



Excel 2003 Introduction

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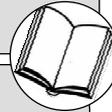
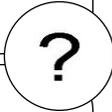
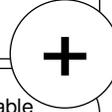
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Quick reference: Excel shortcut keys

Command	Keystroke
Absolute/relative/mixed reference	F4
AutoSum	Alt =
Bold	Ctrl-B
Border lines off	Ctrl-Shift _
Border lines on	Ctrl-Shift &
Close	Ctrl-W
Copy	Ctrl-C
Cut	Ctrl-X
Show values/formulas	Ctrl-pipe key (below Esc)
Edit cell	F2
Find	Ctrl-F
Format commas (2 decimal places)	Ctrl-Shift !
Format currency (2 decimal places)	Ctrl-Shift \$
Format general number	Ctrl-Shift ~
Format percentage (0 decimal places)	Ctrl-Shift %
Formula	=
Function Wizard	Shift-F3
Insert chart sheet	F11
Italics	Ctrl-I
Move left/right one screen	Alt-PgUp/PgDn
Move to beginning of worksheet	Ctrl-Home
Move to edge of region	Ctrl-Arrow
Move to end of row	End, Enter
Move to end of worksheet	Ctrl-End
New	Ctrl-N
Next worksheet	Ctrl-PgUp
Open	Ctrl-O
Paste	Ctrl-V
Previous worksheet	Ctrl-PgDn
Print	Ctrl-P
Repeat/Redo	Ctrl-Y
Replace	Ctrl-H
Save	Ctrl-S
Select worksheet	Ctrl-A
Spelling and Grammar check	F7
Underline	Ctrl-U
Undo	Ctrl-Z

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Unit 1: Getting Started

This unit focuses on familiarising you with the Excel environment, including spreadsheet terminology and navigation techniques.

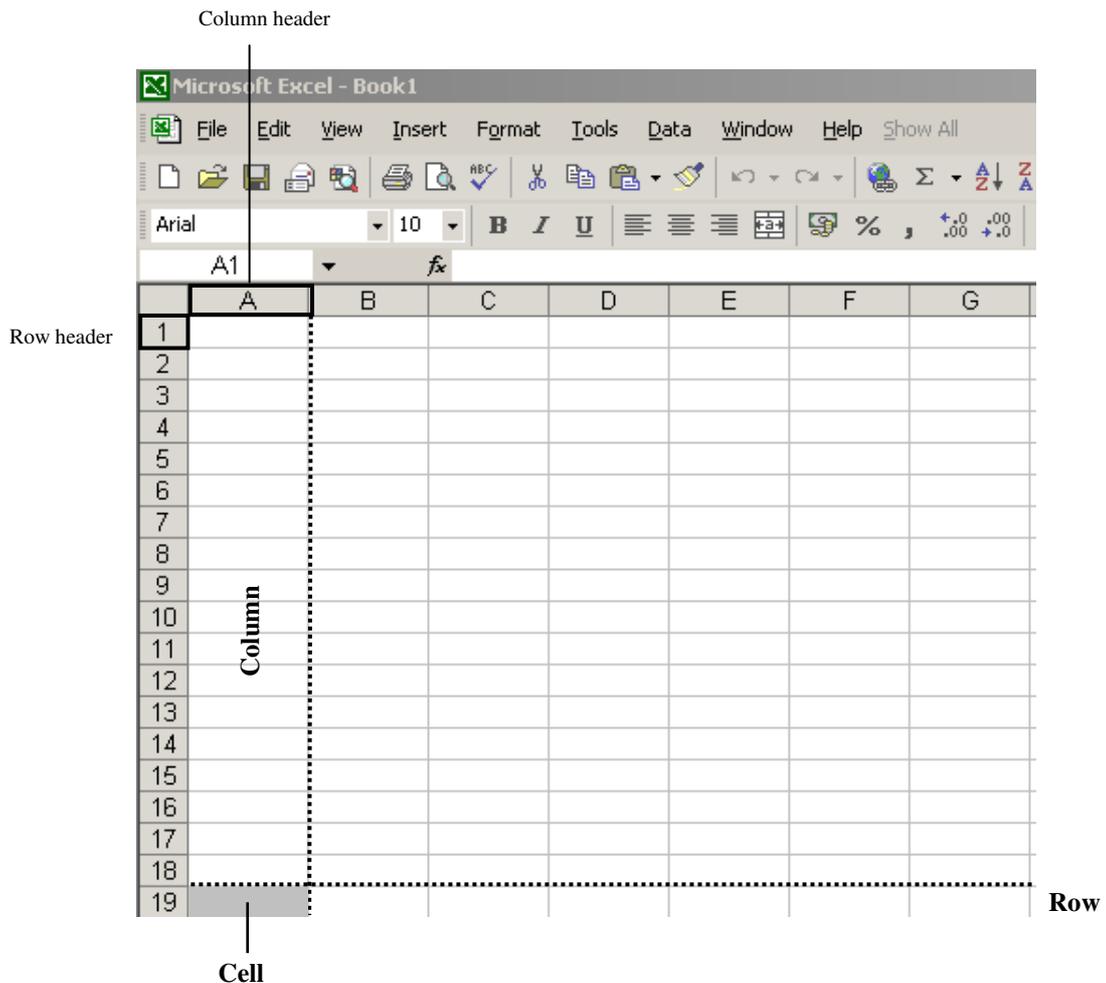
Unit objectives

By the end of this unit, you will be able to:

- Use terminology associated with spreadsheets
- Identify various parts of the Excel window
- Launch and search MS Excel Help
- Use the mouse and shortcut keys to select and navigate in Excel
- Close an Excel file and close the Excel program

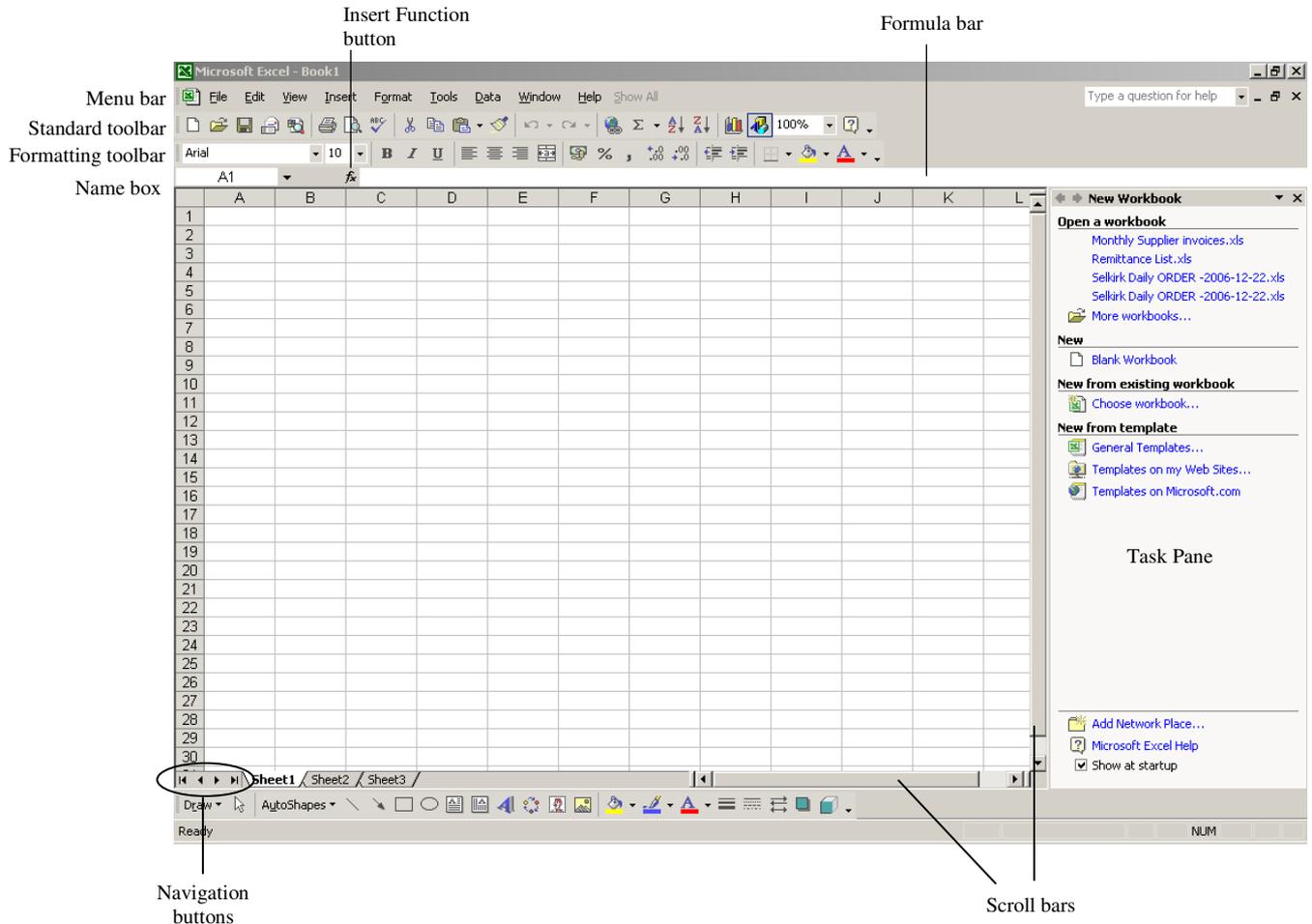
Spreadsheet terminology

Before you begin creating spreadsheets, it is useful to be able to identify the various components that comprise a spreadsheet.



Exploring the Excel window

The Excel window contains various components that are commonly used when creating, modifying and formatting spreadsheets and charts.



The Excel window

Turning on toolbars and the Task Pane

Excel's toolbar and Task Pane can be turned on or off through the View menu.

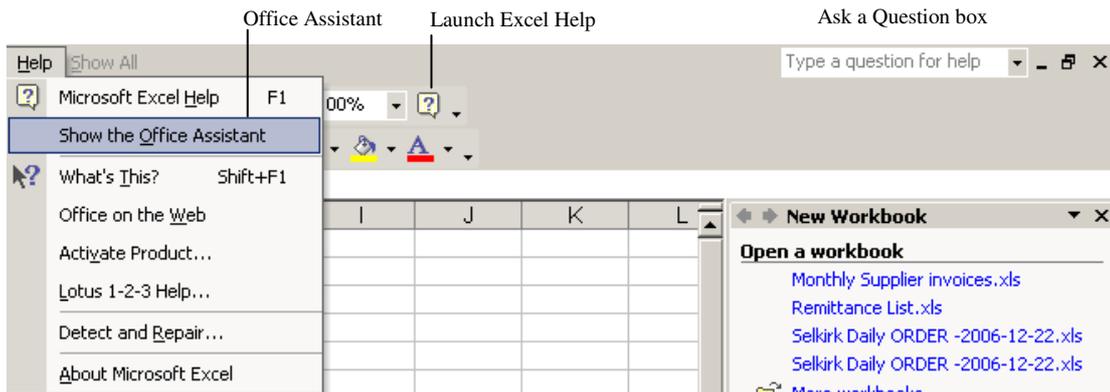
- To turn **toolbars** on or off, go to View-Toolbars.
- To turn the **Task Pane** on or off, go to View-Task Pane.

