

Paul McFedries

SIMPLY EXCEL 2010



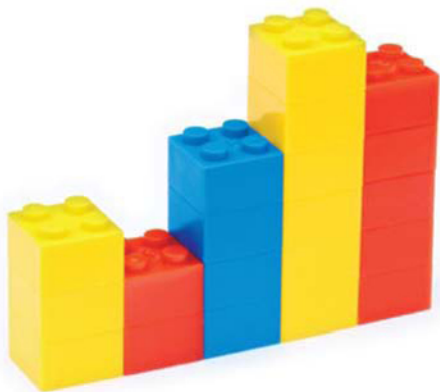
Step-by-step introduction
to Excel 2010



Concise, jargon-free
instructions



Packed with screenshots
in full-colour



Make It Simple For Yourself

SIMPLY EXCEL[®] 2010

by Paul McFedries



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How to Use This Book

Who Needs This Book

This book is for the reader who has never used this particular technology or software application. It is also for readers who want to expand their knowledge.

The Conventions in This Book

Steps

This book uses a step-by-step format to guide you easily through each task. Numbered steps are actions you must do; bulleted steps clarify a point, step, or optional feature; and indented steps give you the result.

Notes

Notes give additional information – special conditions that may occur during an operation, a situation that you want to avoid, or a cross reference to a related area of the book.

Icons and Buttons

Icons and buttons show you exactly what you need to click to perform a step.

Tip and Warning Icons

Tips offer additional information, including tips, hints, and tricks. You can use the tip information to go beyond what you have learned in the steps. Warnings tell you about solutions to common problems and general pitfalls to avoid.

Bold

Bold type shows command names, options, and text or numbers you must type.

Italics

Italic type introduces and defines a new term.

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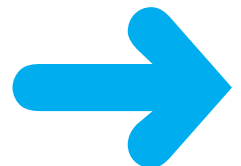
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WORKING WITH EXCEL

You use Microsoft Excel to create *spreadsheets*, which are documents that enable you to manipulate numbers and formulas to quickly create powerful mathematical, financial, and statistical models. In this chapter, you learn about Excel and you find out the kinds of tasks you can perform with Excel. You also learn how to start the program and you take a tour of the program's major features. This chapter also shows you how to work with the Excel Ribbon, how to customise the Ribbon and the Quick Access Toolbar, how to work with smart tags, and how to customise the view and other aspects of the program.



GETTING TO KNOW EXCEL

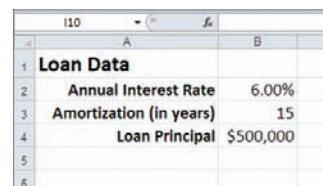
Working with Excel involves two basic tasks: building a spreadsheet and then manipulating the data on the spreadsheet. Building a spreadsheet involves adding data, formulas, and functions. Manipulating data involves calculating totals, working with series, creating tables for your data, and visualising data in charts.

This section gives you an overview of these tasks. You learn about each task in greater detail as you work through the book.

Build a Spreadsheet

Add Data

You can insert text, numbers, and other characters into any cell in the spreadsheet. Click the cell that you want to work with and then type your data in the Formula bar. This is the large text box above the column letters. Your typing appears in the cell that you selected. When you are done, press **Enter**. To edit existing cell data, click the cell and then edit the text in the Formula bar.

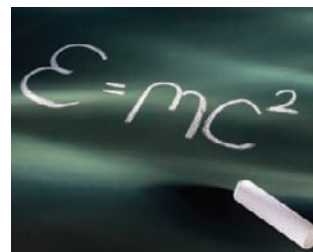


A screenshot of an Excel spreadsheet. The title bar shows '110'. The spreadsheet has two columns, A and B. Row 1 is labeled 'Loan Data'. Row 2 shows 'Annual Interest Rate' in column A and '6.00%' in column B. Row 3 shows 'Amortization (in years)' in column A and '15' in column B. Row 4 shows 'Loan Principal' in column A and '\$500,000' in column B. Rows 5 and 6 are empty.

	A	B
1	Loan Data	
2	Annual Interest Rate	6.00%
3	Amortization (in years)	15
4	Loan Principal	\$500,000
5		
6		

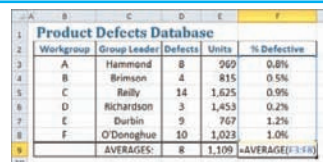
Add a Formula

A *formula* is a collection of numbers, cell addresses, and mathematical operators that performs a calculation. In Excel, you enter a formula in a cell by typing an equals sign (=) and then the formula text. For example, the formula **=B1-B2** subtracts the value in cell B2 from the value in cell B1.



Add a Function

A *function* is a predefined formula that performs a specific task. For example, the AVERAGE function calculates the average of a list of numbers and the PMT function calculates a loan or mortgage payment. You can use functions on their own, preceded by =, or as part of a larger formula. Click **Insert Function** () to see a list of the available functions.



A screenshot of an Excel spreadsheet titled 'Product Defects Database'. The spreadsheet has five columns: Workgroup, Group Leader, Defects, Units, and % Defective. The data is as follows:

	Workgroup	Group Leader	Defects	Units	% Defective
1	A	Hammond	8	960	0.8%
2	B	Brimson	4	815	0.5%
3	C	Reilly	14	1,625	0.9%
4	D	Richardson	3	1,453	0.2%
5	E	Durbin	9	767	1.2%
6	F	O'Donoghue	10	1,023	1.0%
7	AVERAGES:		8	1,109	AVERAGE(D1:D6)

Manipulate Data

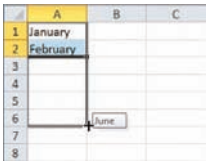
Calculate Totals Quickly

If you just need a quick sum of a list of numbers, click a cell below the numbers and then click the **Sum** button (Σ), which is available in the Home tab of Excel's Ribbon. You can also select the cells that you want to sum and their total appears in the status bar.



Fill a Series

Excel enables you to save time by completing a series of values automatically. For example, if you need to enter the numbers 1 to 100 in consecutive cells, you can enter just the first few numbers, select the cells, and then click and drag the lower right corner to fill in the rest of the numbers. Most programs also fill in dates and the names of week days and months.



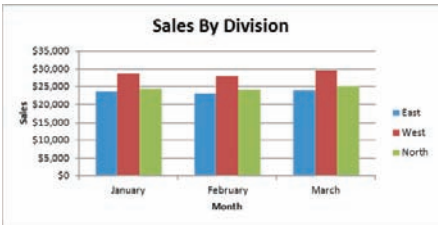
Manage Tables

The row-and-column format of a spreadsheet makes the program suitable for simple databases called *tables*. Each column becomes a field in the table and each row is a record. You can sort the records, filter the records to show only certain values, and add subtotals.

SUMMER SALES PROMOTION - ORDERS						
Order #	Customer	Quantity	Unit Price	Discount	Product	Category
01/05/2020	Printer stand	11	\$ 125.70	\$ Free with 10	Direct Mail	
01/06/2020	Glare filter	6	\$ 77.82	Extra Discount	Magazine	
01/06/2020	Mouse pad	13	\$ 180.92	Extra Discount	Newspaper	
01/06/2020	Glare filter	11	\$ 149.71	\$ Free with 10	Magazine	
02/06/2020	Mouse pad	22	\$ 120.40	\$ Free with 10	Magazine	
02/06/2020	Mouse pad	3	\$ 20.19	Extra Discount	Newspaper	
02/06/2020	Copy holder	9	\$ 10.60	Extra Discount	Direct Mail	
02/06/2020	Printer stand	22	\$ 289.90	\$ Free with 10	Newspaper	

Add a Chart

A *chart* is a graphic representation of spreadsheet data. As the data in the spreadsheet changes, the chart also changes to reflect the new numbers. Excel offers a wide variety of charts, including bar charts, line charts, and pie charts.



START EXCEL

Before you can perform tasks such as adding data and building formulas, you must first start Excel. This brings the Excel window onto the Windows desktop and you can then begin using the program. This task and the rest of the book assume that you have already installed Excel 2010 on your computer.

When you have finished your work with Excel, you should shut down the program. This reduces clutter on the desktop and in the taskbar, and it also conserves memory and other system resources.

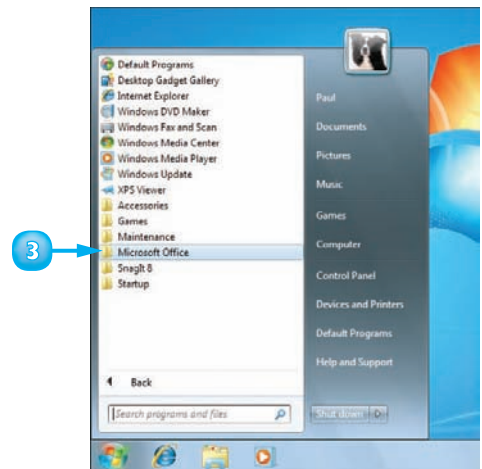
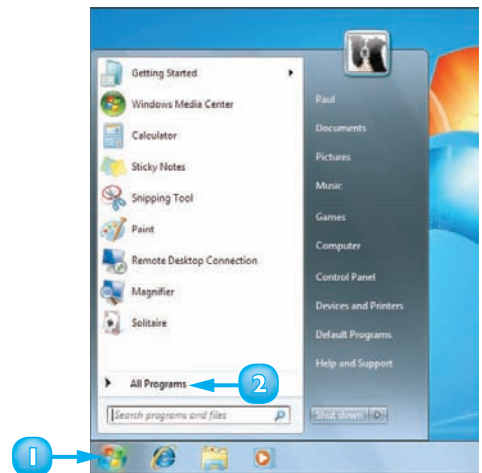
- 1 Click **Start**.

The Start menu appears.

- 2 Click **All Programs**.

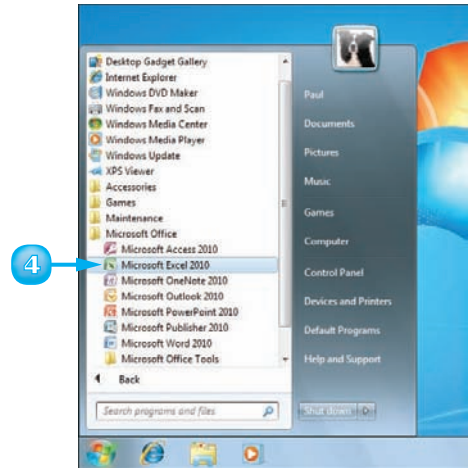
The App Programs menu appears.

- 3 Click **Microsoft Office**.



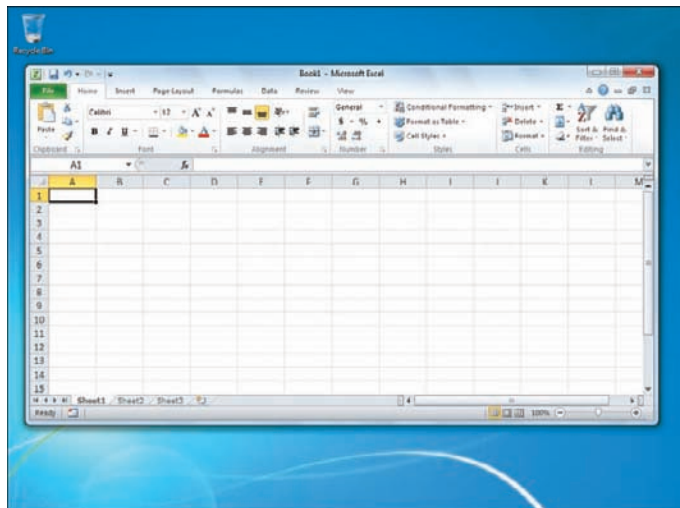
The Microsoft Office menu appears.

4 Click **Microsoft Excel 2010**.



The Microsoft Excel window appears on the desktop.

Note: When you are finished with Excel, close the program by clicking the **File** tab and then clicking **Exit**.



After you have used Excel a few times, it should appear on the main Start menu in the list of your most-used programs and you can click that icon to start the program. You can force the Excel icon onto the Start menu by following Steps 1 to 3, right-clicking the Microsoft Excel 2010 icon and clicking Pin to Start Menu. If you are using Windows 7, you can click Pin to Taskbar to add the Excel icon to the taskbar.

TOUR THE EXCEL WINDOW

To get up to speed quickly with Excel, it helps to understand the various elements of the Excel window. These include standard window elements such as the title bar and status bar, as well as Office-specific elements such as the Ribbon and the File tab.

A Title Bar

The title bar displays the name of the current workbook.

B Quick Access Toolbar

This area gives you one-click access to a few often-used features. To learn how to customise this toolbar, see “Customise the Quick Access Toolbar.”

C Excel Window Controls

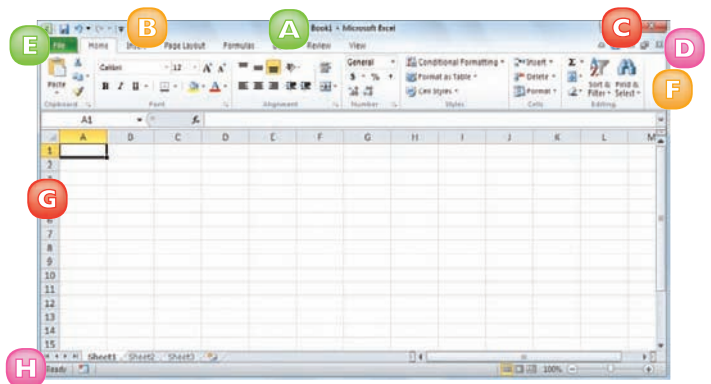
You use these controls to minimise, maximise, restore and close Excel's application window.

D Workbook Window Controls

You use these controls to minimise, maximise, restore, and close the current workbook window.

E File Tab

Click this tab to access file-related commands, such as Save and Open.



F Ribbon

This area gives you access to all of Excel's commands, options and features. To learn how to use this element, see “Work with Excel's Ribbon.”

G Worksheet

This area displays the current worksheet and it is where you will do most of your Excel work.

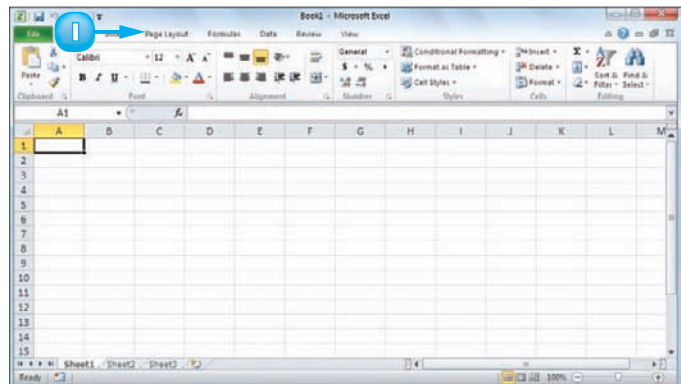
H Status Bar

This area displays messages about Excel's current status, the results of certain operations and other information.

WORK WITH EXCEL'S RIBBON

You use Excel's Ribbon element to access all of the program's features and commands. The *Ribbon* is the horizontal strip that runs across the top of the Excel window, just below the title bar. The Ribbon is organised into various tabs, such as File, Home and Insert, and each tab contains related controls, which usually include buttons, lists, and check boxes. There is no menu bar in Excel, so you do not use pull-down menus to access commands.

- I** Click the tab that contains the Excel feature you want to work with.

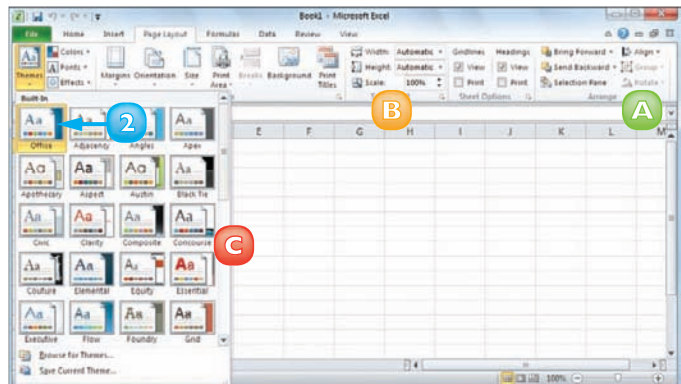


Excel displays the controls in the tab.

- A** Each tab is organised into groups of related controls, and the group names appear here.
- B** In many groups you can click the dialog box launcher button (⌵) to see group settings.

- 2** Click the control for the feature.

- C** If the control displays a list of options, click the option you want.



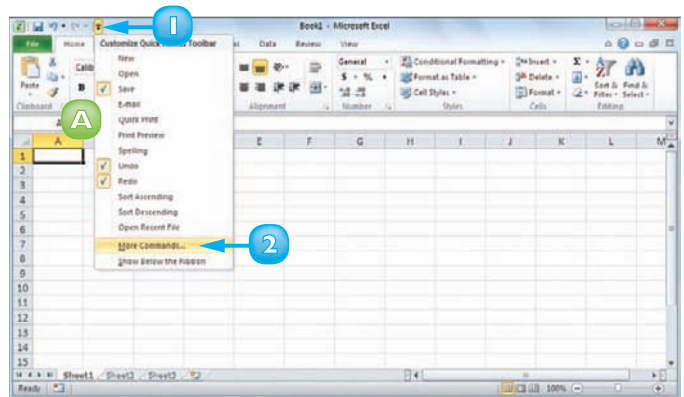
Excel runs the command or sets the option.

CUSTOMISE THE QUICK ACCESS TOOLBAR

You can make Excel easier to use by customising the Quick Access Toolbar to include the Excel commands you use most often. You run Quick Access Toolbar buttons with a single click, so adding your favourite commands saves time. By default, the Quick Access Toolbar contains three buttons, Save, Undo and Redo, but you can add any of Excel's hundreds of commands.

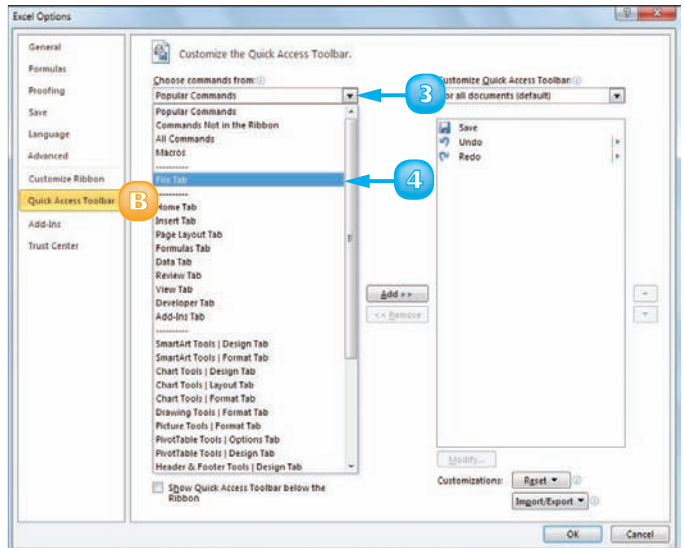
Since there is only so much room for the Quick Access Toolbar in Excel's menu bar, consider moving the Quick Access Toolbar below the Ribbon to gain more space for your custom commands.

- 1** Click the **Customize Quick Access Toolbar** button (☰).
- A** *If you see the command you want, click it and skip the rest of the steps in this section.*
- 2** Click **More Commands**.

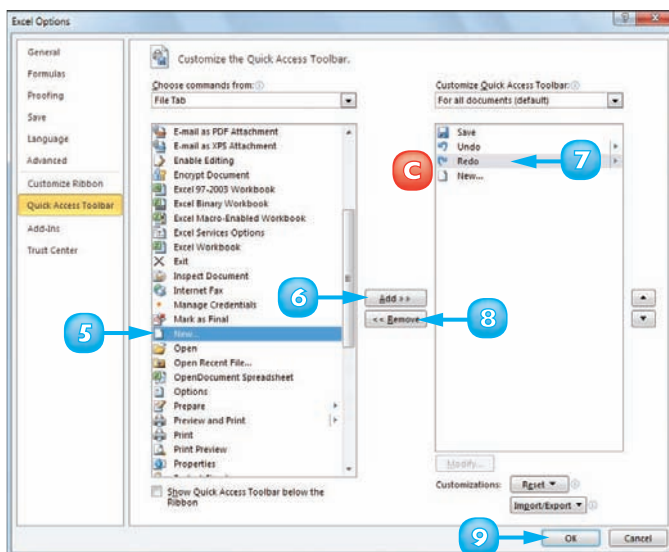


The Excel Options dialog box appears.

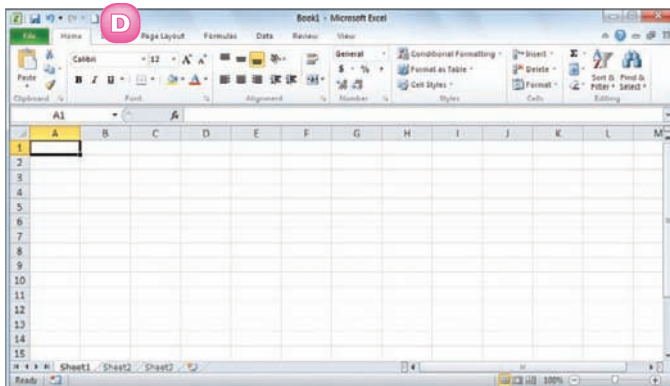
- B** *Excel automatically displays the Quick Access Toolbar tab.*
- 3** Click the **Choose commands from** ☰.
- 4** Click the command category you want to use.



- 5 Click the command you want to add.
- 6 Click **Add**.
- C** Excel adds the command.
- 7 To remove a command, click it.
- 8 Click **Remove**.
- 9 Click **OK**.



- D** Excel adds a button for the command to the Quick Access Toolbar.



You can move the Quick Access Toolbar below the Ribbon to give it the full width of the Excel window, so you can add many more buttons. Click the **Customize Quick Access Toolbar** button (☰) and then click **Show Below the Ribbon**.



You can add a button directly from the Ribbon. Click the Ribbon tab that contains the command, right-click the command, and then click **Add to Quick Access Toolbar**. Excel inserts a button for the command on the Quick Access Toolbar.

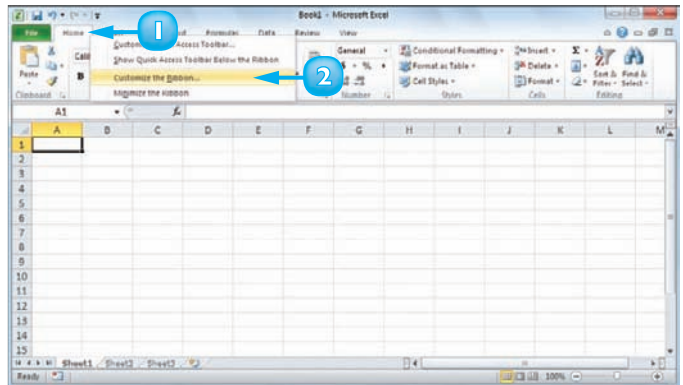
CUSTOMISE THE RIBBON

You can improve your Excel productivity by customising the Ribbon with extra commands that you use frequently. The default Ribbon contains eight tabs and each of those tabs contains dozens of commands in the form of buttons, galleries, lists, and other controls. However, Excel has many other commands available and you may wish to add one or more of these other commands if you use any of them frequently.

To add a new command to the Ribbon, you must first create a new tab or a new group within an existing tab and then add the command to the new tab or group.

Display the Customize Ribbon Tab

- 1 Right-click any part of the Ribbon.
- 2 Click **Customize the Ribbon**.

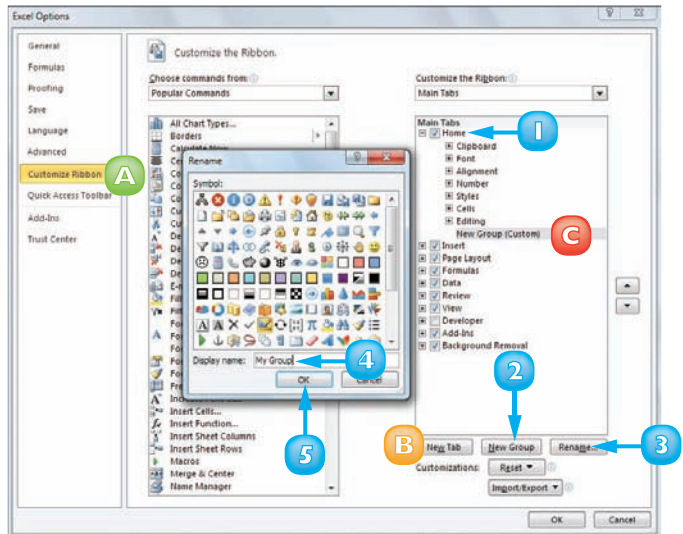


Add a New Tab or Group

The Excel Options dialog box appears.

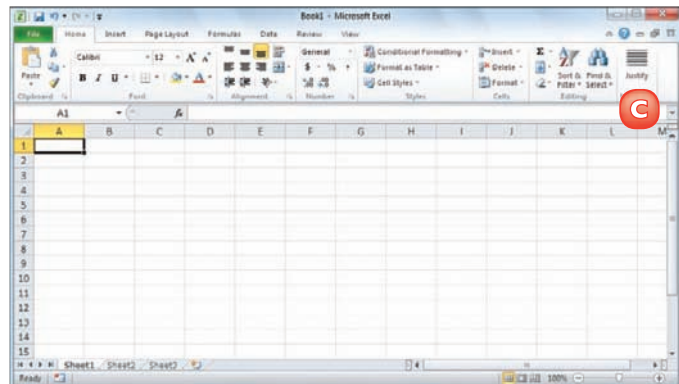
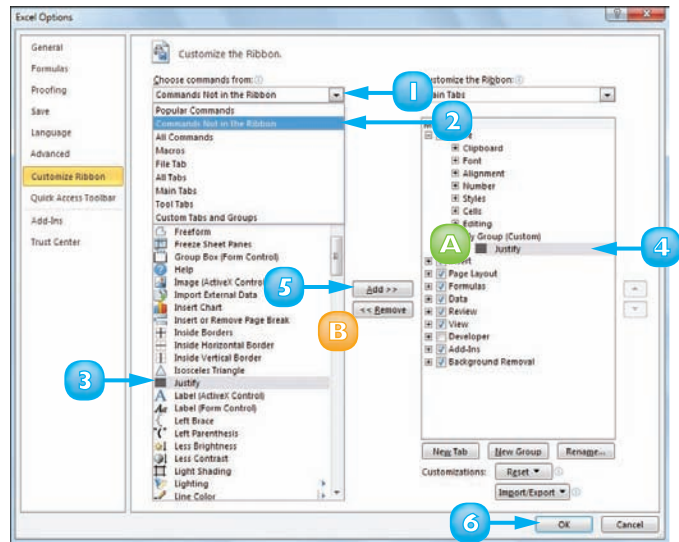
A Excel automatically displays the *Customize Ribbon* tab.

- 1 Click the tab you want to customise.
- B** You can also click **New Tab** to create a custom tab.
- 2 Click **New Group**.
- C** Excel adds the group.
- 3 Click **Rename**.
- 4 Type a name for the group.
- 5 Click **OK**.



Add a Command

- 1 Click the **Choose commands from** .
- 2 Click the command category you want to use.
- 3 Click the command you want to add.
- 4 Click the custom group or tab you want to use.
- 5 Click **Add**.
 - A Excel adds the command.
 - B To remove a custom command, click it and then click **Remove**.
- 6 Click **OK**.
 - C Excel adds the new group and command to the Ribbon.



Excel tool tabs appear only when you select an Excel object. You can add custom groups and commands to any tool tab. Right-click any part of the Ribbon, click **Customize the Ribbon**, click the **Customize the Ribbon**  and then click **Tool Tabs**. Click the tab you want and then follow the steps in this section to customise it.



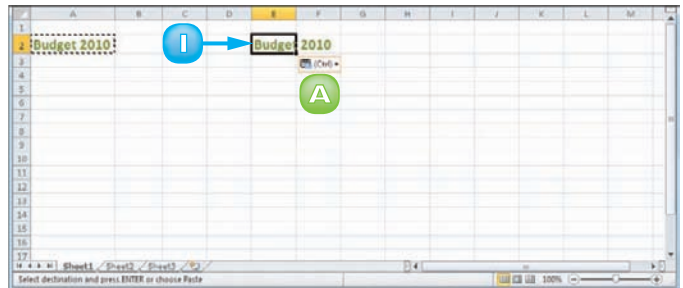
Right-click any part of the Ribbon and then click **Customize the Ribbon**. To restore a tab, click it, click **Restore Defaults**, and then click **Restore only selected Ribbon tab**. To remove all customisations, click **Restore Defaults** and then click **Restore all Ribbon tabs and Quick Access Toolbar customizations**.

