

# Excel MarkBook

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### Introduction:

These notes provide details of using Microsoft Excel as an electronic markbook. As a teacher it will be essential that you keep accurate and up-to-date records of your students marks. I have produced these notes to assist you in using Microsoft Excel as a markbook.

*Microsoft Excel is perhaps the worlds best known spreadsheet. The first electronic spreadsheet was a program called VisiCalc developed in 1978. Since the 1980's the business community has made extensive use of electronic spreadsheets.*

The screenshot shows an Excel spreadsheet with columns for student details and marks. Callout boxes provide instructions:

- Use auto fill to create Numbered list. pg. 2**: Points to the 'Tutorial' column.
- Use conditional formatting to highlight blank cells. pg. 7**: Points to blank cells in the 'Grade' column.
- Use conditional formatting to highlight grades. pg. 7**: Points to cells with grades like 'HD', 'MN', 'P', 'D'.
- Create a test user to ensure that marks add up to 100%.**: Points to the 'Total' and 'Final Grade' columns.
- Use AutoFilters to show all students in tute A, B or C pg. 5**: Points to the 'Tutorial' column.
- Used by VLOOKUP function to convert marks to a grade pg.12**: Points to the 'Mark Grade' column.

At the bottom of the spreadsheet, there are notes and a formula:

- Note: Test student to make sure the formulas add up to 100%:
- Note: Conditional formatting highlights blank cells
- =VLOOKUP(Q2:\$T\$3:\$U\$3,TRUE)

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## Caution:

Using Excel or any other form of electronic MarkBook has many advantages over paper based methods, including accuracy of calculations, the ability to search and sort records and the ease of duplication and distribution via e-mail to colleagues. There is however one major disadvantage of using an electronic Mark Book and that is the possibility of losing or corrupting data.

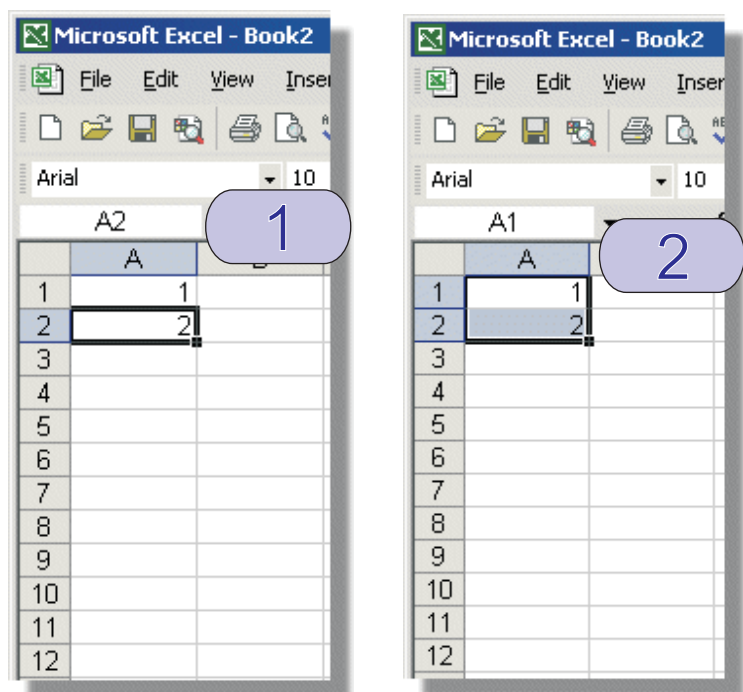
The most reliable way to reduce the risk of losing important computer files is to make backup copies. The method I use and recommend for this is to create Incremental File Names see page 107. A set of backup copies should also be held off-site, eg. keep a copy of the data at home as well as at school.

Do not rely on a single copy or a single location for important data. Computers and especially Notebook computers can be stolen or damaged. The most secure method of keeping a backup copy is to burn a copy on a CD-ROM and keep it away from the computer on which it was created. Another method is to keep a copy on a networked drive. Above all else do not rely on floppy disks as they often fail. If you must use a floppy disk to store important files make at least 2 copies.

## Auto Fill

Auto fill automatically fills a range of cells by continuing a sequence.

- 1 Establish a sequence. For this sequence we are simply counting by 1. Cell A1 contains 1 and A2, 2.
- 2 Select both cells in the sequence. Click on the top cell and shift click on the bottom cell in the sequence.



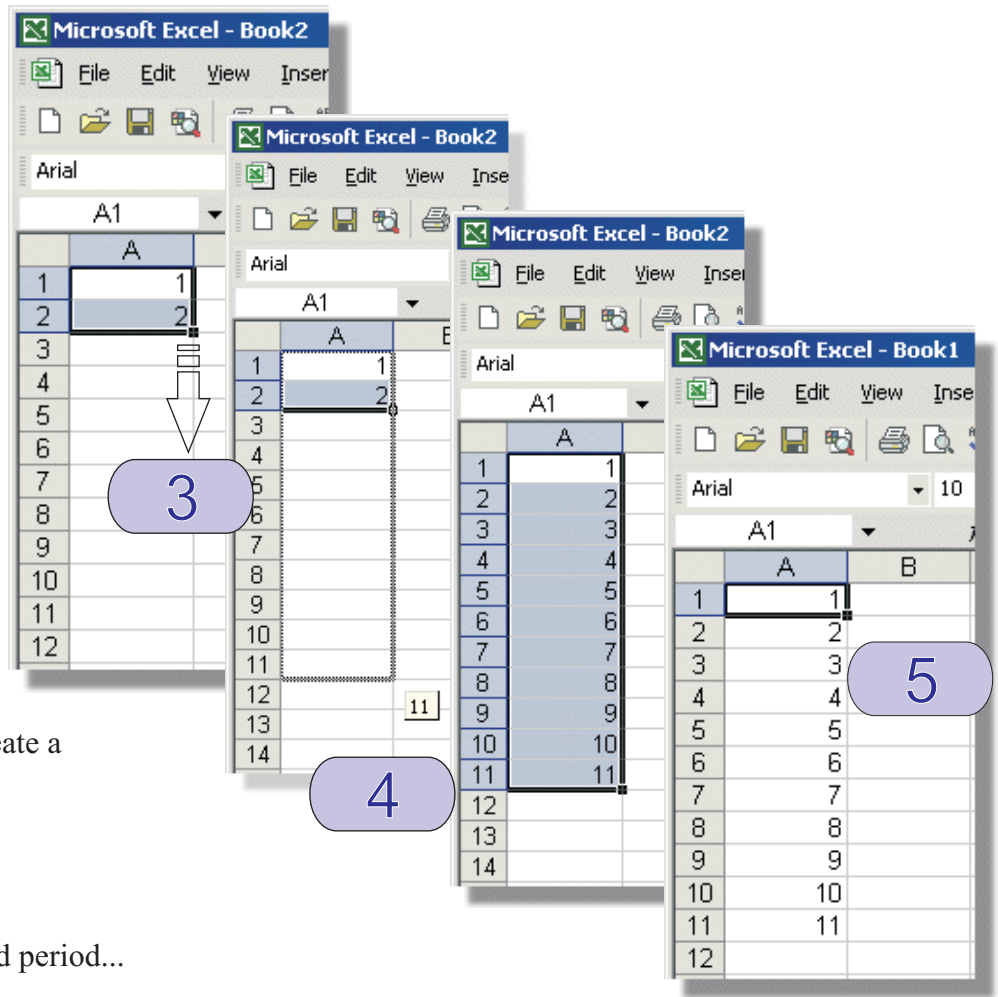
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Auto fill continued...