Getting help

All Microsoft applications contain an in-built Help feature which provides guidance on how to use a program's features.

There are four ways of accessing Help feature in Excel:

- Through the Help menu, using the Office Assistant
- Launch MS Excel Help using the button on the standard toolbar
- Use the Ask a Question box at the top-right of the Excel window
- Press the F1 key



Try it!

Use Excel's Help feature to find information on how to open a file.

Opening and navigating workbooks

To open an Excel file, use the Open button on the standard toolbar or the shortcut keys **Ctrl + O**.



Try it!

Open the file **Sales report.xls** from the course files folder.

Using the mouse to select and navigate



Use to select a cell or range of cells



Use to select a column, by clicking on a column header



Use to select a row, by clicking on a row header



Hold over a scroll bar, click and drag to scroll

Try it!

Practice using the mouse to select cells, rows and columns in **Sales report.xls**.

Using keyboard shortcuts

The following keyboard shortcuts can be used to navigate within and between worksheets in a file.

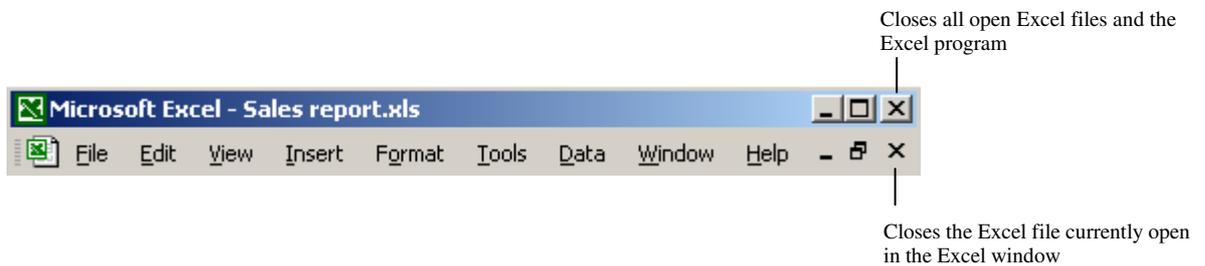
Arrow keys	Move one cell right, left, up or down
Ctrl + arrow keys	Move to the first or last cell that contains data in a row or column
Page Up, Page Down	Move up or down a worksheet
Ctrl + Page Up, Ctrl + Page Down	Move to the next or previous worksheet
Ctrl + Home, Ctrl + End	Move to start or end of spreadsheet

Try it!

Practice using the shortcut keys listed above in **Sales report.xls**.

Closing workbooks

The buttons located at the top-right of the Excel window can be used to close Excel files.



Try it!

Close the file **Sales report.xls** but keep the Excel program open.

Unit 1 Practice Activity

1. Start Excel.
2. Open the file **Practice employee information.xls**.
3. Try using the following keys to change the selection of the active cell:
 - a. Right, down, left and up arrow keys
 - b. Ctrl and right, Ctrl and down, Ctrl and left and Ctrl and up keys
 - c. Page Up and Page Down keys
 - d. Ctrl and Page Down, Ctrl and Page Up
 - e. Ctrl and End, Ctrl and Home
4. Use the Ask a Question box (at the top right of the Excel window) to get help on closing a file.
5. Close Help.
6. Close **Practice employee information** but keep the Excel program open.

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Unit 2: Entering and editing data

This unit focuses on creating spreadsheets 'from scratch', including entering and editing labels, values and formulas.

Unit objectives

By the end of this unit, you will be able to:

- Start a new Excel file
- Enter labels, values and formulas into a spreadsheet
- Use various methods to edit labels, values and formulas
- Save an Excel file

Creating workbooks

To start a new Excel file, use the **New** button on the standard toolbar or the shortcut keys **Ctrl + N**.



Try it!

Start a new Excel file. Then close the new file without saving.

Entering labels and values

In spreadsheet terms, text is referred to as **labels** and numbers are referred to as **values**.

Labels and values should be entered into separate cells in a spreadsheet, so that the values may be used as part of **formulas**, or calculations.

Try it!

Open **Sales report.xls** from the course files folder.

On **Sheet 1** enter details for Julian in row 7 as shown below.

	A	B	C	D	E	F	G	H	I
1	Time Out Holidays								
2	Sales report								
3		Qtr1			Qtr2			Qtr3	
4	Name	Actual	Target	Difference	Actual	Target	Difference	Actual	Target
5	Sandra	63654	62000		44846	50000		82844	66000
6	Pam	84884	77000		66858	68000		45577	75000
7	Julian	84084	77000		72252	74000		86329	82000

Handy hint:

Values should be entered in without currency symbols or commas as these can be applied using number formats later on.

Using Undo/Redo

Undo can be used to reverse previous changes you have made to your spreadsheet. To use Undo, click the button on the standard toolbar or use **Ctrl + Z**.

Redo can be used to reverse changes made by pressing the Undo button. To use Redo, click the button on the standard toolbar or use **Ctrl + Y**.

Try it!



Using **Sales report.xls**, use **Undo** several times to reverse typing labels into row 7.



Then use **Redo** to re-enter labels.

Editing labels and values

There are various ways to edit (make changes to) labels and values that have been entered into a spreadsheet.

Editing using the formula bar

Select the cell to be edited, and click in the formula bar to edit.

	A2	Sales report		
	A	B	C	D
1	Time Out Holidays			
2	Sales report			
3		Qtr1		

Try it!

On **Sheet 1** of the file **Sales report.xls**, use the formula bar to edit the cell **A2** to read Sales report for the Central region.

Editing cell contents

To edit directly inside a cell:

- Double-click directly on the cell and use the arrow keys to move the cursor
- Press the F2 key – the cursor appears at the end of the cell contents

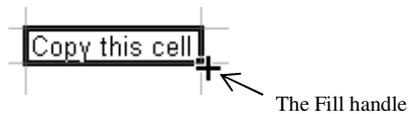
Try it!

In **Sales report.xls**, switch to **Sheet 2**.

Edit the cell **A2** to read Sales targets for the Central region.

Editing using the Fill handle

The Fill handle is a useful tool in Excel. Positioning your cursor over the bottom-right corner of the active cell brings the Fill handle up on your screen.



The Fill handle can be used to quickly enter:

- Quarters (Quarter 1, Quarter 2 etc).
- Days of the week
- Months of the year

Try it!

On **Sheet 2** of the file **Sales report.xls**, type Qtr 1 into cell **B4**.

Use the Fill handle to fill in Qtr 2, Qtr 3 and Qtr 4.

Use the blank area under the spreadsheet on **Sheet 2** to practice using the Fill handle to enter days of the week and months of the year.

Type the first day or month (Monday or January), then use the Fill handle to enter in the following days or months.

Deleting or replacing cell contents

To clear cell contents, select a single cell or range of cells and press the **Delete** key.

To replace the contents of a cell:

- Select the cell and begin typing
- Use Find and Replace to make the same replacement multiple times (Edit – Find and Replace or **Ctrl + H**)

Try it!

On **Sheet 2** of **Sales report.xls**, select and delete the days of the week and months of the year entered in using the Fill handle on **Sheet 2**.

On **Sheet 2** of **Sales report.xls**, replace 60000 in cell **B5** with 62000.

Switch to **Sheet 1**. Use Find and Replace to replace the word Difference with Over/under target.

Entering and editing formulas

Formulas are used to perform calculations in a spreadsheet, including addition, subtraction, multiplication and division.

The main advantage of using formulas is that unlike a value that stays the same unless you edit it, the result of a formula will automatically recalculate itself in response to values in the spreadsheet being changed.

Formulas can be easily recognised in a spreadsheet as all formulas begin with an equals sign =.

Formula operators

In order to create and interpret formulas, you will need to be able to recognise and enter the basic formulas operators:

()	Brackets	^	Exponent
+	Addition	*	Multiplication
-	Subtraction	/	Division

Try it!

In **Sheet 1** of the **Sales report.xls** file, enter a formula in cell **D5** to calculate the difference between Sandra's actual sales and her target for Quarter 1. The formula is =B5-C5.

Create formulas to calculate the difference between Sandra's actual and target sales for Quarters 2 and 3 in cells **G5** and **J5** respectively.

In cell **K5**, create a formula to calculate Sandra's 'eligible for commission' total. This is achieved by adding together any **positive** differences between her actual and target sales for each quarter. In other words, any quarter where Sandra exceeds her target sales, the amount that she exceeded her target by is eligible for commission.

Calculate 'eligible for commission' totals for the other two salespeople in **K6** and **K7**.

In cell **L5**, create a formula to calculate the amount of commission Sandra is to be paid. The formula is =K5*L2.

Order of calculations – BEDMAS or BODMAS

In formulas where there is more than one operator, for example, an addition and a multiplication, Excel will not necessarily calculate the result by reading the formula from left to right.

Excel will follow a set rule for the order in which it performs calculations. BEDMAS or BODMAS are acronyms you can use to help you remember the order in which Excel will perform calculations.

Letter	Stands for	Calculation order
B	Brackets	1 st
E or O	Exponents or Order	2 nd
D	Division	3 rd
M	Multiplication	
A	Addition	4 th
S	Subtraction	

Try it!

Apply the order of calculation rule to the formulas shown below and write in the result of the formula in the space provided.

Formula					Formula result would be:
	A	B	C	D	
1	1	2	3	=A1+B1*C1	
	A	B	C	D	
1	1	2	3	=(A1+B1)*C1	

Saving and updating workbooks

It is good practice to save changes to files as you are working to minimise the risk of losing work you have done.

- To save a file for the first time, use the Save button or File – Save As
- To save changes/updates to a file, use the Save button or **Ctrl + S**

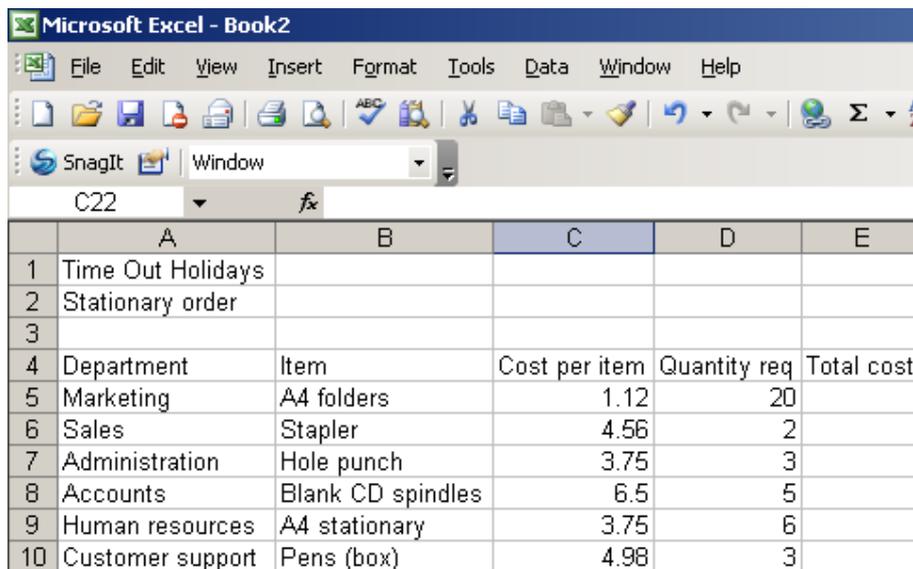


Try it!