WORK WITH SMART TAGS

You can make your Excel work faster and easier by taking advantage of smart tags. A *smart tag* is a special icon that appears when you perform certain Excel tasks, such as pasting data and using the AutoFill feature. Clicking the smart tag displays a list of options that enable you to control or modify the task you just performed. Some smart tags appear automatically in response to certain conditions. For example, if Excel detects an inconsistent formula, it displays a smart tag to let you know.

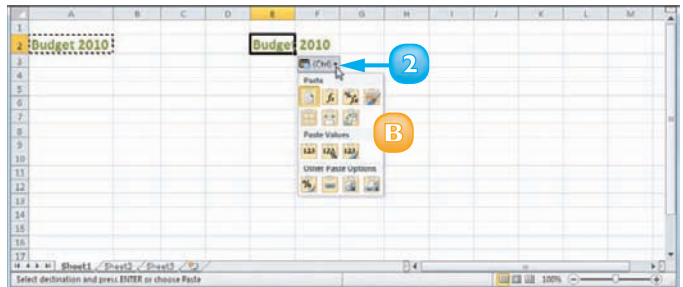
- I** Perform an action that displays a smart tag, such as copying and pasting a cell.

A *The smart tag appears.*

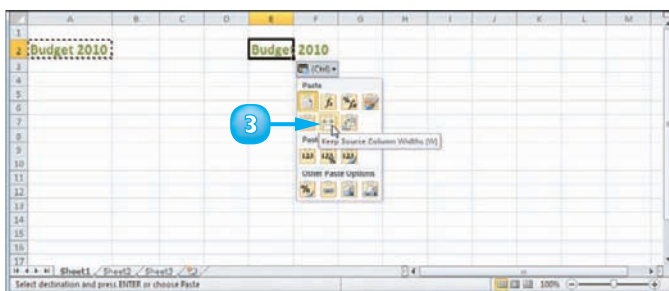


- 2** Click the smart tag.

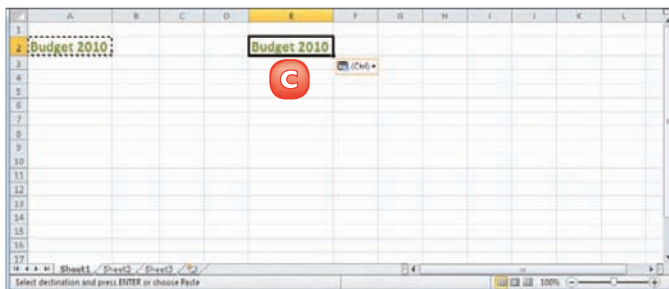
B *The smart tag displays a list of its options.*



- 3 Click the option you want to apply.



- C Excel applies the option to the task you performed in Step 1.



- 4 To turn on extra smart tags, click **File, Options, Proofing, AutoCorrect Options.**

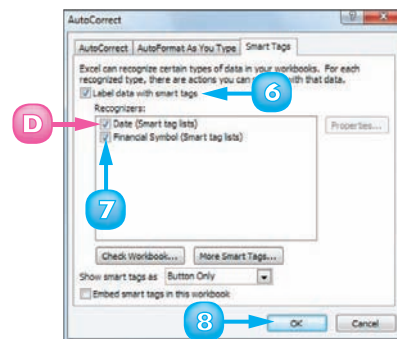
- 5 Click the **Smart Tags** tab.

- 6 Click the **Label data with smart tags** check box (☐ changes to ☒.

- 7 Click the check box beside each smart tag in the **Recognizers** list (☐ changes to ☒.

- D The Date smart tag recognises a worksheet date and offers options such as scheduling a meeting on that date.

- 8 Click **OK**.



CHANGE THE VIEW

You can adjust the Excel window to suit what you are currently working on by changing the view to match your current task. Excel offers three views: Page Layout displays worksheets as they would appear if you printed them out; Page Break Preview displays the page breaks as blue lines; and Normal is useful for building and editing worksheets.

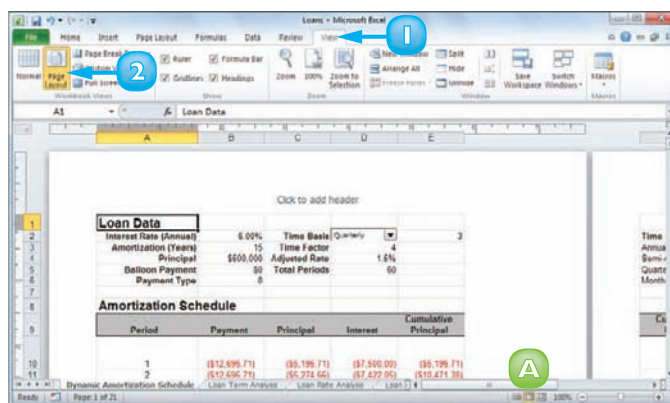
Switch to Page Layout View

1 Click the **View** tab.

2 Click **Page Layout**.

A You can also click the **Page Layout** button ().

Excel switches to Page Layout view.

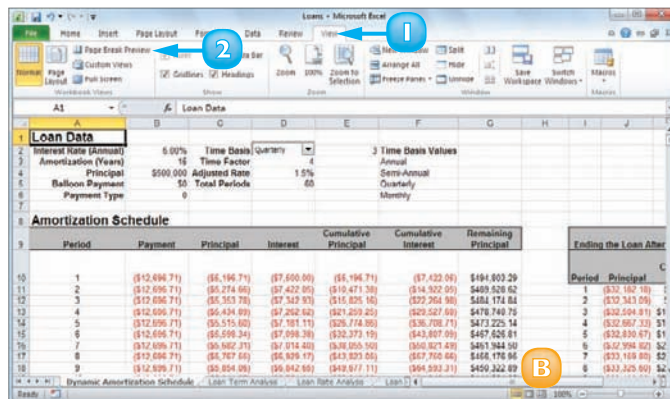


Switch to Page Break Preview

1 Click the **View** tab.

2 Click **Page Break Preview**.

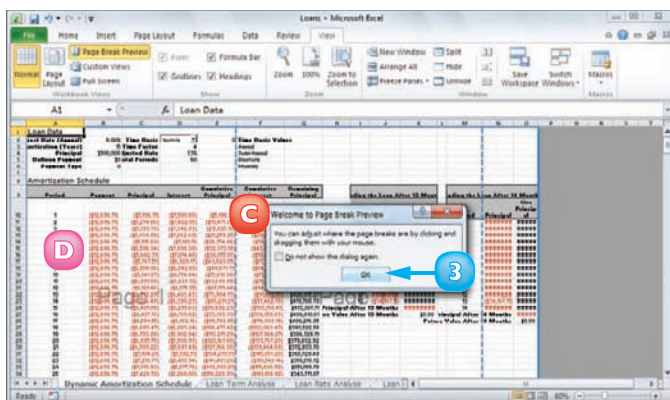
B You can also click the **Page Break Preview** button ().



C The Welcome to Page Break Preview dialog box appears.

D Excel switches to Page Break Preview.

3 Click **OK**.



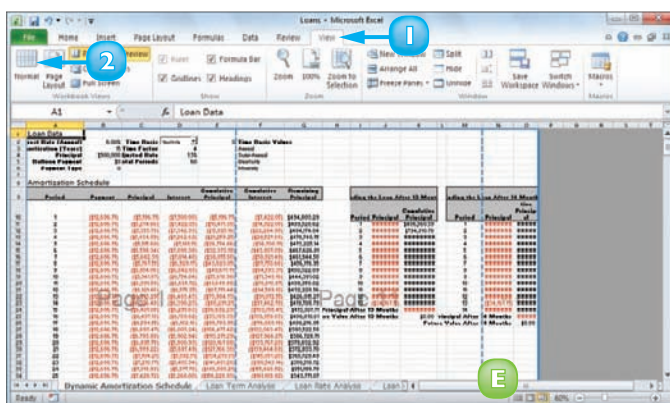
Switch to Normal View

1 Click the **View** tab.

2 Click **Normal**.

E You can also click the **Normal** button (📄).

Excel switches to Normal view.



A page break shows where a new page begins when you print a worksheet. When you switch to Page Break Preview, Excel displays the page breaks as blue lines. If a page break occurs in a bad position – for example, the page break includes headings but not the cells below the headings – you can use your mouse to click and drag the page breaks to new positions.



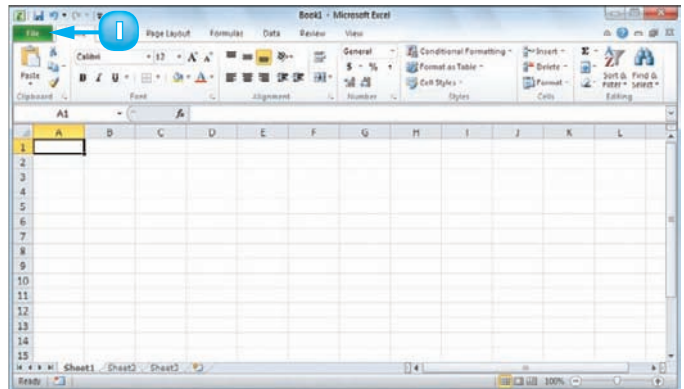
Full Screen view is useful when you want to see the maximum amount of a worksheet on the screen. Full Screen view removes many of the Excel window features, including the File button, Ribbon, Quick Access Toolbar, Formula bar, and status bar. To return to the Normal view, press **Esc** or click the Restore Down button (📄).

CONFIGURE EXCEL OPTIONS

You can customise Excel and set up the program to suit the way you work by configuring the Excel options. You use these options to set your Excel preferences in a number of program categories, including formulas, proofing, and saving.

To use these options, you must know how to display the Excel Options dialog box, which contains controls such as check boxes, option buttons, and lists that enable you to configure many aspects of Excel.

1 Click the **File** tab.



2 Click **Options**.



The Excel Options dialog box appears.

- 3 Click a tab on the left side of the dialog box to choose the configuration category you want to work with.

A The controls that appear on the right side of the dialog box change according to the tab you select.

B Excel offers pop-up descriptions of some – but, unfortunately, not all – of the options. Pop-up help is available for options that have a small “i” in a circle. Hover the mouse  over the option and Excel displays a pop-up description after a second or two.

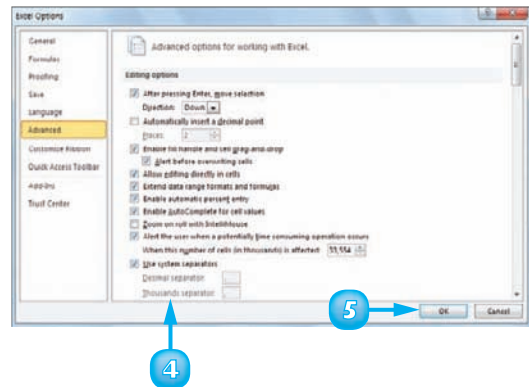
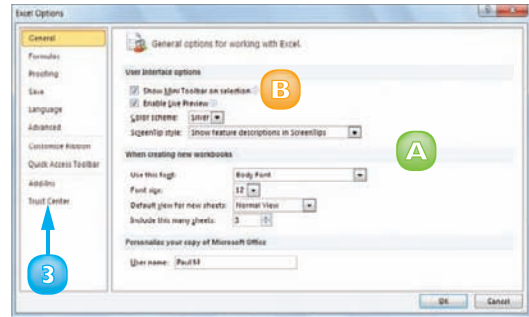
- 4 Use the controls on the right side of the dialog box to configure the options you want to change.

- 5 Click **OK**.

Excel puts the new options into effect.



Right-click the Ribbon and then click Customize Ribbon to open the Excel Options dialog box with the Customize Ribbon tab displayed. You can also open the Excel Options dialog box by pressing **Alt + F and then pressing **I**.**



CONTENTS

- 22** Learning the Layout of a Worksheet
- 23** Understanding the Types of Data You Can Use
- 24** Enter Text into a Cell
- 26** Enter a Number into a Cell
- 28** Insert a Symbol
- 30** Edit Cell Data
- 32** Delete Data from a Cell

2

ENTERING AND EDITING EXCEL DATA

Are you ready to start using Excel to build a spreadsheet? To create a spreadsheet in Excel, you must understand the layout of an Excel worksheet as well as the types of data that you can enter into a worksheet. You also must know how to enter data – including text, numbers, dates, times, and symbols – into the worksheet cells and how to edit that data to fix typos, adjust information, and remove data you no longer need.



LEARNING THE LAYOUT OF A WORKSHEET

In Excel, a spreadsheet file is called a **workbook** and each workbook consists of one or more **worksheets**. These worksheets are where you do most of your work in Excel – including entering your data and formulas – so you need to know the layout of a typical worksheet.

A Cell

A *cell* is a box into which you enter your spreadsheet data.

B Column

A *column* is a vertical line of cells. Each column has a unique letter that identifies it. For example, the leftmost column is A and the next column is B.

C Row

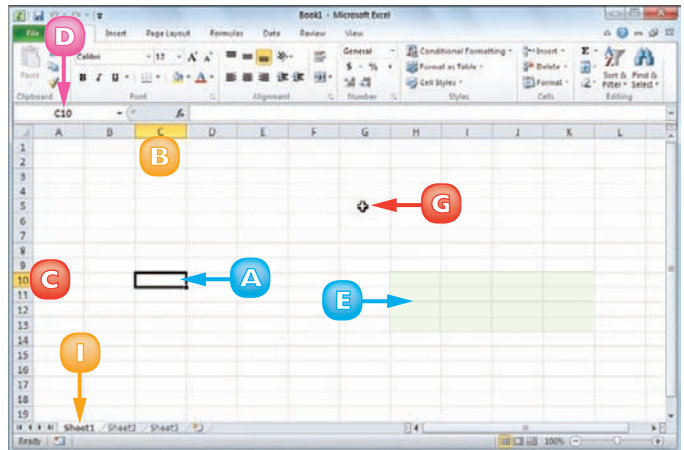
A *row* is a horizontal line of cells. Each row has a unique number that identifies it. For example, the topmost row is 1 and the next row is 2.

D Cell Address

Each cell has an *address*, which is determined by the letter and number of the intersecting column and row. For example, the cell at the intersection of column C and row 10 has the address C10.

E Range

A *range* is a rectangular grouping of two or more cells. The range address is given by the address of the top left cell



and the address of the bottom right cell. H12:K13 is an example of a range of cells; it refers to all of the cells selected between column H, cell 10 and column K, cell 13.

F Worksheet Tab

The worksheet tab displays the worksheet name. Most workbooks contain multiple worksheets and you use the tabs to navigate between the worksheets.

G Mouse Pointer

Use the Excel mouse  to select cells.

UNDERSTANDING THE TYPES OF DATA YOU CAN USE

To build a spreadsheet in Excel, it helps to understand the three main types of data that you can enter into a cell: text, numbers and dates and times.

Text

Text entries can include any combination of letters, symbols, and numbers. You will mostly use text to describe the contents of your worksheets. This is very important because even a modest-sized spreadsheet can become a confusing jumble of numbers without some kind of text guidelines to keep things straight. Most text entries are usually labels such as *Sales* or *Territory* that make a worksheet easier to read.

However, text entries can also be text/number combinations for items such as phone numbers and account codes.

	A	B	C
1	Category Name	Product Name	Quantity Per Unit
2	Beverages	Chai	10 boxes x 20 bags
3	Beverages	Chang	24 - 12 oz bottles
4	Beverages	Chartreuse verte	750 cc per bottle
5	Beverages	Côte de Blaye	12 - 75 cl bottles
6	Beverages	Ipooh Coffee	16 - 500 g tins
7	Beverages	Lakkalikööri	500 ml
8	Beverages	Laughing Lumberjack Lager	24 - 12 oz bottles
9	Beverages	Outback Lager	24 - 355 ml bottles
10	Beverages	Rhönbräu Klosterbier	24 - 0.5 l bottles
11	Beverages	Sasquatch Ale	24 - 12 oz bottles
12	Beverages	Steeleye Stout	24 - 12 oz bottles
13	Condiments	Aniseed Syrup	12 - 550 ml bottles
14	Condiments	Chef Anton's Cajun Seasoning	48 - 6 oz jars
15	Condiments	Genen Shouyu	24 - 250 ml bottles

Numbers

Numbers are the most common type of Excel data. The numbers you enter into a cell can be money values, weights, interest rates, temperatures, or any other numerical quantity. In most cases you just type the number that you want to appear in the cell. However, you can also precede a number with a pound sign (£) or other currency symbol to indicate a monetary value or follow a number with a percent sign (%) to indicate a percentage value.

	A	B	C
1	Loan Data		
2	Annual Interest Rate	6.00%	
3	Amortisation (in years)	15	
4	Loan Principal	£500,000	
5			

Dates and Times

Date entries appear in spreadsheets that include dated data, such as invoices and sales. You can either type out the full date – such as 23 August 2010 – or use the forward slash (/) or hyphen (-) as a date separator – such as 23/8/2010 or 23-8-2010. Note that the order in which you enter the date values depends on your regional settings. For example, in the United Kingdom, the format is day/month/year. For time values, you use a colon (:) as the separator, followed by either AM or PM, such as 9:15 AM.

	A	B	C	D	E	F
1		Work Start	Launch Start	Launch End	Work End	Total
2	Date	Time	Time	Time	Time	Hours
3	01 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00
4	02 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00
5	03 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00
6	04 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00
7	05 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00
8	06 September 2010	08:00:00 AM	12:00:00 PM	02:00:00 PM	05:00:00 PM	7:00

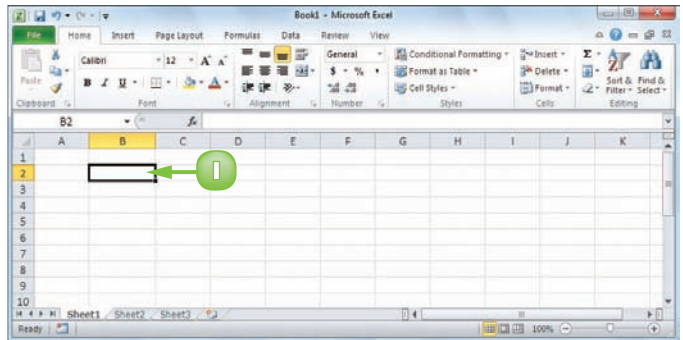
ENTER TEXT INTO A CELL

Your first step when building a spreadsheet is usually to enter the text data that defines the spreadsheet's labels or headings. This is particularly important if other people will be reading or editing the spreadsheet, because the labels and headings help people make sense of the data and help them understand the purpose of the spreadsheet.

Most labels appear in the cell to the right or above where the data will appear, while most headings appear at the top of a column of data or to the left of a row of data.

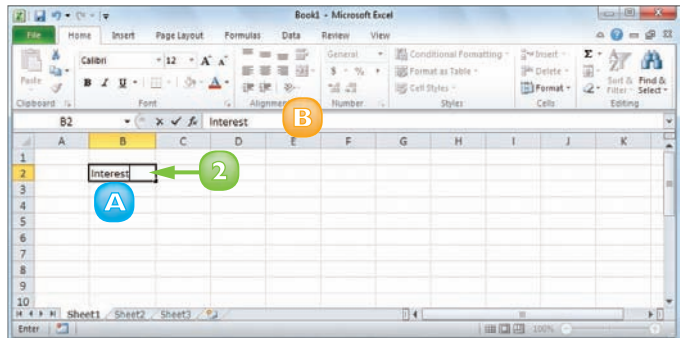
- I** Click the cell in which you want to enter the text.

Excel marks the current cell by surrounding it with a thick, black border.



- 2** Start typing your text.

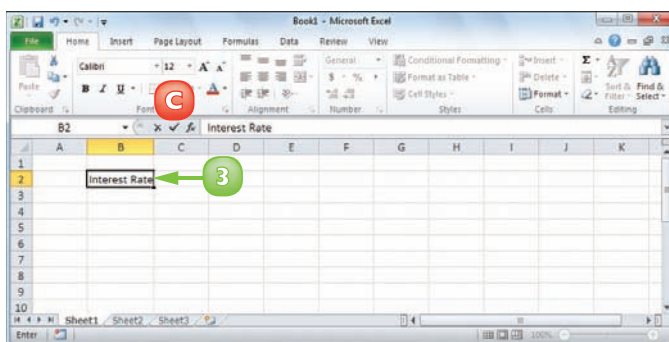
- A** Excel opens the cell for editing and displays the text as you type.
- B** Your typing also appears in the Formula bar.



Note: Rather than typing the text directly into the cell, you can also type the text into the Formula bar.

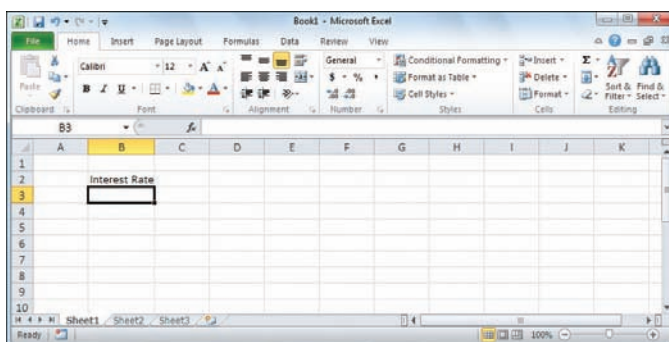
3 When your text entry is complete, press **Enter**.

C If you do not want Excel to move the selection, click **Enter** (✓) or press **Ctrl** + **Enter** instead.



Excel closes the cell for editing.

If you pressed **Enter**, Excel moves the selection to the cell below.



 When you have finished adding data to a cell, press **→** to close the current cell for editing and move the selection to the next cell on the right. If you prefer to move left instead, press **←**; if you prefer to move up, press **↑**.



If the letters you type at the start of a cell match the contents of another cell in the worksheet, Excel's **AutoComplete** feature fills in the full text from the other cell under the assumption that you are repeating the text in the new cell. If you want to use the text, click **✓** or press **Enter**; otherwise, just keep typing your text.

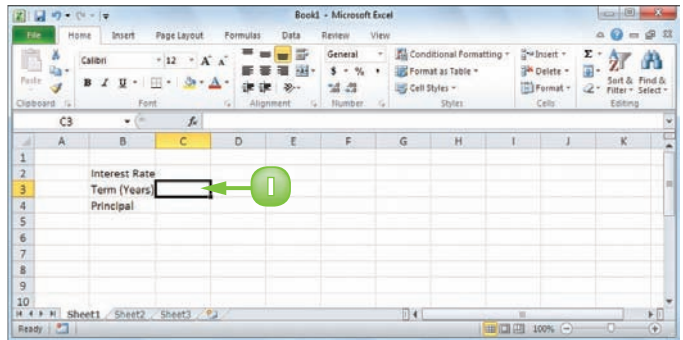
ENTER A NUMBER INTO A CELL

Excel is all about numbers, so most of your worksheets will include numeric values. Some worksheets store only numeric values, but most use numbers as the basis for one or more calculations, such as monthly loan payments, statistical analysis, or budget totals.

To get the most out of Excel, you need to know how to enter numeric values, including percentages and currency values.

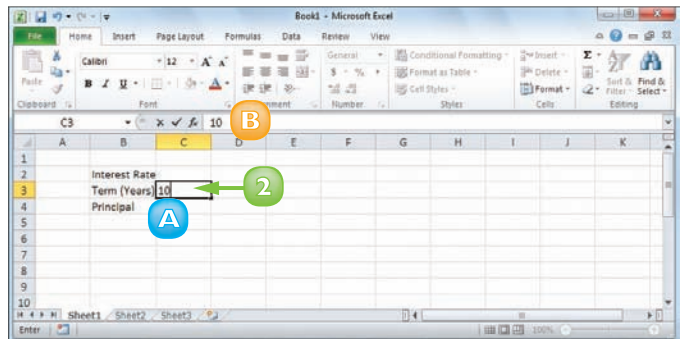
- 1** Click the cell in which you want to enter the number.

Excel marks the current cell by surrounding it with a thick, black border.



- 2** Start typing your number.

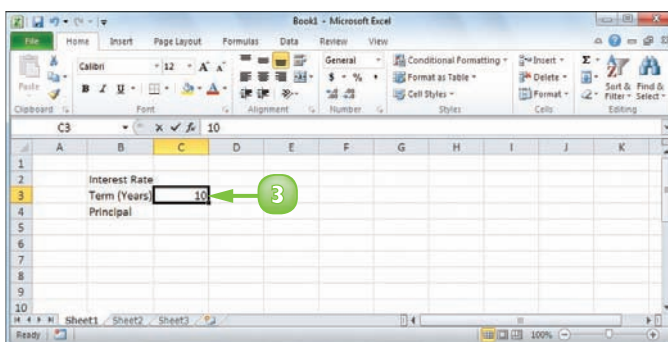
- A** Excel opens the cell for editing and displays the number as you type.
- B** Your typing also appears in the Formula bar.



Note: Rather than typing the number directly into the cell, you can also type the number into the Formula bar.

- 3** When your number is complete, press **Enter**.

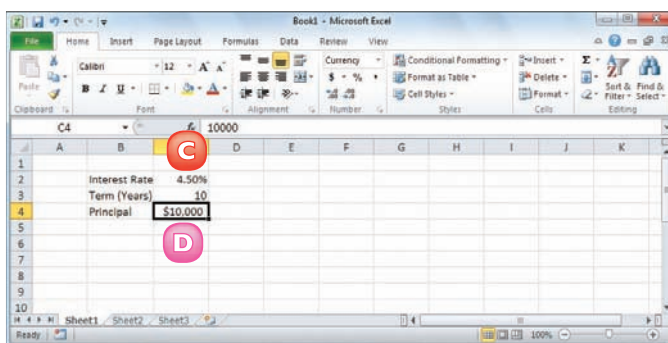
If you do not want Excel to move the selection, click **Enter** (☑) or press **Ctrl** + **Enter** instead.



Excel closes the cell for editing.

- C** To enter a percentage value, type the number followed by a percent sign (%).

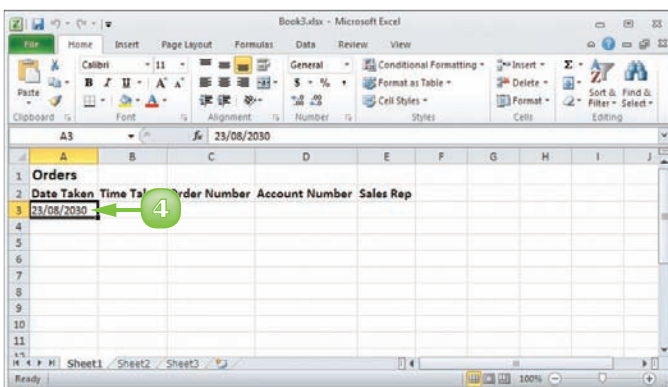
- D** To enter a currency value, type the pound sign (£) or dollar sign (\$) followed by the number.



Many Excel worksheets include dates, such as the number of days an invoice is overdue.

- 4** Click the cell in which you want to enter the date.

You can also enter a time in the format hour:minute:second AM/PM; for example, 3:15:00 PM.