**3** Drag the square handle at the lower right corner of the selection downwards.

**4** Continue to drag the handle downward

**5** Click once to deselect the cells.



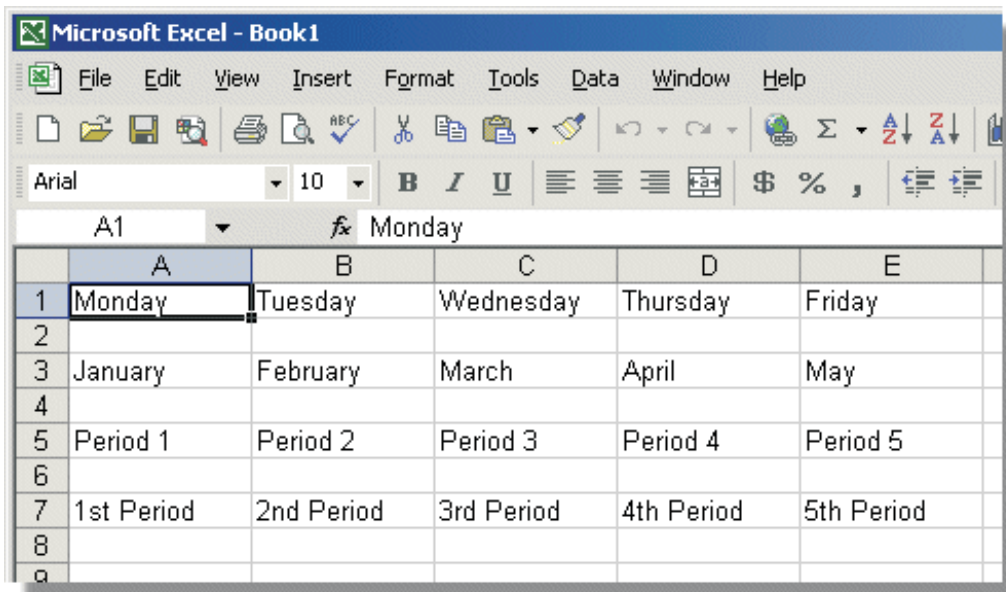
Note:

Auto fill can be used to create a range of sequences eg, :

- Monday, Tuesday...
- January, February...
- 8:30, 9:00, 9:30...
- 1st period, 2nd period, 3rd period...
- P1, P2, P3...

Auto fill can be used to fill both Horizontal Vertical and sequences..

You can even create your own fill sequences See **Create a custom fill series** in Excel help.



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## AutoFilters

### Theory:

Autofilters allow you to display a subset of cells in a column. This is useful if you want to view only students from one tutorial or home group etc.

It is also possible to display a range of values less or greater than a particular value.

If the column contains names then it is possible to filter all names beginning with a particular letter or letters. eg. "A", "Mc" "Mac".

- 1 To turn on auto filters select **Data | Filter | AutoFilter**

- 2 When auto filters are turned on a series of autofilter arrows appear at the top of each column.

- 3 Clicking on an autofilter arrow displays a list of each item in the column.

Select an item from the autofilter list to view all items that match the value selected. *To display all students with a grade of HD select HD from the autofilter list in the grade column.*

- 4 When an autofilter is being used the autofilter arrow turns from black to blue.

The screenshots show the following steps:

- Step 1:** The 'Data' menu is open, and 'Filter' > 'AutoFilter' is selected.
- Step 2:** The spreadsheet shows autofilter arrows on the 'Grade', 'Task 3', 'Grades', 'Total', and 'Final Grade' columns.
- Step 3:** The 'Grade' autofilter dropdown is open, showing a list of grades: AAA, Danielle, Mharni, Paul, Donna, Melissa, Claire, Rebecca, Lauren, Vikki, and (All) (Top 10...) (Custom...). 'HD' is selected.
- Step 4:** The 'Grade' autofilter arrow is now blue, indicating it is active.

Grade	/ 20 Task 3	Grades	Total	Final Grade
HD	20	HD	100	HD
XN	0	XN	0	XN
MN	10	P	32	NN
35	D	14	D	63
26	P	17	HD	58
39	D	18	HD	73
45	HD	16	HD	78
35	D	15	D	68
3	D	14	D	72

Last Name	First Name	Student Number	/ 30 Task 1
AAA	Danielle	1234567	30
RVEY	Mharni	2454354	1
TEMAN	Paul	246789	1
UER	Donna	24645	1
HAN	Melissa	24611	1
MROW	Claire	24578	1
	Rebecca	240394	1
	Lauren	2412345	19
	Vikki	2420736	28

Student Number	Grade	Task 2
234567	30	HD
454300	24	HD
462691	25	HD
471082	26	HD
479473	27	HD
487864	28	HD
496255		

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AutoFilters continued...

## Theory:

Custom filters allow filtering for ranges of values, as well as using wildcards to match one or more unknown characters.

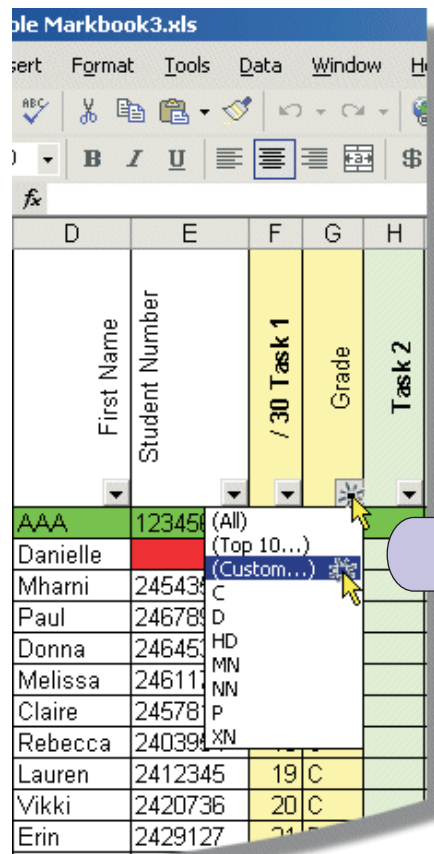
Custom filters include the following options:

- equals
- does not equal
- is greater than
- is greater than or equal to
- is less than
- is less than or equal to
- begins with
- does not begin with
- ends with
- does not end with
- contains
- does not contain