Save the changes you have made to **Sales report.xls**.

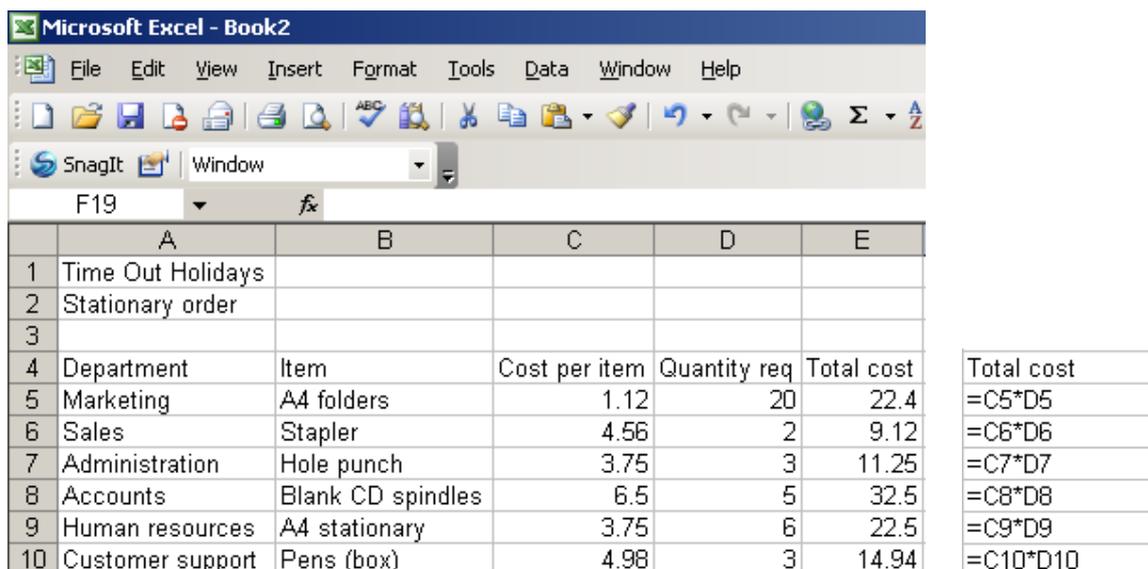
Unit 2 Practice Activity

1. Create a new workbook.
2. Enter data as shown in Example 1 below.
3. In cell E5, enter the formulas to calculate the total costs for each item.
Hint: multiply the cost per item by the quantity required.
4. Use Undo to remove the formula you entered in E5, and then use Redo re-enter it.
5. Save the workbook as **Practice total costs**.
6. Compare the workbook to Example 2 below.
7. Close the workbook.



	A	B	C	D	E
1	Time Out Holidays				
2	Stationary order				
3					
4	Department	Item	Cost per item	Quantity req	Total cost
5	Marketing	A4 folders	1.12	20	
6	Sales	Stapler	4.56	2	
7	Administration	Hole punch	3.75	3	
8	Accounts	Blank CD spindles	6.5	5	
9	Human resources	A4 stationary	3.75	6	
10	Customer support	Pens (box)	4.98	3	

Example 1



	A	B	C	D	E
1	Time Out Holidays				
2	Stationary order				
3					
4	Department	Item	Cost per item	Quantity req	Total cost
5	Marketing	A4 folders	1.12	20	22.4
6	Sales	Stapler	4.56	2	9.12
7	Administration	Hole punch	3.75	3	11.25
8	Accounts	Blank CD spindles	6.5	5	32.5
9	Human resources	A4 stationary	3.75	6	22.5
10	Customer support	Pens (box)	4.98	3	14.94

Total cost
=C5*D5
=C6*D6
=C7*D7
=C8*D8
=C9*D9
=C10*D10

Example 2 – formulas for Total cost are shown on the right

Unit 3: Modifying a Worksheet

Once a spreadsheet has been set up, it is likely that changes will need to be made to it. This unit focuses on methods that can be used to rearrange data in spreadsheets.

Unit objectives

By the end of this unit, you will be able to:

- Use cut, copy and paste to move and copy spreadsheet data and formulas
- Create absolute references in formulas
- Modify spreadsheets by inserting and deleting ranges

Moving and copying data

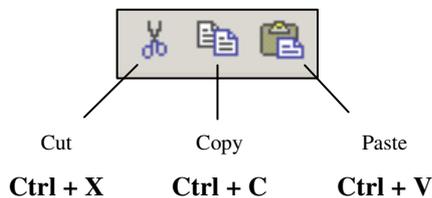
Moving involves physically transferring data from one location to another, whereas **copying** refers to duplicating data so that it appears in more than one location.

There are several methods that can be used to move or copy data.

Toolbar buttons and shortcut keys

The Cut, Copy and Paste buttons are located on the standard toolbar:

- Use **Cut and Paste** to move data
- Use **Copy and Paste** to copy data



Try it!

Switch to **Sheet 3** in **Sales report.xls**.

Use **Cut and Paste** to move the names that appear in cells **A5:A7** to cells **A8:A10**.

Then use **Undo** to move the names back to their previous location.

Use **Copy and Paste** to copy the names that appear in cells **A5:A7** to cells **A8:A10**.

Then use **Undo**.

Handy hint:

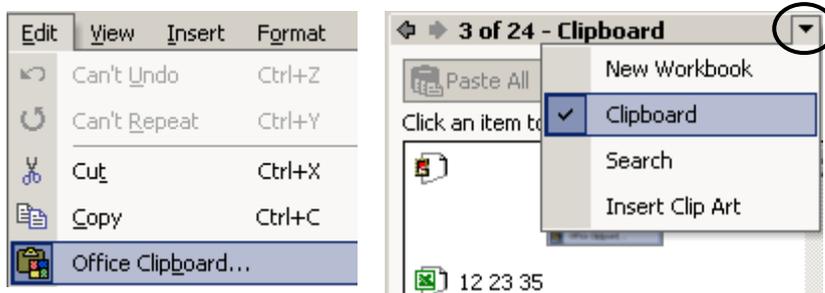
Only one cell needs to be selected when pasting data – it is not necessary to try and select the same number of cells as you are moving or copying.

Press the **Esc** key to remove the moving border from around copied or cut cells.

Using the Clipboard

The Clipboard provides a more visual/pictorial interface for copying and pasting data.

The Clipboard can be accessed through the Edit menu; or by using the dropdown arrow at the top of the Task Pane.



Accessing Excel's Clipboard

Try it!

Use the Edit menu or the dropdown arrow at the top of the Task Pane to display the Clipboard.

On **Sheet 3** of **Sales report.xls**, select cells **C5:C7** and copy the cells. The values you have copied will show on the Clipboard.

Select cell **C8** then click on the copied values showing on the Clipboard. The values should now be pasted in cells **C8:C10**.

Using the mouse

Drag-and-drop methods:

- Move data, by selecting it then dragging and dropping it to a different location
- Copy data, by selecting it, and holding down **Ctrl** in conjunction with dragging and dropping

Right mouse button:

- Select the data, then right-click for cut and copy options
- Select the destination cell for the data, then right-click for the paste option

Try it!

On **Sheet 3** of **Sales report.xls**, use the mouse to move the values in cells **C5:C7** to **C8:C10**.

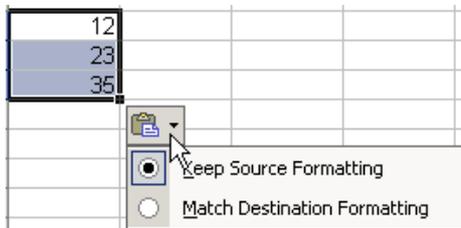
Use the mouse to copy the values in cells **C8:C10** to **C5:C7**.

Select the cells **C8:C10** and delete the values from these cells.

Using the Paste Options Smart Tag

The Paste Options smart tag appears on the screen after copied data has been pasted, providing various options that can be applied to the pasted data.

The Paste Options smart tag can be turned off by going to Tools–Options–Edit and deselecting ‘Show Paste Options buttons’.



The Paste Options smart tag

Deselecting copied data

The moving border (‘marching ants’) around copied data can be removed by pressing the **Esc** key.

This also removes the Paste Options smart tag from the screen.

Moving and copying formulas

Formulas can also be moved or copied using the same methods you have practiced using to move or copy text.

The only difference is that when formulas are **copied**, they do not stay the same like text or numbers – they change.

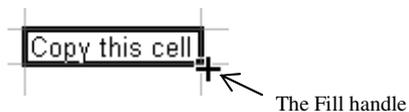
Try it!

On **Sheet 1** of **Sales report.xls**, delete the formulas in cells **G5** and **J5**. Copy the formula in cell **D5** and paste it into cells **G5** and **J5**. Note how the result of the formula changes when it is pasted into these two cells.

Why does this happen? Your trainer will explain.

Using the Fill handle

Using the Fill handle provides a quick way to copy formulas across a row or down a column.



Try it!

On **Sheet 1** of **Sales report.xls** use the Fill handle to copy down the formulas created in **D5**, **G5**, **J5** and **L5** to the next two rows (rows 6 and 7).

Why do you get incorrect formula results appearing in cells **L6** and **L7**?

Discuss this with your trainer.

Handy hint:

Formulas can be displayed in a spreadsheet by using **Ctrl + the 'pipe' key** (directly below the Esc key).

Relative references in formulas

Cell references (or cell names) that are used as part of a formula are by default **relative** cell references. 'Relative' in this case means that the cell references in the formula are viewed by Excel as being relative to the location of the formula itself.

	A	B	C	D
5	Sandra	63654	62000	=B5-C5
6	Pam	84884	77000	=B6-C6
7	Julian	84084	77000	=B7-C7

In the example on the left, Excel reads the formula in cell **D5** as 'take the value in the cell two columns to the left and minus the value in the cell one column to the left'.

So when the formula is copied, Excel changes the cell references in the formula relative to where the formula is copied to.

Therefore in cells **D6** and **D7**, Excel will continue to 'take the value in the cell two columns to the left and minus the value in the cell one column to the left'.

Absolute references in formulas

Sometimes when you create a formula it will be necessary to 'fix' or 'lock' particular cell references into a formula, so that when the formula is copied the results that show are correct.

A cell reference that is fixed or locked into a formula is known as an **absolute** reference.

The example below shows the cell **L2** as an absolute reference in the formula in column L. An absolute reference has **\$** signs before the column letter and before the row number, so L2 becomes **\$L\$2** in the formula shown below.

	K	L
1		
2	Commission rate:	0.04
3		
4	Total eligible for commission	Commission amount
5	=D5+J5	=K5*\$L\$2
6	=D6	=K6*\$L\$2
7	=D7+J7	=K7*\$L\$2

When the formula is copied down column L, cell L2 remains fixed or locked into the formula.

Handy hint:

Create an absolute reference by pressing the **F4** key once, immediately after the cell has been entered into the formula.

Try it!

On **Sheet 1** of **Sales report.xls** select cell **L5**.

Change cell **L2** in the formula into an absolute reference. This can be done by clicking next to **L2** in the formula and pressing the **F4** key once so the formula reads **=K5*\$L\$2**.

Then use the Fill handle to copy the new formula down to cells **L6** and **L7**. The correct formula results should now display.

Use **Ctrl + the 'pipe' key** to display formulas and show the absolute reference in the formula in column **L**.

Save the changes made to **Sales report.xls**.