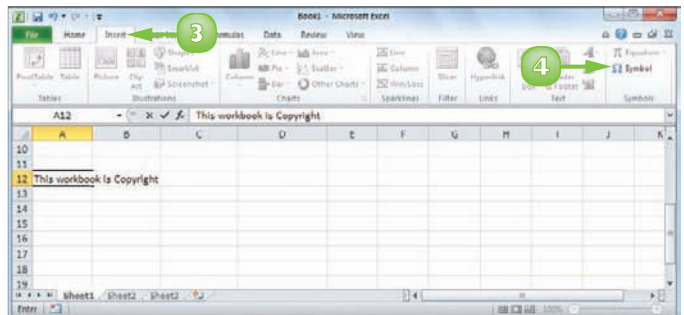
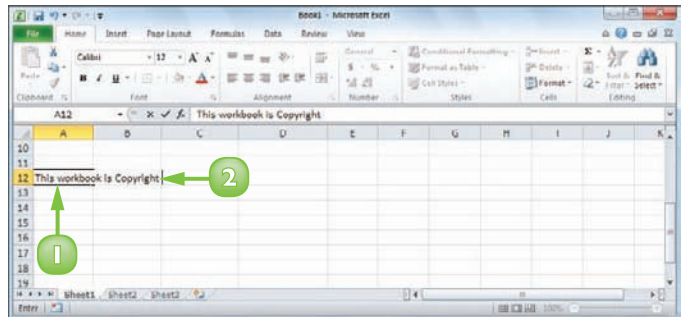
 **If your number is in the thousands, you can include the thousands separator (,) within the number. For example, you can enter 10,000, which is easier to read than 10000. You can include the decimal point (.) when you type a value. If your numeric value is negative, precede the value with a minus sign (-).**

 **To enter the same number again, select the cell directly below the value you want to repeat and then press **Ctrl** + **Enter**. Excel adds the value to the cell.**

INSERT A SYMBOL

You can make your Excel worksheets more readable and more useful by inserting special symbols that are not available via your keyboard's standard keys. These special symbols include foreign characters such as ö and é, mathematical symbols such as ÷ and ∞, financial symbols such as ¢ and ¥, commercial symbols such as © and ®, and many more.

- 1 Click the cell in which you want the symbol to appear.
- 2 Type the text that you want to appear before the symbol, if any.
- 3 Click the **Insert** tab.
- 4 Click **Symbol**.



The Symbol dialog box appears.

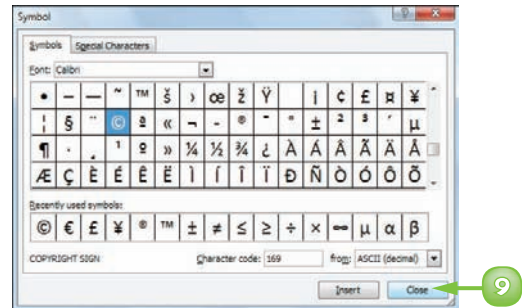
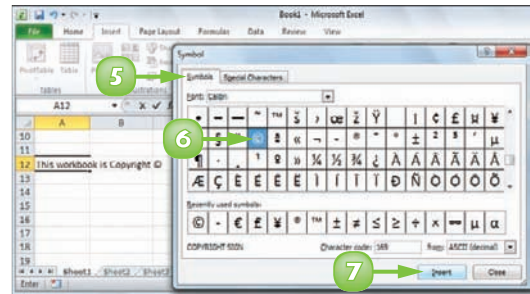
- 5 Click the **Symbols** tab.
- 6 Click the symbol you want to insert.

Note: Many other symbols are available in the Webdings and Wingdings fonts. To see these symbols, click the **Font** ▾ and then click either **Webdings** or **Wingdings**.

- 7 Click **Insert**.

Excel inserts the symbol.

- 8 Repeat Steps 6 and 7 to insert any other symbols you require.
- 9 Click **Close**.



You can use the keyboard to enter symbols you use frequently. In the Symbol dialog box, click ▾ in the from list and select ASCII (decimal). Click the symbol you want to insert and then examine the Character code text box. You can enter the symbol via the keyboard by holding down **Alt, pressing **0**, and then typing the number in the Character code text box. For example, you can enter the © symbol by pressing **Alt** + **0** **1** **6** **9**. Be sure to type all the numbers using your keyboard's numeric keypad.**

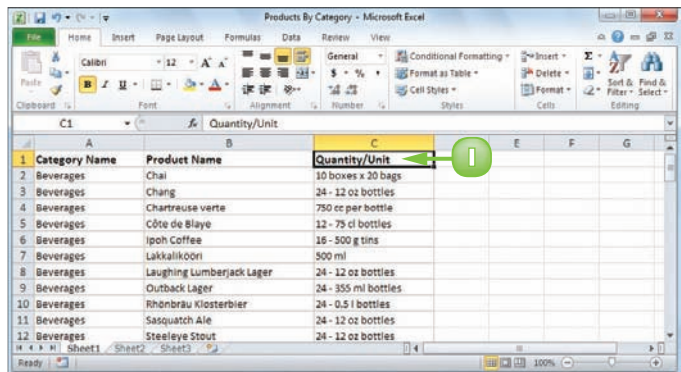
EDIT CELL DATA

Once you enter text, a number, a date, or a time into a cell, that cell data is not set in stone. If the data you entered into a cell has changed or is incorrect, you can edit the data to the updated or correct value. You can edit cell data either directly in the cell or by using the Formula bar.

1 Click the cell in which you want to edit the text.

2 Press **F2**.

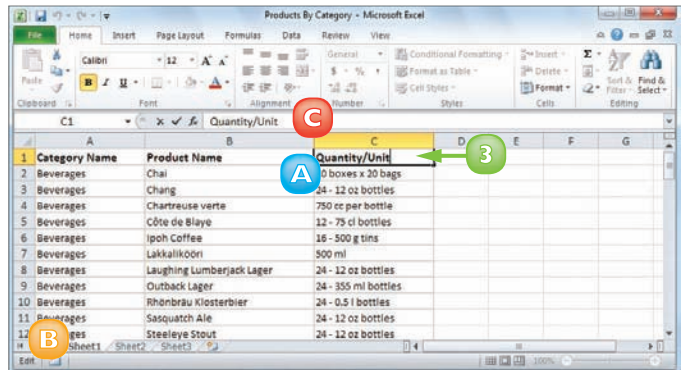
You can also double-click the cell you want to edit.



A Excel opens the cell for editing and moves the cursor to the end of the existing data.

B Excel displays Edit in the status bar.

C You can also click inside the Formula bar and edit the cell data there.

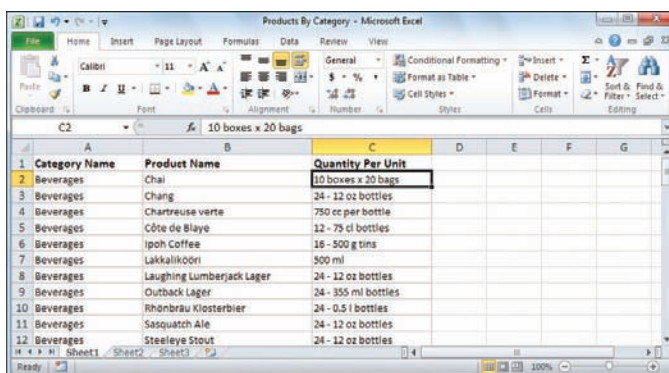
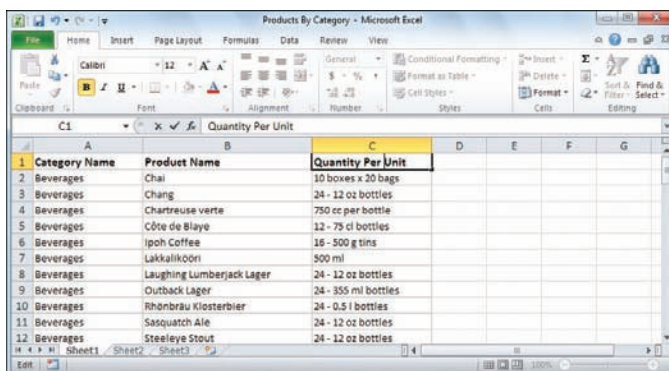


3 Make your changes to the cell data.

- 4 When you finish editing the data, press **Enter**.

Note: If you do not want Excel to move the selection, click **Enter** (✓) or press **Ctrl** + **Enter** instead.

Excel closes the cell for editing. If you pressed **Enter**, Excel moves the selection to the cell below.



You can move  over the cell you want to edit and centre  over the character where you want to start editing. Double-click the mouse. Excel opens the cell for editing and positions the cursor at the spot where you double-clicked.



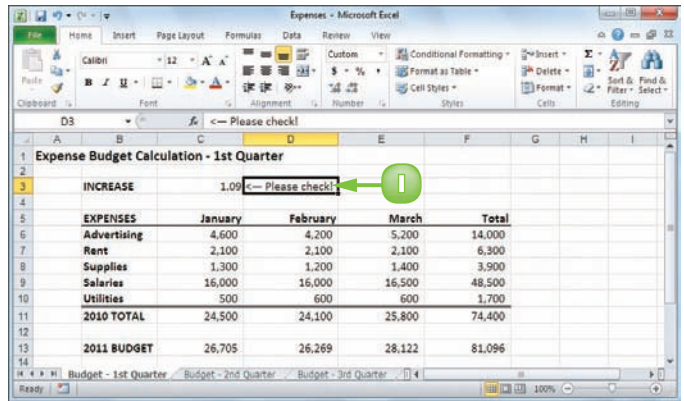
If you make a mistake and the cell edit was the last action you performed in Excel, press **Ctrl** + **Z** or click the Undo button () in the Quick Launch Toolbar. If you have performed other actions in the meantime, click the Undo  and then click the edit in the list that appears. However, this will undo the other actions you performed after the edit.

DELETE DATA FROM A CELL

If your worksheet has a cell that contains data you no longer need, you can delete that data. This helps to reduce worksheet clutter and makes your worksheet easier to read. If you want to delete data from multiple cells, you must first select those cells; see “Select a Range” in Chapter 3.

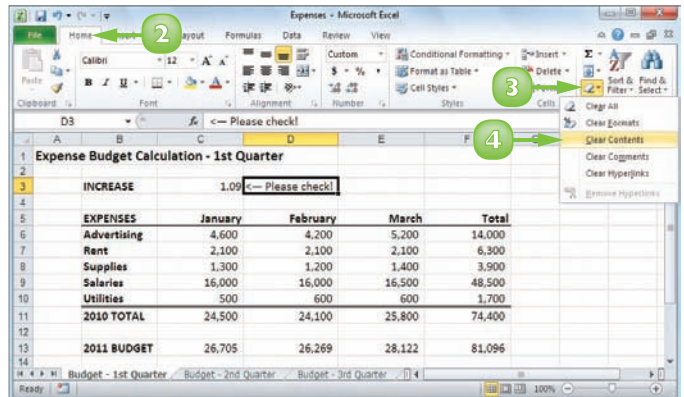
Delete Cell Data

- 1 Select the cell that contains the data you want to delete.

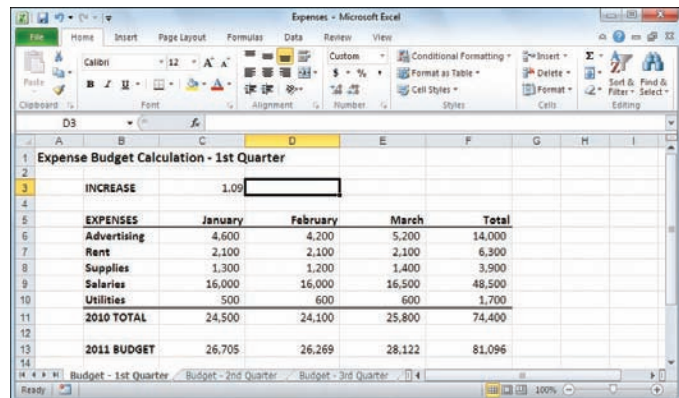


- 2 Click the **Home** tab.
- 3 Click **Clear** (E).
- 4 Click **Clear Contents**.

Note: You can also delete cell data by pressing **Del**.



Excel removes the cell data.



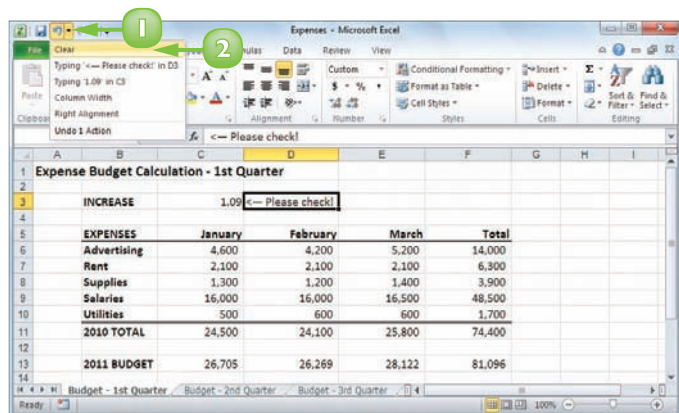
	A	B	C	D	E	F	G	H	I	
1	Expense Budget Calculation - 1st Quarter									
2										
3		INCREASE		1.09						
4										
5		EXPENSES	January	February	March	Total				
6		Advertising	4,600	4,200	5,200	14,000				
7		Rent	2,100	2,100	2,100	6,300				
8		Supplies	1,300	1,200	1,400	3,900				
9		Salaries	16,000	16,000	16,500	48,500				
10		Utilities	500	600	600	1,700				
11		2010 TOTAL	24,500	24,100	25,800	74,400				
12										
13		2011 BUDGET	26,705	26,269	28,122	81,096				
14										

Undo Cell Data Deletion

- 1 Click the **Undo** .
- 2 Click **Clear**.

Note: If the data deletion was the most recent action you performed, you can undo it by pressing **Ctrl** + **Z** or by clicking **Undo** (.

Excel restores the data to the cell.



	A	B	C	D	E	F	G	H	I	
1	Expense Budget Calculation - 1st Quarter									
2										
3		INCREASE		1.09						
4										
5		EXPENSES	January	February	March	Total				
6		Advertising	4,600	4,200	5,200	14,000				
7		Rent	2,100	2,100	2,100	6,300				
8		Supplies	1,300	1,200	1,400	3,900				
9		Salaries	16,000	16,000	16,500	48,500				
10		Utilities	500	600	600	1,700				
11		2010 TOTAL	24,500	24,100	25,800	74,400				
12										
13		2011 BUDGET	26,705	26,269	28,122	81,096				
14										



You can delete a cell's formatting while leaving the data intact. Select the cell, click **Home**, click , and then click **Clear Formats**.



You can delete both the data and the formatting from a cell. Select the cell, click **Home**, click  and then click **Clear All**.

CONTENTS

- 36** Select a Range
- 38** Fill a Range with the Same Data
- 40** Fill a Range with a Series of Values
- 42** Move or Copy a Range
- 44** Insert a Row or Column
- 46** Insert a Cell or Range
- 48** Delete Data from a Range
- 50** Hide a Row or Column
- 52** Freeze Rows or Columns
- 54** Merge Two or More Cells
- 56** Transpose Rows and Columns
- 58** Define or Change a Range Name
- 60** Use Worksheet Text to Define a Range Name
- 62** Navigate a Workbook Using Range Names

3

WORKING WITH EXCEL RANGES

In Excel, a *range* is a collection of two or more cells that you work with as a group rather than separately. You can fill the range with values, move or copy the range, sort the range data, filter the range to show only certain values, insert and delete ranges, hide entire rows or columns, and merge two or more cells. You can make it easier to navigate worksheets and build formulas by applying a name to a range.

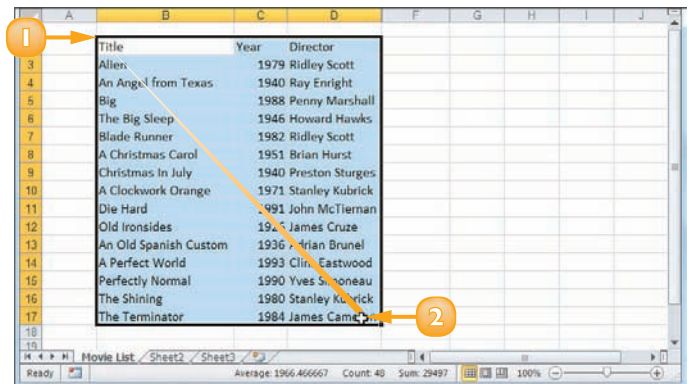


SELECT A RANGE

To work with a range in Excel, you must select the cells that you want to include in the range. After you select the range, you can fill it with data, move or copy it to another part of the worksheet, format the cells, delete the data, and so on. You can select a range as a rectangular group of cells, as a collection of individual cells, or as an entire row or column. It is almost always easiest to select a range using the mouse, but Excel does offer a few keyboard shortcuts for selecting ranges.

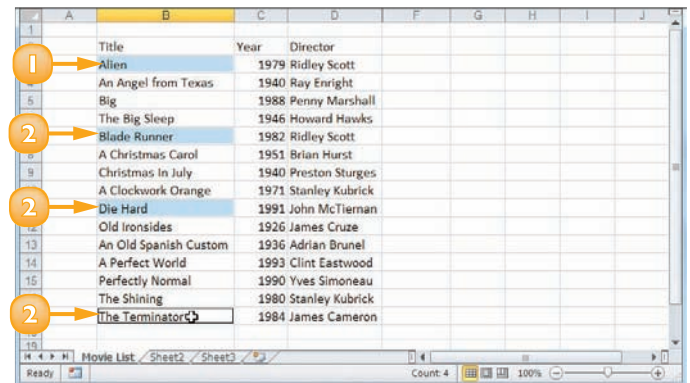
Select a Rectangular Range

- 1 Position  over the first cell you want to include in the range.
- 2 Click and drag  over the cells that you want to include in the range.
Excel selects the cells.
- 3 Release the mouse button to end the range selection.



Select a Range of Individual Cells

- 1 Click in the first cell that you want to include in the range.
- 2 Hold down **Ctrl** and click in each of the other cells that you want to include in the range.
Each time you click in a cell, Excel adds it to the range.
- 3 Release **Ctrl** to end the range selection.



Select an Entire Row

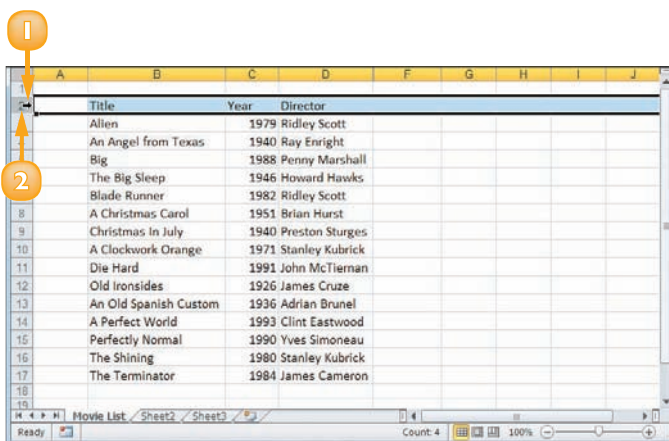
- 1 Position  over the header of the row you want to select.

 changes to .

- 2 Click the row header.

Excel selects the entire row.

To select multiple rows, click and drag across the row headers or hold down **Ctrl** and click each row header.



Select an Entire Column

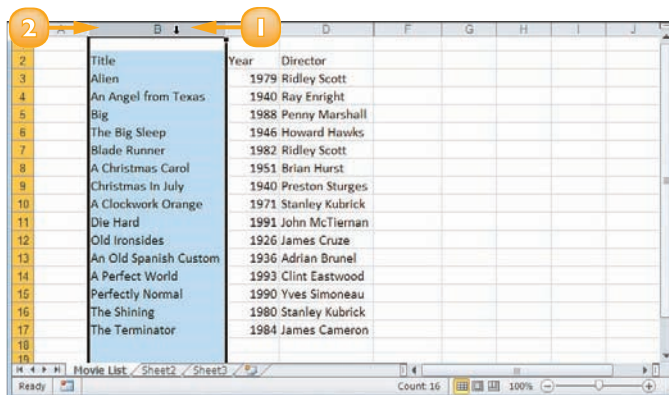
- 1 Position  over the header of the column you want to select.

 changes to .

- 2 Click the column header.

Excel selects the entire column.

To select multiple columns, click and drag across the column headers or hold down **Ctrl** and click each column header.



You can use the keyboard to select ranges. Navigate to the first cell that you want to include in the range, hold down **Shift, and then press the arrow keys to extend the selection. To select an entire row, navigate to any cell in the row and press **Shift + Spacebar**. To select an entire column, navigate to any cell in the column and then press **Ctrl + Spacebar**.**



To select every cell in the worksheet, press **Ctrl + A or click the Select All button () in the upper left corner of the worksheet.**

FILL A RANGE WITH THE SAME DATA

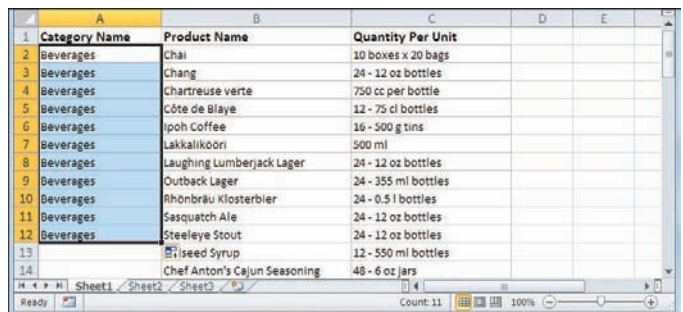
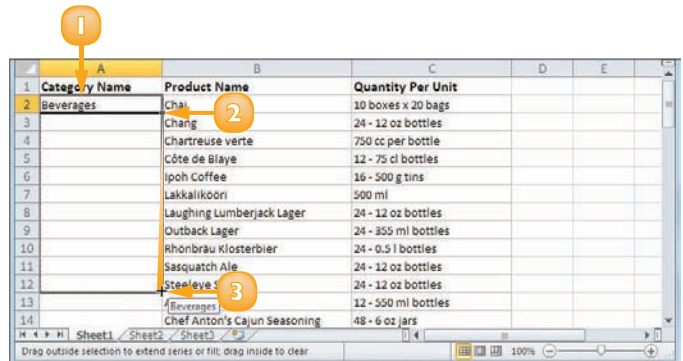
If you need to fill a range with the same data, you can save time by getting Excel to fill the range for you. The most common method for filling a range in this way is to use Excel's AutoFill feature, which makes it easy to fill a vertical or horizontal range with the same value. However, Excel also offers a method that enables you to fill any selected range.

See “Select a Range,” earlier in this chapter, to learn how to select a range of cells.

Fill a Vertical or Horizontal Range

- 1 In the first cell of the range you want to work with, enter the data you want to fill.
- 2 Position  over the bottom right corner of the cell.
 changes to .
- 3 Click and drag  down to fill a vertical range or across to fill a horizontal range.
- 4 Release the mouse button.

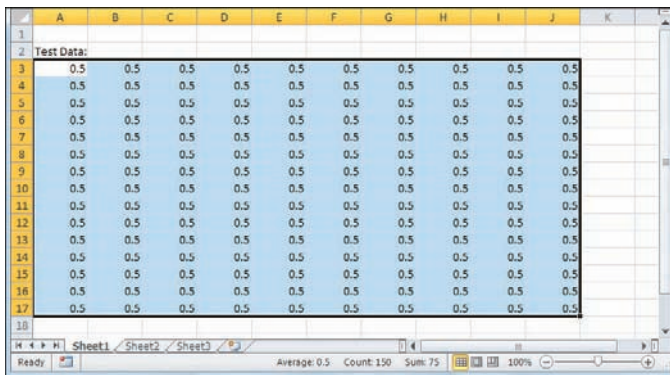
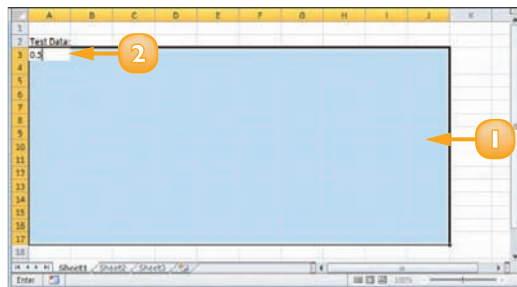
Excel fills the range with the initial cell value.



Fill a Selected Range

- 1 Select the range you want to fill.
- 2 Type the text, number, or other data.
- 3 Press **Ctrl** + **Enter**.

Excel fills the range with the value you typed.



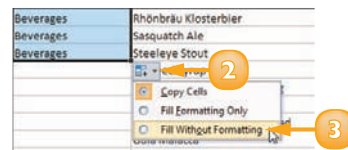
Fill a Range Without Copying Formatting

- 1 Perform Steps 1 to 4 to fill a vertical or horizontal range with data.

Excel displays the AutoFill Options smart tag (✚).

- 2 Click the AutoFill Options .
- 3 Click **Fill Without Formatting**.

Excel removes the original cell's formatting from the copied cells.



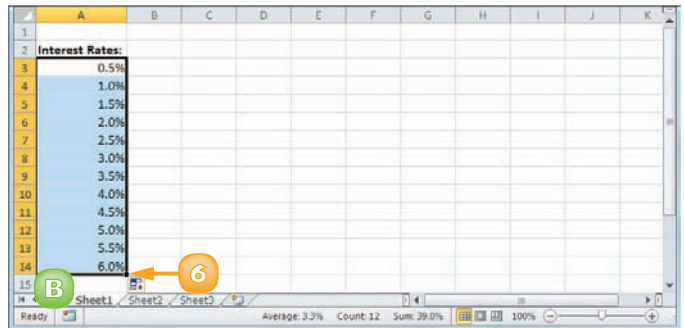
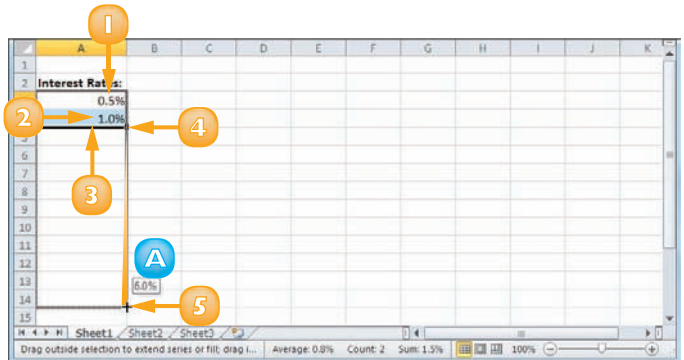
FILL A RANGE WITH A SERIES OF VALUES

If you need to fill a range with a series of values, you can save time by using Excel's AutoFill feature to create the series for you. AutoFill can fill a series of numeric values such as 5, 10, 15, 20, and so on; a series of date values such as 1 January 2011, 2 January 2011, and so on; or a series of alphanumeric values such as Chapter 1, Chapter 2, Chapter 3, and so on.

You can also create your own series with a custom step value, which determines the numeric difference between each item in the series.

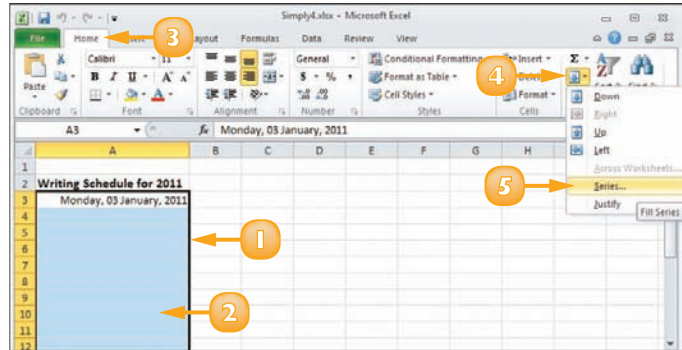
AutoFill a Series of Numeric, Date, or Alphanumeric Values

- 1** Click in the first cell and type the first value in the series.
- 2** Click in an adjacent cell and type the second value in the series.
- 3** Select the two cells.
- 4** Position  over the bottom right corner of the second cell.
 changes to .
- 5** Click and drag  down to fill a vertical range or across to fill a horizontal range.
A *As you drag through each cell, Excel displays the series value that it will add to the cell.*
- 6** Release the mouse button.
B *Excel fills the range with a series that continues the pattern of the initial two cell values.*



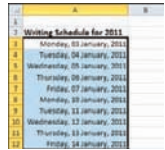
Fill a Custom Series of Values

- 1 Click in the first cell and type the first value in the series.
- 2 Select the range you want to fill, including the initial value.
- 3 Click the **Home** tab.
- 4 Click **Fill** ().
- 5 Click **Series**.



The Series dialog box appears.

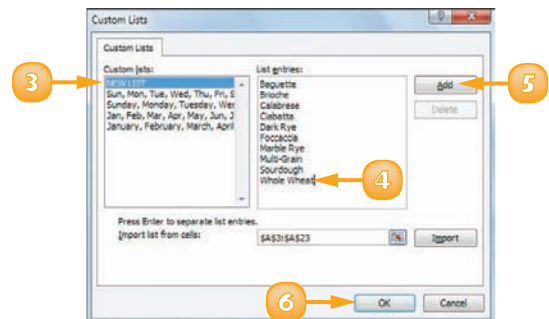
- 6 In the Type group, select the type of series you want to fill (☐ changes to ☒).
- 7 If you selected **Date** in Step 6, select an option in the **Date unit** group (☐ changes to ☒).
- 8 In the Step value text box, type the value you want to use.
- 9 Click **OK**.



