The Drag-and-Drop Technique

To move or copy a selected range, the **drag-and-drop** method may be used. This is achieved by selecting the cell range to move or copy, placing the mouse pointer in the correct position and then dragging to the new location. For example, suppose the cell range **A2 : B5** are to be moved to a new location two columns to the right in the same row location, we would proceed as follows:

Step 1 Select the cell range to copy or move.

Step 2 Move the mouse pointer over the selection's border. The mouse pointer should change to an arrow, as follows:



Step 3 To **copy** the range, hold down the **Ctrl** key.
To **move** the range nothing is required at this step.

Step 4 Drag the border. As you drag, an outline of the selected data is visible. When the selected cell range is at the required location, release the mouse button to complete the task.

Copying Data from Non-Contiguous Columns

To copy the information contained in columns A, C and E, in the following diagram, and move it to a new position in the spreadsheet, the steps are:

	A	B	C	D	E	F
1		1993	1994	1995	1996	1997
2	Qtr 1	\$120	\$206	\$162	\$166	\$153
3	Qtr 2	\$809	\$903	\$903	\$837	\$840
4	Qtr 3	\$650	\$679	\$682	\$669	\$744
5	Qtr 4	\$380	\$413	\$385	\$462	\$384
6						

- Step 1** Select the cell range **A1 : A5**
- Step 2** Press and hold the **Ctrl** key
- Step 3** While holding the **Ctrl** key down, select the cell range **C1 : C5** and then the cell range **E1 : E5**
- Step 4** Place the mouse pointer in the first cell of the target cell range, **B7**, and **Paste** the contents of the clipboard. This procedure arranges the data in contiguous columns.

Copy and Paste Special

Frequently we wish to copy data from one worksheet location to another and paste the values in the new location. This requires the use of *Paste Special* when the data to be copied is the result of formulae.

To copy the values stored in cells **A4 : A5** in this worksheet use *Paste Special*.

	A	B
1	12	
2	15	
3	25	
4	=SUM(A1:A3)	
5	=AVERAGE(A1:A3)	
6		
7		

- Step 1** Select cells **A4 : A5** and copy the contents to the clipboard.
- Step 2** Select the first cell of the destination location, cell **B4**.
- Step 3** From the **Edit** pull-down menu choose **Paste Special**
- Step 4** Complete the **Paste Special** dialogue box by checking the **Values** radio button and click **OK** to complete the task.

Turning a Row into a Column

The layout of a worksheet facilitates the way in which information is communicated and may also enhance our productivity.

Press Shift F11 to insert a new worksheet.

Enter the following data in cell range **A2:G2**

	A	B	C	D	E	F	G
1							
2	Melb-0	Melb-1	Melb-2	Melb-3	Melb-4	Melb-5	Melb-6
3							

Sheet2 / Sheet1

Type the first two entries and then use the fill handle to drag to the right.

Step 1: Select cell range **A2:G2** and choose **Copy**

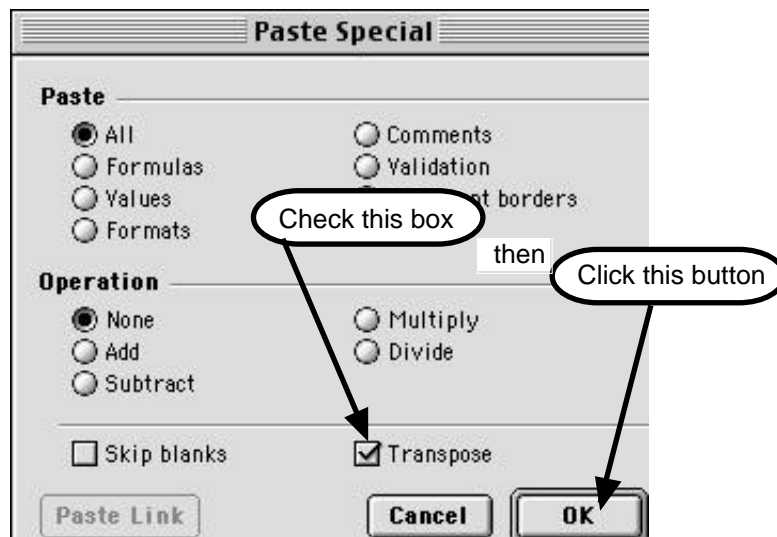
Select cell **A5** and *right-click*

Step 2: From the pop up menu choose *Paste Special*



(or from the **Edit** menu, choose **Paste Special**)

Step 3:



The **transpose** function converts rows to columns or columns to rows. It may be applied to a single row (or column) or a group of rows (or columns).

Exercise Place **Syd-0, Syd-1, ... , Syd-6** in cells **B3:G3**
Transfer the contents of **A2:G3** to two columns starting at cell **D5**.

Faster Data Entry

Press **Shift** **F11** to insert a new worksheet.