Inserting ranges

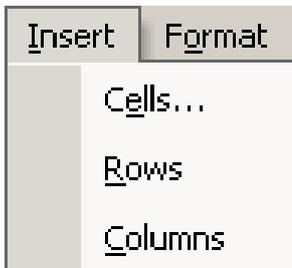
Columns and rows may need to be added to or removed from an existing spreadsheet.

In Excel, **rows** can only be inserted in an **upward** direction and **columns** can only be inserted to the **left**.

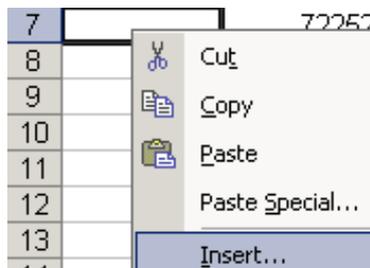
To insert rows or columns:

- Use Insert-Cells **or** right-click in a column or row and select Insert from the menu, then select Row or Column
- Right-click on a row or column header and select Insert from the menu

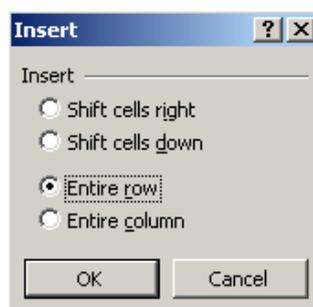
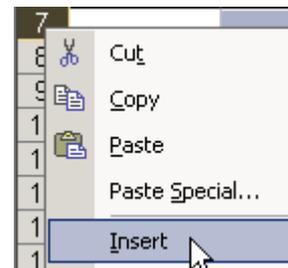
Using the Insert menu



Click in a row or column and right-click



Select the row or column header and right-click



Handy hint:

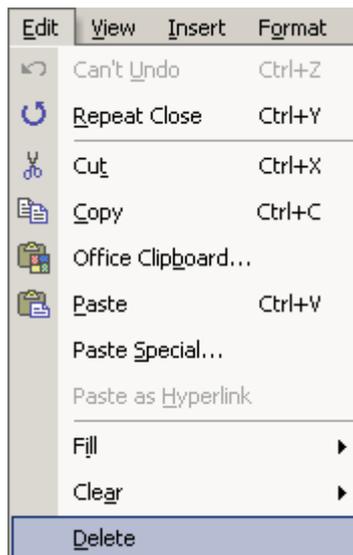
Insert multiple rows or columns by selecting more than one row or column header, right-clicking and selecting Insert from the menu.

Deleting ranges

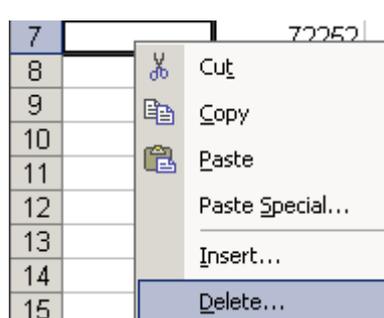
To delete rows or columns:

- Use Edit-Delete... or right-click in a column or row and select Delete from the menu, then select Row or Column
- Right-click on a row or column header and select Delete from the menu

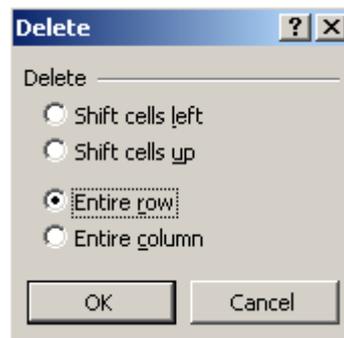
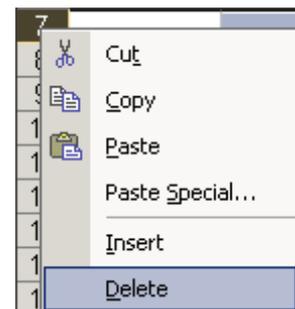
Using the Edit menu



Click in a row or column and right-click



Select the row or column header and right-click



Handy hint:

Delete multiple rows or columns by selecting more than one row or column header, right-clicking and selecting Delete from the menu.

Try it!

On **Sheet 1** of **Sales report.xls**, delete Pam's information (row 6) from the spreadsheet, then use Undo to bring it back.

Insert three rows above the Totals row (row 8) at the bottom of the spreadsheet. These rows will display the data related to the three salespeople on **Sheet 3** of **Sales report.xls**.

Move the data for the three salespeople on **Sheet 3** into the appropriate positions in the three newly created rows in **Sheet 1**.

Use the Fill handle to copy down the formulas in columns **D**, **G**, and **J**.

Calculate the 'eligible for commission' Total for each salespeople in column **K**.

Use the Fill handle to copy down the formula in column **L**.

Save the changes made to **Sales report.xls**.

Unit 3 Practice Activity

1. Open **Practice sales summary.xls**.
2. Delete the row containing the 2002 figures (row 3).
3. Insert a new row between rows 1 and 2. Enter the heading Sales 2003-2007 into cell A2.
4. Enter a formula to calculate the total sales for 2003 in F4.
5. Use the AutoFill handle to copy the year total formula from F4 to F5:F7.
6. In B8, enter formula that will calculate predicted sales for each quarter in 2007. For 2007, sales in each quarter are predicted to increase by 2% (on average) from same quarter in the previous year. Note that 2% has been entered into cell E10 to be used as part of the formula.
7. Copy the formula in B8 to C8:E8. Check your formula results in C8:E8 – if the quarterly results are the same as those in the previous year then the formula in B8 needs correcting.
8. Change the percentage in B8 from 2% to 1.5%. The predicted sales for 2007 should automatically recalculate once the percentage has been altered.
9. Copy the formula from F7 down to F8, so total predicted sales for 2007 show in the spreadsheet.
10. Save the workbook as **My practice sales summary** and close the workbook.

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Unit 3 Practice Activity solution

Upon completion of Unit 3 Practice Activity your formulas should match those shown below.

Use **Ctrl + the 'pipe' key** (directly below the Esc key) to view formulas in your spreadsheet.

	A	B	C	D	E	F
1	Time Out Holidays					
2	Sales for 2003-2007					
3	Year	Qtr1	Qtr2	Qtr3	Qtr4	Total
4	2003	312369	355987	348369	419875	=SUM(B4:E4)
5	2004	389563	329632	379456	316987	=SUM(B5:E5)
6	2005	366987	388756	411698	419875	=SUM(B6:E6)
7	2006	412369	410369	413548	415369	=SUM(B7:E7)
8	2007 (predicted)	=B7*(1+\$E\$10)	=C7*(1+\$E\$10)	=D7*(1+\$E\$10)	=E7*(1+\$E\$10)	
9						
10	Predicted average increase in sales				0.015	

Notes

- Formulas in column F are created using the AutoSum button
- Formula in row 8 uses an absolute reference – when the cell E10 is entered into the formula, press the F4 key to create an absolute reference (\$E\$10).

Unit 4: Using Functions

Functions are types of formulas that are pre-programmed into Excel in order to perform specific calculations.

This unit is an introduction to some of the common Excel functions and their uses, including SUM, AVERAGE, MIN, MAX, COUNT and COUNTA.

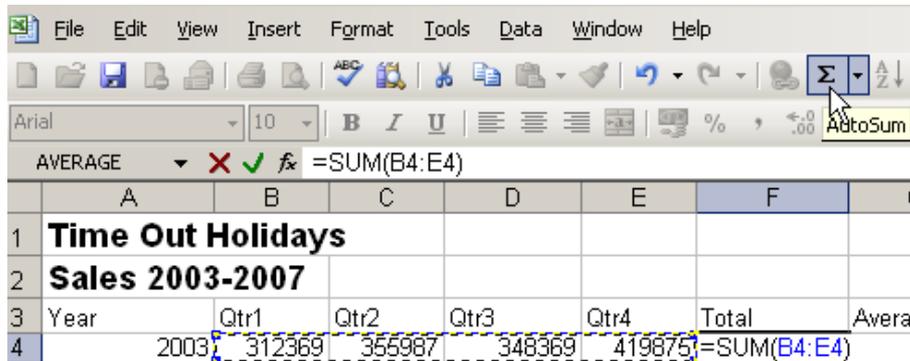
Different methods for entering functions into a spreadsheet will be covered.

Unit objectives

- Use the AutoSum button add values in a spreadsheet
- Use a variety of methods to enter common functions such as AVERAGE, MIN, MAX, COUNT and COUNTA

Using AutoSum

The AutoSum button in Excel provides a quick way to add together values in a spreadsheet.



To use AutoSum:

- Select the cell where the formula is to appear in the spreadsheet
- Click the AutoSum button – Excel automatically enters a formula into the cell for you
- Check the formula to ensure it is accurate – edit the formula if necessary
- Press Enter to confirm the formula and display the formula result.

Try it!

On **Sheet 1** of **Sales report.xls** use the AutoSum button to calculate Total actual and target sales for each quarter in row 11.

Entering functions

There are several ways of entering functions into a spreadsheet:

- Using the Insert Function button
- Using the AutoSum list
- Manually entering the function

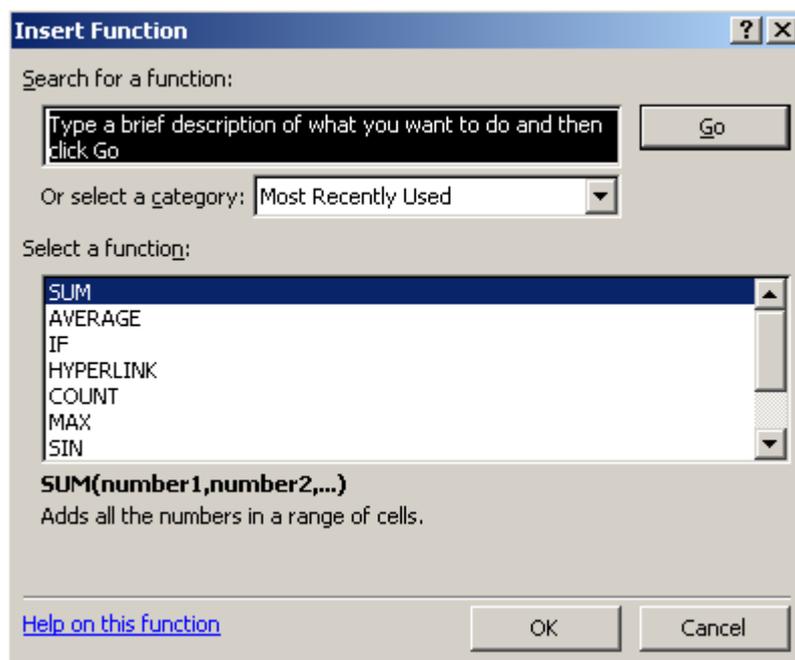
Using the Insert Function button

The Insert Function button is located near the top of the screen, adjacent to the formula bar:



Insert Function button

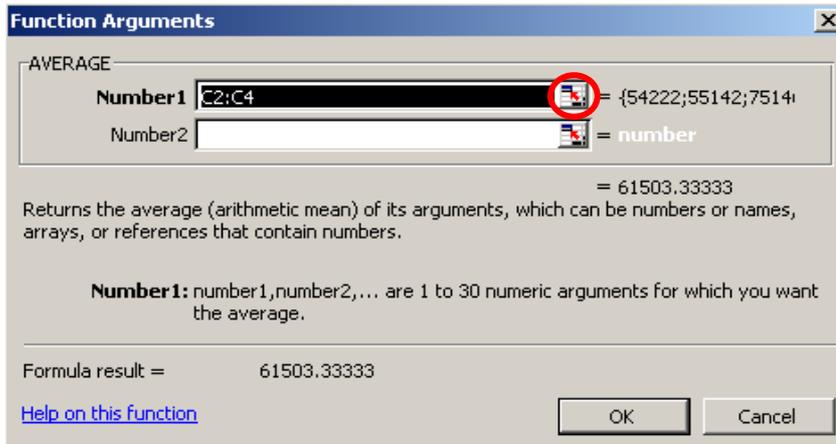
Clicking the Insert Function button activates the Insert Function dialogue box and provides access to the large range of functions available in Excel.