Custom filters may be combined using And or Or

**1** Turn on autofilters select  
**Data | Filter | AutoFilter**

**2** Select (Custom...) from the autofilter list



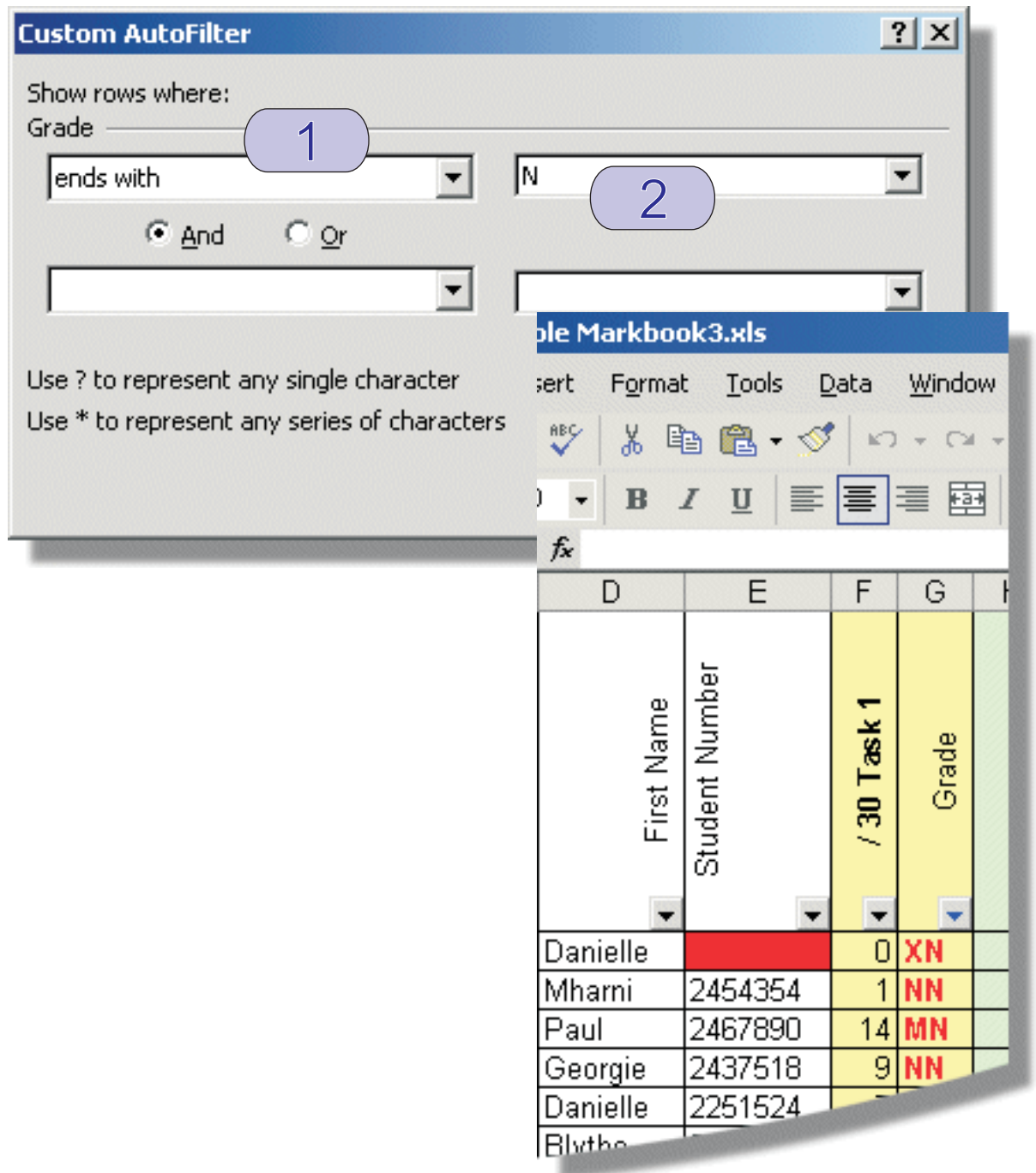
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AutoFilters continued...

To view all students who have failed an assignment:

1 Select ends with

2 Enter N for the value



Custom AutoFilter

Show rows where:  
Grade ends with N

And Or

Use ? to represent any single character  
Use \* to represent any series of characters

File Markbook3.xls

Insert Format Tools Data Window

First Name	Student Number	/ 30 Task 1	Grade
Danielle		0	XN
Mharni	2454354	1	NN
Paul	2467890	14	MN
Georgie	2437518	9	NN
Danielle	2251524		
Blythe			

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## Conditional Formatting

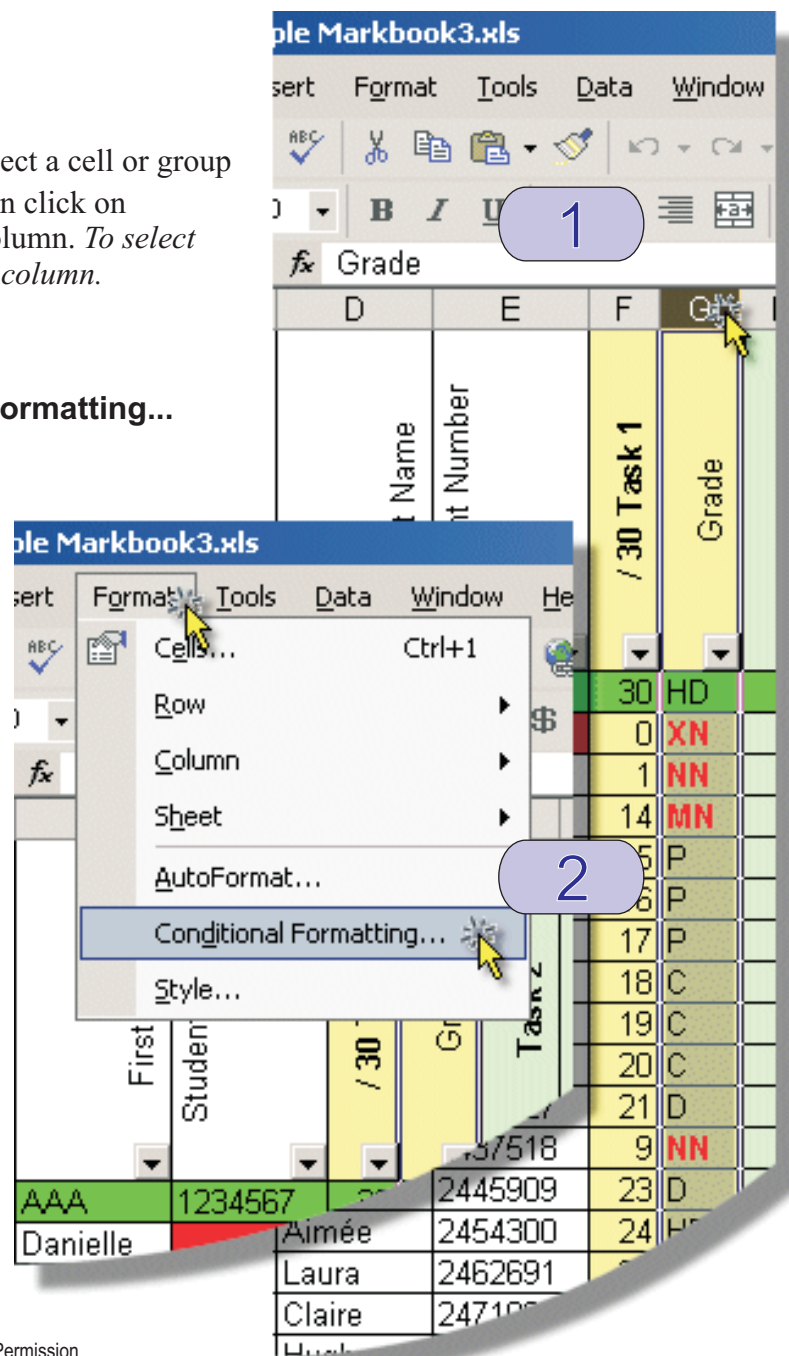
### Theory:

Conditional formatting applies a format, such as cell shading or font colour, automatically to cells if a specified condition is true. Up to three conditional formatting rules can be applied to any cell or group of cells.

Conditional formats are useful if you want to highlight cells with a particular value or range of values.

**1** To use conditional formatting select a cell or group of cells. To select a entire column click on the letter of the corresponding column. *To select a row click on the number of the column.*

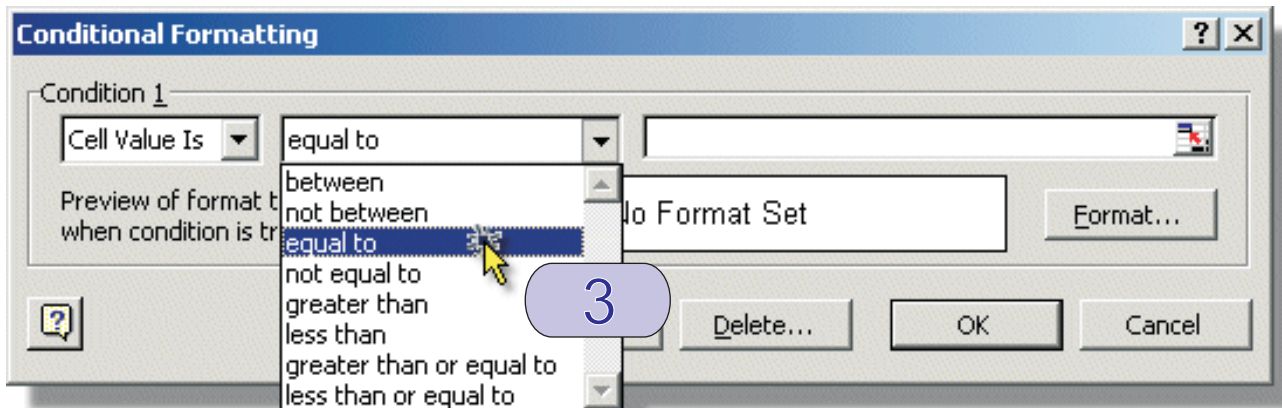
**2** Select **Format | Conditional Formatting...**



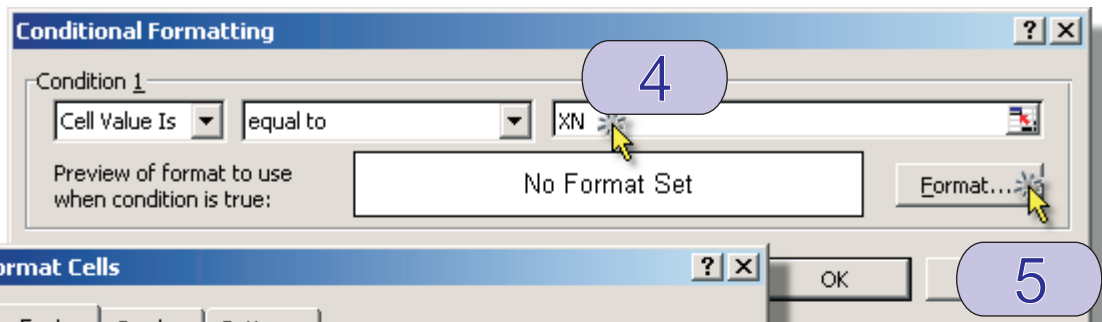
# Excel MarkBook

Conditional Formatting continued...