Excel fills the range with the series you created.

Create an AutoFill Series

- 1 Click the **File** tab; **Options**, **Advanced**.
- 2 Click **Edit Custom Lists**.
- 3 Click **NEW LIST**.
- 4 In the List entries box, type each item in your list. Press **Enter** after each item.
- 5 Click **Add**.
- 6 Click **OK**.



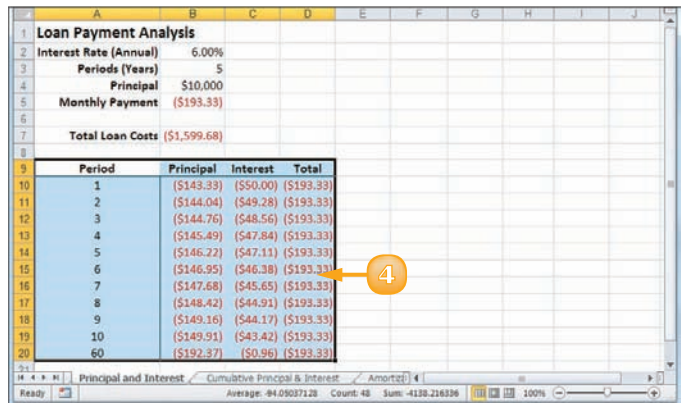
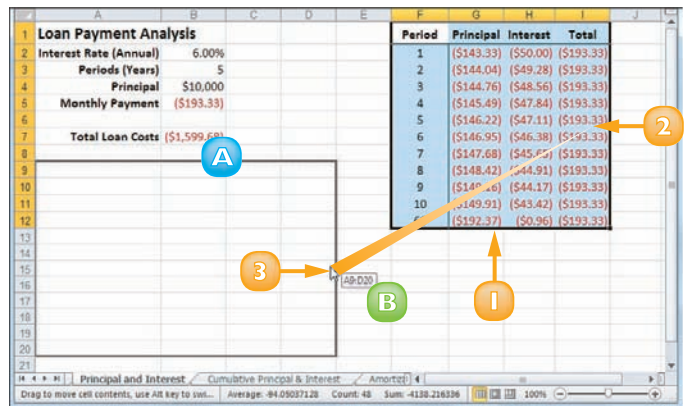
MOVE OR COPY A RANGE

You can restructure or reorganise a worksheet by moving an existing range to a different part of the worksheet. For example, if you have two related ranges that are far apart on the worksheet, you can move one of them so that the ranges are closer to each other.

You can also make a copy of a range, which is a useful technique if you require a duplicate of the range elsewhere or if you require a range that is similar to an existing range.

Move a Range

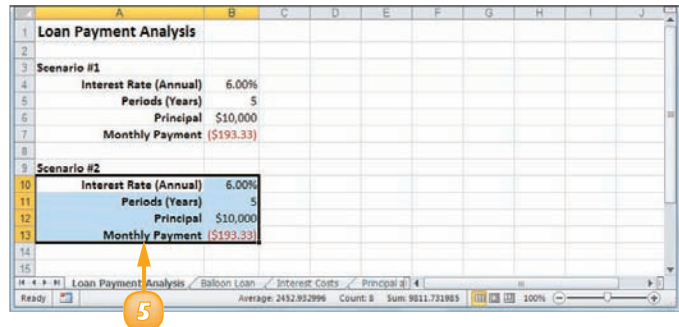
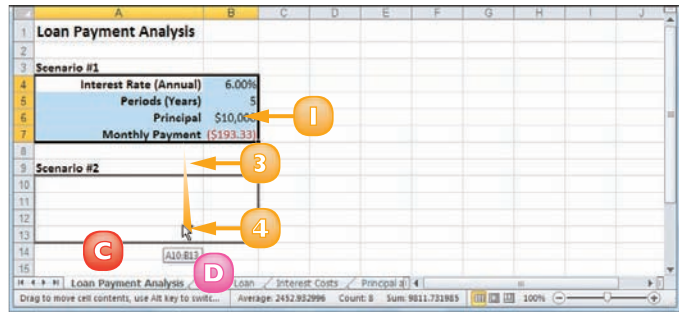
- 1** Select the range you want to move.
- 2** Position  over any outside border of the range.
 changes to .
- 3** Click and drag the range to the new location.
 changes to .
- A** Excel displays an outline of the range.
- B** Excel displays the address of the new location.
- 4** Release the mouse button.
Excel moves the range to the new location.



Copy a Range

- 1** Select the range you want to copy.
- 2** Press and hold **Ctrl**.
- 3** Position  over any outside border of the range.
 changes to .
- 4** Click and drag the range to the location where you want the copy to appear.
 - C** Excel displays an outline of the range.
 - D** Excel displays the address of the new location.
- 5** Release the mouse button.
- 6** Release **Ctrl**.

Excel creates a copy of the range in the new location.



To move or copy a range to another worksheet, click and drag the range. Remember to hold down **Ctrl if you are copying the range. Press and hold **Alt** and then drag the mouse pointer over the tab of the sheet you want to use as the destination. Excel displays the worksheet. Release **Alt** and then drop the range on the worksheet.**



If you can see another workbook on-screen, you can click and drag a range to it. Otherwise, select the range, click the Home tab, click Cut () to move the range or Copy () to copy it, switch to the other workbook, select the cell where you want the range to appear, click Home, and then click Paste (.

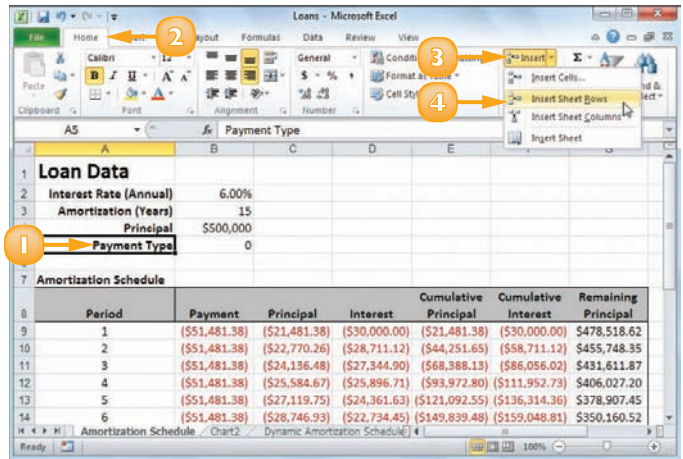
INSERT A ROW OR COLUMN

You can insert a row or column into your existing worksheet data to accommodate more information. This is particularly useful if the information you need to add fits naturally within the existing data, rather than at the end.

When you insert a row, Excel shifts the existing rows down, so you must first determine the row above where you want your new row to appear. Similarly, when you insert a column, Excel shifts the existing columns to the right, so you must first determine the column to the left of where you want your new column to appear.

Insert a Row

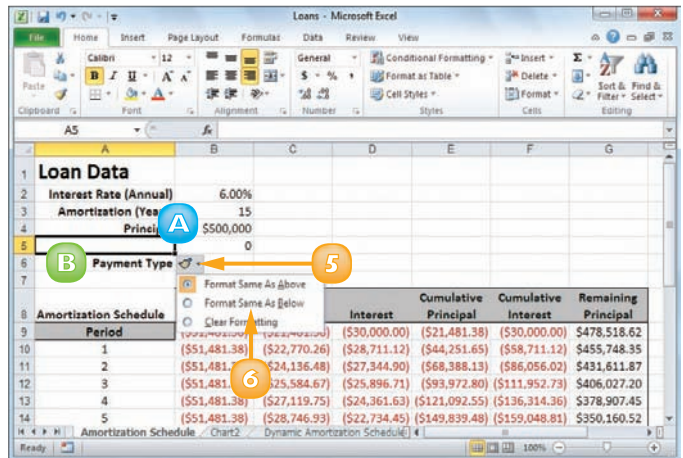
- 1 Click in any cell in the row above where you want to insert the new row.
- 2 Click the **Home** tab.
- 3 Click the **Insert** .
- 4 Click **Insert Sheet Rows**.



A Excel inserts the new row.

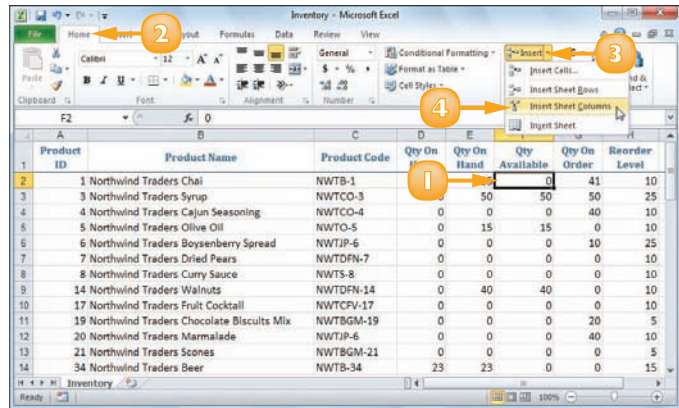
B The rows below the new row are shifted down.

- 5 Click the **Format** smart tag (.
- 6 Select a formatting option for the new row ( changes to .



Insert a Column

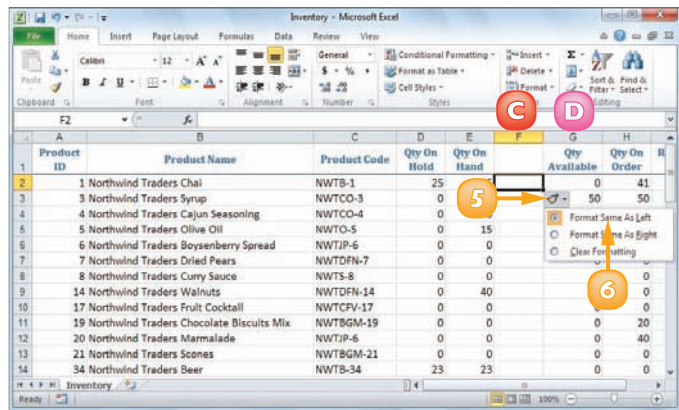
- 1 Click any cell in the row to the left of where you want to insert the new column.
- 2 Click the **Home** tab.
- 3 Click the **Insert** ▾.
- 4 Click **Insert Sheet Columns**.



C Excel inserts the new column.

D The columns to the right of the new column are shifted to the right.

- 5 Click the **Format** smart tag (🔗).
- 6 Select a formatting option for the new column (⦿ changes to ●).



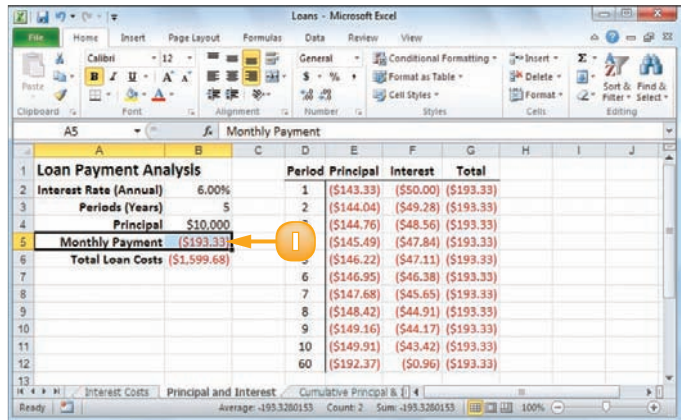
You can insert as many new rows or columns as you need. Select the same number of rows or columns as you want to insert. (See “Select a Range” earlier in this chapter to learn how to select rows and columns.) For example, if you want to insert four rows, select four existing rows. Follow Steps 2 to 4 in “Insert a Row” to insert rows or Steps 2 to 4 in “Insert a Column” to insert columns.

INSERT A CELL OR RANGE

If you need to add data to an existing range, you can insert a single cell or a range of cells within that range. When you insert a cell or a range, Excel shifts the existing data to accommodate the new cells.

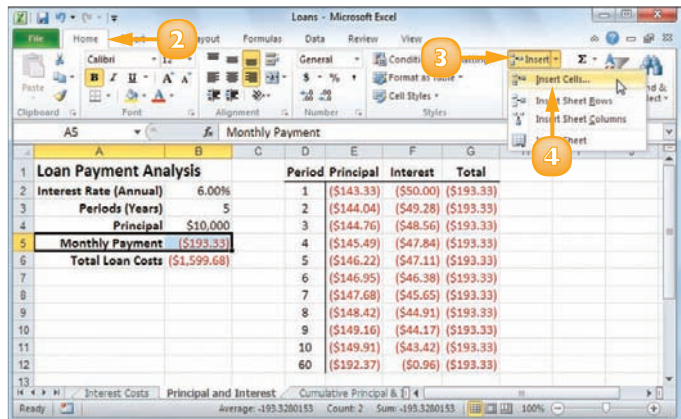
Excel can shift the existing data down or to the right. Therefore, you need to decide in advance where you want the new range to be inserted. You then tell Excel where you want the insertion to take place by selecting existing data either below or to the right of where you want the new range to appear.

- 1 Select the cell or range where you want the inserted cell or range to appear.



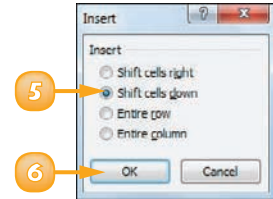
- 2 Click the **Home** tab.
- 3 Click the **Insert** button.
- 4 Click **Insert Cells**.

Note: You can also press **Ctrl** + **Shift** + **=**.



The Insert dialog box appears.

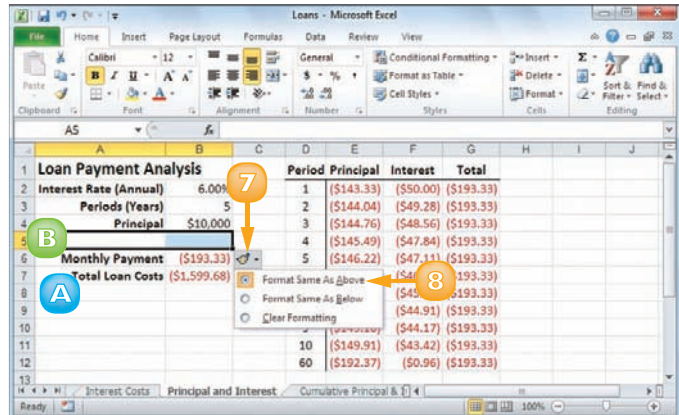
- 5 Select the option that corresponds to how you want Excel to shift the existing cells to accommodate your new cells (☐ changes to ●).



Note: In most cases, if you selected a horizontal range, click the **Shift cells down** option; if you selected a vertical range, click the **Shift cells right** option.

- 6 Click **OK**.

- A Excel inserts the cell or range.
- B The existing data is shifted down (in this case) or to the right.



- 7 Click the **Format** smart tag (🏷️).
- 8 Select a formatting option for the new row (☐ changes to ●).



In most cases, it is better to insert a cell or range when you have other data either to the left or right of the existing range, or above or below the range. For example, if you have data to the left or right of the existing range, inserting an entire row would create a gap in the other data.



The easiest way to position the inserted cell or range is to select the cells that are where you want the new cell or range to appear. For example, if you want the new range to be A5:B5, select the existing A5:B5 range. When you insert the new range, Excel shifts the existing cells to accommodate it.

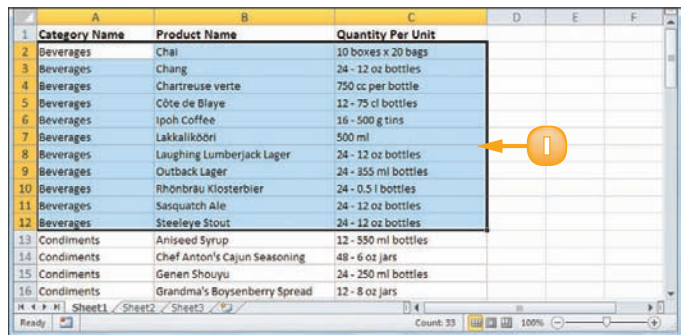
DELETE DATA FROM A RANGE

If your worksheet has a range that contains data you no longer need, you can delete that data. This helps to reduce worksheet clutter and makes your worksheet easier to read.

You can also delete a range that you no longer need. Note that when you delete a range, Excel deletes not just the data within the range, but the range cells themselves. Excel shifts the remaining worksheet data to replace the deleted range.

Delete Range Data

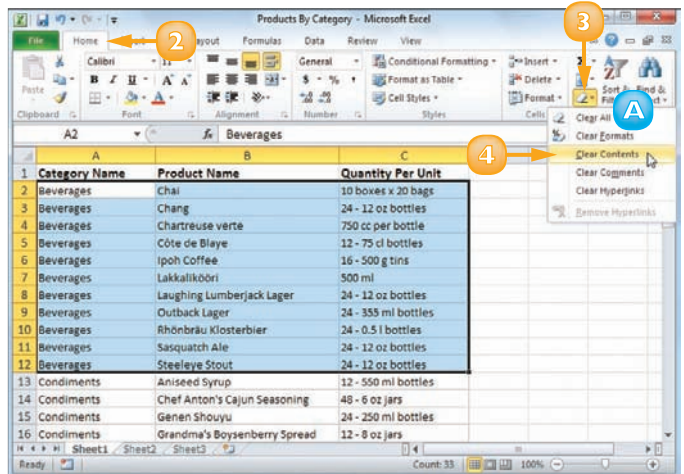
- 1 Select the range that contains the data you want to delete.



- 2 Click the **Home** tab.
- 3 Click **Clear** (E).
- 4 Click **Clear Contents**.

A If you want to delete the range data and its formatting, click **Clear All** instead.

Excel removes the range data.

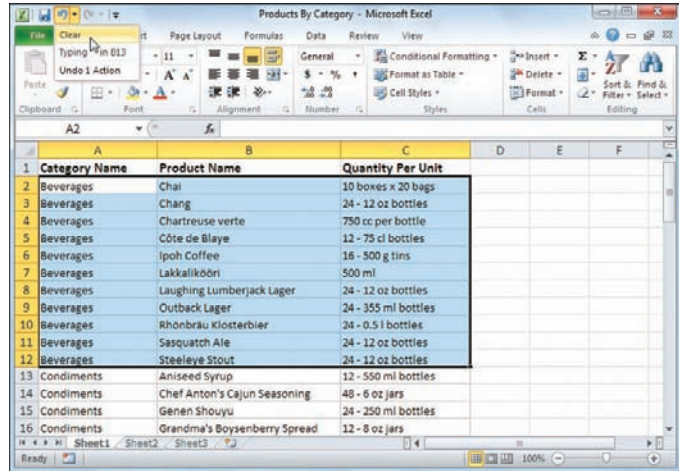


Undo Range Data Deletion

- 1 Click the **Undo** .
- 2 Click **Clear**.

Note: If the data deletion was the most recent action you performed, you can undo it by pressing **Ctrl** + **Z** or by clicking **Undo** .

Excel restores the data to the range.



Delete a Range

- 1 Select the range that you want to delete.
- 2 Click the **Home** tab.
- 3 Click the **Delete** .
- 4 Click **Delete Cells**.

The Delete dialog box appears.

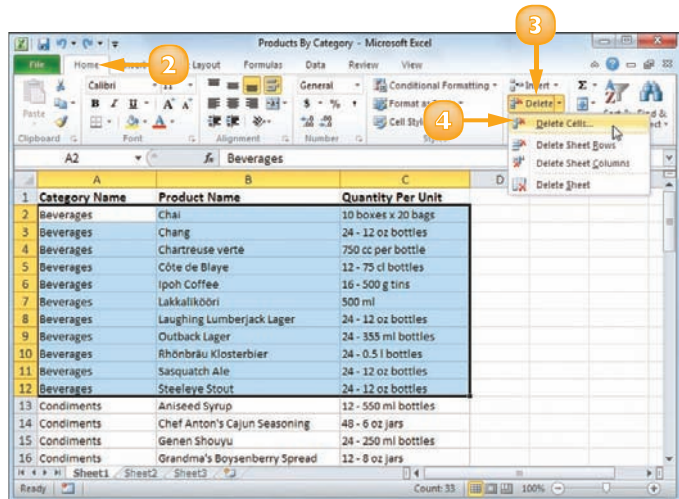
- 5 Select the option that corresponds to how you want Excel to shift the remaining cells after it deletes the range (radio button changes to selected).

Note: In most cases, if you have data below the selected range, click **Shift cells up**; if you have data to the right of the selected range, click **Shift cells left**.

- 6 Click **OK**.

Excel deletes the range and shifts the remaining data.

 You can delete data from a range by selecting the range and then pressing **Del**.



You can delete a range by selecting the range and then pressing **Ctrl** + **-**. You can also select the range, right-click any part of the range and then click **Delete**. Both methods display the Delete dialog box.



To delete a row or column, select any cell in it, click the **Home** tab, click the **Delete** , and then click **Delete Sheet Rows** or **Delete Sheet Columns**.

HIDE A ROW OR COLUMN

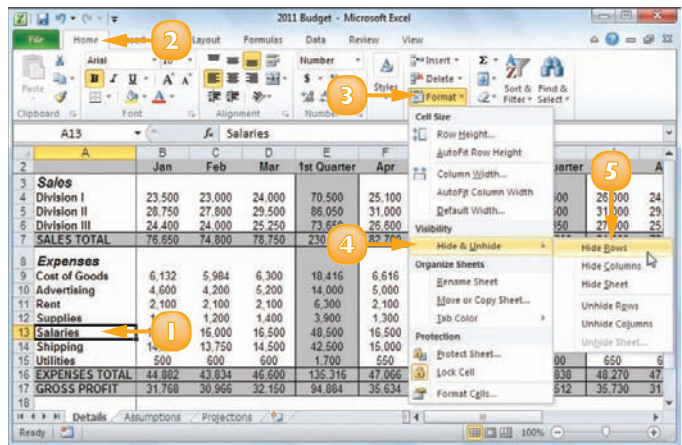
If you do not need to see or work with a row or column, temporarily, you can make your worksheet easier to read and to navigate by hiding the row or column.

Hiding a row or column is also useful if you are showing someone a worksheet that contains private or sensitive data that you do not want the person to see. For example, if a row or column contains salary data, passwords, or Social Security numbers, you should hide the row or column to protect this data from non-authorized viewers.

Hide a Row

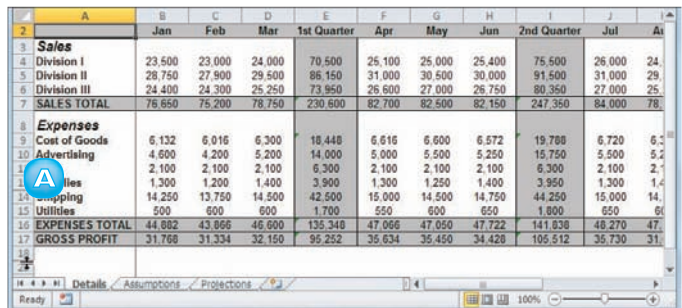
- 1 Click in any cell in the row you want to hide.
- 2 Click the **Home** tab.
- 3 Click **Format**.
- 4 Click **Hide & Unhide**.
- 5 Click **Hide Rows**.

Note: You can also hide a row by pressing **Ctrl + 9**.



Excel removes the row from the worksheet display.

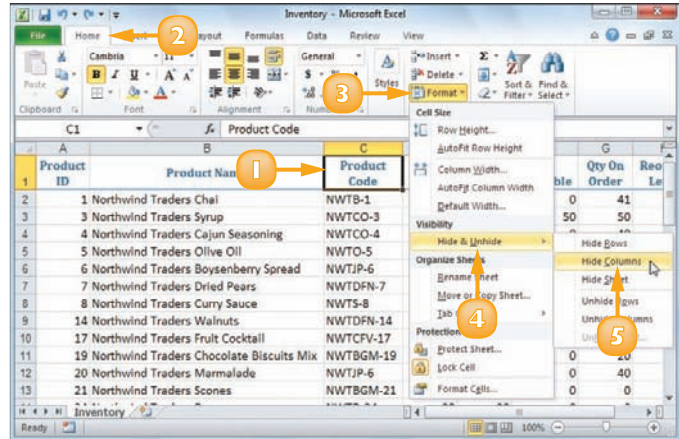
- A** Excel displays a slightly thicker heading border between the surrounding rows to indicate that a hidden row lies between them.



Hide a Column

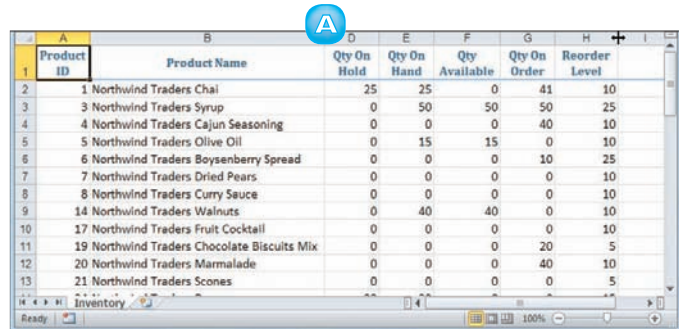
- 1 Click in any cell in the column you want to hide.
- 2 Click the **Home** tab.
- 3 Click **Format**.
- 4 Click **Hide & Unhide**.
- 5 Click **Hide Columns**.

Note: You can also hide a column by pressing **Ctrl** + **0**.



Excel removes the column from the worksheet display.

- A** Excel displays a slightly thicker heading border between the surrounding columns to indicate that a hidden column lies between them.



Another way to hide a column is to move  over the right edge of the column heading ( changes to ) and then click and drag the edge left until the width displays 0.



To display a hidden row or column, select the rows or columns on either side of the hidden row, click Home, click Format, click Hide & Unhide and then click Unhide Rows or Unhide Columns.

FREEZE ROWS OR COLUMNS

As you vertically scroll a worksheet, you can keep your column labels in view by freezing the row or rows that contain the labels. This makes it easier to review and edit the existing data and to insert new data to the worksheet because you can always see the column labels.

If your worksheet also includes row labels, you can keep those labels in view as you horizontally scroll the worksheet by freezing the column or columns that contain the labels.

Freeze Rows

1 Scroll the worksheet so that the row or rows that you want to freeze are visible.

2 Position  over the horizontal split bar ().

 changes to .

3 Click and drag  and drop it below the row you want to freeze.

Excel splits the worksheet into two horizontal panes.

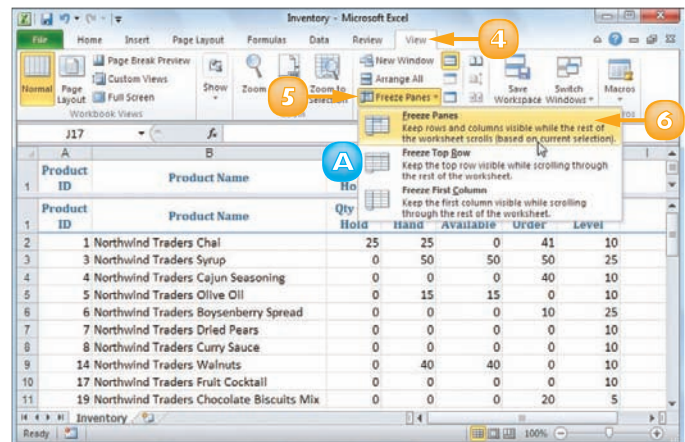
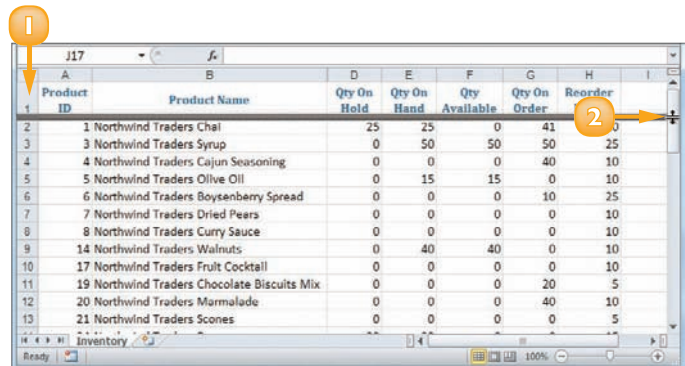
4 Click the **View** tab.