Once the Insert Function dialogue box is open:

- Select the function you wish to use from the available list and click OK **or**
- Type the name of the function you wish to use in the Search for a function area, press Enter, select the function when it appears in the list and click OK.

In the Function Arguments dialogue box, click the button with the red arrow to select the range of cells to enter into the formula from the spreadsheet, then click OK.



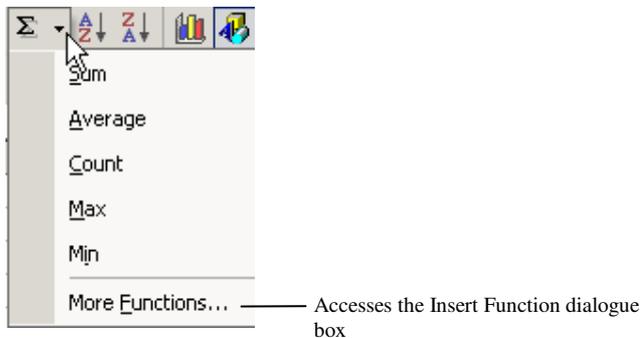
Try it!

On **Sheet 1** of **Sales report.xls** type Average into cell **A12**.

Use the Insert Function button to calculate average actual and target sales for each quarter in row 12.

Using the AutoSum List

The dropdown arrow next to the AutoSum button provides access to common functions, and the Insert Function dialogue box.



To insert function using the AutoSum list:

- Select the cell where the formula is to appear in the spreadsheet
- Select the function you wish to use from the AutoSum list
- Check the formula to ensure it is accurate – edit the formula if necessary
- Press Enter to confirm the formula and display the formula result.

Try it!

On **Sheet 1** of **Sales report.xls** type Minimum into cell **A13**.

Use the AutoSum list to calculate minimum actual and target sales for each quarter in row 13.

Entering functions manually

All the common functions follow the same basic structure:

=function name(cell:cell) or =function name(cell,cell,cell)

Therefore formulas containing functions can be typed directly into a cell in the spreadsheet.

Try it!

On **Sheet 1** of **Sales report.xls** type Maximum into cell **A14**.

Enter formulas to calculate maximum actual and target sales for each quarter into row 14.

Type No. of employees into cell **A15**.

Use any one of the three methods for inserting functions to enter the **COUNT** function into cell **B15**. The **COUNT** function can be used on cells that contain values, to determine how many values there are. In this case, we want to know how many employees there are.

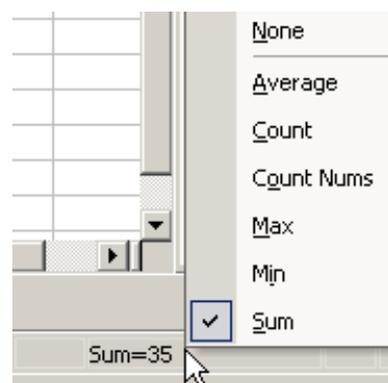
Handy hint:

By changing the function from **COUNT** to **COUNTA**, cells containing labels can be counted as well as cells containing values.

Using AutoCalc

The AutoCalc feature in the status bar at the bottom-right of the Excel window can be used to find the result of using a particular function on cells that have been selected in the spreadsheet.

Right-click on the AutoCalc area to select other functions – SUM shows by default.



The AutoCalc feature

Unit 4 Practice Activity

1. Open **My Practice sales summary.xls**. This is the file you worked on for the Unit 3 Practice Activity.
2. Enter the labels Average, Minimum and Maximum into cells G3, H3 and I3 respectively.
3. In cell G4, enter a function to calculate the average quarterly sales for 2003. Copy the formula down to row 8.
4. In cell H4, enter a function to calculate the lowest quarterly sales value for 2003. Copy the formula down to row 8.
5. In cell I4, enter a function to calculate the highest quarterly sales value for 2003. Copy the formula down to row 8.
6. Save the changes made to **My Practice sales summary** and close the file.

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Unit 4 Practice Activity solution

Upon completion of Unit 4 Practice Activity your formulas should match those shown below.

Use **Ctrl + the 'pipe' key** (directly below the Esc key) to view formulas in your spreadsheet.

	A	B	C	D	E	F	G	H	I
1	Time Out Holidays								
2	Sales for 2003-2007								
3	Year	Qtr1	Qtr2	Qtr3	Qtr4	Total	Average	Minimum	Maximum
4	2003	312369	355987	348369	419875	=SUM(B4:E4)	=AVERAGE(B4:E4)	=MIN(B4:E4)	=MAX(B4:E4)
5	2004	389563	329632	379456	316987	=SUM(B5:E5)	=AVERAGE(B5:E5)	=MIN(B5:E5)	=MAX(B5:E5)
6	2005	366987	388756	411698	419875	=SUM(B6:E6)	=AVERAGE(B6:E6)	=MIN(B6:E6)	=MAX(B6:E6)
7	2006	412369	410369	413548	415369	=SUM(B7:E7)	=AVERAGE(B7:E7)	=MIN(B7:E7)	=MAX(B7:E7)
8	2007 (predicted)	=B7*(1+\$E\$10)	=C7*(1+\$E\$10)	=D7*(1+\$E\$10)	=E7*(1+\$E\$10)				
9									
10	Predicted average increase in s:				0.015				

Notes

Functions can be entered into columns G, H and I using any one of the three methods outlined in the Unit 4 notes (using the Insert Function button, using the AutoSum list or by entering functions manually into the spreadsheet).

Unit 5: Formatting Worksheets

This unit focuses on how to use various formatting features in Excel, including text and number formatting.

Formatting can be applied by selecting the cell or cells the formatting is to be applied to, then applying the format(s) you wish to use.

Unit objectives

By the end of this unit, you will be able to:

- Format labels using text formatting
- Apply formatting to rows and columns
- Apply various number formats to spreadsheet values
- Use the Format Painter and AutoFormat features

Formatting text

Font formats can be applied using buttons from the formatting toolbar.



Try it!

On **Sheet 1** of **Sales report.xls**, change the font and font size of the headings in rows 1 and 2. Apply bolding to the labels in rows 3 and 4.

Formatting rows and columns

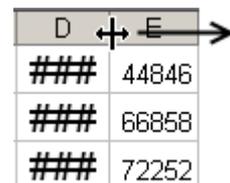
Row height and column width can be adjusted in order to make their contents visible; or to create space around labels or values in a spreadsheet.

To adjust column width, position your cursor at the right of the column header, click and drag.



Handy hint:

When the result of a formula displays as #### widen the column that the formula is in until the formula result displays normally.



D	E
###	44846
###	66858
###	72252

To adjust row height, position your cursor at the bottom of the row header, click and drag.



Both values and labels can be realigned across rows and vertically in columns. Borders can be applied to rows and columns to define or highlight values and labels in a spreadsheet.



Changing alignment

By default, Excel aligns labels to the left of the cell and values to the right.

Select the cell(s) where alignment is to be altered then apply alignment using the alignment buttons on the formatting toolbar.

Merge and centre

The Merge and Centre feature allows you to join cells together and centre align text across the merged (joined) cells.

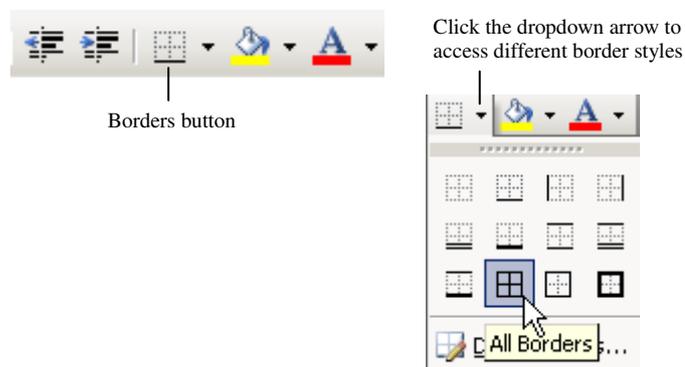
Select the cells to be merged, and then click the Merge and Centre button.

Try it!

Use Merge and Centre to centre the headings in row 1 and in row 2 across the top of the spreadsheet. Use Merge and Centre to centre the quarter labels in row 3 across the columns of figures relating to each particular quarter.

Borders

Borders can be applied to define rows, columns or ranges in a spreadsheet.



To apply borders, select the cell(s) you wish to apply borders to and use the Borders button to apply a border style.

Try it!

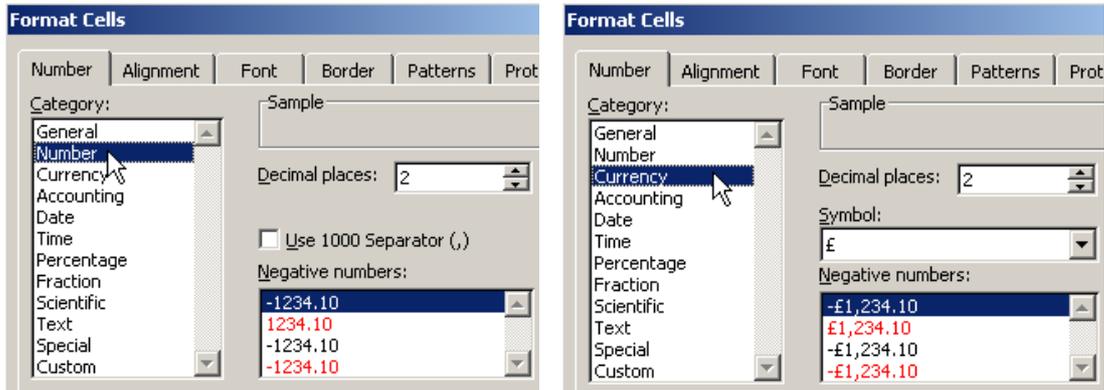
*Try applying various types of borders to **Sheet 1** of **Sales report.xls** using the Borders button on the formatting toolbar.*

Number formatting

Values in a spreadsheet can be reformatted to display in different ways, for example, as currency.

Number formatting can be applied by:

- Going to Format-Cells-Number
- Right-clicking and selecting Format Cells from the menu, then select the Number tab



Try it!

Format all values and formula results in the spreadsheet to show commas between the hundreds and thousands values and zero decimal places. Add currency symbols to the totals, average, minimum and maximum figures.

Using Format Painter and AutoFormat

Format Painter

Format Painter can be used to copy the formatting that has been applied to one cell over to other cells.