In separate cells enter the following: (c) (r) (tm)

In a blank cell enter (all in lower case): *monday*

Excel's **AutoCorrect** feature automatically adjusts the cells' contents to a predefined value. This is a useful feature to improve the accuracy of data entry and the efficiency with which information is entered.

Suppose that we wished to enter the following text several times in our worksheet:

Engelbert Humperdinck

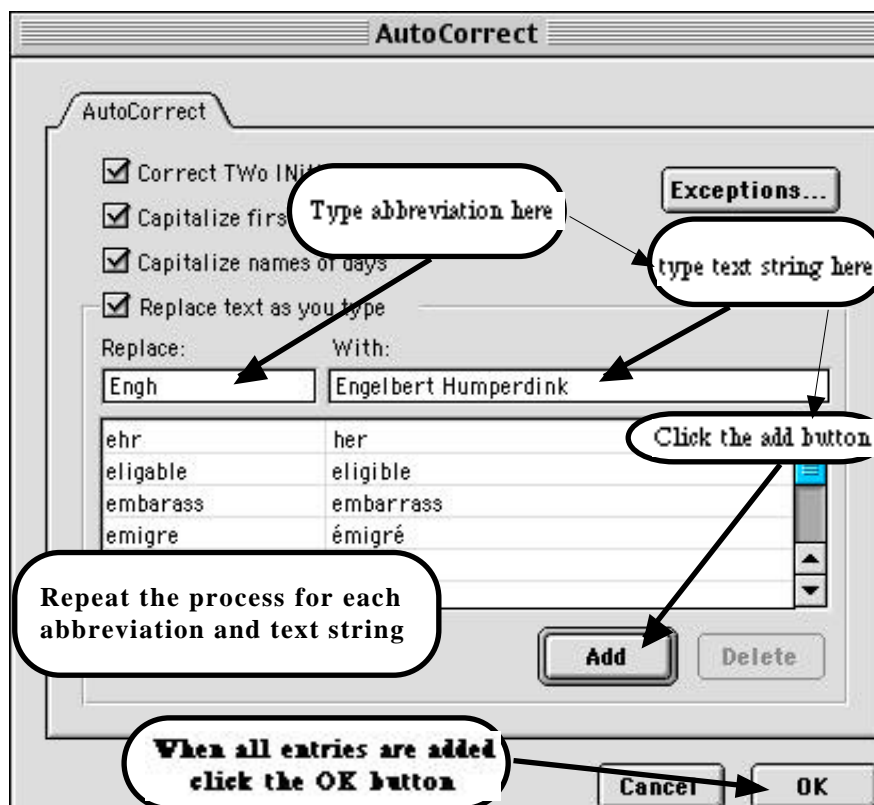
Alakazam Holofoil

Ludwig van Beethoven

For each entry we will assign a unique identifier (or abbreviation) as follows:

<i>Abbreviation</i>	<i>used for</i>	<i>this text</i>
Engh		Engelbert Humperdinck
Alak		Alakazam Holofoil
LVB		Ludwig van Beethoven

From the **Tools** menu select **AutoCorrect** and complete the following tasks:

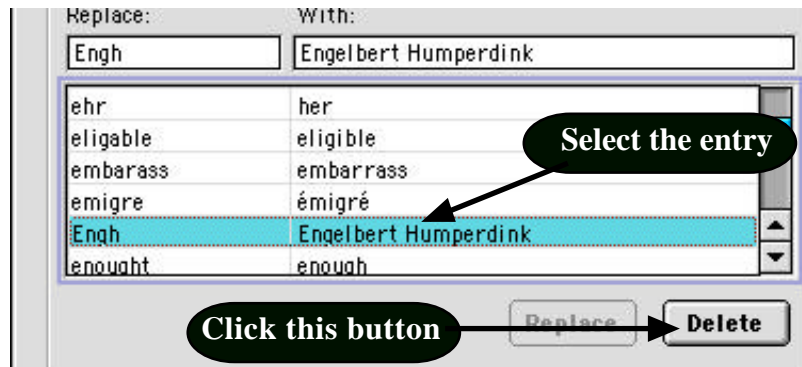


Select any blank cell and type one of the abbreviations: **Engh**, **Alak** or **LVB**

Excel replaces the abbreviated text with the text string previously stored using the **AutoCorrect** feature.

Removing an Entry from AutoCorrect

To remove an entry from **AutoCorrect**, simply select the entry and click on the **Delete** button.



Using AutoComplete

If you need to enter a lot of repetitive data, such as entering the same text labels repeatedly, then Excel's **AutoComplete** feature provides a more efficient way of entering such data.

To illustrate, suppose we wanted to use **Victoria** and **Melbourne** repeatedly in our data entry.