5 Click **Freeze Panes**.

6 Click **Freeze Panes**.

A If you want to freeze just the first row, you can bypass Steps 1 to 3 and click the **Freeze Top Row** command.

Excel freezes the panes.



Freeze Columns

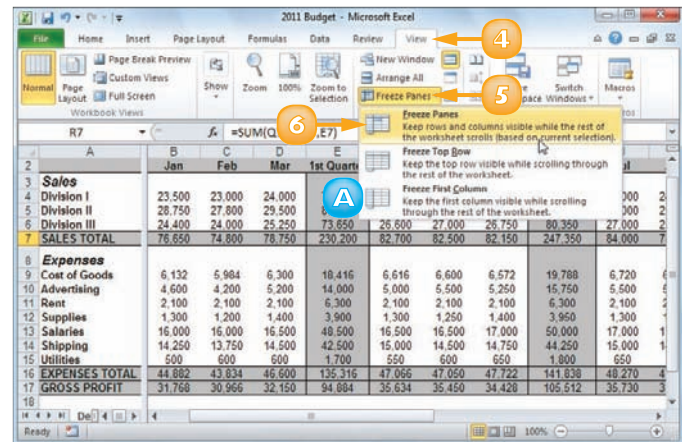
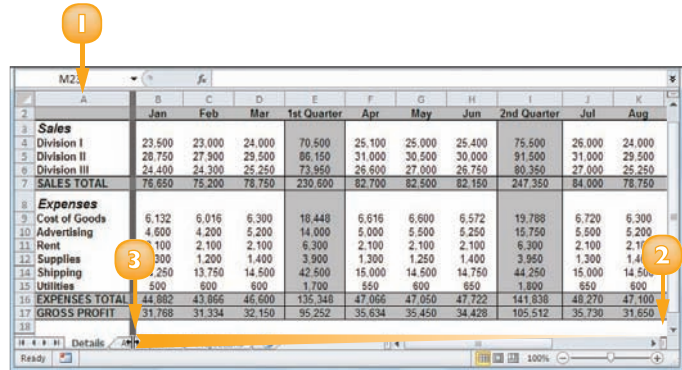
- 1 Scroll the worksheet so that the column or columns that you want to freeze are visible.
- 2 Position  over the vertical split bar ().
-  changes to .
- 3 Click and drag  and drop it on the right edge of the column you want to freeze.

Excel splits the worksheet into two vertical panes.

- 4 Click the **View** tab.
- 5 Click **Freeze Panes**.
- 6 Click **Freeze Panes**.

A If you want to freeze just the first column, you can bypass Steps 1 to 3 and click the **Freeze First Column** command.

Excel freezes the panes.



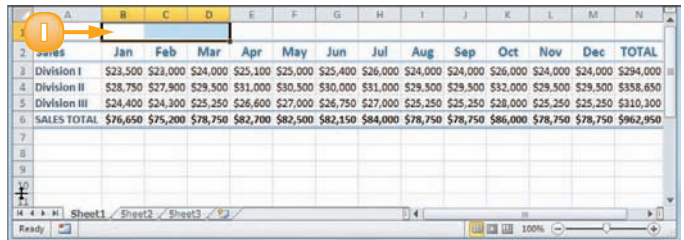
 You can unfreeze a row or column by clicking **View**, **Freeze Panes**, and then **Unfreeze Panes**. If you no longer want your worksheet split into two panes, click **View** and then click **Split** ().

 To adjust the position of a frozen row or column, you must first unfreeze them. You can then click and drag the split bar to the new location.

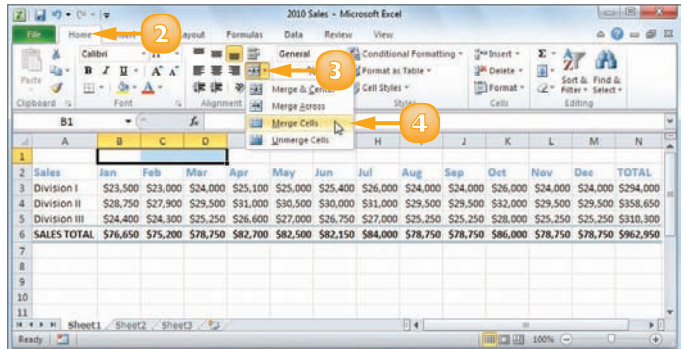
MERGE TWO OR MORE CELLS

You can create a single large cell by merging two or more cells. For example, it is common to merge some of the top row of cells to use as a worksheet title. Another common reason for merging cells is to create a label that applies to multiple columns of data. This can make your worksheet easier to read because it makes it clear that the label applies to multiple columns instead of just a single column.

- 1 Select the cells that you want to merge.



- 2 Click the **Home** tab.
- 3 Click the **Merge and Center** button.
- 4 Click **Merge Cells**.



- A** Excel merges the selected cells into a single cell.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2	Sales	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
3	Division I	\$23,500	\$23,000	\$24,000	\$25,100	\$25,000	\$25,400	\$26,000	\$24,000	\$24,000	\$26,000	\$24,000	\$24,000	\$294,000
4	Division II	\$28,750	\$27,900	\$29,500	\$31,000	\$30,500	\$30,000	\$31,000	\$29,500	\$29,500	\$32,000	\$29,500	\$29,500	\$358,650
5	Division III	\$24,400	\$24,300	\$25,250	\$26,600	\$27,000	\$26,750	\$27,000	\$25,250	\$25,250	\$28,000	\$25,250	\$25,250	\$310,300
6	SALES TOTAL	\$76,650	\$75,200	\$78,750	\$82,700	\$82,500	\$82,150	\$84,000	\$78,750	\$78,750	\$86,000	\$78,750	\$78,750	\$962,950
7														
8														
9														
10														
11														

- 5** Type your text in the merged cell.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		1st Quarter Sales												
2	Sales	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
3	Division I	\$23,500	\$23,000	\$24,000	\$25,100	\$25,000	\$25,400	\$26,000	\$24,000	\$24,000	\$26,000	\$24,000	\$24,000	\$294,000
4	Division II	\$28,750	\$27,900	\$29,500	\$31,000	\$30,500	\$30,000	\$31,000	\$29,500	\$29,500	\$32,000	\$29,500	\$29,500	\$358,650
5	Division III	\$24,400	\$24,300	\$25,250	\$26,600	\$27,000	\$26,750	\$27,000	\$25,250	\$25,250	\$28,000	\$25,250	\$25,250	\$310,300
6	SALES TOTAL	\$76,650	\$75,200	\$78,750	\$82,700	\$82,500	\$82,150	\$84,000	\$78,750	\$78,750	\$86,000	\$78,750	\$78,750	\$962,950
7														
8														
9														
10														
11														



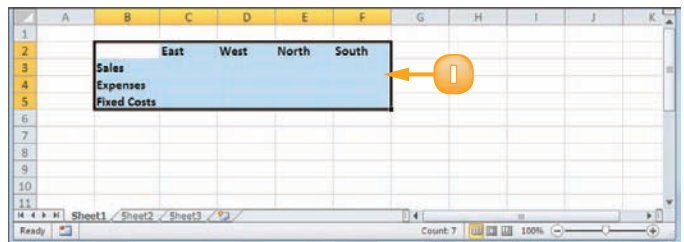
You can centre a title across the entire worksheet or a heading across the columns that it refers to. Follow Steps 1 to 3 and then click Merge & Center. Excel creates the merged cell and formats the cell with the Center alignment option. Any text you enter into the merged cell appears centred within the cell.

TRANPOSE ROWS AND COLUMNS

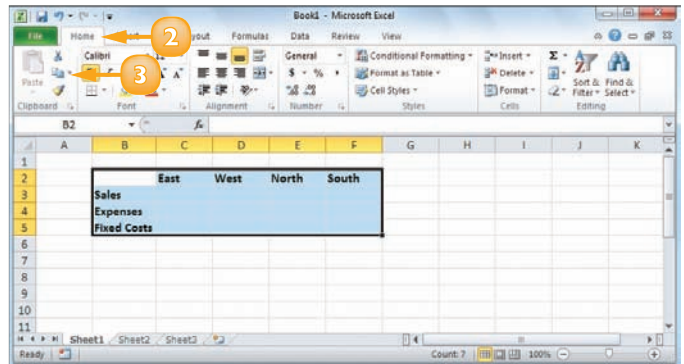
You can use Excel's Transpose command to easily turn a row of data into a column of data, or a column of data into a row of data. You can also transpose rows and columns together in a single command, which is handy when you need to restructure a worksheet.

56

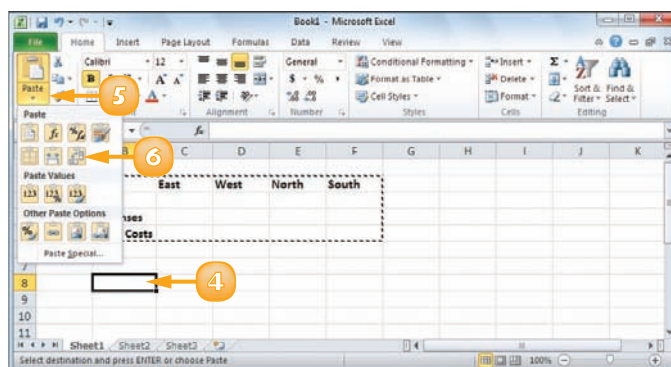
- 1 Select the range that includes the data you want to transpose.



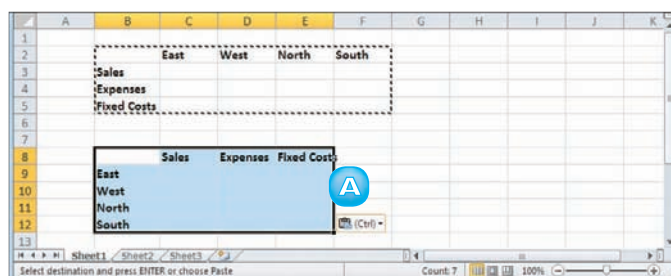
- 2 Click the **Home** tab.
- 3 Click **Copy** (Ctrl+C).



- 4 Click where you want the transposed range to appear.
- 5 Click the **Paste** ▾.
- 6 Click **Transpose** (📊).



A Excel transposes the data and then pastes it into the worksheet.



If you want to transpose a single horizontal or vertical range of cells, then select just that range. If you want to transpose a horizontal range of cells and a vertical range of cells at the same time, select the range that includes all the cells, as shown in this section's example.



Excel's Transpose command works with text, numbers, dates, formulas, and any other data that you can add to a cell. So if you have a rectangular region of data that includes row labels, column labels, and cell values within each row and column, you can select the entire range and transpose it.

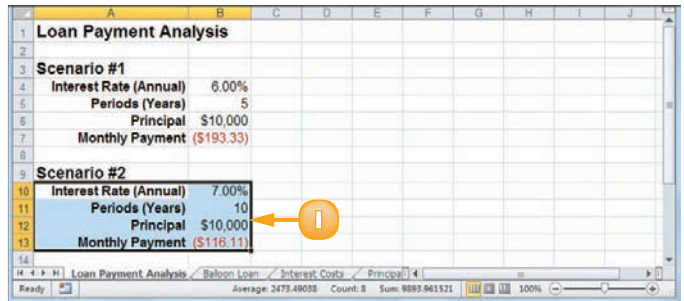
DEFINE OR CHANGE A RANGE NAME

A *range name* is a text label that you apply to a single cell or to a range of cells. Once you have defined a name for a range, you can use that name in place of the range coordinates, which has several benefits. For example, range names are more intuitive, particularly in formulas; range names are more accurate than range coordinates; range names are easier to remember than range coordinates; and range names make it easier to navigate a worksheet. This chapter explains range names and shows you how to define, edit, and use range names.

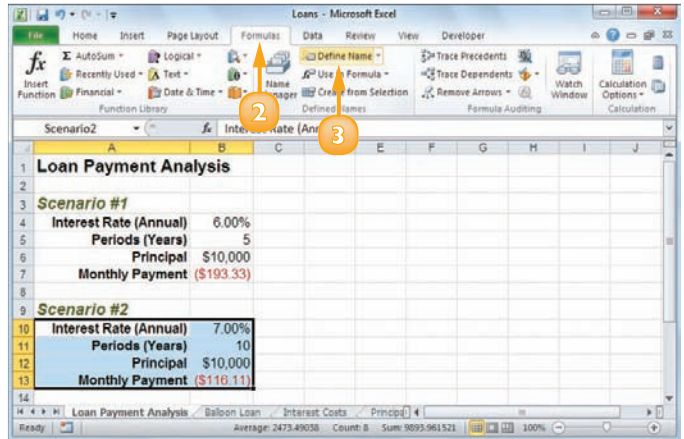
Before you can use a range name in your formulas or to navigate a worksheet, you must first define the range name. You can define as many names as you need and you can even define multiple names for the same range. In this section, you learn to create range names by hand.

Define a Range Name

- 1 Select the range you want to name.



- 2 Click the **Formulas** tab.
- 3 Click **Define Name**.



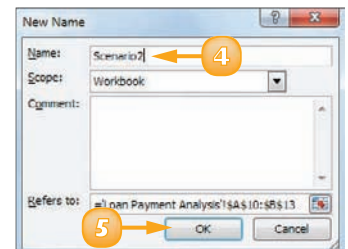
The New Name dialog box appears.

- 4 Type the name you want to use into the **Name** text box.

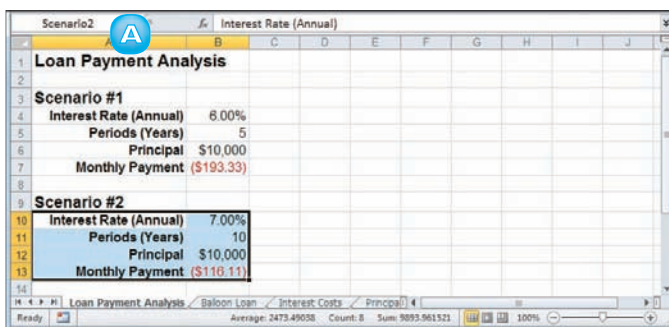
Note: The first character of the name must be a letter or an underscore (_). The name cannot include spaces or cell references, and it cannot be any longer than 255 characters.

- 5 Click **OK**.

Excel assigns the name to the range.



- A** The new name appears in the Name box whenever the range is selected.



Change a Range Name

- 1** Open the workbook that contains the range name you want to change.

- 2** Click the **Formulas** tab.

- 3** Click **Name Manager**.

The Name Manager dialog box appears.

- 4** Click the name you want to change.

- 5** Click **Edit**.

The Edit Name dialog box appears.

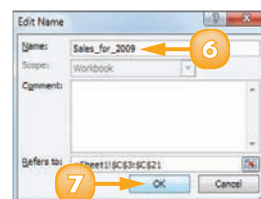
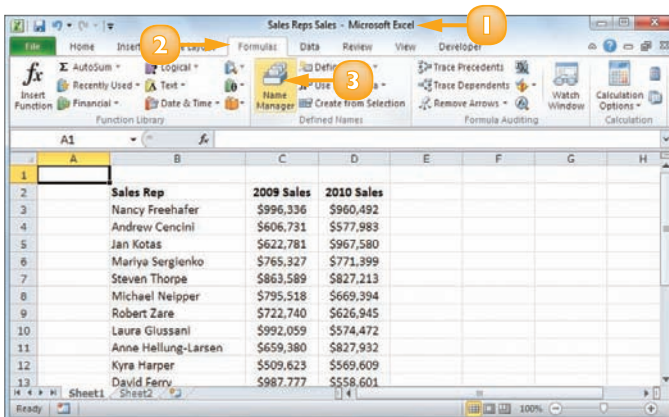
- 6** Use the **Name** text box to edit the name.

- 7** Click **OK**.

The new name appears in the Name Manager dialog box.

- 8** Click **Close**.

 You can use a keyboard shortcut to open the Name Manager dialog box. Open the workbook that contains the range name you want to change and then press **Ctrl + F3**.



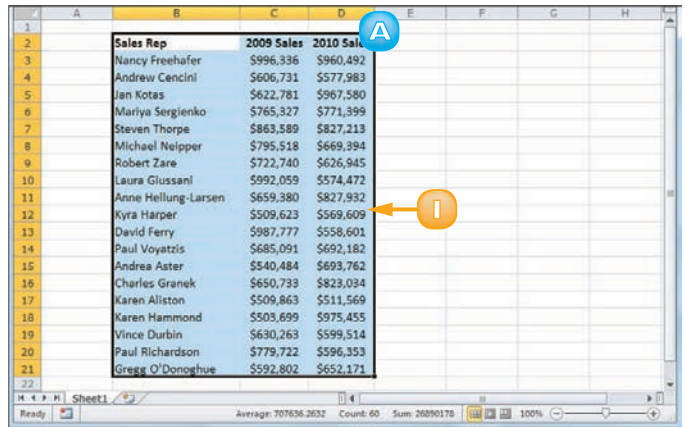
You can modify a range name to refer to a new range. Open the Edit Name dialog box. Click inside the Refers to reference box and then click and drag the mouse  on the worksheet to select the new range. Click OK.

USE WORKSHEET TEXT TO DEFINE A RANGE NAME

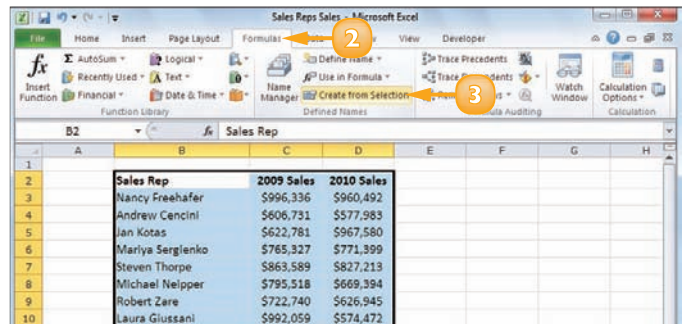
If you have several ranges to name, you can speed up the process by getting Excel to create the names for you automatically based on the range's text labels.

For example, if you have a column of sales data that has the label “Sales” on top, Excel can automatically apply the name “Sales” to that range. You can create range names from worksheet text when the labels are in the top or bottom row of the range or the left or right column of the range.

- I Select the range or ranges you want to name.
- A Be sure to include the text labels you want to use for the range names.



- 2 Click the **Formulas** tab.
- 3 Click **Create from Selection**.



The Create Names from Selection dialog box appears.

- 4 Select the setting or settings that correspond to where the text labels are located in the selected range (☐ changes to ☒.

If Excel has activated a check box that does not apply to your data, click it (☒ changes to ☐.

- 5 Click **OK**.

Excel assigns the text labels as range names.

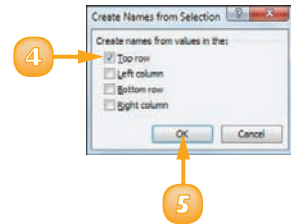
- B** When you select one of the ranges, the range name assigned by Excel appears in the Name box.

Note: If the label text contains any illegal characters, such as a space, Excel replaces each of those characters with an underscore (_).

- C** A data range with labels in the top row and left column is known as a table. To assign a name to a table, type a label in the top left corner. When you run the Create from Selection command on the entire table, Excel assigns the top left label to the data range.



You can use a keyboard shortcut to open the Create Names from Selection dialog box. Select the range or ranges you want to work with and then press **Ctrl+Shift+F3.**



Sales_Rep	2009 Sales	2010 Sales
Nancy Freehafer	\$996,336	\$960,492
Andrew Cencini	\$606,731	\$577,983
Jen Kotas	\$622,781	\$967,580
Mariya Sergienko	\$765,327	\$771,399
Steven Thorpe	\$863,589	\$827,213
Michael Neipper	\$795,518	\$669,394
Robert Zare	\$722,740	\$626,945
Laura Giussani	\$992,059	\$574,472
Anne Hellung-Larsen	\$659,380	\$827,932
Kyra Harper	\$509,623	\$569,609
David Ferry	\$987,777	\$558,601
Paul Voyatzis	\$685,091	\$692,182
Andrea Aster	\$540,484	\$693,762
Charles Granek	\$650,733	\$823,034
Karen Alliston	\$509,863	\$511,569
Karen Hammond	\$503,699	\$975,455
Vince Durbin	\$630,263	\$599,514
Paul Richardson	\$779,722	\$596,353
Gregg O'Donoghue	\$592,802	\$652,171

GDP_Growth	2004	2003	2002
Canada	2.9	2	3.4
France	2.3	0.8	1.2
Germany	1.6	0	0.2
United Kingdom	3.1	2.2	1.8
United States	4.2	3.1	1.9

NAVIGATE A WORKBOOK USING RANGE NAMES

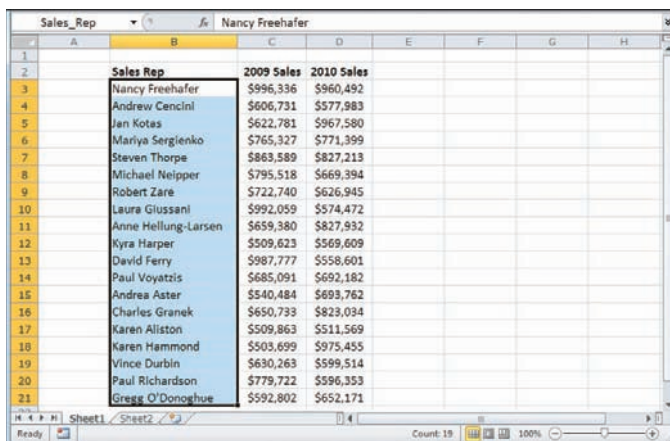
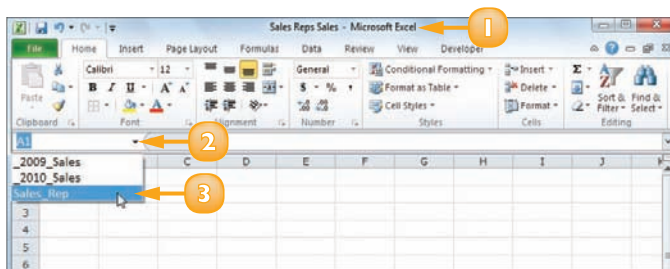
One of the big advantages of defining range names is that they make it easier to navigate a worksheet. You can choose a range name from a list and Excel automatically selects the associated range. This is much faster than scrolling through a workbook by hand or by entering a cell or range reference into Excel's Go To command.

Excel offers two methods for navigating a workbook using range names: the Name box and the Go To command.

Navigate Using the Name Box

- 1 Open the workbook that contains the range you want to work with.
- 2 Click the Name box .
- 3 Click the name of the range you want to select.

A Excel selects the range.



Navigate Using the Go To Command

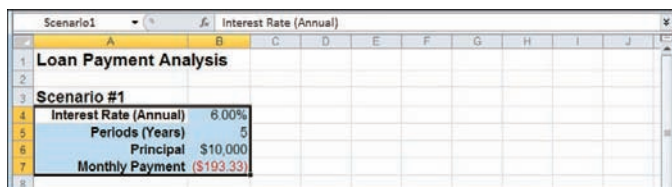
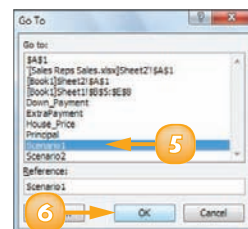
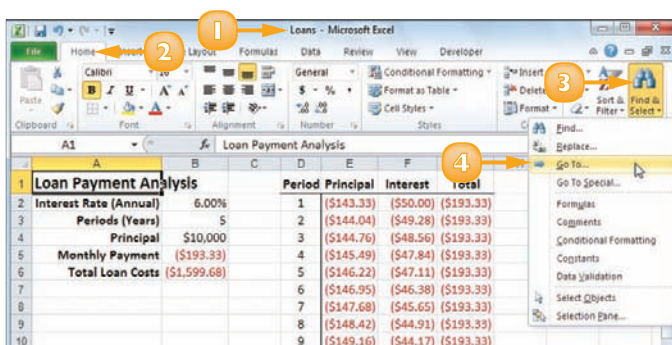
- 1 Open the workbook that contains the range you want to work with.
- 2 Click the **Home** tab.
- 3 Click **Find & Select**.
- 4 Click **Go To**.

Note: You can also select the Go To command by pressing **Ctrl + G**.

The Go To dialog box appears.

- 5 Click the name of the range you want to select.
- 6 Click **OK**.

Excel selects the range.



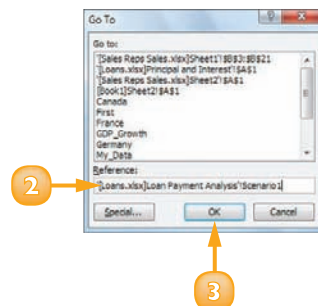
Navigate to a Range in Another Workbook

- 1 Follow Steps 1 to 4 above to display the Go To dialog box.
- 2 In the **Reference** text box, type the following:

'[workbook]worksheet'!name

Replace *workbook* with the file name of the workbook, *worksheet* with the name of the worksheet that contains the range and *name* with the range name.

- 3 Click **OK**.



CONTENTS

- 66** Change the Font and Font Size
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- 80** Apply a Number Format
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- 84** Apply a Conditional Format to a Range
- 86** Apply a Style to a Range
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- 92** Wrap Text Within a Cell
- 94** Add Borders to a Range

4

FORMATTING EXCEL RANGES

Microsoft Excel 2010 offers many commands and options for formatting ranges and you learn about most of them in this chapter. For text, you learn how to change the font, the font size, the colour and the alignment, as well as how to centre text across columns and rotate text within a cell. You also learn how to change the background colour, apply a number format, apply an AutoFormat and a style, change the column width and row height, add borders and more.

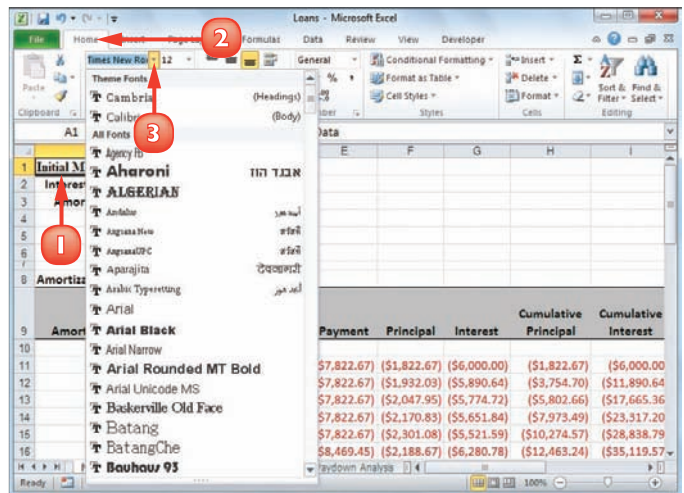


CHANGE THE FONT AND FONT SIZE

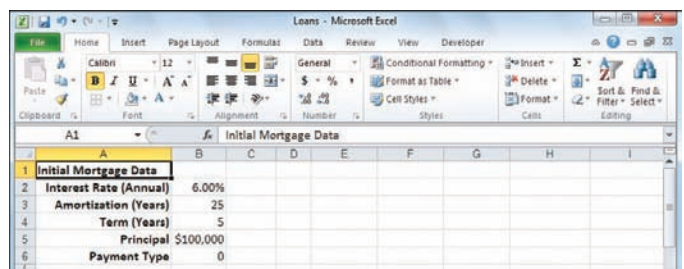
When you work in an Excel worksheet, you can add visual appeal to a cell or range by changing the font and font size.

In this section, the term *font* is synonymous with *typeface* and both refer to the overall look of each character. By default, Excel offers nearly 200 different fonts in a wide variety of styles. The font size is measured in *points*, where there are roughly 72 points in an inch. In some cases, formatting a range with a larger font size can make the range text easier to read.

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 To change the typeface, click  in the **Font** list and then click the typeface you want to apply.