3 Select the desired condition. In this example we are selecting **Cell Value Is | equal to**



4 Enter **XN**

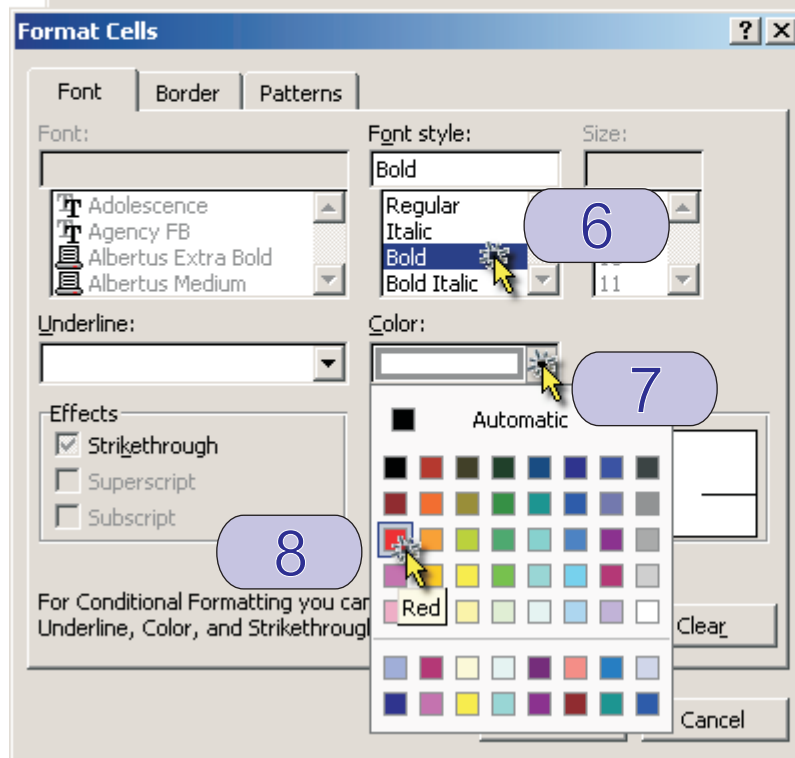


5 Select **Format...**

6 Select **Bold**

7 Select **Color:**

8 Select **Red**

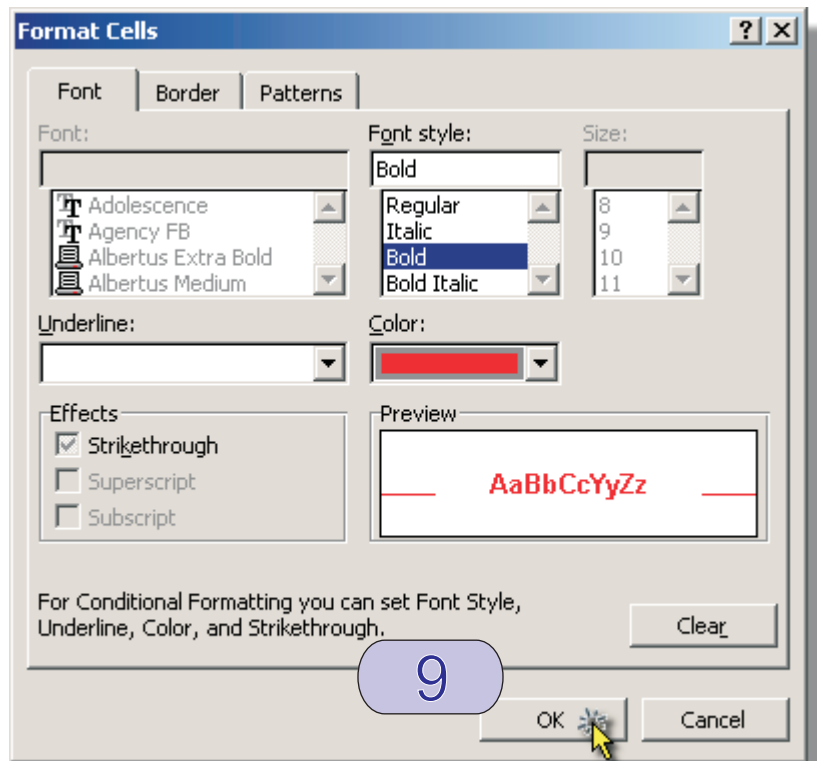




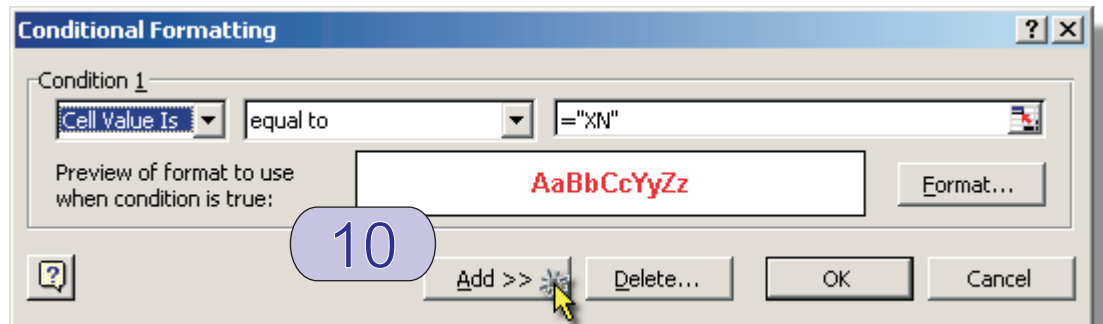
# Excel MarkBook

Conditional Formatting continued...

9 Click **OK**



10 Click **Add>>** to add a 2<sup>nd</sup> conditional format for the value NN.

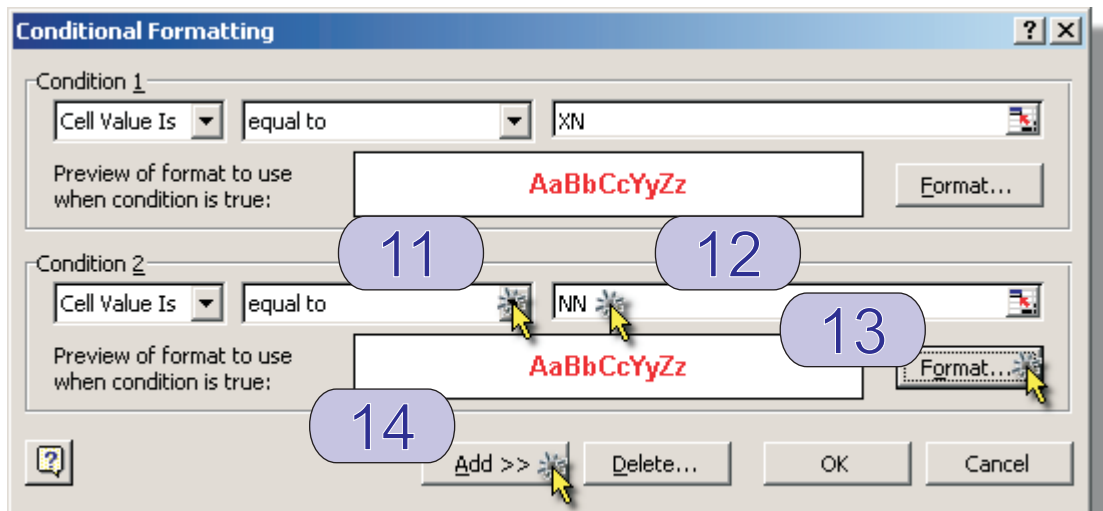


11 Select **equal to**

12 Enter **NN**

13 Click **Format...**

14 Click **Add>>** to add a 3<sup>rd</sup> conditional format for the value MN.



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## Customising toolbars

### Theory:

The default toolbars see: *figure 1* in Excel do not display many useful functions. Customising the toolbar allows you to add functions that rotate text and allow for easy resizing of column width. See *figure 2*.