Format Painter

To use FormatPainter:

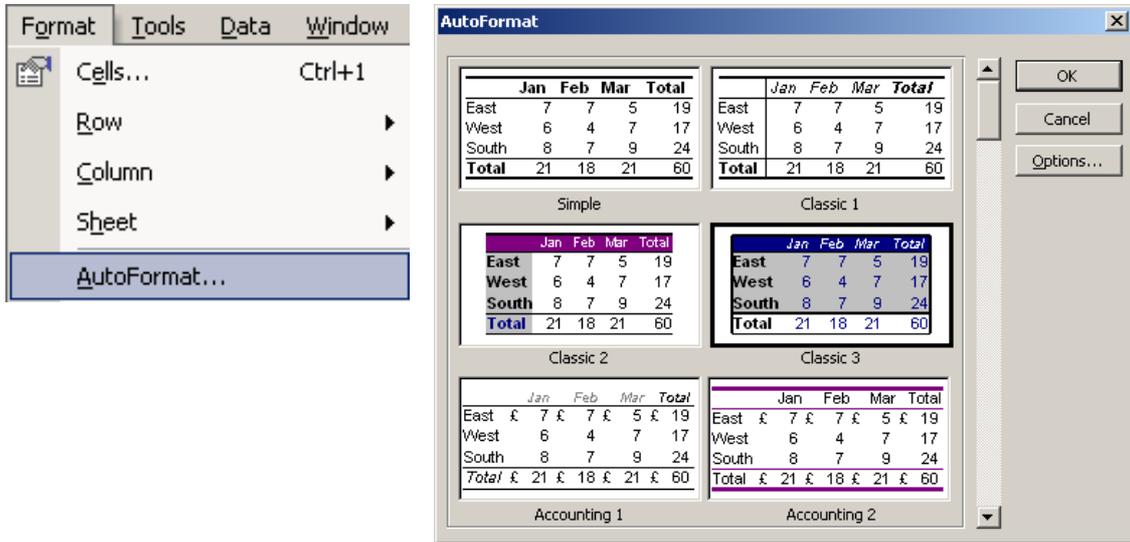
- Select the cell that displays the formatting you wish to copy
- Click the FormatPainter button
- Select the cell(s) you wish to apply the formatting to

Try it!

Use Format Painter to copy the formatting applied to the heading in row 1 on **Sheet 1** and apply formatting to the heading in row 1 on **Sheet 2**.

AutoFormat

The AutoFormat feature can be used to apply a preset format to a spreadsheet.



To apply an AutoFormat:

- Select the spreadsheet data to be formatted
- Go to Format-AutoFormat
- Choose an AutoFormat from those shown
- Click OK to apply the AutoFormat

Try it!

Switch back to **Sheet 1** in **Sales report.xls**.

Select all the spreadsheet data and use *Edit-Clear-Formats* to remove formatting from selected cells.

With the data still selected, go to *Format-AutoFormat* and apply an AutoFormat to the spreadsheet.

Unit 5 Practice Activity

1. Open **My Practice sales summary.xls**.
2. Format all the quarterly values for all years to show a comma separator between the thousands and hundreds digits, with no decimal places.
3. Format the totals, average, minimum and maximum sales for each year to show currency symbols and a comma separator between the thousands and hundreds digits.
4. Change the font size for the heading in row 2 to 12pt.
5. Use the Merge and Centre feature to centre the headings in row 1 and row 2.
6. Apply bolding and a top and bottom border to the labels in row 3.
7. Left-align the years in cells A4:A8.
8. Apply a bottom border to cells A8:I8.
9. Save the changes made to **My Practice sales summary** and close the file.

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Unit 5 Practice Activity solution

Upon completion of Unit 5 Practice Activity your spreadsheet formatting should match the formatting shown in the example below.

	A	B	C	D	E	F	G	H	I
1	Time Out Holidays								
2	Sales for 2003-2007								
3	Year	Qtr1	Qtr2	Qtr3	Qtr4	Total	Average	Minimum	Maximum
4	2003	312,369	355,987	348,369	419,875	£1,436,600	£359,150	£312,369	£419,875
5	2004	389,563	329,632	379,456	316,987	£1,415,638	£353,910	£316,987	£389,563
6	2005	366,987	388,756	411,698	419,875	£1,587,316	£396,829	£366,987	£419,875
7	2006	412,369	410,369	413,548	415,369	£1,651,655	£412,914	£410,369	£415,369
8	2007 (predicted)	418,555	416,525	419,751	421,600				
9									
10	Predicted average increase in sales per quarter				1.5%				

Unit 6: Printing

This unit focuses on printing features and options that can be used to control and enhance the appearance of printed copies of a spreadsheet.

Unit objectives

By the end of this unit, you will be able to:

- Use Print Preview and Spellcheck
- Use Page Setup to change orientation, margins and add headers and footers
- Print a worksheet and set a print area

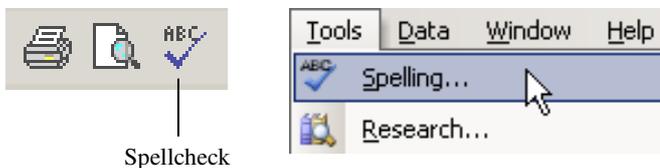
Preparing to print

The following tools can help to produce a more professional looking printed version of a spreadsheet.

Spellcheck

Spellcheck can be accessed:

- Through the Tools menu
- By clicking on the Spellcheck button on the standard toolbar



Try it!

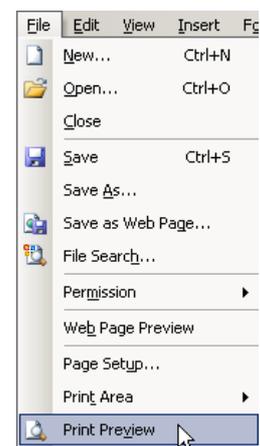
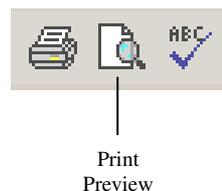
Use Spellcheck to check for possible spelling errors on **Sheet 1** of **Sales report.xls**.

Print Preview

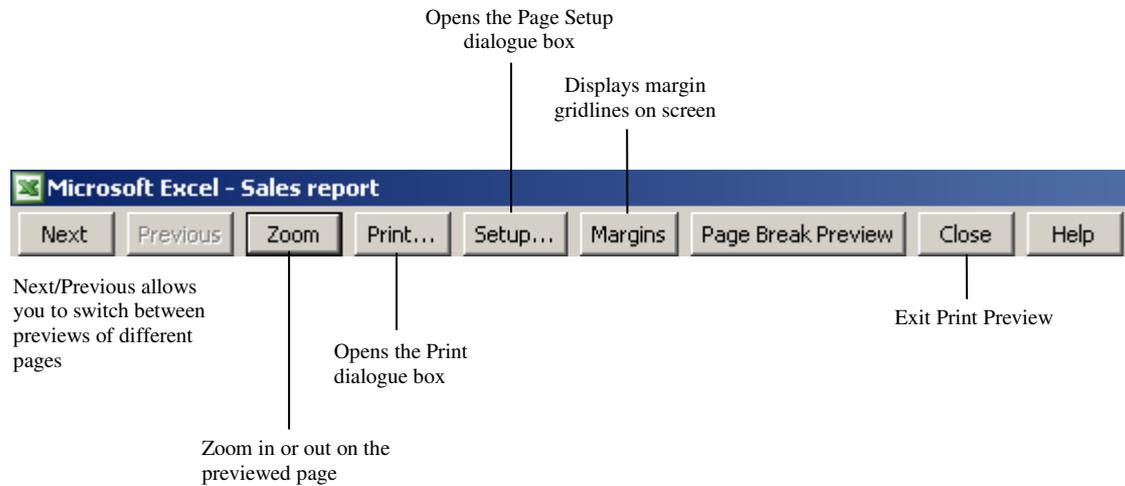
Print Preview provides a view of the spreadsheet as it would appear when printed.

Print Preview can be accessed:

- By clicking the Print Preview button on the standard toolbar
- Through the File menu



The buttons at the top of the Print Preview screen are shown below.



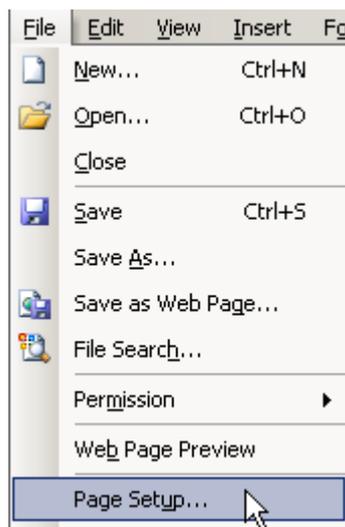
Try it!

View **Sheet 1** of **Sales report.xls** in Print Preview, then close Print Preview.

Page Setup options

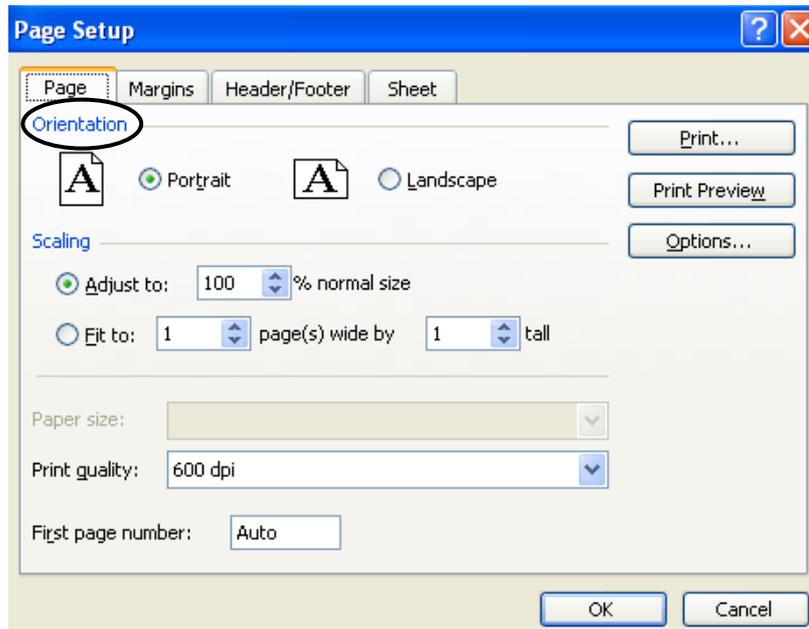
Page Setup can be accessed:

- Through File-Page Setup
- From Print Preview, by clicking on the Setup button at the top of the screen



Page orientation

Page orientation can be changed on the Page tab.