- Step 1:** Select any blank column:
 - in row 1 enter **Victoria**
 - in row 2 enter **Melbourne**
- Step 2:** Move down to the cell in row 3 of the column and **right-click**
- Step 3:** Choose **Pick** from the pop up menu.
A list of previously typed words appear.
- Step 4:** Choose the word you want from your list and Excel will automatically insert it in the cell.

Adding Comments to Cells

You can add comment notes to any cell in your worksheet to help you identify data or explain the contents. Comments will not affect the worksheet in any way and do not appear in the printed document.

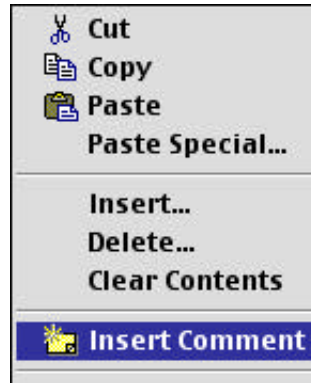
Comments become visible when the pointer passes over a cell containing a comment - a comment box pops up. Cells containing comments may be identified by *small red triangles* in the upper-right corner of the cell.

To add a comment to a cell:

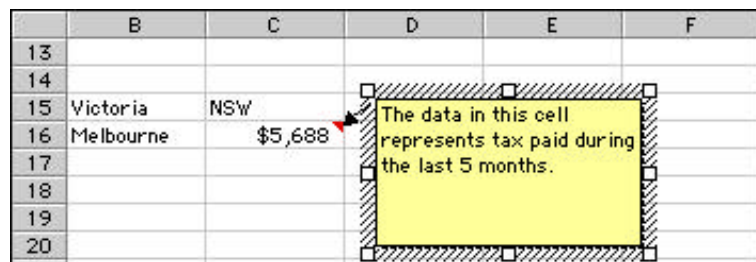
Step 1 Select the cell you wish to add the comment to

Step 2 *Right-click* your mouse

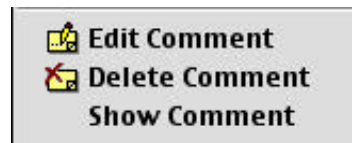
Step 3 From the pop-up menu choose **Insert Comment**



Step 4 In the box that appears type the comment.



To **Edit**, **Delete** or **Show** a comment, select the cell containing the comment and *right-click* your mouse. Select the appropriate sub menu:



Using the Shift key to Select a Range

Open a new worksheet and place 1200 values in column A.

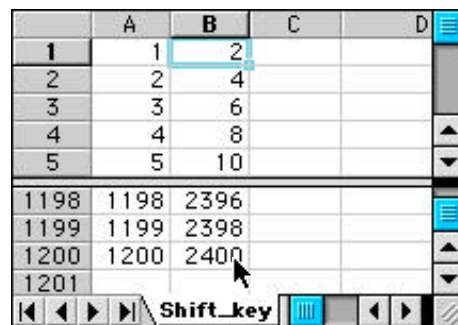
Place 1 in cell **A1** and then use **Edit** ➔ **Fill** ➔ **Series** to place 1200 values in column **A** (see previous section headed **Fill Handle**).

Enter the formula in cell **B1**: $=2*A1$

Now use the **Fill handle** to replicate this formula 1200 times.

Split the worksheet window so that both the top and bottom of the data are visible.

Select cell **B1**
Hold the **Shift** key down
and select cell **B1200**.



Copy the selected cell range.

Select cell **D2**.

From the **Edit** drop-down menu (or *right-click*), choose **Paste Special...**.

Check the **Values** radio button and click the **OK** button.



Enter the formula in cell **C1**: **=A1+B1-D1**

Select cell **C1** and choose **Copy** from the **Edit** menu.

With **C1** selected, hold the **Shift** key down and select cell **C1200**.

Choose **Paste** from the **Edit** menu.

Custom Formatting

Excel has a selection of standard numerical formats, which are accessed by choosing **Format** from the drop-down menu, then choose **Cells** and click on the **Number** tab.

Open a new worksheet and place any numeric values in cell range **A2:A6**.

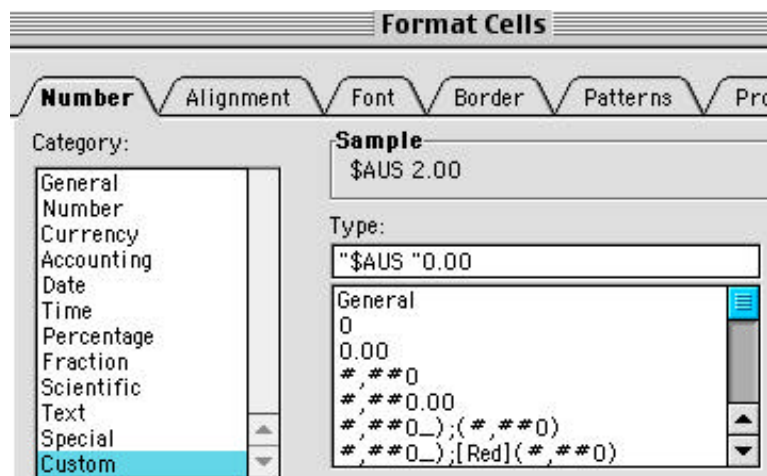
Select cell range **A2:A6**

Activate the format cells dialogue box.