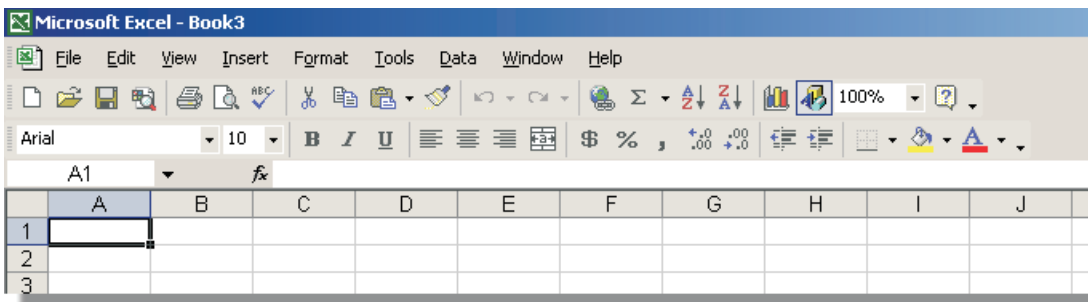


Figure 1: Default toolbars

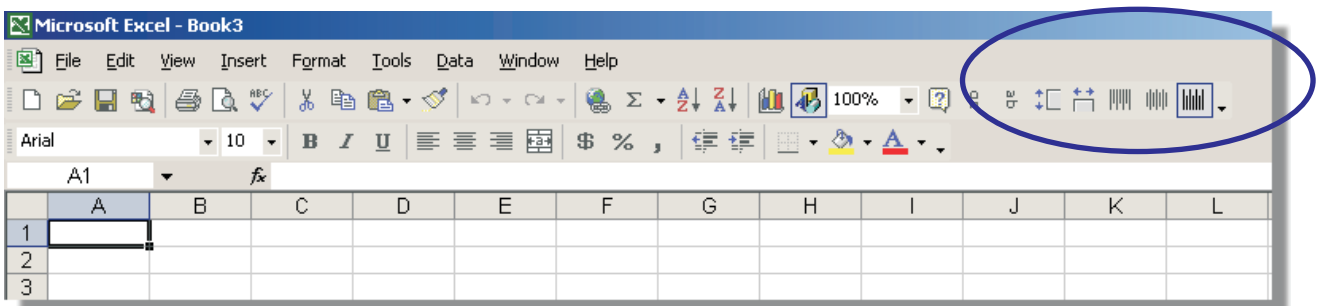
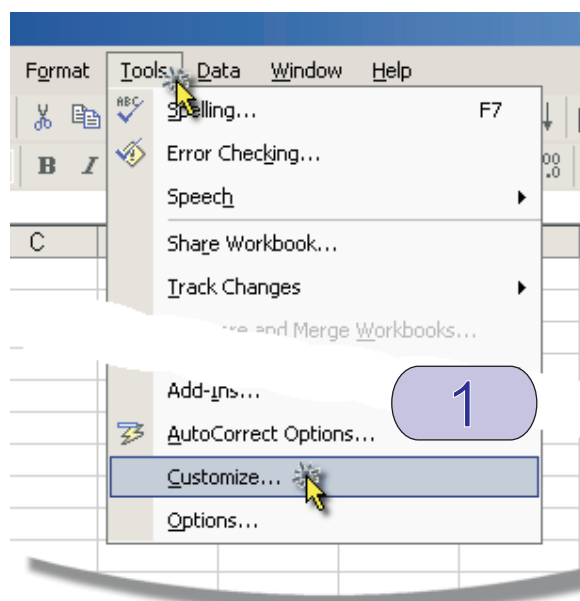


Figure 2: Customised toolbars

- 1 To customise the toolbars select **Tools | Customize...**



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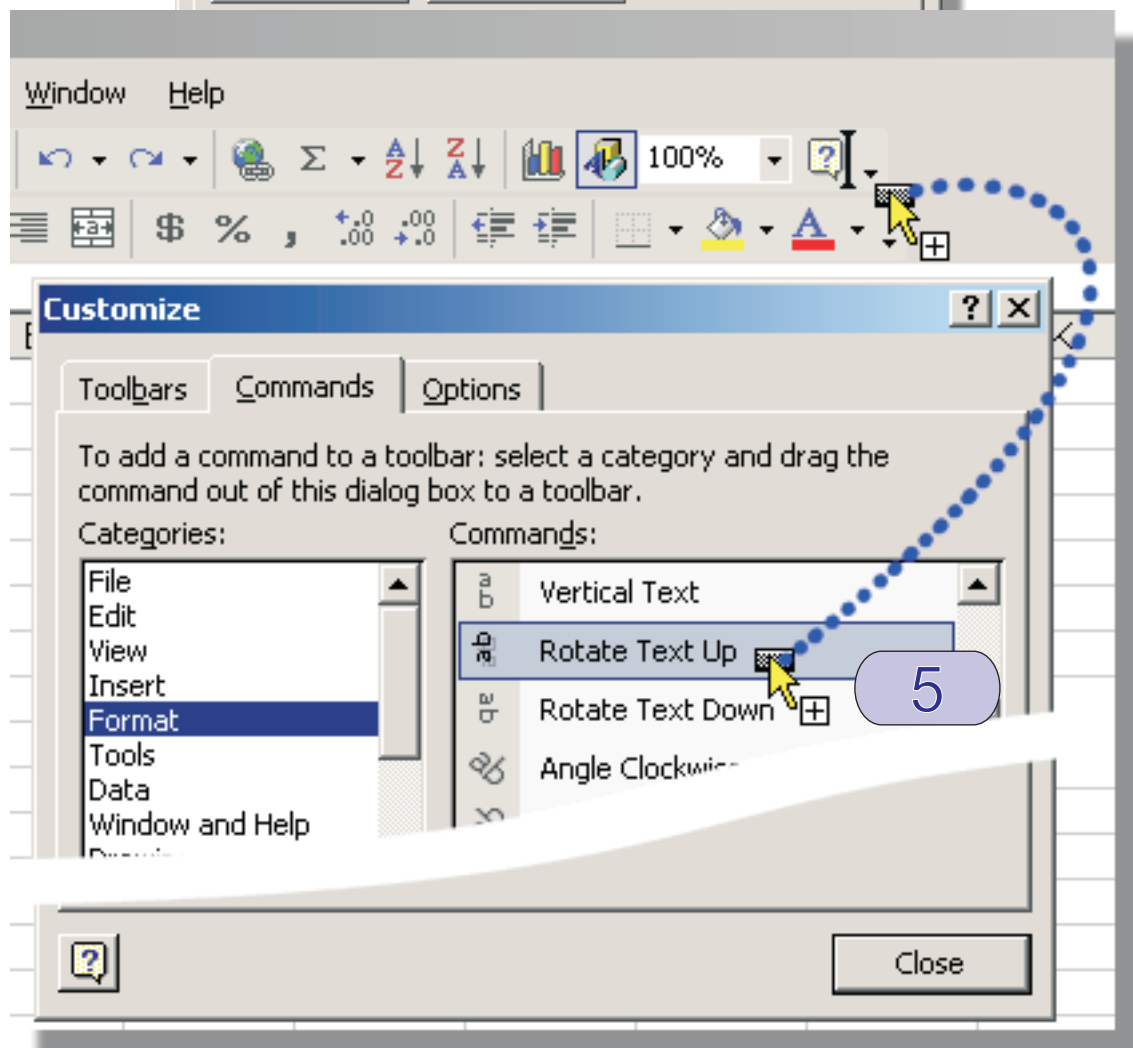
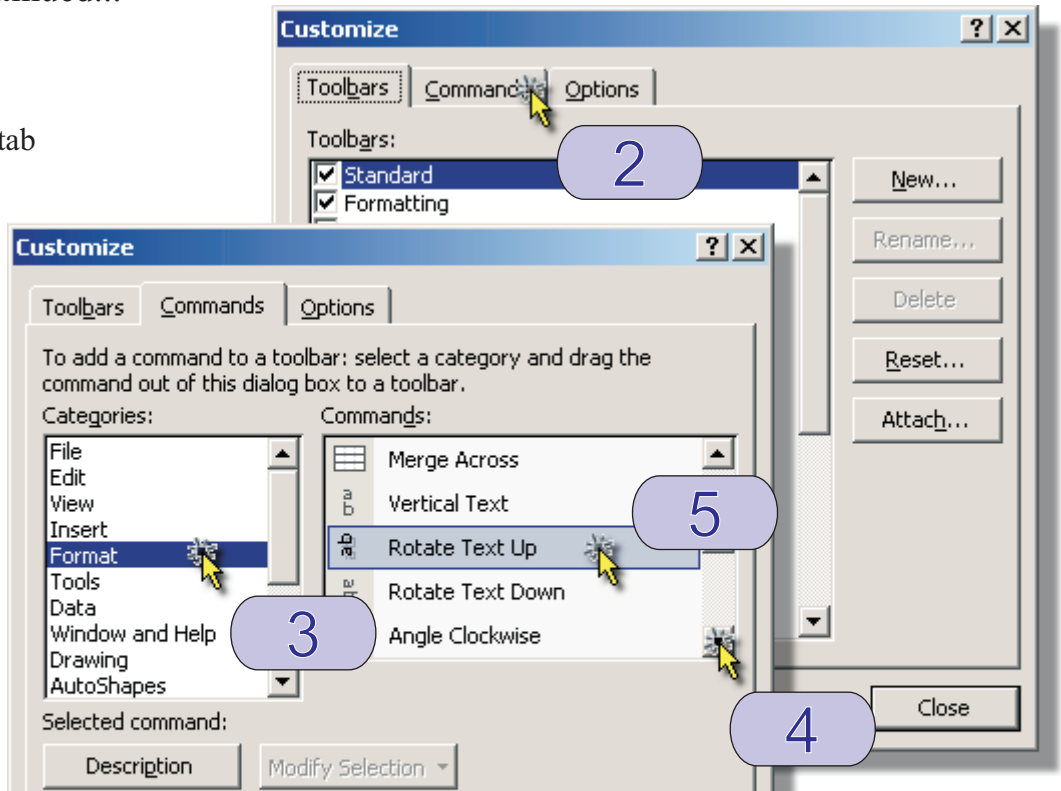
Customising toolbars continued...