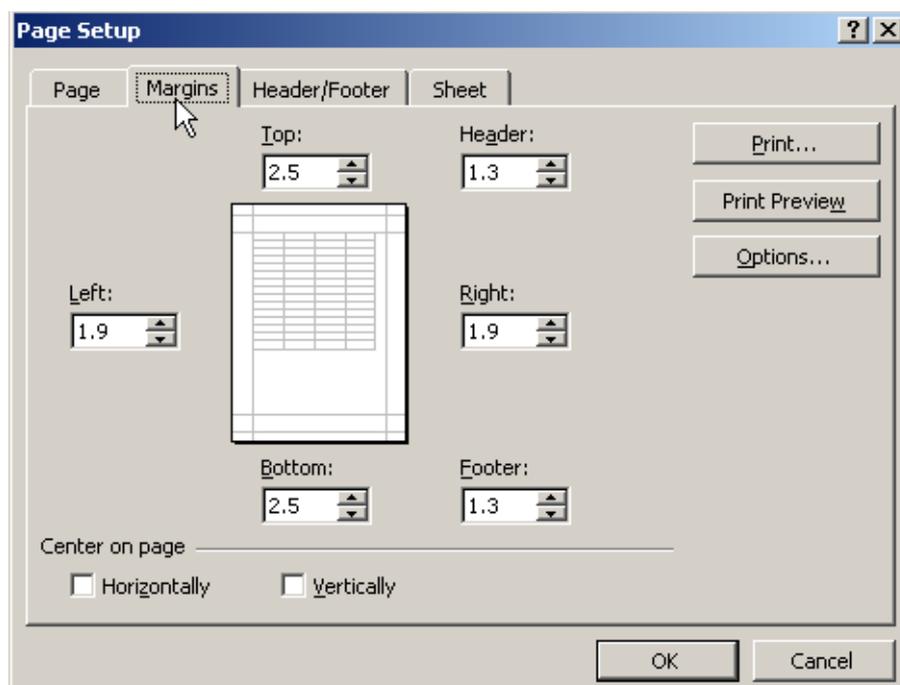
Try it!

Change the page orientation for **Sheet 1** of **Sales report.xls** to Landscape. Use Print Preview to view the change to page orientation.

Margins

Margins can be adjusted by:

- Using the Margins tab in the Page Setup dialogue box. This also gives the options to centre data horizontally on the page, and vertically on the page.
- From Print Preview, by clicking on the Margins button at the top of the screen.



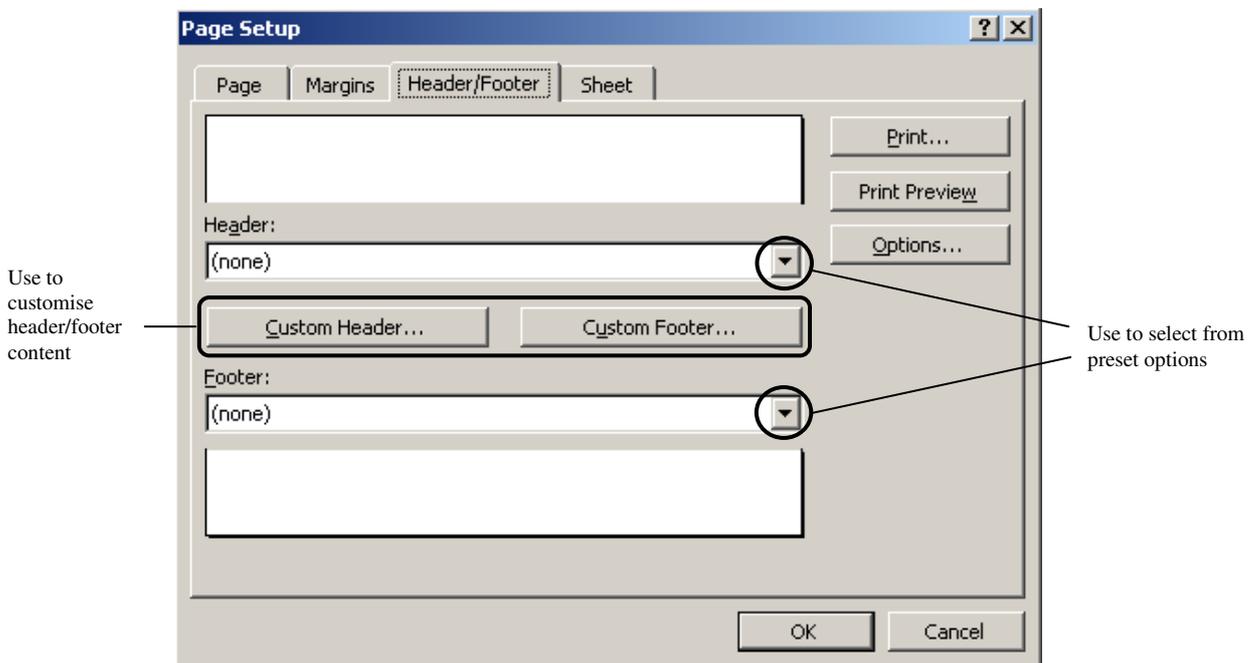
Try it!

Access Page Setup features again and go to the Margins tab. Change the left and right margin measurements to 0.5. Use Print Preview to observe the margin changes.

Headers and footers

Use the Header/Footer tab to add information to header and/or footer areas by:

- Using the dropdown arrows under Header: or Footer: to select from preset options
- Using the Custom Header or Custom Footer buttons to modify preset options, or use alternative header/footer options



Try it!

Choose the Sales report.xls, Page 1 option from the preset options for the footer.

Use Custom Footer to add your name to the footer as well.

View the changes in Print Preview.

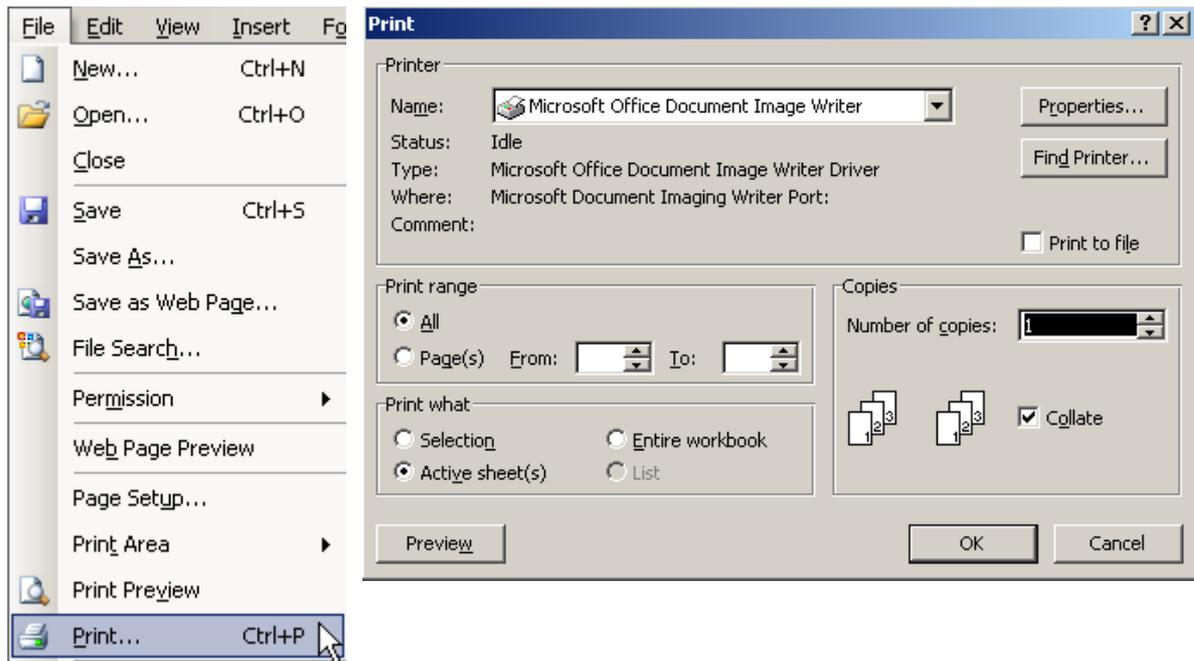
Use Custom Footer to remove your name from the footer area.

Printing worksheets

The Print dialogue box is used to change print settings.

The Print dialogue box can be accessed:

- Through File-Print
- From Print Preview, by clicking the Print button at the top of the screen



The Print Range and Print What areas allow you to specify which parts of the workbook you wish to print. You can also choose how many copies you wish to print in the Copies area.

Setting a print area

A print area can be set so that only a certain part of the spreadsheet will print when the Print button is clicked.



Print button

To set a print area:

- Highlight the range of cells to be included in the print area
- Go to File-Print Area-Set Print Area

To clear the print area, go to File-Print Area-Clear Print Area.

Try it!

Set a print area that contains the cell range **A1:J11** on **Sheet 1** of **Sales report.xls**.

Then clear the print area.

Unit 6 Practice Activity

1. Open **My Practice sales summary.xls**.
2. Preview the worksheet.
3. Change the page orientation to Landscape.
4. Centre the sheet horizontally.
5. Create a custom header. In the left section, enter Time Out Holidays. In the right section enter the date.
6. Preview the worksheet to preview the changes you have made.
7. Close out of Print Preview.
8. Set the cell range A1:E7 as the print area.
9. Preview the worksheet to check the print area has been set correctly.
10. Close out of Print Preview.
11. Clear the print area.
12. Save the changes made to **My Practice sales summary**, and close the file.

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Unit 7: Creating Charts

This unit focuses on how to create simple charts from spreadsheet data.

Unit objectives

By the end of this unit, you will be able to:

- Create charts from spreadsheet data using the Chart Wizard
- Modify chart size, position, objects and elements
- Print charts

Chart basics

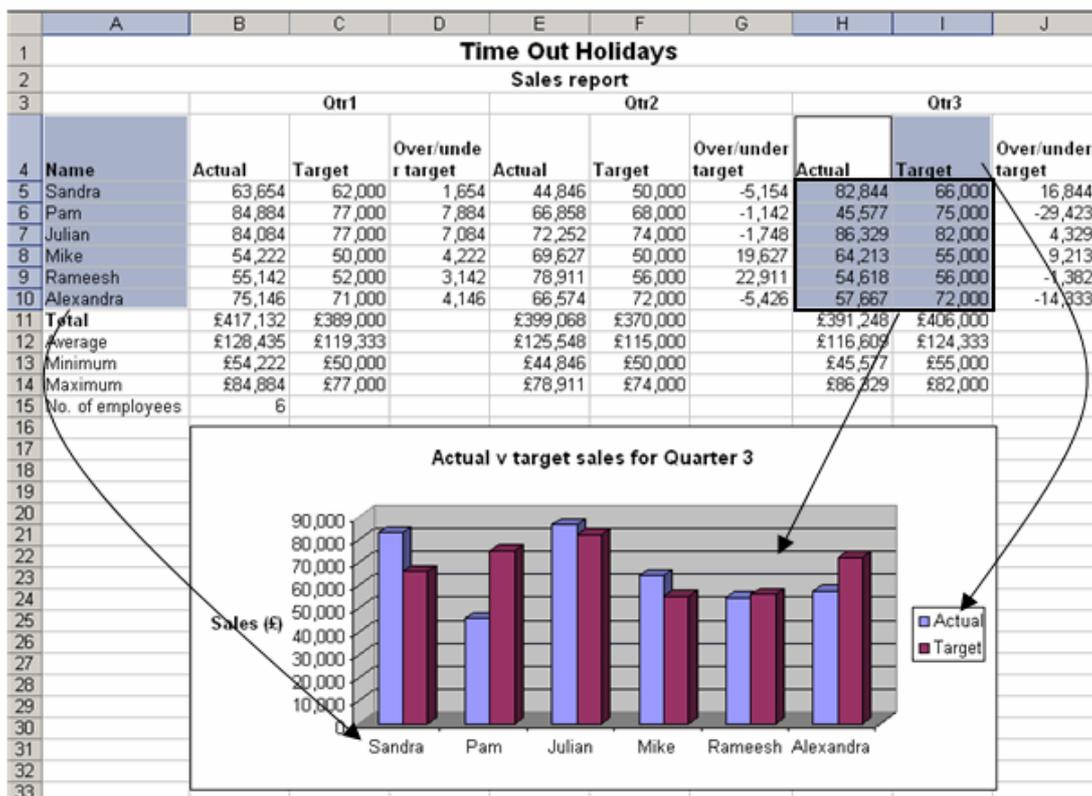
Types of charts

Excel makes it easy to create column charts, bar charts, pie charts or line graphs from a spreadsheet.