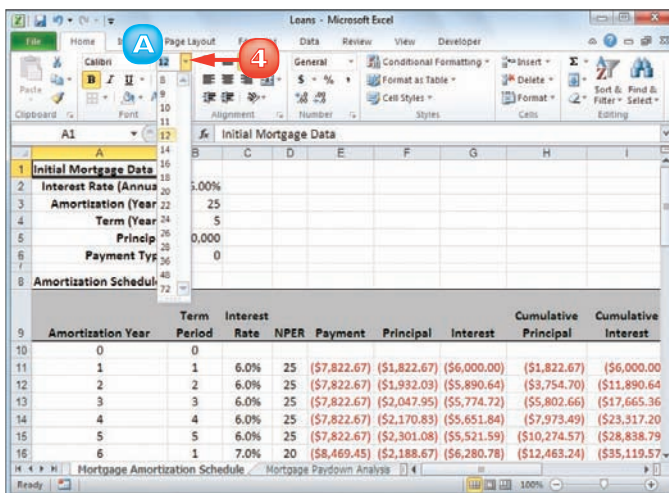


Excel applies the font to the text in the selected range.

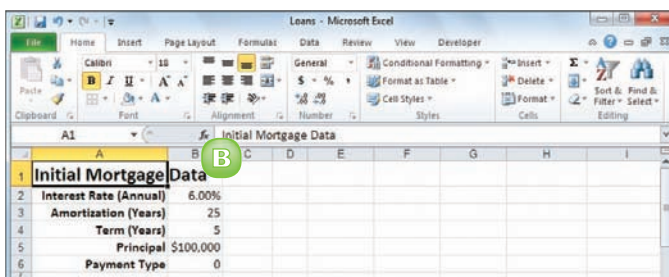


4 To change the font size, click  in the **Font Size** list and then click the size you want to apply.

A You can also type the size you want in the Size text box.



B Excel applies the font size to the text in the selected range.



When you create a workbook, Excel automatically applies a document theme, which includes predefined fonts, to the workbook. The theme's default font is referred to as **Body** and is used for regular worksheet text. Each theme also defines a **Headings** font, which Excel uses for cells formatted with a heading or title style.



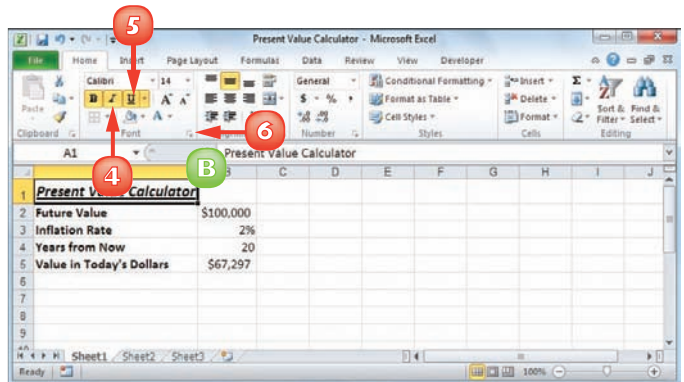
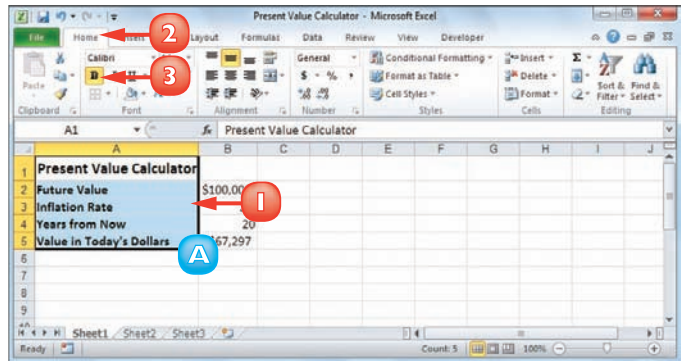
You can change the default font and font size by clicking the **File** tab and then **Options** to open the **Excel Options** dialog box. Click the **General** tab, click the **Use this font** , and then click the typeface you want to use as the default. Click the **Font size**  and then click the size you prefer to use as the default. Click **OK**.

APPLY FONT EFFECTS

You can improve the look and impact of text in an Excel worksheet by applying font effects to a range.

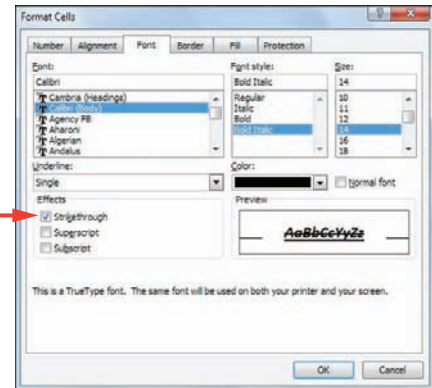
Excel's font effects include bold, italic, and underline, which are available on the Ribbon for easy application. Excel also offers a dialog box tab that includes many more font effects, including special effects such as strikethrough, superscripts, and subscripts. In most cases, you should not need to apply more than one or two font effects at a time. If you use too many effects, it can make the text difficult to read.

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 To format the text as bold, click the **Bold** button (**B**).
 - A Excel applies the bold effect to the selected range.
- 4 To format the text as italic, click the **Italic** button (**I**).
- 5 To format the text as underline, click the **Underline** button (**U**).
 - B Excel applies the effects to the selected range.
- 6 Click the **Font** dialog box launcher (.



The Format Cells dialog box appears with the Font tab displayed.

- 7** To format the text as strikethrough, click **Strikethrough** (☐ changes to ☒)

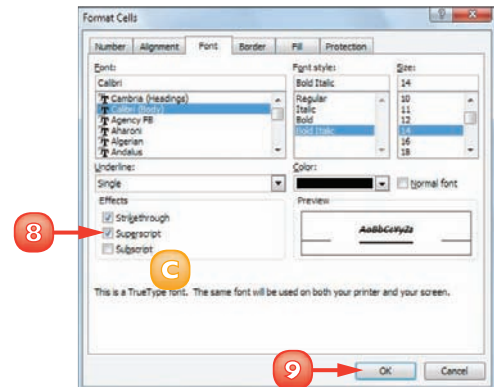


- 8** To format the text as a superscript, click **Superscript** (☐ changes to ☒)

C To format the text as a subscript, click **Subscript** (☐ changes to ☒)

- 9** Click **OK**.

Excel applies the font effects.



Excel supports the following keyboard shortcuts for applying font effects: **Ctrl + B** toggles the selected range as bold; **Ctrl + I** toggles the selected range as italic; **Ctrl + U** toggles the selected range as underline; **Ctrl + 5** toggles the selected range as strikethrough.

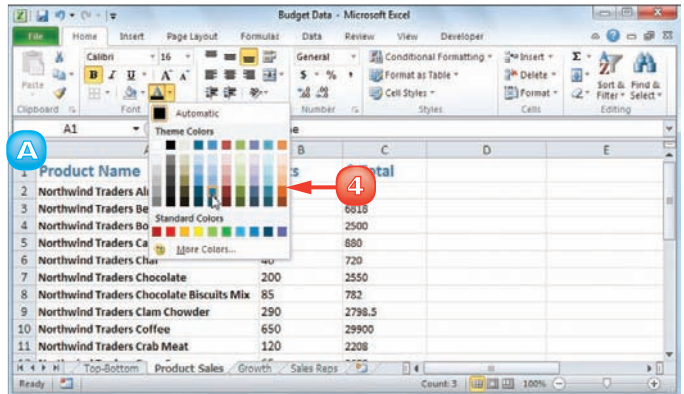
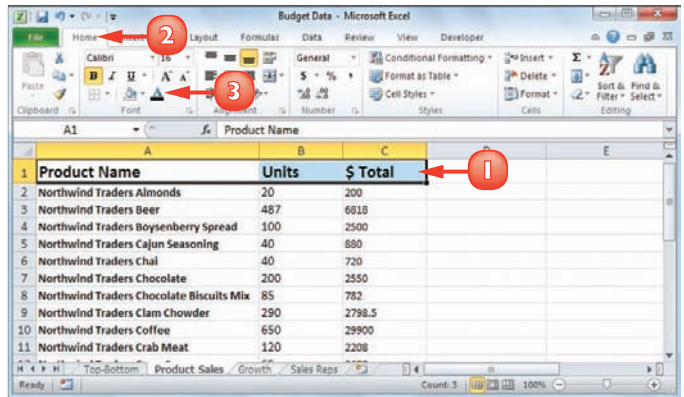
CHANGE THE FONT COLOUR

When you build an Excel worksheet, you can add visual interest to the sheet text by changing the font colour.

By default, each Excel workbook comes with a theme applied and you can change the font colour by applying one of the colours from the workbook's theme. You learn more about workbook themes in Chapter 7. You can also select a colour from Excel's palette of standard colours or a custom colour that you create yourself.

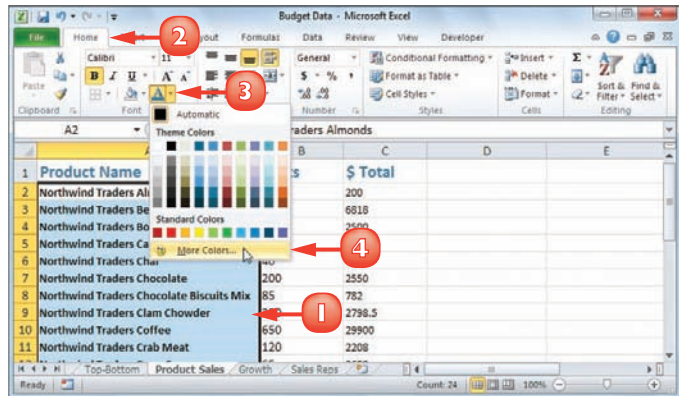
Select a Theme or Standard Colour

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 Click  in the **Font Color** list ().
- 4 Click a theme colour or one of Excel's standard colours.
 *Excel applies the colour to the range text.*



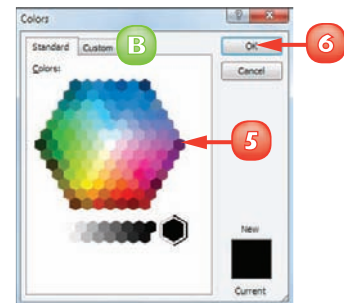
Select a Custom Colour

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 Click  in the **Font Color** list ().
- 4 Click **More Colors**.



The Colors dialog box appears.

- 5 Click the colour you want to use.
- B** You can also click the **Custom** tab and then either click the colour you want or enter the values for the Red, Green, and Blue components of the colour.
- 6 Click **OK**.



Excel applies the colour to the selected range.



Do not use many different typefaces in a single document. Stick to one, or at most two, typefaces to avoid the ransom note look.



If you change the text colour, be sure to leave enough contrast between the text and the background. In general, dark text on a light background is the easiest to read.

ALIGN TEXT WITHIN A CELL

You can make your worksheets easier to read by aligning text and numbers within each cell. By default, Excel aligns numbers with the right side of the cell and text with the left side of the cell.

You can also align your data vertically within each cell. By default, Excel aligns all data with the bottom of each cell but you can align text with the top or middle.

Align Text Horizontally

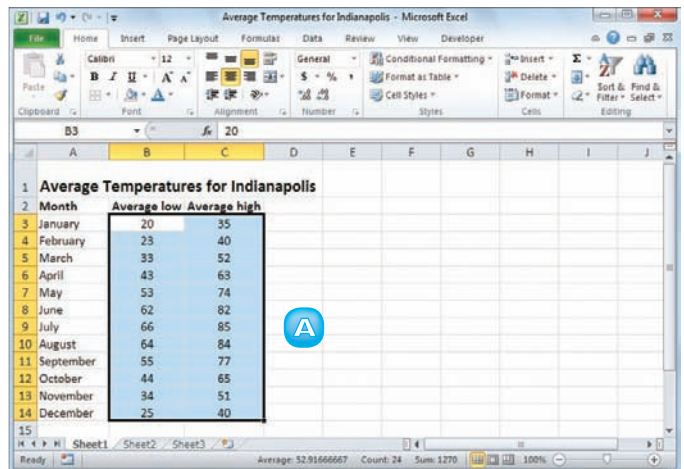
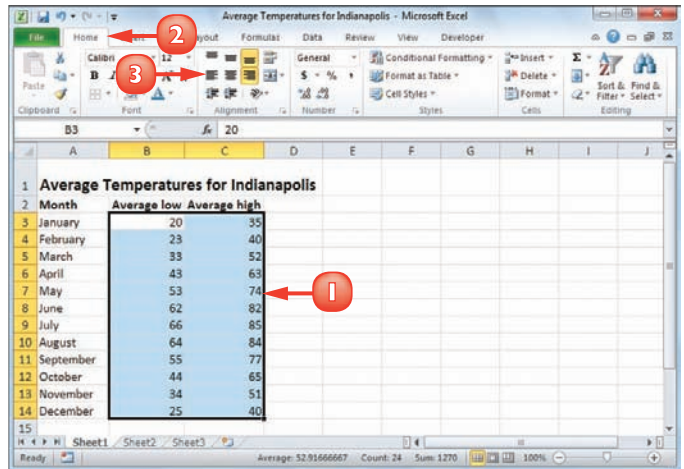
- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 In the Alignment group, click the horizontal alignment option you want to use:

Click **Align Text Left** (☐) to align data with the left side of each cell.

Click **Center** (☐) to align data with the centre of each cell.

Click **Align Text Right** (☐) to align data with the right side of each cell.

A In this example, the data in the cells is centred.



Align Text Vertically

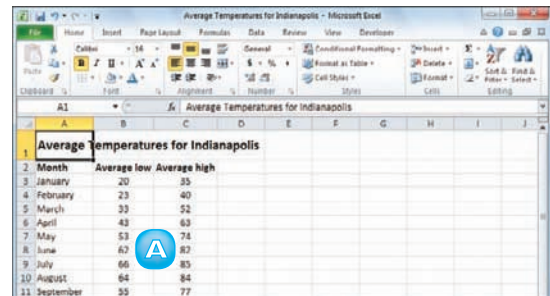
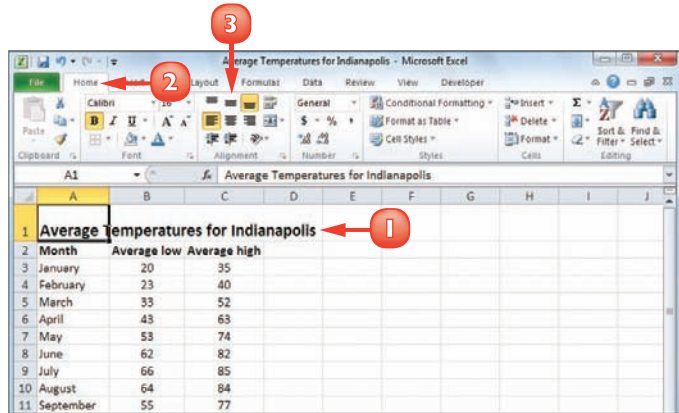
- 1** Select the range you want to format.
- 2** Click the **Home** tab.
- 3** In the Alignment group, click the vertical alignment option you want to use:

Click **Top Align** () to align data with the top of each cell.

Click **Middle Align** () to align data with the middle of each cell.

Click **Bottom Align** () to align data with the bottom of each cell.

- A** In this example, the text is aligned with the middle of the cell.



Justified text aligns with both the left and right sides of the cell. Select the range, click the Home tab and then click  in the Alignment group. The Format Cells dialog box appears with the Alignment tab displayed. In the Horizontal list, click  and then click Justify. Click OK.



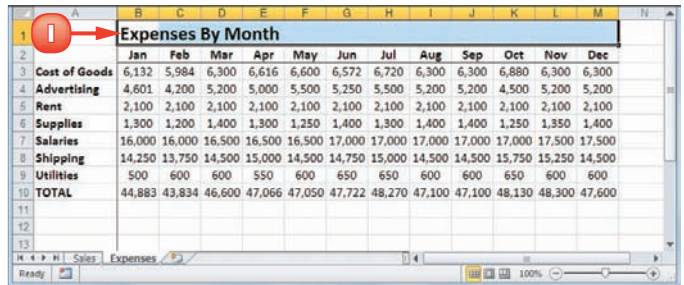
To indent cell text, select the range you want to indent, click the Home tab and then click  in the Alignment group. In the Alignment tab, click the Horizontal list  and then click Left (Indent). Use the Indent text box to type the indent, in characters, and then click OK. You can also click the Increase Indent () or Decrease Indent () buttons in the Home tab's Alignment group.

CENTRE TEXT ACROSS MULTIPLE COLUMNS

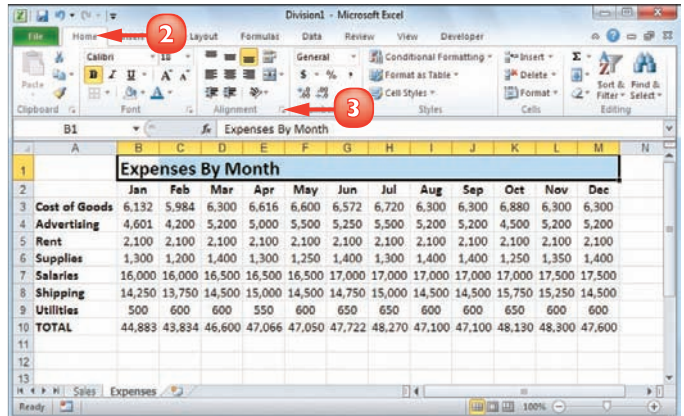
You can make a worksheet more visually appealing and easier to read by centring text across multiple columns. This feature is most useful when you have text in a cell that you use as a label or title for a range. By centring the text across the range, it makes it easier to see that the label or title applies to the entire range.

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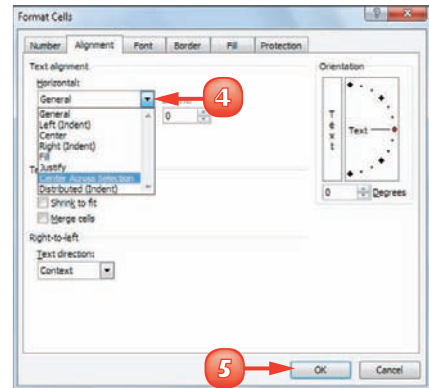
- 1 Select a range that consists of the text you want to work with and the cells across which you want to centre the text.



- 2 Click the **Home** tab.
- 3 In the Alignment group, click the dialog box launcher ()



Excel opens the Format Cells dialog box with the Alignment tab displayed.



4 Click the **Horizontal**  and then click **Center Across Selection**.

5 Click **OK**.

Excel centres the text across the selected cells.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cost of Goods	6,132	5,984	6,300	6,616	6,600	6,572	6,720	6,300	6,300	6,880	6,300	6,300
Advertising	4,601	4,200	5,200	5,000	5,500	5,250	5,500	5,200	5,200	4,500	5,200	5,200
Rent	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Supplies	1,300	1,200	1,400	1,300	1,250	1,400	1,300	1,400	1,400	1,250	1,350	1,400
Salaries	16,000	16,000	16,500	16,500	16,500	17,000	17,000	17,000	17,000	17,000	17,500	17,500
Shipping	14,250	13,750	14,500	15,000	14,500	14,750	15,000	14,500	14,500	15,750	15,250	14,500
Utilities	500	600	600	550	600	650	650	600	600	650	600	600
TOTAL	44,883	43,834	46,600	47,066	47,050	47,722	48,270	47,100	47,100	48,130	48,300	47,600



An easier way to centre text across multiple columns is to follow Steps 1 and 2 and then, in the Alignment group, click the Merge & Center button (). Excel merges the selected cells into a single cell and centres the text within that cell. (See Chapter 3 to learn more about merging cells.)

ROTATE TEXT WITHIN A CELL

You can add visual interest to your text by slanting the text upward or downward in the cell. You can also use this technique to make a long column heading take up less horizontal space on the worksheet.

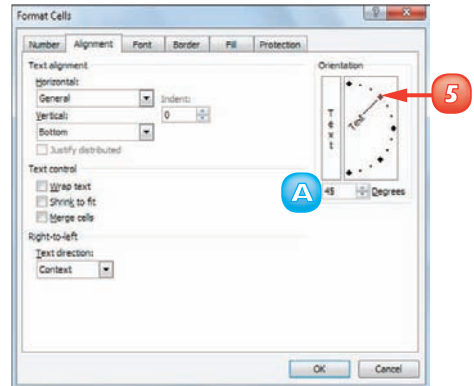
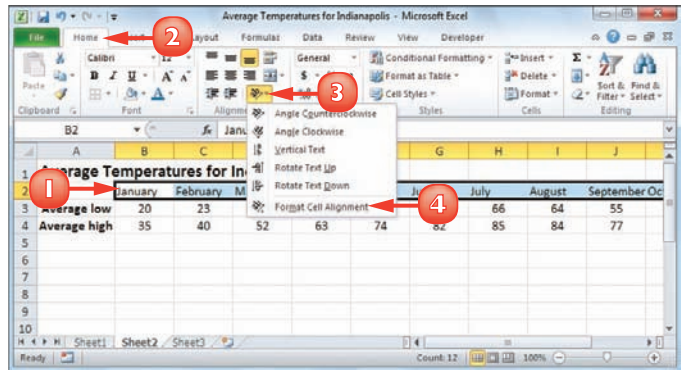
Excel offers several predefined rotations, such as Angle Counterclockwise, which angles text upward at a 45-degree angle, and Rotate Text Up, which displays the text vertically with the letters running from the bottom of the cell to the top. You can also make cell text angle upward or downward by specifying the degrees of rotation.

- 1 Select the range containing the text you want to angle.
- 2 Click the **Home** tab.
- 3 Click **Orientation** (📐).
- 4 Click **Format Cell Alignment**.

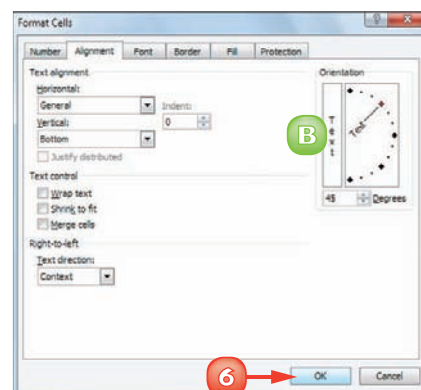
If you want to use a predefined orientation, click one of the menu items and skip the rest of the steps.

- 5 Click an orientation marker.

A You can also use the Degrees spin box to type or click a degree of rotation. (See the Tip on the following page.)



- B** You can click the vertical text area to display your text vertically instead of horizontally in the cell.

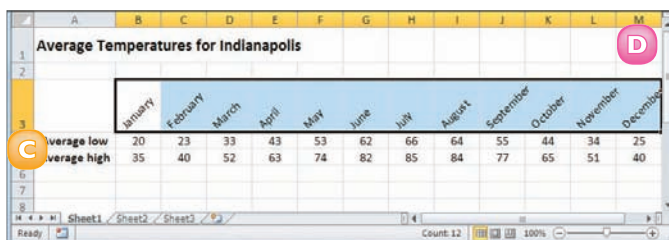


- 6** Click **OK**.

Excel rotates the cell text.

- C** The row height automatically increases to contain the slanted text.

- D** You can reduce the column width to free up space and make your cells more presentable.



When you use the Degrees spin box to set the text orientation to a positive number, such as 25, Excel angles the text in an upward direction. If you set the text orientation to a negative number, such as -40, Excel angles the text in a downward direction. You can specify values in the range from 90 degrees to -90 degrees.

ADD A BACKGROUND COLOUR TO A RANGE

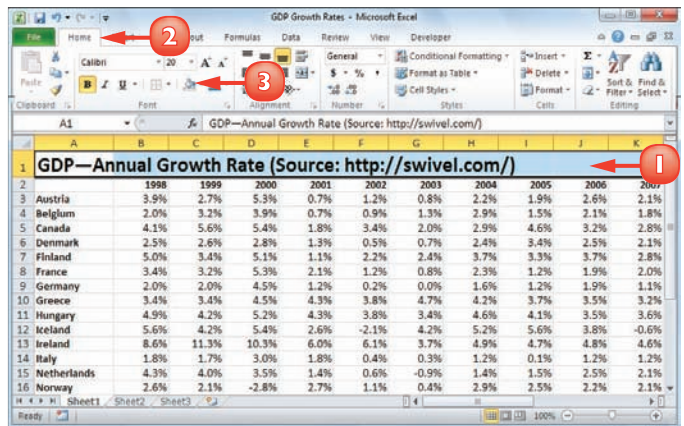
You can make a range stand out from the rest of the worksheet by applying a background colour to the range. For example, many people apply a background colour to the labels in a range, which makes it easier to differentiate the labels from the data.

Perhaps the easiest way to change the background colour is by applying a colour from the set of 60 predefined colours that come with the workbook's theme. You can also choose a colour from Excel's palette of standard colours or from a custom colour that you create yourself.

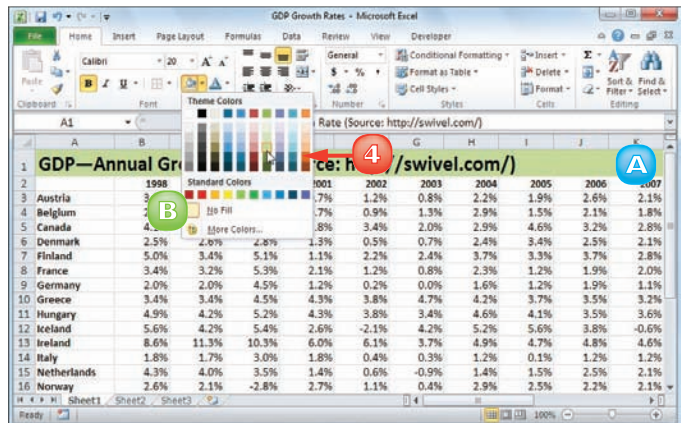
78

Select a Theme or Standard Colour

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 Click  in the **Fill Color** list (.

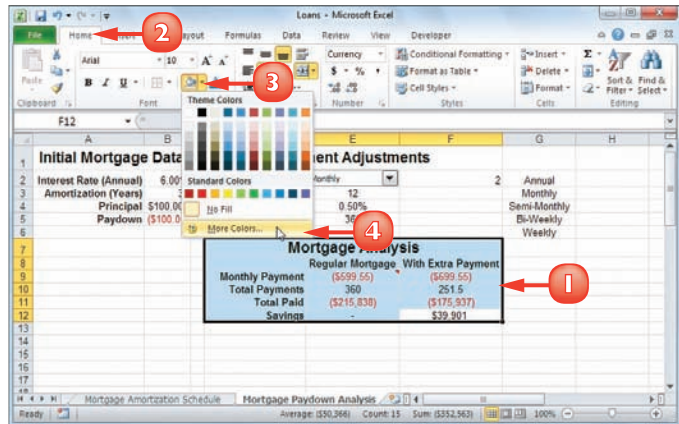


- 4 Click a theme colour or one of Excel's standard colours.
- A** Excel applies the colour to the range text.
- B** To remove the background colour from the range, click **No Fill**.



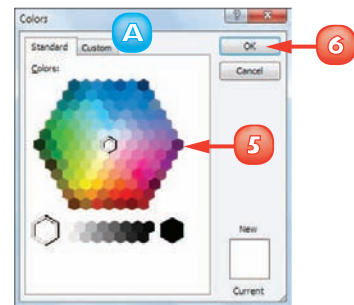
Select a Custom Colour

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 Click  in the **Fill Color** list (.
- 4 Click **More Colors**.



The Colors dialog box appears.

- 5 Click the colour you want to use.
- A** You can also click the **Custom** tab and then either click the colour you want or enter the values for the Red, Green, and Blue components of the colour.
- 6 Click **OK**.



Excel applies the colour to the selected range.

STOP The default text colour is black, so if you apply any dark background colour, the text will be very difficult to read. Always use a light background colour with dark-coloured text or a dark background colour with light-coloured text.



A background that fades from one colour to another is called a gradient effect. Select the range, click the Home tab, and then click the Font group's dialog box launcher (). Click the Fill tab and then click Fill Effects. In the Fill Effects dialog box, use the Color 1  and the Color 2  to choose your colours. Click an option in the Shading styles section ( changes to ) and then click OK.

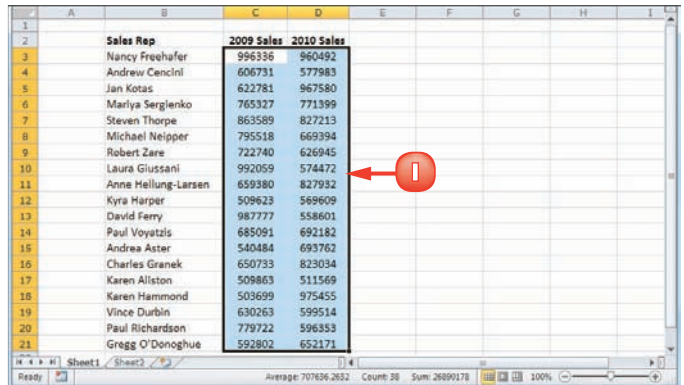
APPLY A NUMBER FORMAT

You can make your worksheet easier to read by applying a number format to your data. For example, if your worksheet includes monetary data, you can apply the Currency format to display each value with a pound sign and two decimal places.