Click the **Number** tab. Select **Custom** from the **Category** list.

In the **Type**: text box enter: **"\$AUS "0.00**

Click the **OK** button.



The information embedded in the double quotation marks precedes the data formatted to two decimal places. The double quotes may be placed before or after the required number format to achieve the desired result.

```
= "The net profit is: " & TEXT(H10,"$#,##0.00")   Cell H10 contains a numeric value  
= "Total: " & DOLLAR(1287.367,2)  
= "Total: " & DOLLAR(H10,2)
```

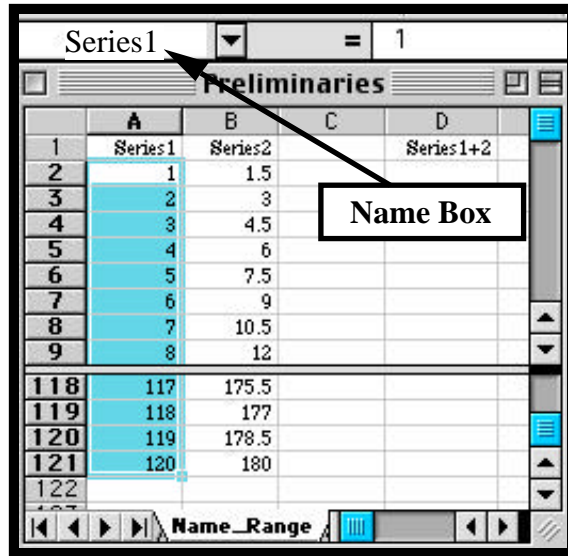
Naming Cell Ranges

Open a new worksheet and place 120 values in column **A** starting from **A2**.

Enter the labels: in cell **A1** **Series1**
 in cell **B1** **Series2**
 in cell **D1** **Series1+2**

Enter the formula: in cell **B2** **=1.5*A1**

Use the **Fill handle** to replicate the formula so that it fills the cell range **B3:B121**



Select cell range **A2:A121**

Click in the **Name Box**
Enter the range name: **Series1**
and press the **Enter** key.

Repeat the process for the data in column **B**.

- select cell range **B2:B121**,
- click in the **Name Box**,
- enter the range name **Series2** and
- press the **Enter** key.

Standard spreadsheet operations may now be performed on these cell ranges using the range names assigned to them. Complete the following tasks in the nominated cells:

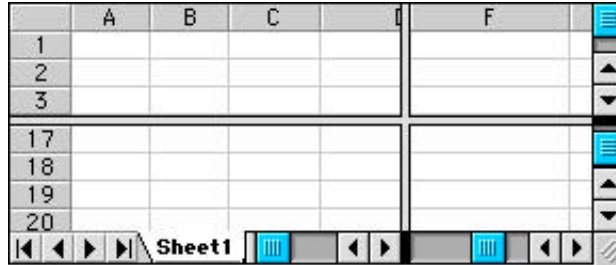
Cell	Formula
D2	=AVERAGE(Series1)
D3	=SUM(Series1)
D4	=SUM(Series1,Series2)
D5	=SUMXMY2(Series2,Series1)

Splitting the Worksheet Window

Many spreadsheet tasks take up an area of the worksheet far greater than is visible on the average computer screen. The ability to split the worksheet window increases the flexibility of the work environment. Two methods of arranging the worksheet window are presented here.

Method 1

- Step 1** From the **Window** drop-down menu select **Split**
This will split the worksheet into 4 sections as follows:



Note that within each section it is possible to scroll through the worksheet independently of any other section, each window has its own vertical and horizontal scroll bars.

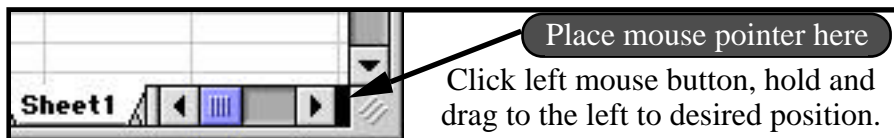
- Step 2** **Removing the left (or right) section:**
Place the mouse pointer on the bar dividing the worksheet vertically, click the left mouse button and drag to the left (or right) of the worksheet until it disappears.
- A similar approach may be used to remove the top (or bottom) panels.
- Step 3** Drag the horizontal bar to the desired position, it is generally a good idea to split the worksheet so that the top portion represents about two-thirds and the bottom about one-third.
- Step 4** Arrange the information in the worksheet so that both the beginning and ending sections of the data set are visible.

Method 2

Split worksheet horizontally



Split worksheet vertically



A Quick Look at Charts

Open a new worksheet and place 120 values in column **A** starting from **A2**.