- Column charts or bar charts are best for making comparisons between different items
- Pie charts show proportional representations
- Line graphs show progress or trends across a particular period of time

Selecting relevant spreadsheet data

The first step in creating a chart is to select the labels and values that are going to make up the chart itself.



Try it!

Select the cell ranges **A4:A10** and **H4:I10** from **Sheet 1** of **Sales report.xls**.

Handy hint

Hold down the **Ctrl** key while using your mouse to select non-adjacent ranges of cells from a spreadsheet.

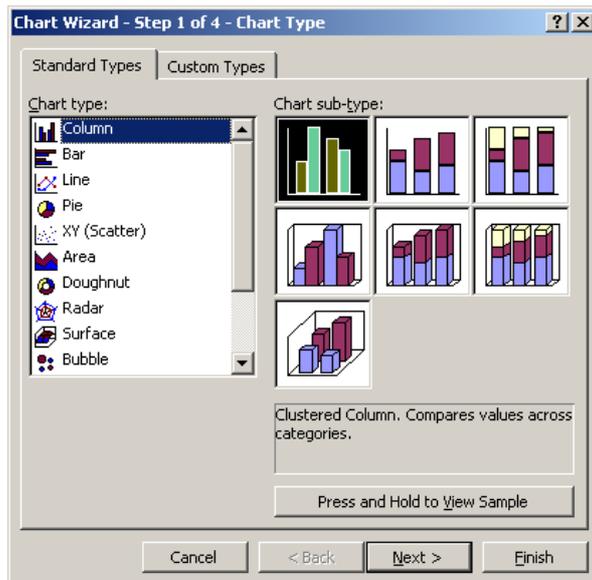
Using the Chart Wizard

Once you have selected the relevant data from your spreadsheet, you can start the Chart Wizard in order to create a chart from the data you have selected.



Step 1

Select the type of chart you wish to create.



Step 2

Shows the data range you have selected in order to create the chart.

You can reselect data from the spreadsheet at this stage if necessary.

Chart Wizard - Step 2 of 4 - Chart Source Data

Data Range Series

Actual v target sales for Quarter 3

Sales (£)

Actual Target

Sheet1!\$A\$4:\$A\$10,Sheet1!\$H\$4:\$I\$10

Series in: Rows Columns

Shows source data for chart

Cancel < Back Next > Finish

Step 3

At the third step, chart titles can be added in and data labels can be added if you wish.

Chart Wizard - Step 3 of 4 - Chart Options

Titles Axes Gridlines Legend Data Labels Data Table

Chart title: Actual v target sales for Quar

Category (X) axis:

Series (Y) axis:

Value (Z) axis: Sales (£)

Actual v target sales for Quarter 3

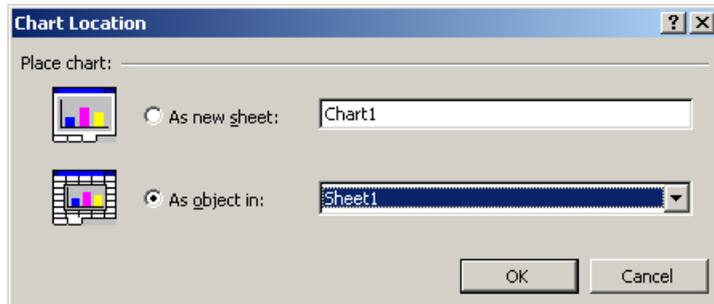
Sales (£)

Actual Target

Cancel < Back Next > Finish

Step 4

The final step allows you to choose where the chart should be positioned in the workbook.



Click OK to finish and produce your chart.

Link between source data and chart

The data selected to create the chart (the source data) is linked to the chart itself.

Therefore any changes made to the source data will be reflected in the chart immediately.

Try it!

Change Sandra's actual sales in cell H5 to 80844 and note how the change is reflected in the chart.

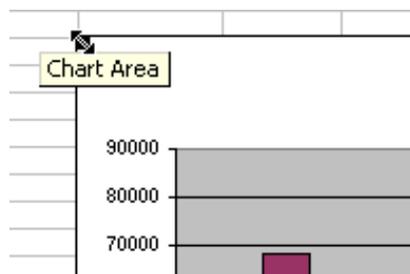
Modifying charts

Charts can easily be modified once created.

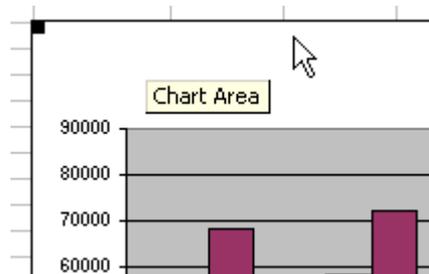
Moving and resizing charts

Embedded charts can be moved and resized once created.

Position the cursor over one of the square handles at the chart corners and drag in or out to resize



Position the cursor inside the chart area and hold down the mouse and drag to move



Try it!

Move the column chart underneath the spreadsheet data and make it larger.

Changing chart type

The chart type can be changed by:

- Selecting the chart and going to Chart-Chart Type on the menu bar
- Use the Chart Type button on the chart toolbar

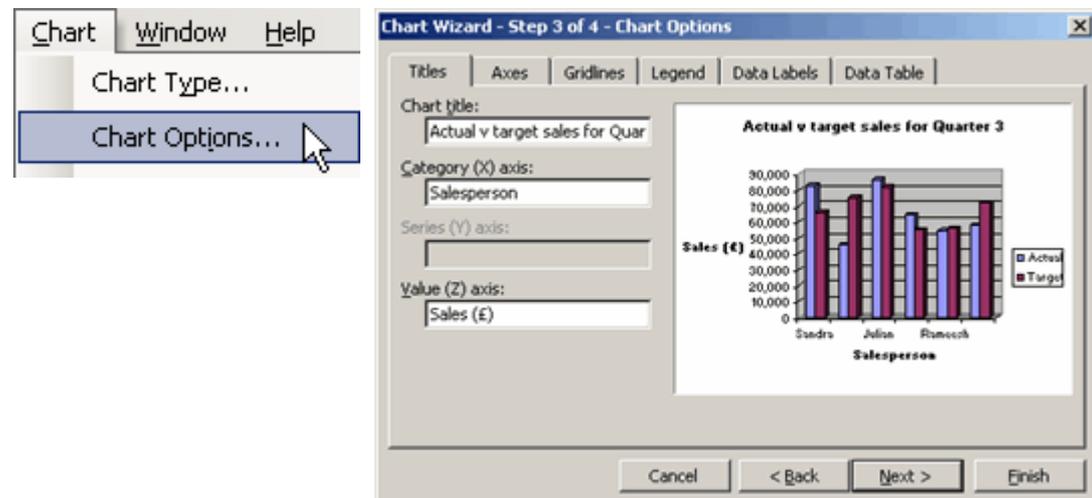


Try it!

Change the chart into a bar chart using the menu bar, then back to a column chart using the chart toolbar.

Adding axis labels to the chart area

Chart title and axis labels can be added or altered once the chart has been created by going to Chart-Chart Options.

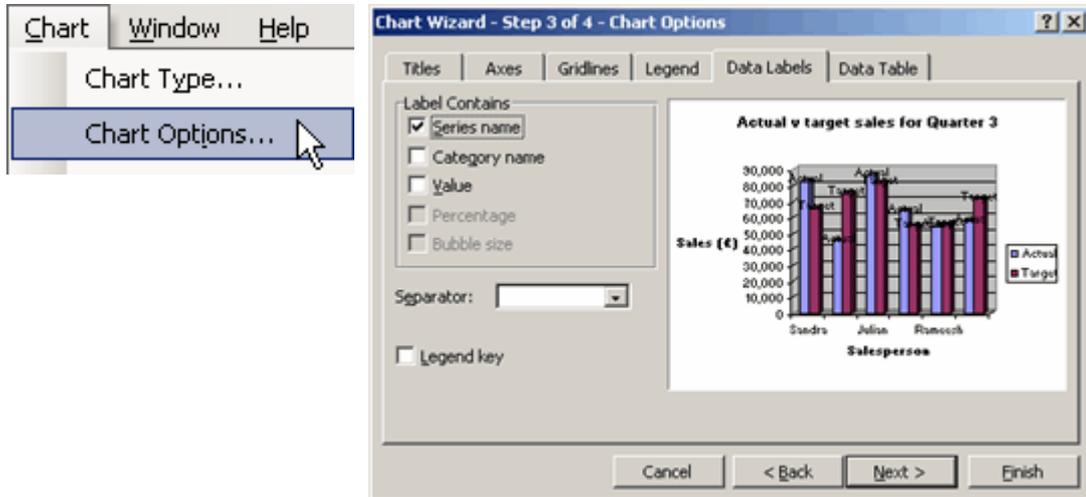


Try it!

Add the label Salesperson as the Category (X) axis on the chart.

Displaying chart labels

Labels can be displayed next to chart objects, for example, percentages can be displayed next to segments of a pie chart.



Try it!

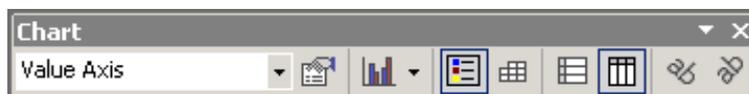
Add chart labels by selecting the chart and going to Chart-Chart Options on the menu. On the Data Labels tab, tick the Series name option and click OK.

The words Actual and Target should display above each of the columns in the chart.

Formatting chart objects

The various parts or components that make up a chart are called objects. Objects can be reformatted by:

- Double-clicking on the object
- Clicking on the object once to select it, then using the Format button on the chart toolbar



The Format button

Try it!

Change the colour of the columns for one of the salespeople.

Printing charts

Embedded charts can be printed by selecting the chart and clicking the Print button. Where charts are displayed on their own sheet, clicking the Print button will print the chart.

Try it!

[Select](#) the embedded chart and click the Print Preview button to show that just the chart will print when selected.

*Close out of Print Preview and save the changes made to **Sales report.xls**.*

Unit 7 Practice Activity

1. Open **My Practice sales summary.xls**.
2. Create a column chart in its own sheet based on the quarterly sales for the years 2003 to 2006. Do not include the yearly totals, averages, minimum or maximum figures.

Hint: do not include the labels for the years when selecting data from the spreadsheet, otherwise Excel will display these as bars in the chart. The year labels can be incorporated into the chart at Step 2 of the Chart Wizard.

3. Change the colour of the bars for one of the years.
4. Move the legend so it is positioned underneath the chart.
5. Save the changes made to **My Practice sales summary** and close.

Online support forum and knowledge base



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Unit 7 Practice Activity solution

Upon completion of Unit 7 Practice Activity your chart should match the chart shown in the example below.