2 Select the **Commands** tab

3 Select **Format** from the list of **Categories**:

4 Scroll down the list of **Commands**: until you find the command **Rotate Text Up**

5 Click and drag the command to the required toolbar.



# Excel MarkBook

## The VLOOKUP function

### Theory:

VLOOKUP is short for "Vertical lookup"

The VLOOKUP function is used to convert a numerical grade value to a text string. In this example we are using University of Ballarat grades, eg:

Mark	Grade
0	XN
1-39	NN
40-49	MN
50-59	P
60-69	C
70-79	D
80-100	HD

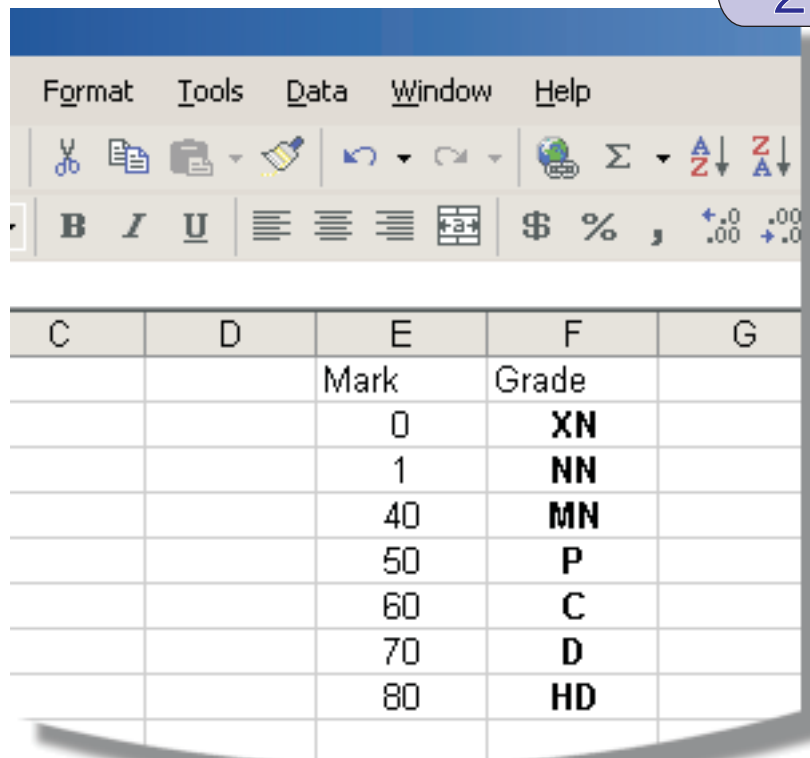
VLOOKUP uses a 2 column table. It looks up the value or range of values in the first column and replaces the contents of the cell with the corresponding value in the second column.

1 For this example we will open a new worksheet **File | New...** or use **CTRL + N**

2 Create a lookup table with the following values:

Mark	Grade
0	XN
1	NN
40	MN
50	P
60	C
70	D
80	HD

Place the table at the top of the E & F columns ie from E1 to F8:



C	D	E	F	G
		Mark	Grade	
		0	<b>XN</b>	
		1	<b>NN</b>	
		40	<b>MN</b>	
		50	<b>P</b>	
		60	<b>C</b>	
		70	<b>D</b>	
		80	<b>HD</b>	