Enter the labels: in cell **B1** **Series1**
 in cell **C1** **Series2**
 in cell **D1** **Series2**

Enter the formulae: in cell **B2** =INT(RAND()*100)+600
 in cell **C2** =INT(RAND()*100)+750
 in cell **D2** =INT(RAND()*100)+900

Split the worksheet horizontally so that the beginning and end of the data are visible.

Select cell range: **B2:D2** and double-click the **Fill handle** to duplicate each of these formulae 120 times in columns **B, C** and **D**.

Select cell range **B2:D121** and choose **Copy** from the **Edit** menu.

Select cell **B2** and choose **Paste Special** from the **Edit** menu.

Check the **Values** radio button and click the **OK** button.)

All data in columns **B, C** and **D** are now values.

Sort the data: Select cell range **B2:B121** and click on the *sort descending* button on the tool bar:

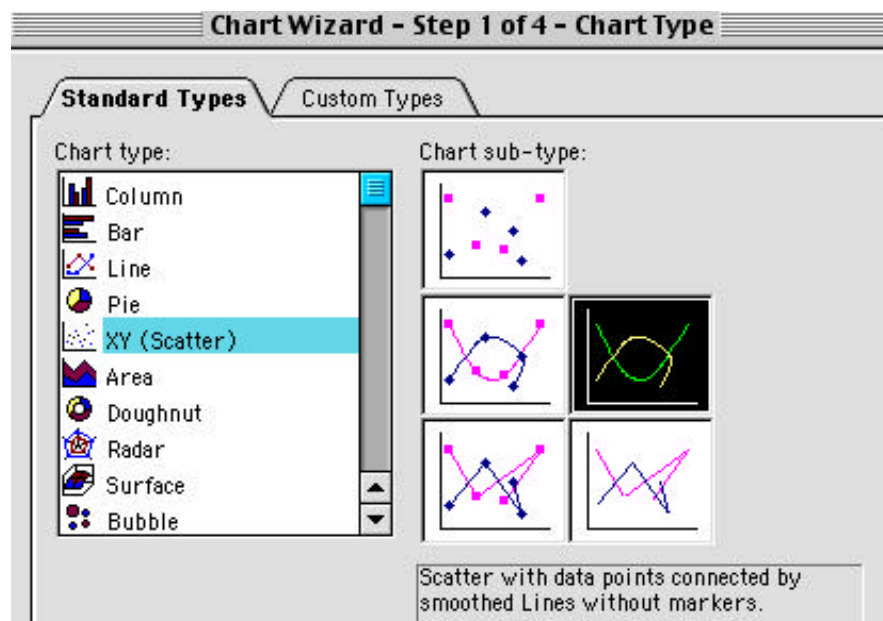


Repeat the sort for data in columns **C** and **D**.

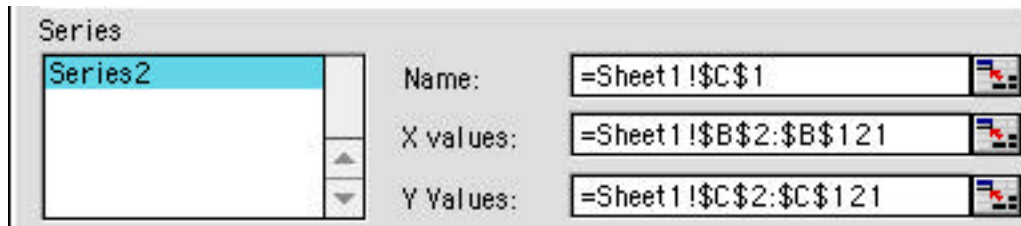
Select cell range: **B1:C121** and click on the **Chart Wizard** button

Select the following **Chart type** and **sub-type**:

Click the **Next >** button.



In **Step 2** of the **Chart Wizard** click on the **Series** tab and ensure the column **B** values are in the **X values:** text box. The values in column **C** represent the Y-axis values.



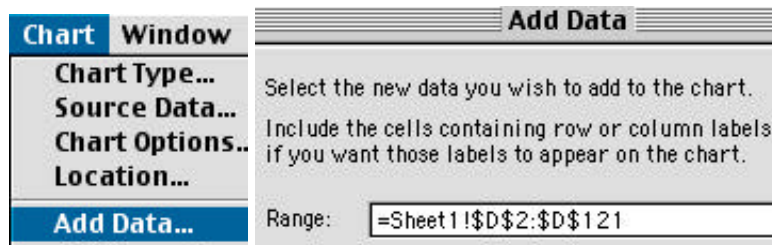
Click the **Finish** button to complete the chart and place it in the active worksheet.

The data in column **D** has to added to the chart.

Click on the chart, near the outer edge, to select it.

From the **Chart** drop-down menu select **Add Data**.