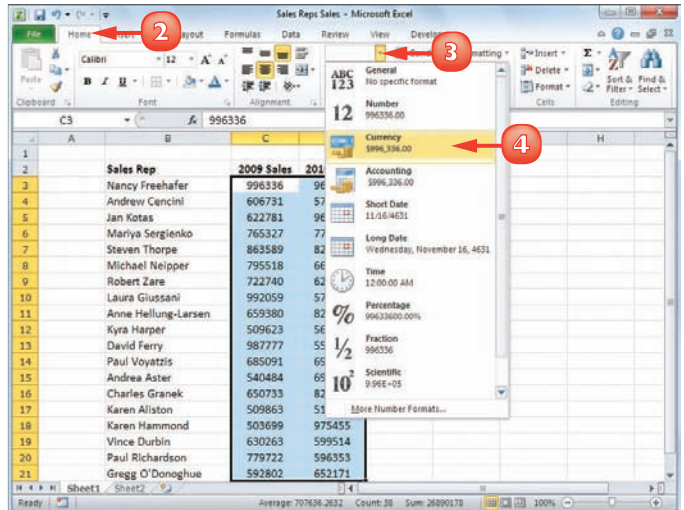
Excel offers ten number formats, most of which apply to numeric data. However, you can also apply the Date format to date data, the Time format to time data, and the Text format to text data.

Apply a Basic Format

- 1 Select the range you want to format.



- 2 Click the **Home** tab.
- 3 Click the **Number Format** button.
- 4 Click the number format you want to use.

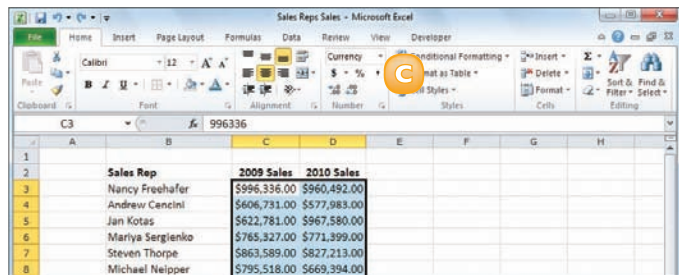
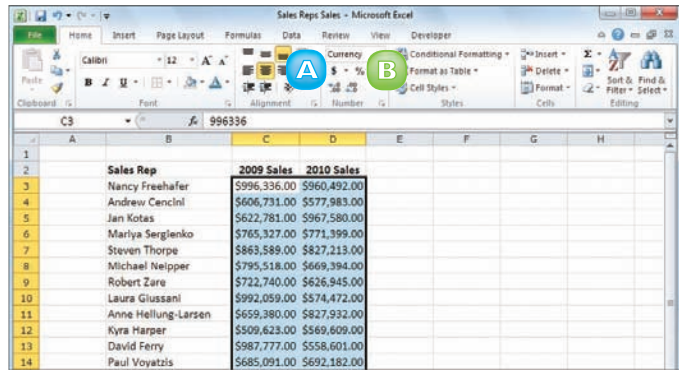


Excel applies the number format to the selected range.

A For monetary values, you can click **Accounting Number Format** (\$).

B For percentages, you can click **Percent Style** (%).

C For large numbers, you can click **Comma Style** (,).



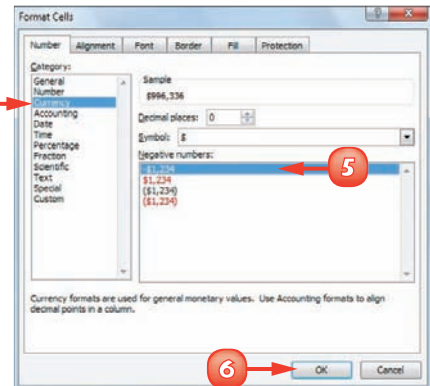
Use the Format Cells Dialog Box

- 1 Select the range you want to format.
- 2 Click the **Home** tab.
- 3 Click the Number group's dialog box launcher (☰).

The Format Cells dialog box appears with the Number tab displayed.

- 4 In the Category list, click the type of number format you want to apply.
- 5 Use the controls that Excel displays to customise the number format.
- 6 Click **OK**.

Excel applies the number format.

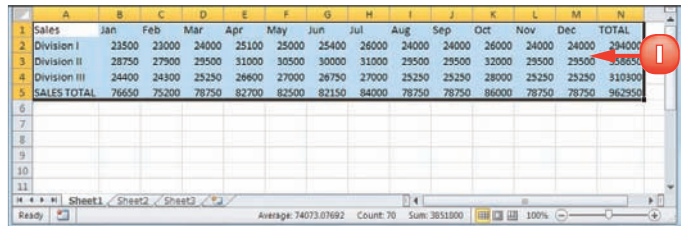


APPLY AN AUTOFORMAT TO A RANGE

You can save time when formatting your Excel worksheets by using the AutoFormat feature. This feature offers a number of predefined formatting options that you can apply to a range all at once. The formatting options include the number format, font, cell alignment, borders, patterns, row height, and column width.

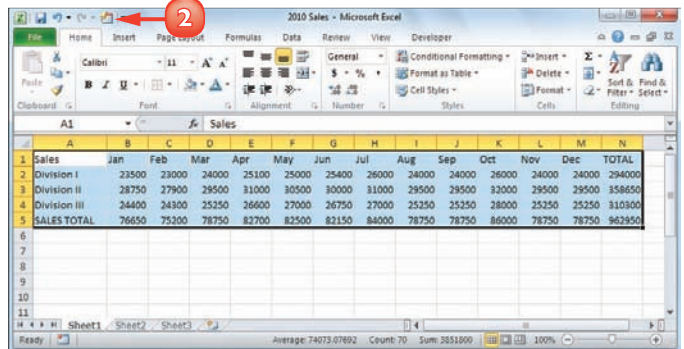
The AutoFormats are designed for data in a tabular format, particularly where you have headings in the top row and left column, numeric data in the rest of the cells, and a bottom row that shows the totals for each column.

- 1 Select the range you want to format.



- 2 Click **AutoFormat** ().

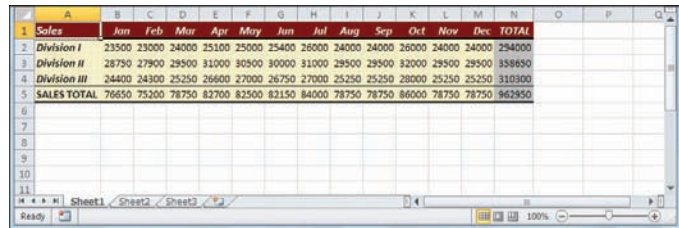
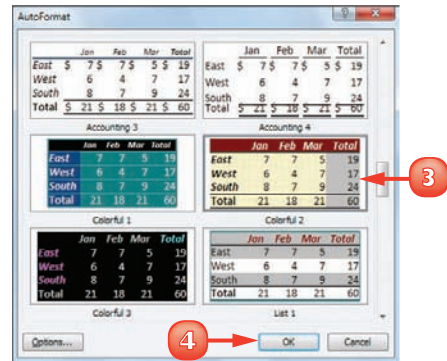
Note: See Chapter 1 to learn how to add a button to the Quick Access Toolbar. In this case, you must add the QuickFormat button.



The AutoFormat dialog box appears.

- 3 In the Table format list, click the AutoFormat you want to use.
- 4 Click **OK**.

Excel applies the AutoFormat to the selected range.



Excel enables you to control the six formats that are part of each AutoFormat: number, font, alignment, border, patterns, and width/height. In the AutoFormat dialog box, click Options and display the Formats to apply group. Deselect the option for each format you do not want to apply (☒ changes to ☐) and then click OK.



To revert to a plain, unformatted state, select the range and then click  to display the AutoFormat dialog box. In the format list, click None, and then click OK. Excel removes the AutoFormat from the selected range.

APPLY A CONDITIONAL FORMAT TO A RANGE

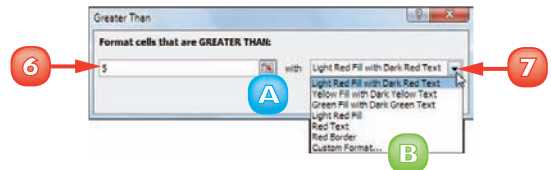
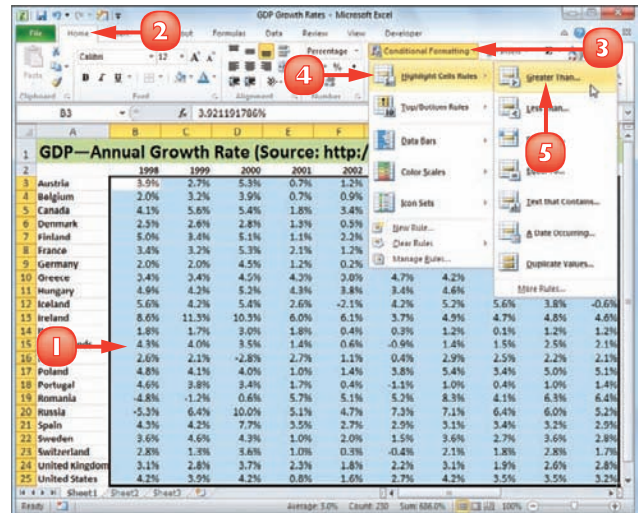
You can make a worksheet easier to analyse by applying a *conditional format* to a range. A conditional format is formatting that Excel applies only to cells that meet the condition you specify. For example, you can tell Excel to apply the formatting only if a cell's value is greater than some specified amount.

When you set up your conditional format, you can specify the font, border, and background pattern, which helps to ensure that the cells that meet your criteria stand out from the other cells in the range.

- 1 Select the range you want to work with.
- 2 Click the **Home** tab.
- 3 Click **Conditional Formatting**.
- 4 Click **Highlight Cells Rules**.
- 5 Click the operator you want to use for your condition.

An operator dialog box appears, such as the Greater Than dialog box shown here.

- 6 Type the value you want to use for your condition.
- A You can also click the collapse dialog box button (⌵) and then click in a worksheet cell. Depending on the operator, you may need to specify two values.
- 7 Click this  and then click the formatting you want to use.
- B To create your own format, click **Custom Format**.



8 Click **OK**.



Excel applies the formatting to cells that meet your condition.

	A	B	C	D	E	F	G	H	I	J	K
1	GDP—Annual Growth Rate (Source: http://swivel.com/)										
2		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
3	Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%	2.1%
4	Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%	1.8%
5	Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%	2.8%
6	Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%	2.1%
7	Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%	2.8%
8	France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%	2.0%
9	Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%	1.1%
10	Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%	3.2%
11	Hungary	4.9%	4.2%	5.2%	4.3%	3.8%	3.4%	4.6%	4.1%	3.5%	3.6%
12	Iceland	5.6%	4.2%	5.4%	2.6%	-2.1%	4.2%	5.2%	5.6%	3.8%	-0.6%
13	Ireland	8.6%	11.3%	10.3%	6.0%	6.1%	3.7%	4.9%	4.7%	4.8%	4.6%
14	Italy	1.8%	1.7%	3.0%	1.8%	0.4%	0.3%	1.2%	0.1%	1.2%	1.2%
15	Netherlands	4.3%	4.0%	3.5%	1.4%	0.6%	-0.9%	1.4%	1.5%	2.5%	2.1%
16	Norway	2.6%	2.1%	-2.8%	2.7%	1.1%	0.4%	2.9%	2.5%	2.2%	2.1%
17	Poland	4.8%	4.1%	4.0%	1.0%	1.4%	3.8%	5.4%	3.4%	5.0%	5.1%
18	Portugal	4.6%	3.8%	3.4%	1.7%	0.4%	-1.1%	1.0%	0.4%	1.0%	1.4%
19	Romania	-4.8%	-1.2%	0.6%	3.7%	5.1%	5.2%	8.1%	4.1%	6.3%	6.4%
20	Russia	-5.3%	0.4%	10.0%	5.1%	4.7%	7.3%	7.1%	16.4%	6.0%	5.2%
21	Spain	4.3%	4.2%	7.7%	3.5%	2.7%	2.9%	3.1%	3.4%	3.2%	2.9%
22	Sweden	3.6%	4.6%	4.3%	1.0%	2.0%	1.5%	3.6%	2.7%	3.6%	2.8%
23	Switzerland	2.8%	1.3%	3.6%	1.0%	0.3%	-0.4%	2.1%	1.8%	2.8%	1.7%
24	United Kingdom	3.1%	2.8%	3.7%	2.3%	1.8%	2.2%	3.1%	1.9%	2.6%	2.8%
25	United States	4.2%	3.9%	4.2%	0.8%	1.6%	2.7%	4.2%	3.5%	3.5%	3.2%



Excel enables you to specify multiple conditional formats. For example, you could set up one condition for cells that are greater than some value and a separate condition for cells that are less than some other value. You can apply a unique format to each condition.



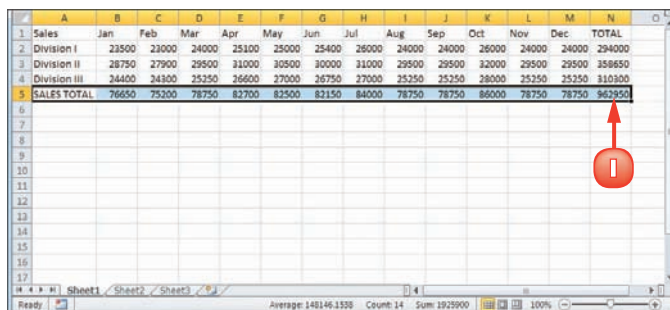
If you no longer require a conditional format, you can delete it. Follow Steps 1 to 3 to select the range and display the Conditional Formatting menu, and then click Manage Rules. Click the conditional format you want to remove and then click Delete Rule.

APPLY A STYLE TO A RANGE

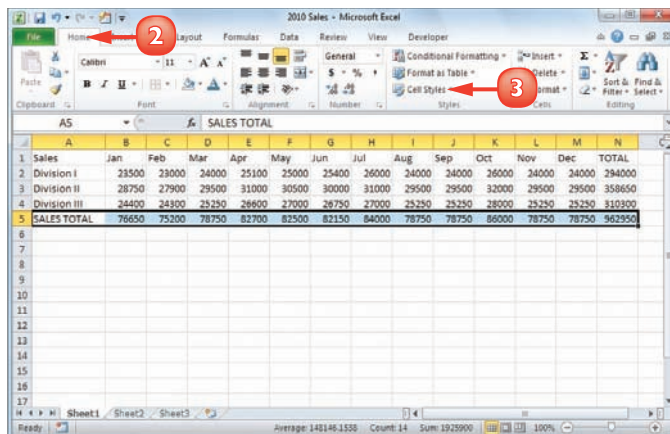
You can reduce the time it takes to format your worksheets by applying Excel's predefined styles to your ranges. Excel comes with more than 20 predefined styles for different worksheet elements, such as headings, as well as two dozen styles associated with the current document theme.

Each style includes the number format, cell alignment, font typeface and size, border and fill colour.

- 1 Select the range you want to format.



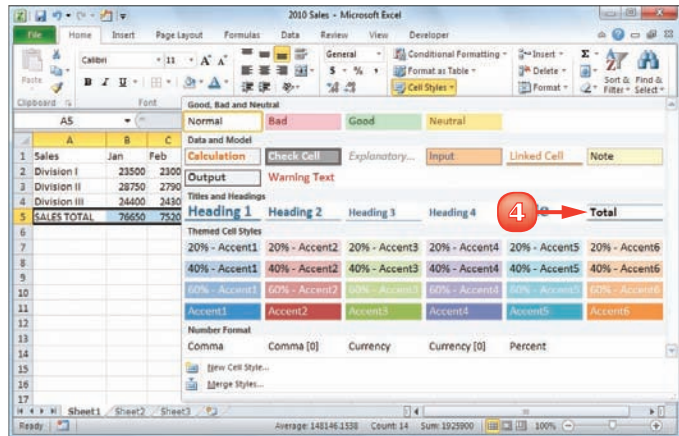
- 2 Click the **Home** tab.
- 3 Click **Cell Styles**.



Excel displays the Cell Styles gallery.

4 Click the style you want to apply.

Note: If the style is not exactly the way you want, you can right-click the style, click **Modify**, and then click **Format** to customise the style.



Excel applies the style to the range.

1	Sales	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2	Division I	23500	23000	24000	25100	25000	25400	26000	24000	24000	26000	24000	24000	294000
3	Division II	28750	27900	29500	31000	30500	30000	31000	29500	32000	29500	29500	29500	358650
4	Division III	24400	24800	25250	26600	27000	26750	27000	25250	25250	28000	25250	25250	316900
5	SALES TOTAL	76650	75200	78750	82700	82500	82150	84000	78750	78750	86000	78750	78750	962950
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														



Excel comes with a gallery of table styles that offer formatting options that highlight the first row, apply different formats to alternating rows, and so on. Select the range that includes your data, click the **Home** tab, and then click **Format as Table**. In the gallery that appears, click the table format you want to apply.



If you find yourself applying the same set of formatting options over and over, you can save the options as a custom style. Apply your formatting to a cell or range and then select that cell or range. Click **Home**, click **Cell Styles**, and then click **New Cell Style**. In the **Style** dialog box, type a name for your style and click **OK**.

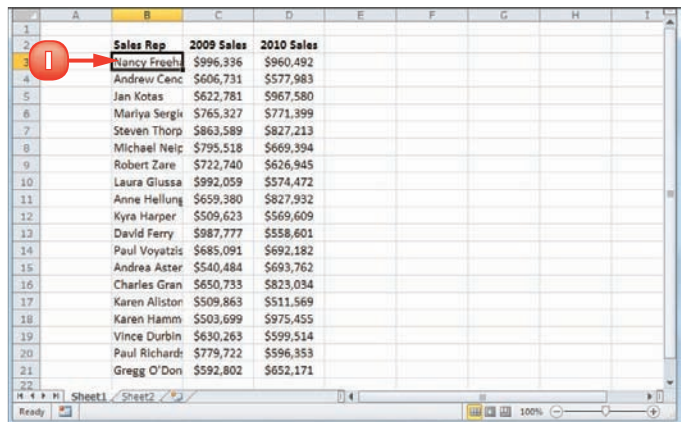
CHANGE THE COLUMN WIDTH

You can make a column of data easier to read by adjusting the column width. For example, if you have a large number or a long line of text in a cell, Excel may display only part of the cell value. To avoid this, you can increase the width of the column. Similarly, if a column only contains a few characters in each cell, you can decrease the width to fit more columns on the screen.

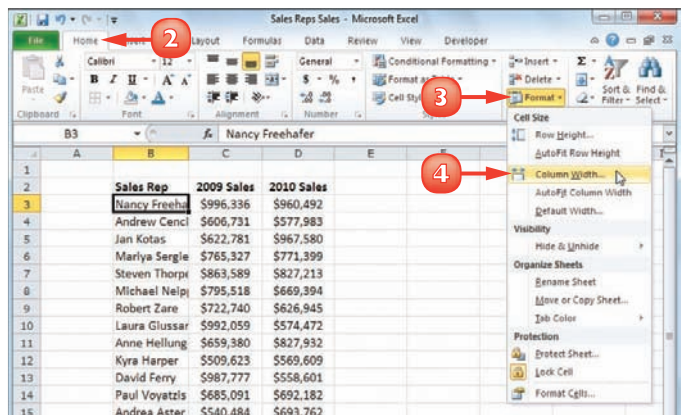
88

Change the Width of One Column

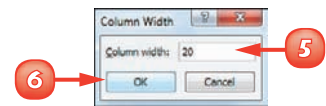
- 1 Click in any cell in the column you want to resize.



- 2 Click the **Home** tab.
- 3 Click **Format**.
- 4 Click **Column Width**.



The Column Width dialog box appears.



- 5 In the Column width text box, type the width you want to use.

- 6 Click **OK**.

Excel adjusts the column width.

A You can also move  over the right edge of the column heading ( changes to ) and then click and drag the edge to set the width.

A screenshot of an Excel spreadsheet. Column B is highlighted in yellow. A blue circle with the letter 'A' is placed over the right edge of column B's heading. The spreadsheet contains data for 'Sales Rep', '2009 Sales', and '2010 Sales'.

	A	B	C	D	E	F	G	H
2		Sales Rep	2009 Sales	2010 Sales				
3		Nancy Freehafer	\$996,336	\$960,492				
4		Andrew Cencini	\$606,731	\$577,983				
5		Jan Kotas	\$622,781	\$967,580				
6		Mariya Sergienko	\$765,327	\$771,399				
7		Steven Thorpe	\$863,589	\$827,213				
8		Michael Neipper	\$795,518	\$669,394				
9		Robert Zare	\$722,740	\$626,945				
10		Laura Giussani	\$992,059	\$574,472				
11		Anne Hellung-Larsen	\$659,380	\$827,932				
12		Kyra Harper	\$509,623	\$569,609				
13		David Ferry	\$987,777	\$558,601				
14		Paul Voyatzis	\$685,091	\$692,182				
15		Andrea Aster	\$340,484	\$693,762				
16		Charles Granek	\$650,733	\$823,034				
17		Karen Aliston	\$509,863	\$511,569				
18		Karen Hammond	\$503,699	\$975,455				
19		Vince Durbin	\$630,263	\$599,514				
20		Paul Richardson	\$779,722	\$596,353				
21		Gregg O'Donoghue	\$592,802	\$652,171				

Change the Width of All Columns

- 1 Click  (or press **Ctrl** + **A**) to select the entire worksheet.
- 2 Follow the steps in this section to set the width you prefer.
- 3 If you have already adjusted some column widths and you want to change all the other widths, click **Home**, click **Format**, and then click **Default Width** to open the Standard Width dialog box.
- 4 Type the new standard column width, and then click **OK**.



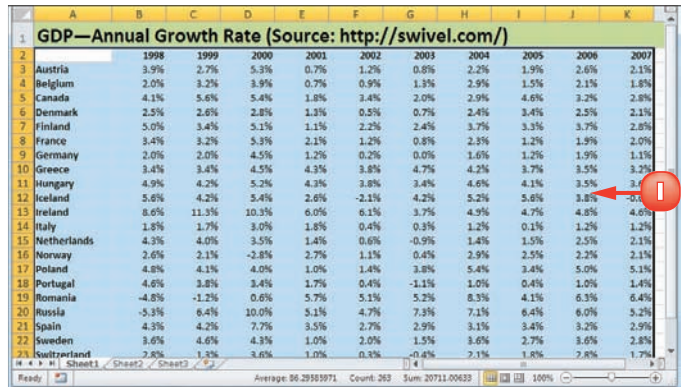
Excel's AutoFit feature automatically adjusts the column width to fit the widest item in a column. Click any cell in the column, click Home, click Format, and then click AutoFit Column Width.

CHANGE THE ROW HEIGHT

You can make your worksheet more visually appealing by increasing the row heights to create more space. This is particularly useful in worksheets that are crowded with text. By increasing the row heights, you add white space above each cell, which makes the text easier to read.

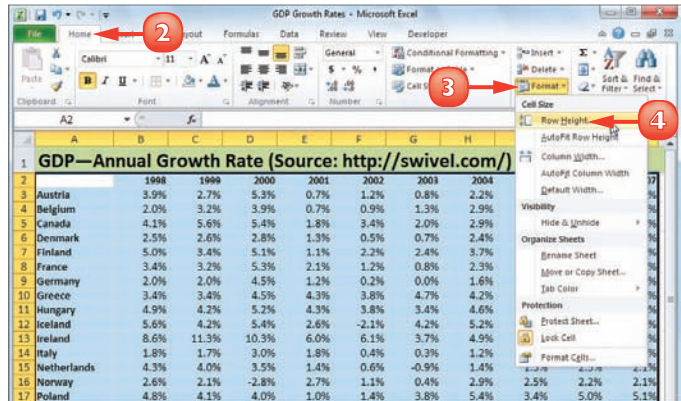
If you want to change the row height to display multiline text within a cell, you must also turn on text wrapping within the cell. See “Wrap Text Within a Cell” later in this chapter.

- 1 Select a range that includes at least one cell in every row you want to resize.

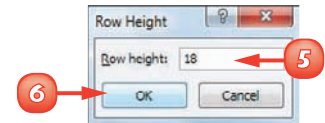


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%	2.1%
Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%	1.8%
Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%	2.8%
Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%	2.1%
Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%	2.8%
France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%	2.0%
Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%	1.1%
Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%	3.2%
Hungary	4.9%	4.2%	5.2%	4.3%	3.8%	3.4%	4.6%	4.1%	3.5%	2.1%
Iceland	5.6%	4.2%	5.4%	2.6%	-2.1%	4.2%	5.2%	5.8%	1.8%	-0.1%
Ireland	8.6%	11.3%	10.3%	6.0%	6.1%	3.7%	4.9%	4.7%	4.8%	4.6%
Italy	1.8%	1.7%	3.0%	1.8%	0.4%	0.3%	1.2%	0.1%	1.2%	1.2%
Netherlands	4.3%	4.0%	3.5%	1.4%	0.6%	-0.9%	1.4%	1.5%	2.5%	2.1%
Norway	2.6%	2.1%	-2.8%	2.7%	1.1%	0.4%	2.9%	2.5%	2.2%	2.1%
Poland	4.8%	4.1%	4.0%	1.0%	1.4%	3.8%	5.4%	3.4%	5.0%	5.1%
Portugal	4.6%	3.8%	3.4%	1.7%	0.4%	-1.1%	1.0%	0.4%	1.0%	1.4%
Romania	-4.8%	-1.2%	0.6%	5.7%	5.1%	5.2%	8.3%	4.1%	6.3%	6.4%
Russia	-5.3%	6.4%	10.0%	5.1%	4.7%	7.3%	7.1%	6.4%	6.0%	5.2%
Spain	4.3%	4.2%	7.7%	3.5%	2.7%	2.9%	3.1%	3.4%	3.2%	2.9%
Sweden	3.6%	4.6%	4.3%	1.0%	2.0%	1.5%	3.6%	2.7%	3.6%	2.8%
Switzerland	2.8%	1.3%	3.6%	1.0%	0.3%	-0.4%	7.1%	1.8%	2.8%	1.7%

- 2 Click the **Home** tab.
- 3 Click **Format**.
- 4 Click **Row Height**.



The Row Height dialog box appears.



5 In the Row height text box, type the height you want to use.

6 Click **OK**.

Excel adjusts the row heights.

A You can also move  over the bottom edge of a row heading ( changes to ) and then click and drag the edge to set the height.

The image shows an Excel spreadsheet titled 'GDP—Annual Growth Rate (Source: http://swivel.com/)'. The spreadsheet has columns for years from 1998 to 2007 and rows for various countries. A blue circle with the letter 'A' is placed over the row heading for row 4, which is 'Belgium'.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2										
3	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%	2.1%
4	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%	1.8%
5	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%	2.8%
6	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%	2.1%
7	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%	2.8%
8	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%	2.0%
9	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%	1.1%
10	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%	3.2%
11	4.9%	4.2%	5.2%	4.3%	3.8%	3.4%	4.6%	4.1%	3.5%	3.6%
12	5.6%	4.2%	5.4%	2.6%	-2.1%	4.2%	5.2%	5.6%	3.8%	-0.6%
13	8.6%	11.3%	10.3%	6.0%	6.1%	3.7%	-4.9%	4.7%	4.8%	4.6%
14	1.8%	1.7%	3.0%	1.8%	0.4%	0.3%	1.2%	0.1%	1.2%	1.2%
15	4.3%	4.0%	3.5%	1.4%	0.6%	-0.9%	1.4%	1.5%	2.5%	2.1%
16	2.6%	2.1%	-2.8%	2.7%	1.1%	0.4%	2.9%	2.5%	2.2%	2.1%
17	4.8%	4.1%	4.0%	1.0%	1.4%	3.8%	5.4%	3.4%	5.0%	5.1%
18	4.6%	3.6%	3.4%	1.7%	0.4%	-1.1%	1.0%	0.4%	1.0%	1.4%

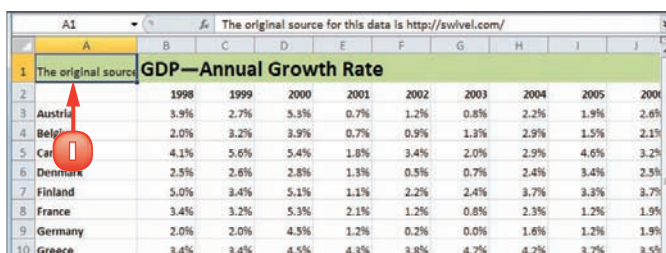
 You can use Excel's AutoFit feature to automatically adjust the row height to fit the tallest item in a row. Click in any cell in the row, click Home, click Format and click AutoFit Row Height. Alternatively, move  over the bottom edge of the row heading ( changes to ) and then double-click.