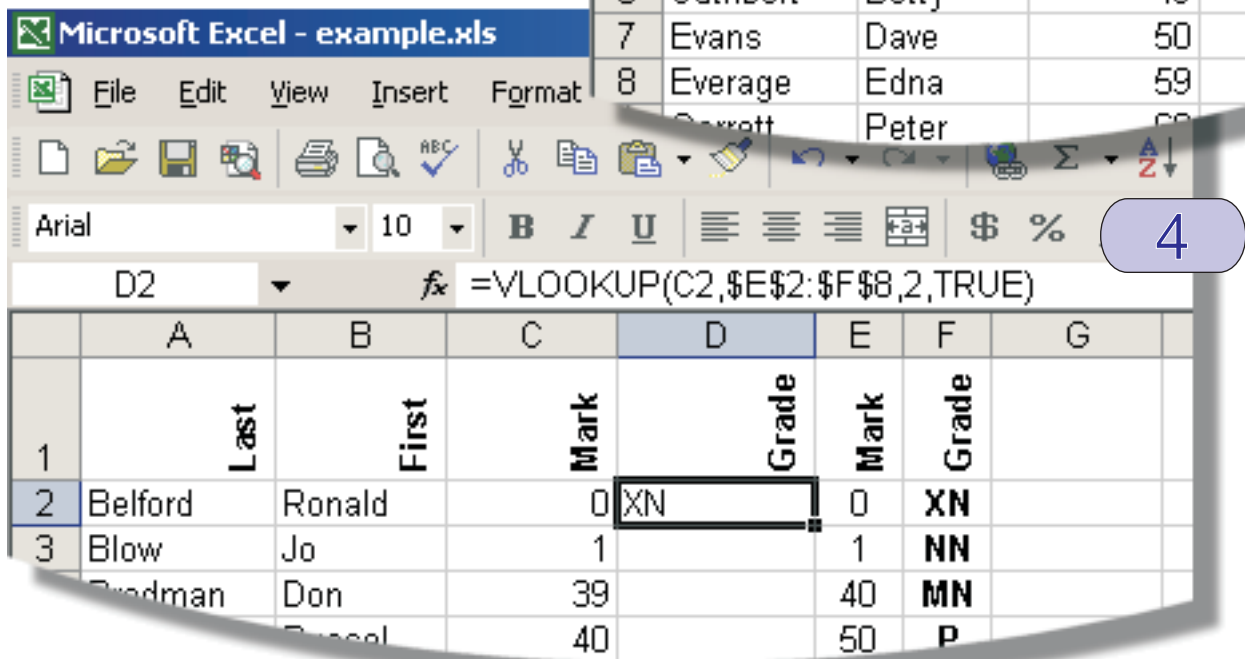
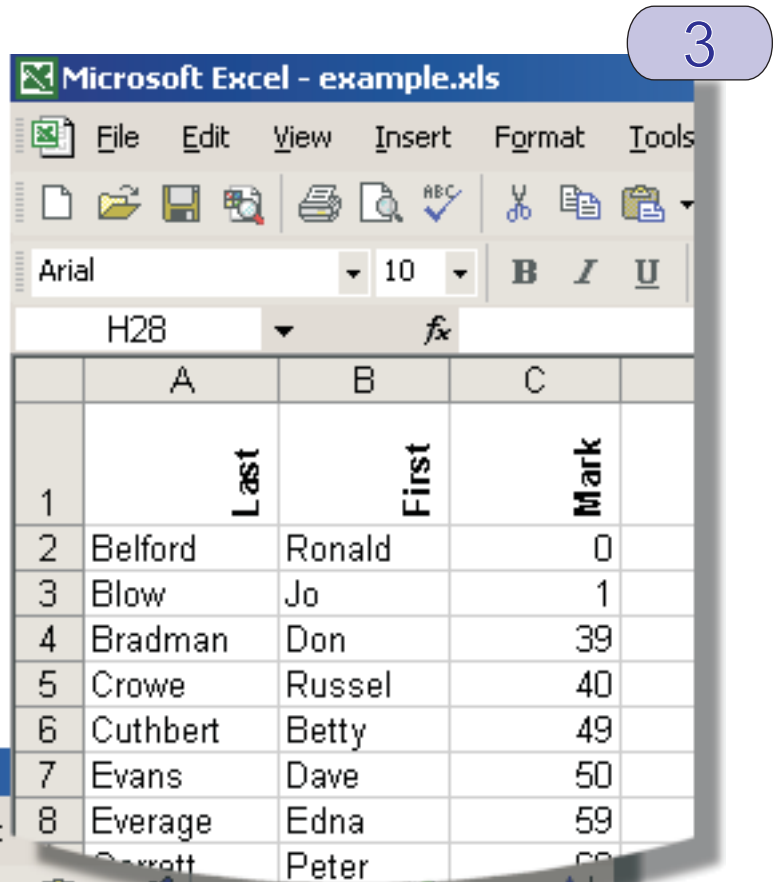
2

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VLOOKUP Function continued...

**3** Create a list of names and grades to apply the lookup table to eg:

Last	First	Mark
Belford	Ronald	0
Blow	Jo	1
Bradman	Don	39
Crowe	Russel	40
Cuthbert	Betty	49
Evans	Dave	50
Everage	Edna	59
Garrett	Peter	60
Johnson	Brian	69
Lawson	Henry	70
Nurk	Fred	79
Patterson	Les	80
Wright	Simon	100



**4** Enter the following formula in cell D2: `=VLOOKUP(C2,$E$2:$F$8,2,TRUE)`

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VLOOKUP Function continued...

Theory:

The VLOOKUP function has the following syntax:

*VLOOKUP(lookup\_value,table\_array,col\_index\_num,range\_lookup)*

In this example we are using the following =VLOOKUP(C2,\$E\$2:\$F\$8,2,TRUE)

*lookup\_value* is C2, this means that the mark in cell C2 will be used as the lookup value and the appropriate grade will be returned from the table.

*table\_array* is E2:F8, this is the location of the lookup table. Note the \$ signs lock the position of the lookup table when using autofill to copy the VLOOKUP function in step 6.

*col\_index\_num* is 2, this means the second column in the lookup table\_array is the value to be returned.

*range\_lookup* is TRUE this means match a range of values eg marks between 50 and 59 will return a grade of P.

5 Use autofill to copy the VLOOKUP function to each cell in column D.

6 Click on cell D2

7 Drag the autofill handle to cell D14

The screenshot shows two overlapping windows of Microsoft Excel. The top window shows the formula bar with the formula =VLOOKUP(C2,\$E\$2:\$F\$8,2,TRUE) and the active cell D2. The bottom window shows a spreadsheet with columns A-F and rows 1-15. Columns A and B contain student names (Last and First). Columns C and E contain marks, and columns D and F contain grades. The formula =VLOOKUP(C2,\$E\$2:\$F\$8,2,TRUE) is entered in cell D2, and a blue dotted line indicates the autofill handle being dragged down to cell D14. A purple callout bubble with the number 6 is positioned over cell D2, and another purple callout bubble with the number 7 is positioned over the autofill handle.

	A	B	C	D	E	F
	Last	First	Mark	Grade	Mark	Grade
1						
2	Belford	Ronald	0	XN	0	XN
3	Blow	Jo	1		1	NN
4	Bradman	Don	39		40	MN
5	Crowe	Russel	40		50	P
6	Cuthbert	Betty	49		60	C
7	Evans	Dave	50		70	D
8	Everage	Edna	59		80	HD
9	Garrett	Peter	60			
10	Johnson	Brian	69			
11	Lawson	Henry	70			
12	Nurk	Fred	79			
13	Patterson	Les	80			
14	Wright	Simon	100			
15						

# Excel MarkBook

VLOOKUP Function continued...

- 8 Click once on a blank cell to remove the selection. You should see grade values for each student in the list.

The screenshot shows two overlapping windows of Microsoft Excel. The foreground window displays a table with columns for Last Name, First Name, Mark, and Grade. The background window shows a VLOOKUP formula in cell E15: `=VLOOKUP(C2,$E$2:$F$8,2,TRUE)`. A callout box with the number 8 is positioned near the bottom right of the foreground window.

	A	B	C	D	E	F
	Last	First	Mark	Grade	Mark	Grade
1						
2	Belford	Ronald	0	XN	0	XN
3	Blow	Jo	1	NN	1	NN
4	Bradman	Don	39	NN	40	MN
5	Crowe	Russel	40	MN	50	P
6	Cuthbert	Betty	49	MN	60	C
7	Evans	Dave	50	P	70	D
8	Everage	Edna	59	P	80	HD
9	Garrett	Peter	60	C		
10	Johnson	Brian	69	C		
11	Lawson	Henry	70	D		
12	Nurk	Fred	79	D		
13	Patterson	Les	80	HD		
14	Wright	Simon	100	HD		
15						
16						
17						