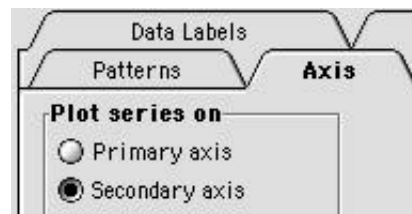
Enter D2:D121 in the **Add Data** dialogue box. Click **OK**



The magnitude of the scale of Series3 is somewhat larger than for Series 2, it requires its own axis. To add a second axis to the chart, double click the line representing Series3 on the Chart to access the **Format Series** dialogue box.

Click on the **Axis** tab and check the **Secondary axis** radio button.

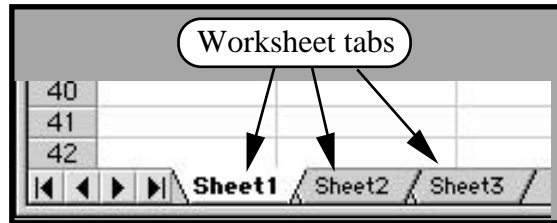
Click the **OK** button.



Some additional formatting may be required to complete the chart. Double clicking on the various parts of the chart will provide access to the various dialogue boxes to enable editing. Charts should be correctly labelled; a chart title, and a label for each of the Y- and X-axis. Legend should be included if necessary, this is typically the case if more than one series is included on the chart. If both a **Primary** and **Secondary** axis are used it should be made clear which axis is associated with a particular data series. Beyond this the chart should be as simple and uncluttered as possible.

Make a Duplicate Copy of a Worksheet

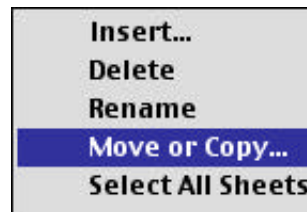
Click on the worksheet tab to select it.
Then *right-click* your mouse.



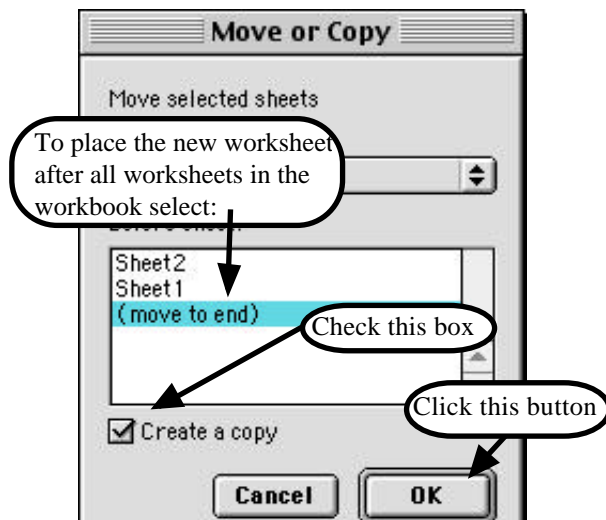
To make a copy of a worksheet:

Step 1 Point to its tab at the bottom of the worksheet and *right-click* your mouse.

Step 2 From the pop up menu select **Move or Copy**

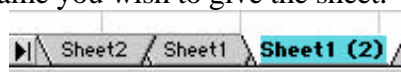


Step 3 Select (*move to end*)
and click on the
Create a copy checkbox.



Naming the New Worksheet

Double-click the tab of the new worksheet and type the name you wish to give the sheet.



Using a Graphic for a Background

In Excel you are not limited to the plain old white or somewhat shaded background for your worksheets. Instead, you can use a graphic image for a background. The effect is much like the backgrounds you see on Web pages--the image used as the background is tiled (repeated) so that it fills the entire background of the worksheet.

If you have a favourite graphic that you would like to look at, you can tile one or more of your worksheets with it.

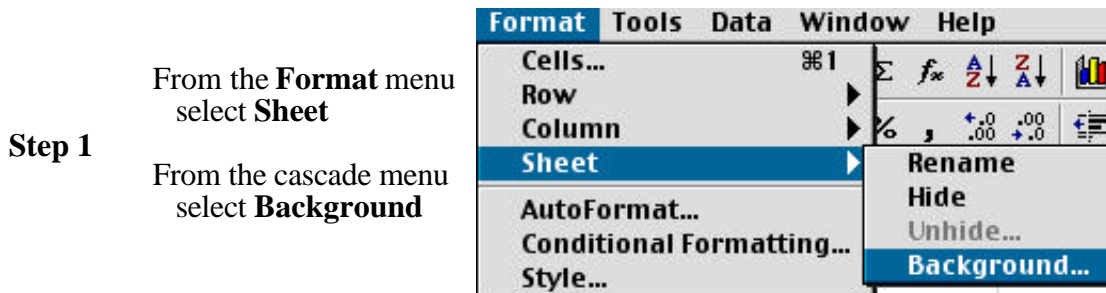
To use a graphic as a worksheet background, follow these steps:

Press Shift F11 to insert a new worksheet.

To find a sample graphic, visit:

<http://www.allposters.com/>

Find a graphic and save it to your disk.



Step 2 Use the controls in the dialog box to locate and select the graphic image you want to use as a background.

Step 3 Click **Insert** to include the background.

The image is imported and fills the background of your worksheet.

To remove a background:

1. Choose **Sheet** from the **Format** menu.
2. Choose **Background** from the submenu.
3. Choose **Delete Background**.

The dialog box is closed and the background is removed.

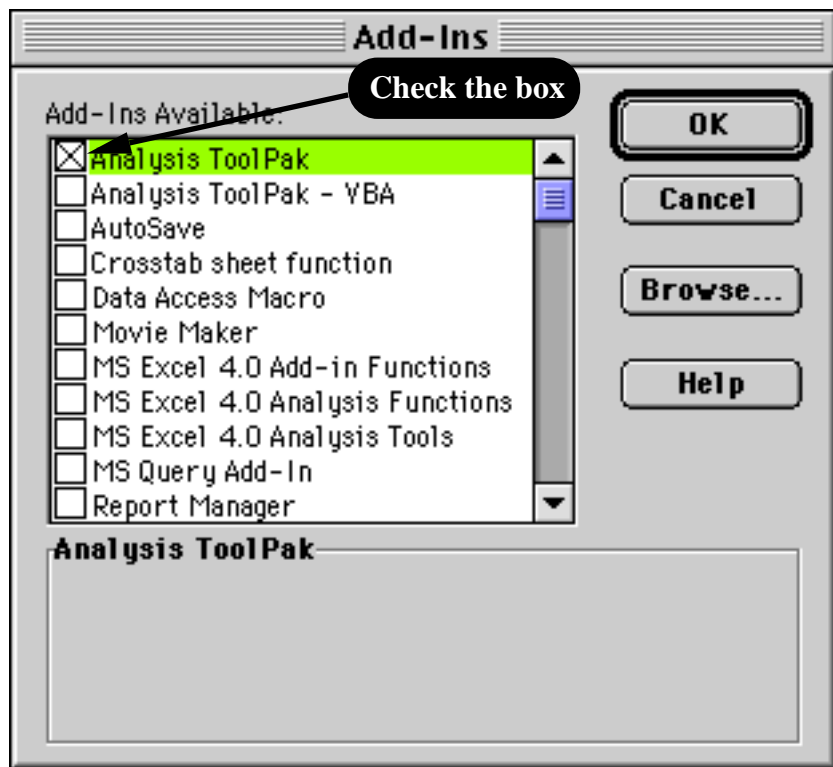
Installing the Analysis ToolPak

When Excel is initially installed on a computer some of its features are not accessible. A feature that is frequently used, and requires installation, is the *Analysis ToolPak* Add-In. This Add-In provides access to additional spreadsheet functions and a collection of statistical procedures.

From the **Tools** drop down menu select:



Click in the check box to the left of *Analysis ToolPak*:



To complete the installation click the **OK** button.

The REPT Function

To repeat a text string, or number, a given number of times use the *REPT* function. The syntax for the function is as follows:

=REPT("text string", Number of repetitions)

Try the following:

=REPT("*",120)

=REPT("John Howard ",100)

=REPT(100,100)

The Convert Function

If you are dealing with measurements that must be converted from one measuring system to another, it can be a real bother to look up the formulas and enter them into Excel. For instance, if you had to convert Watts to horsepower, where would you start?

Fortunately, Excel includes a function that will handle many different unit conversions for you. The **CONVERT** function is part of the **Analysis ToolPak**, and will handle dozens of conversions. The syntax for the function is as follows:

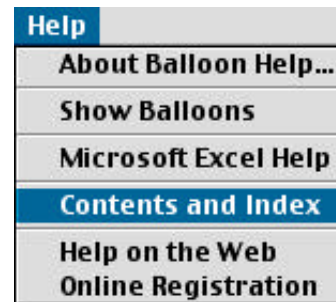
=CONVERT(number, "from_unit", "to_unit")

You simply supply the value you want to convert, along with an abbreviation for the units you are converting from and to. For instance if you wanted to find out the equivalent of 300 BTUs when you convert to calories and temperature from Celsius to Fahrenheit, you would use the following:

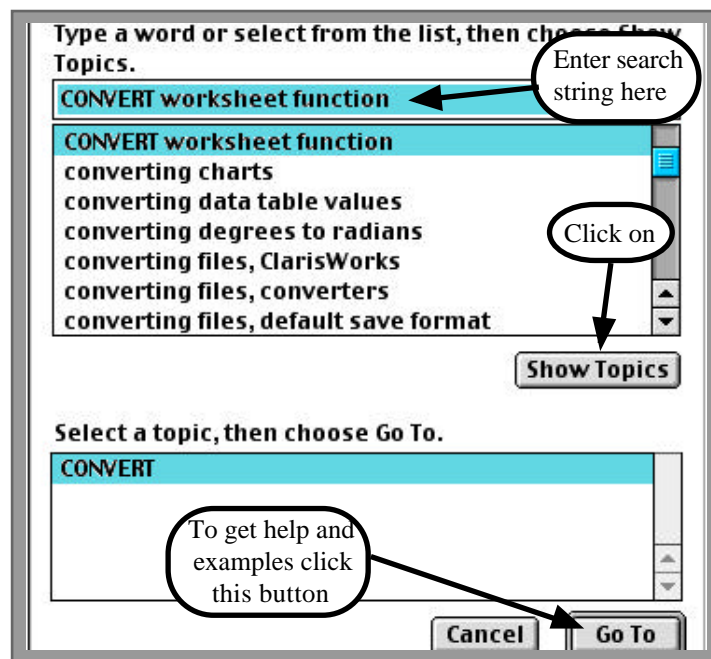
=CONVERT(300, "BTU", "c")	BTUs to calories
=CONVERT(35, "C", "F")	Celsius to Fahrenheit
=CONVERT(95, "F", "C")	Fahrenheit to Celsius

You can perform conversions in the areas of weight, volume, distance, time, pressure, energy, force, power, magnetism, and a few others. A complete list can be found in the **Excel on-line Help** system. (Simply search for "**CONVERT worksheet function.**")

From the **Help** menu
choose **Contents and Index**.



Then click on **Index**



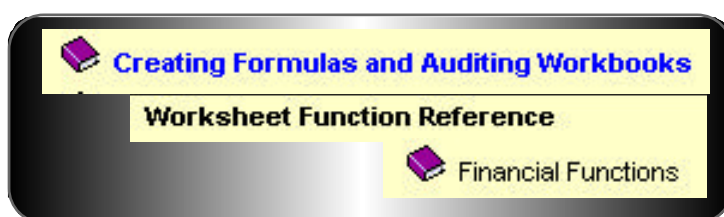
Excel's On-Line Help

Excel provides on-line help for functions and procedures within the application, it also provides Lotus 1-2-3 Help and for users of Office 97 or later there is help available to prepare Web based documents.

From the **Help** pull-down menu select **Contents and Index**.

When the **Contents** tab is active a list of topics is presented.

A category you may wish to explore for Financial models is *Financial Functions*.



Select *Financial Functions* to obtain a list of Excel's financial functions. Select the function you are interested in and click for a description of the function and an example of how it is used.

Using the Index Tab

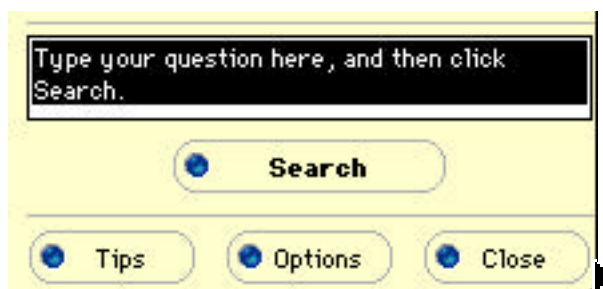
To get help for a specific function or procedure click the **Index** tab after you have selected **Contents and Index** from the **Help** pull-down. Enter your query in the box provided. Suppose you are interested in "Annuities", type this word in the box and click on **Display**.

Using Office Assistant

To activate **Office Assistant**
press the **F1** key or

select **Microsoft Excel help** from the **Help** pull-down menu

Office Assistant provides context sensitive help, simply type your question in the nominated box and click the **search** button.



Don't expect success every time.

Keyboard Shortcuts

Key	Action
F1	Help
F2	Edit A Cell
F3	Displays the paste name box
F4	Changes cell reference from relative to Absolute. Click in the cell then press the F4 key repeatedly to rotate from relative to Absolute references
F5	Go To a cell or range name
F6	Next Pane
F7	Spell Check
F8	Activate range extension feature
F9	Recalculate Spreadsheet
F10	Active the Menu Bar
F11	Insert New Chart
F12	Save As
Ctrl C	Copy Selection
Ctrl X	Cut Selection
Ctrl V	Paste Selection
Ctrl F	Find Text
Ctrl H	Replace Text
Ctrl O	Open a File
Ctrl N	Create a New File (New Workbook)
Ctrl P	Print File
Ctrl S	Save File
Ctrl Z	Undo Last Action
Ctrl Y	Redo Last Undo
Ctrl F3	Display Create a Name Box
Ctrl F9	Minimize Active Worksheet
Ctrl F10	Restore Active Worksheet
Shift F2	Edit/Create Cell Note
Shift F4	Repeat Find
Shift F10	Activate the Cell Popup Menu
Shift F11	Insert New Worksheet
CTRL ;	Enters the current date
CTRL :	Enters the current time