 To change all the row heights at once, click  (or press **Ctrl + A**) to select the entire worksheet. You can then follow the steps in this section to set the height by hand or move  over the bottom edge of any row heading ( changes to ) and then click and drag the edge.

WRAP TEXT WITHIN A CELL

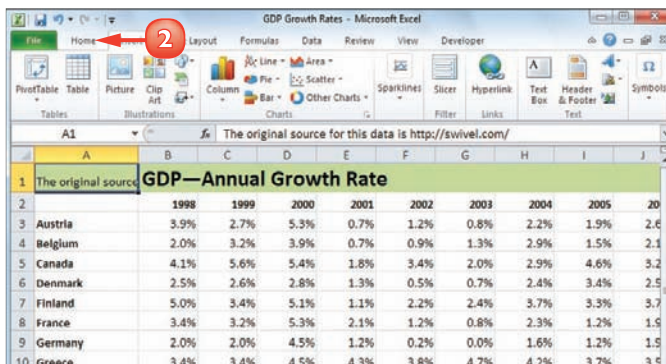
You can make a long cell entry easier to read by wrapping the text within the cell. If you type more text in a cell than can fit horizontally, Excel displays the text over the next cell, if that cell is empty, or displays only part of the text if the next cell contains data. To prevent Excel from showing truncated cell data, you can format the cell to wrap the text within the cell. In most cases, Excel increases the row height just enough so that it can display all the text given the cell's current width.

- 1 Select the cell that you want to format.



	A	B	C	D	E	F	G	H	I	J
1	The original source	GDP—Annual Growth Rate								
2		1998	1999	2000	2001	2002	2003	2004	2005	2006
3	Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%
4	Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%
5	Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%
6	Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%
7	Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%
8	France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%
9	Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%
10	Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%

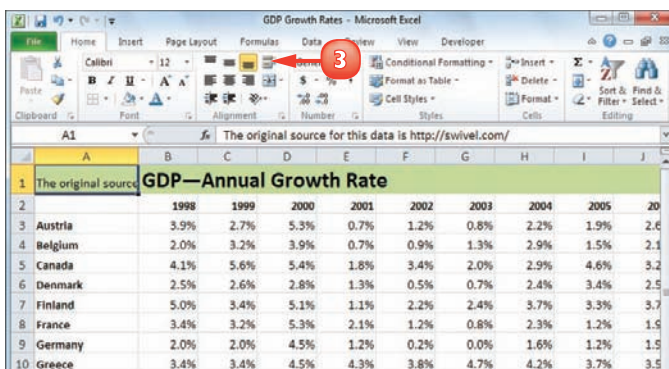
- 2 Click the **Home** tab.



	A	B	C	D	E	F	G	H	I	J
1	The original source	GDP—Annual Growth Rate								
2		1998	1999	2000	2001	2002	2003	2004	2005	2006
3	Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%
4	Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%
5	Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%
6	Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%
7	Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%
8	France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%
9	Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%
10	Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%

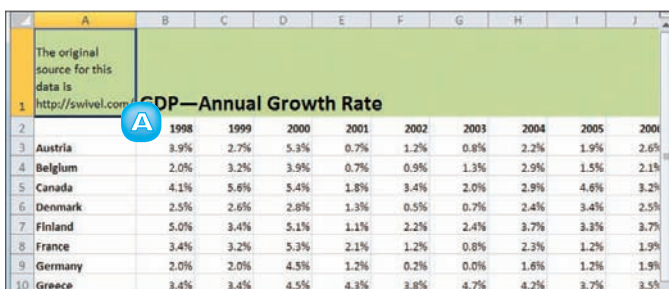
- 3 Click **Wrap Text** (¶).

Excel turns on text wrapping for the selected cell.



	1998	1999	2000	2001	2002	2003	2004	2005	2006
Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%
Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%
Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%
Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%
Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%
France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%
Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%
Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%

- A If the cell has more text than can fit horizontally, Excel wraps the text onto multiple lines and increases the row height to compensate.



	1998	1999	2000	2001	2002	2003	2004	2005	2006
The original source for this data is http://swivel.com/									
Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%
Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%
Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	4.6%	3.2%
Denmark	2.5%	2.6%	2.8%	1.3%	0.5%	0.7%	2.4%	3.4%	2.5%
Finland	5.0%	3.4%	5.1%	1.1%	2.2%	2.4%	3.7%	3.3%	3.7%
France	3.4%	3.2%	5.3%	2.1%	1.2%	0.8%	2.3%	1.2%	1.9%
Germany	2.0%	2.0%	4.5%	1.2%	0.2%	0.0%	1.6%	1.2%	1.9%
Greece	3.4%	3.4%	4.5%	4.3%	3.8%	4.7%	4.2%	3.7%	3.5%

View Text Without Turning on Text Wrapping

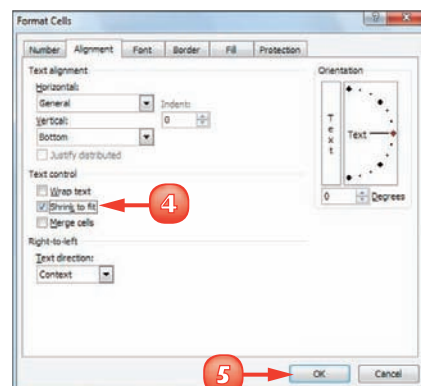
- 1 You can widen the column until you see all your text; see “Change the Column Width” earlier in this chapter.

- 2 You can reduce the cell font size. One way to do this is to choose a smaller value in the Font Size list of the Home tab’s Font group.

- 3 An easier way is to click the Alignment group’s dialog box launcher (¶) to open the Format Cells dialog box with the Alignment tab displayed.

- 4 Click the **Shrink to fit** check box (☐ changes to ☑).

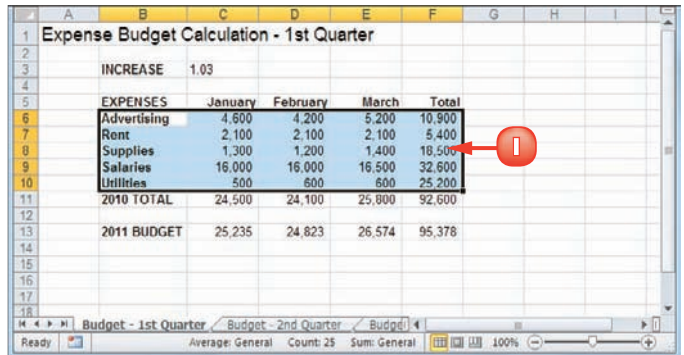
- 5 Click **OK**.



ADD BORDERS TO A RANGE

You can make a range stand out from the rest of your worksheet data by adding a border around it. You can also use borders to make a range easier to read. For example, if your range has totals on the bottom row, you can add a double border above the totals. Borders are also useful if a worksheet has several ranges that appear close to each other. By surrounding each range with a border, you make it clearer that your worksheet consists of multiple, separate ranges.

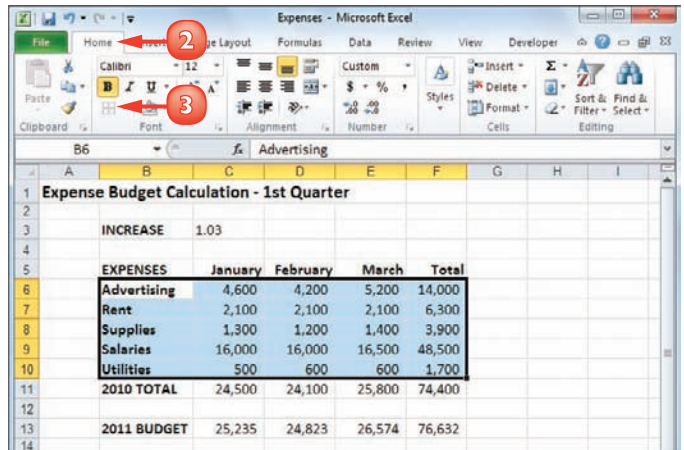
- 1 Select the range that you want to format.



Expense Budget Calculation - 1st Quarter				
INCREASE	1.03			
EXPENSES	January	February	March	Total
Advertising	4,600	4,200	5,200	10,900
Rent	2,100	2,100	2,100	5,400
Supplies	1,300	1,200	1,400	18,500
Salaries	16,000	16,000	16,500	32,800
Utilities	500	600	600	25,200
2010 TOTAL	24,500	24,100	25,800	92,600
2011 BUDGET	25,235	24,823	26,574	95,378

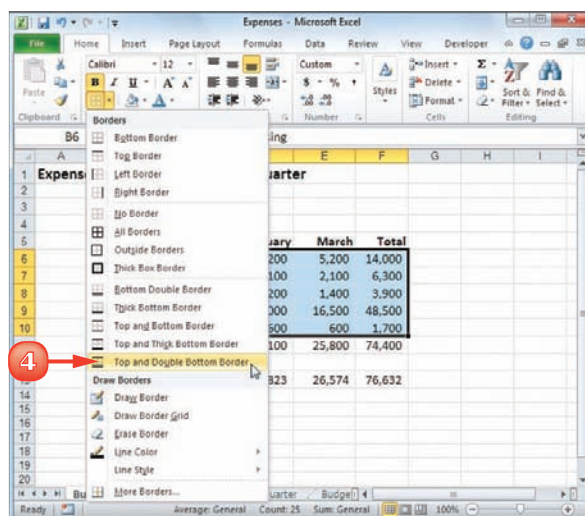
- 2 Click the **Home** tab.

- 3 Click the **Borders** button.



Expense Budget Calculation - 1st Quarter				
INCREASE	1.03			
EXPENSES	January	February	March	Total
Advertising	4,600	4,200	5,200	14,000
Rent	2,100	2,100	2,100	6,300
Supplies	1,300	1,200	1,400	3,900
Salaries	16,000	16,000	16,500	48,500
Utilities	500	600	600	1,700
2010 TOTAL	24,500	24,100	25,800	74,400
2011 BUDGET	25,235	24,823	26,574	76,632

- 4 Click the type of border you want to use.



- A Excel applies the border to the range.

	A	B	C	D	E	F	G	H	I
1	Expense	Budget Calculation - 1st Quarter							
2									
3		INCREASE	1.03						
4									
5		EXPENSES	January	February	March	Total			
6		Advertising	4,600	4,200	5,200	10,900			
7		Rent	2,100	2,100	2,100	5,400			
8		Supplies	1,300	1,200	1,400	18,500			
9		Salaries	16,000	16,000	16,500	32,600			
10		Utilities	500	600	600	25,200			
11		2010 TOTAL	24,500	24,100	25,800	92,600			
12									
13		2011 BUDGET	25,235	24,823	26,574	95,378			
14									



You can make your borders stand out from the gridlines by clicking the Borders , clicking Line Style, and then selecting a thicker border style. You can click Line Color and then click a colour that is not a shade of grey. You can also turn off the worksheet gridlines by clicking the View tab. In the Show group, click the Gridlines check box ( changes to ).



You can draw a border by hand. Click the Borders  and then click Draw Border. Use the Line Style and Line Color lists to configure your border. Click a cell edge to add a border to that edge; click and drag a range to add a border around that range. If you prefer to create a grid where the border surrounds every cell, click the Draw Border Grid command instead.

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- 100** Build a Formula
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- 104** Add a Function to a Formula
- 106** Add a Row or Column of Numbers
- 108** Build an AutoSum Formula
- 110** Add a Range Name to a Formula
- 112** Reference Another Worksheet Range in a Formula
- 114** Move or Copy a Formula

5

BUILDING FORMULAS AND FUNCTIONS

Are you ready to start creating powerful and useful worksheets by building your own formulas? This chapter explains formulas, shows you how to build them, and shows you how to incorporate Excel's versatile worksheet functions into your formulas. You also learn useful formula techniques such as how to sum a row or column of numbers, how to create quick formulas using the AutoSum feature, how to use range names and ranges from other workbooks in your formulas, and how to move and copy formulas.

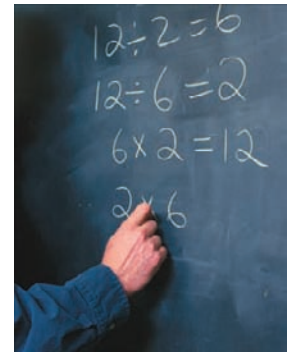


UNDERSTANDING EXCEL FORMULAS

To get the most out of Excel, you need to understand formulas so that you can perform calculations on your worksheet data. You need to know the components of a formula, you need to understand arithmetic and comparison formulas, and you need to understand the importance of precedence when building a formula.

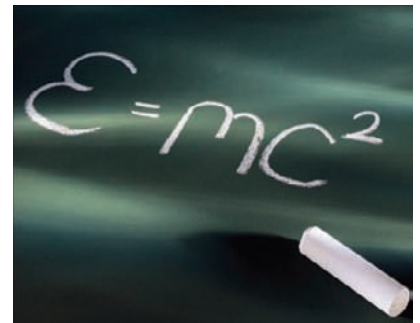
Formulas

A *formula* is a set of symbols and values that perform some kind of calculation and produce a result. All Excel formulas have the same general structure: an equals sign (=) followed by one or more operands and operators. The equals sign tells Excel to interpret everything that follows in the cell as a formula. For example, if you type **=5+8** into a cell, Excel interprets the 5+8 text as a formula and displays the result (13) in the cell.



Operands

Every Excel formula includes one or more *operands*, which are the data that Excel uses in the calculation. The simplest type of operand is a constant value, which is usually a number. However, most Excel formulas include references to worksheet data, which can be a cell address (such as B1), a range address (such as B1:B5), or a range name. Finally, you can also use any of Excel's built-in functions as an operand.



Operators

In an Excel formula that contains two or more operands, each operand is separated by an *operator*, which is a symbol that combines the operands in some way, usually mathematically. Example operators include the plus sign (+) and the multiplication sign (*). For example, the formula **=B1+B2** adds the values in cells B1 and B2.



Arithmetic Formulas

An arithmetic formula combines numeric operands – numeric constants, functions that return numeric results, and fields or items that contain numeric values – with mathematical operators to perform a calculation. Because Excel worksheets primarily deal with numeric data, arithmetic formulas are by far the most common formulas used in worksheet calculations.

There are seven arithmetic operators you can use to construct arithmetic formulas:

Operator	Name	Example	Result
+	Addition	=10 + 5	15
–	Subtraction	=10 – 5	5
–	Negation	=–10	–10
*	Multiplication	=10 * 5	50
/	Division	=10 / 5	2
%	Percentage	=10%	0.1
^	Exponentiation	=10 ^ 5	100000

Comparison Formulas

A comparison formula combines numeric operands – numeric constants, functions that return numeric results, and fields or items that contain numeric values – with special operators to compare one operand with another. A comparison formula always returns a logical result. This means that if the comparison is true, then the formula returns the value 1, which is equivalent to the logical value TRUE; if the comparison is false, then the formula returns the value 0, which is equivalent to the logical value FALSE.

There are six operators you can use to construct comparison formulas:

Operator	Name	Example	Result
=	Equal to	=10 = 5	0
<	Less than	=10 < 5	0
< =	Less than or equal to	=10 < = 5	0
>	Greater than	=10 > 5	1
> =	Greater than or equal to	=10 > = 5	1
< >	Not equal to	=10 < > 5	1

Operator Precedence

Most of your formulas include multiple operands and operators. In many cases, the order in which Excel performs the calculations is crucial. Consider the formula **=3+5^2**. If you calculate from left to right, the answer you get is 64 (3+5 equals 8 and 8^2 equals 64). However, if you perform the exponentiation first and then the addition, the result is 28 (5^2 equals 25 and 3+25 equals 28).

To solve this problem, Excel evaluates formulas according to a predefined order of precedence, which is determined by the formula operators:

Operator	Operation	Precedence
()	Parentheses	1st
–	Negation	2nd
%	Percentage	3rd
^	Exponentiation	4th
* and /	Multiplication and division	5th
+ and –	Addition and subtraction	6th
= < < = > > = < >	Comparison	7th

BUILD A FORMULA

You can add a formula to a worksheet cell using a technique similar to adding data to a cell. To ensure that Excel treats the text as a formula, be sure to begin with an equals sign (=) and then type your operands and operators.

When you add a formula to a cell, Excel displays the formula result in the cell, not the formula itself. For example, if you add the formula **=C3+C4** to a cell, that cell displays the sum of the values in cells C3 and C4. To see the formula, click the cell and examine the Formula bar.

1 Click in the cell in which you want to build the formula.

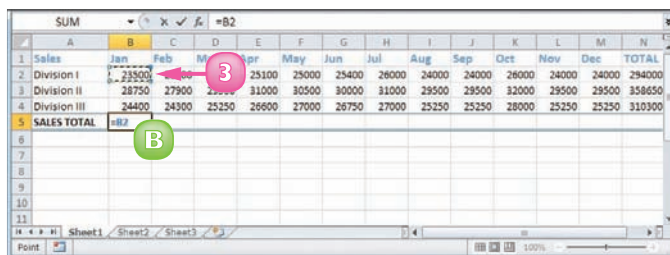
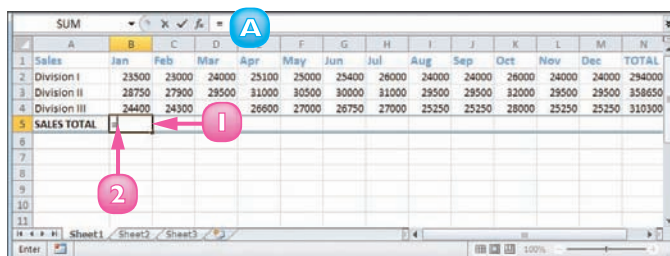
2 Type **=**.

A Your typing also appears in the Formula bar.

Note: You can also type the formula into the Formula bar.

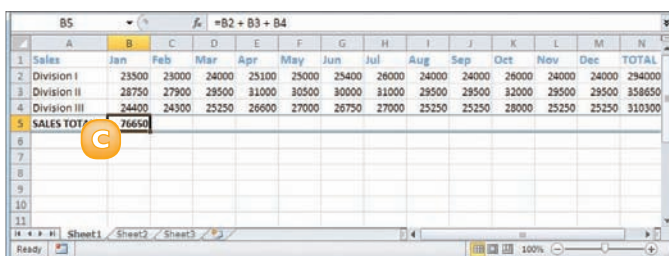
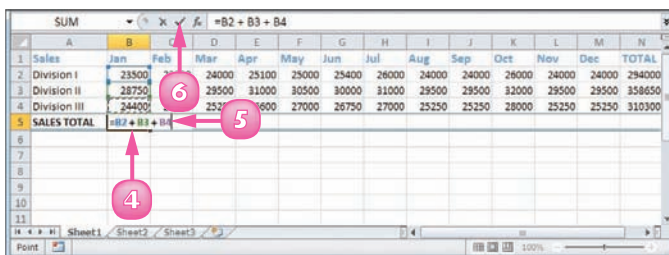
3 Type or click an operand. For example, to reference a cell in your formula, click in the cell.

B Excel inserts the address of the clicked cell into the formula.



- 4 Type an operator.
- 5 Repeat Steps 3 and 4 to add other operands and operators to your formula.
- 6 Click ☒ or press **Enter**.

C Excel displays the formula result in the cell.



Excel displays the formula result in the cell but it keeps track of the original formula. To display the formula again, you have two choices: click the cell and then edit the formula using the Formula bar or double-click the cell to display the original formula in the cell and then edit the formula. Press **Enter** when you finish editing the formula.



You can configure the worksheet to show the formulas instead of their results. Click **File, Options** to open the Excel Options dialog box. Click the **Advanced** tab, scroll to the **Display options for this worksheet section**, click the **Show formulas in cells instead of their calculated results** check box (☐ changes to ☒) and then click **OK**. You can also toggle between formulas and results by pressing **Ctrl + `**.

UNDERSTANDING EXCEL FUNCTIONS

To build powerful and useful formulas, you often need to include one or more Excel functions as operands. You need to understand the advantages of using functions, you need to know the basic structure of every function, and you need to review Excel's function types.

Functions

A *function* is a predefined formula that performs a specific task. For example, the SUM function calculates the total of a list of numbers and the PMT (payment) function calculates a loan or mortgage payment. You can use functions on their own, preceded by =, or as part of a larger formula.



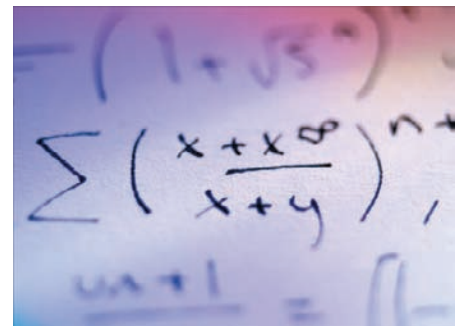
Function Advantages

Functions are designed to take you beyond the basic arithmetic and comparison formulas by offering two main advantages. First, functions make simple but cumbersome formulas easier to use. For example, calculating a loan payment requires a complex formula, but Excel's PMT function makes this easy. Second, functions enable you to include complex mathematical expressions in your worksheets that otherwise would be difficult or impossible to construct using simple arithmetic operators.



Function Structure

Every worksheet function has the same basic structure: NAME(Argument1, Argument2, ...). The NAME part identifies the function. In worksheet formulas and custom PivotTable formulas, the function name always appears in uppercase letters: PMT, SUM, AVERAGE, and so on. The items that appear within the parentheses are the functions' *arguments*. The arguments are the inputs that functions use to perform calculations. For example, the function SUM(A1,B2,C3) adds the values in cells A1, B2, and C3.



Statistical Functions

The following table lists some common statistical functions:

Function	Description
AVERAGE(number1,number2,...)	Returns the average of the arguments
COUNT(number1,number2,...)	Counts the numbers in the argument list
MAX(number1,number2,...)	Returns the maximum value of the arguments
MEDIAN(number1,number2,...)	Returns the median value of the arguments
MIN(number1,number2,...)	Returns the minimum value of the arguments
MODE(number1,number2,...)	Returns the most common value of the arguments
STDEV(number1,number2,...)	Returns the standard deviation based on a sample
STDEVP(number1,number2,...)	Returns the standard deviation based on an entire population

Financial Functions

Most of Excel's financial functions use the following arguments:

Argument	Description
rate	The fixed rate of interest over the term of the loan or investment
nper	The number of payments or deposit periods over the term of the loan or investment
pmt	The periodic payment or deposit
pv	The present value of the loan (the principal) or the initial deposit in an investment
fV	The future value of the loan or investment
type	The type of payment or deposit: 0 (the default) for end-of-period payments or deposits; 1 for beginning-of-period payments or deposits

The following table lists some common financial functions:

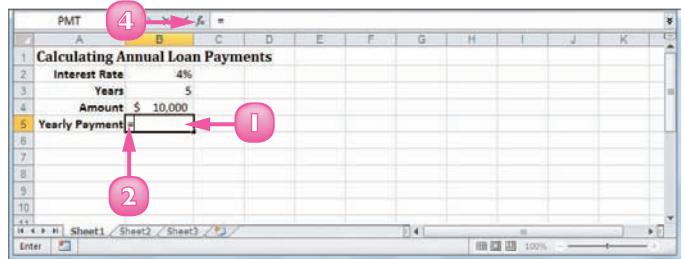
Function	Description
FV(rate,nper,pmt,pv,type)	Returns the future value of an investment or loan
IPMT(rate,per,nper,pv,fv,type)	Returns the interest payment for a specified period of a loan
NPER(rate,pmt,pv,fv,type)	Returns the number of periods for an investment or loan
PMT(rate,nper,pv,fv,type)	Returns the periodic payment for a loan or investment
PPMT(rate,per,nper,pv,fv,type)	Returns the principal payment for a specified period of a loan
PV(rate,nper,pmt,fv,type)	Returns the present value of an investment
RATE(nper,pmt,pv,fv,type,guess)	Returns the periodic interest rate for a loan or investment

ADD A FUNCTION TO A FORMULA

To get the benefit of an Excel function, you need to use it within a formula. You can use a function as the only operand in the formula, or you can include the function as part of a larger formula.

In “Understanding Excel Functions,” you learned that Excel has many functions and that most functions take one or more arguments, but it is often difficult to remember a function's arguments and the order in which they appear. To make it easy to choose the function you need, and to add the appropriate arguments, Excel offers the Insert Function feature.

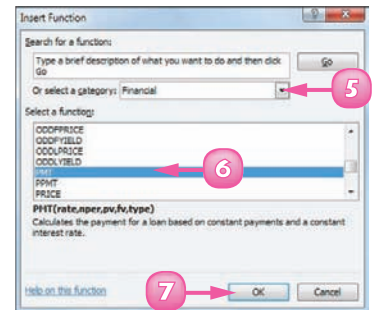
- 1 Click in the cell in which you want to build the formula.
- 2 Type **=**.
- 3 Type any operands and operators you need before adding the function.



- 4 Click the **Insert Function** button ().

The Insert Function dialog box appears.

- 5 Click and then click the category that contains the function you want to use.
- 6 Click the function.
- 7 Click **OK**.



The Function Arguments dialog box appears.

8 Click inside an argument box.

9 Click the cell that contains the argument value.

You can also type the argument value.

10 Repeat Steps **8** and **9** to fill as many arguments as you need.

A The function result appears here.

11 Click **OK**.

B Excel adds the function to the formula.

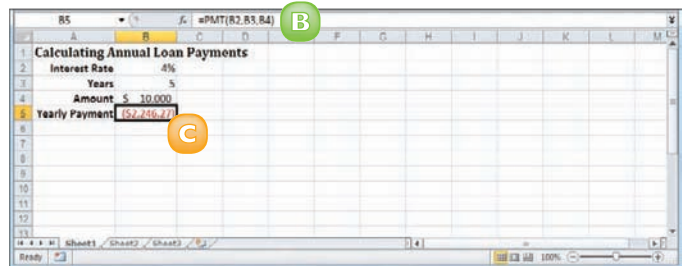
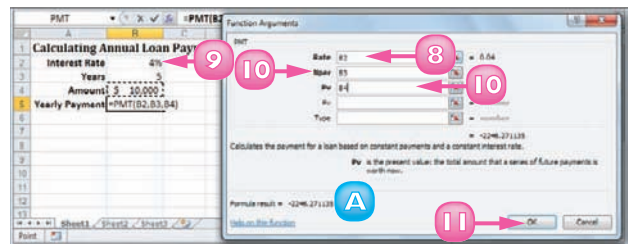
C Excel displays the formula result.

Note: If your formula requires any other operands and operators, press **F2** and type what you need to complete your formula.

Note: In this example, the result appears in parentheses to indicate a negative value. In loan calculations, money that you pay out is always a negative amount.



You do not necessarily have to specify a value for every function argument. In the PMT function, for example, the rate, nper and pv arguments are required, but the fv and type arguments are optional. When the Function Arguments dialog box displays a result, you have entered all of the required arguments.



If your loan payment worksheet contains an annual interest rate and a loan term in years, you need to convert the rate and term to monthly values to calculate the monthly payment using the PMT function. That is, you divide the annual interest rate by 12 and multiply the term by 12. For example, if the annual rate is in cell B2, the term in years is in B3, and the loan amount is in B4, the function $PMT(B2/12, B3*12, B4)$ calculates the monthly payment.

ADD A ROW OR COLUMN OF NUMBERS

You can quickly add worksheet numbers by building a formula that uses Excel's SUM function.

Adding a range of numbers is probably the most common worksheet calculation, so it is useful to know how to use Excel's SUM function. Although you can use SUM to add individual cells or a rectangular range of cells, you will most often need to add a row or a column of data. In this case, when you use the SUM function in a formula, you can specify as the function's argument a reference to a row or a column of numbers.

1 Click in the cell where you want the sum to appear.

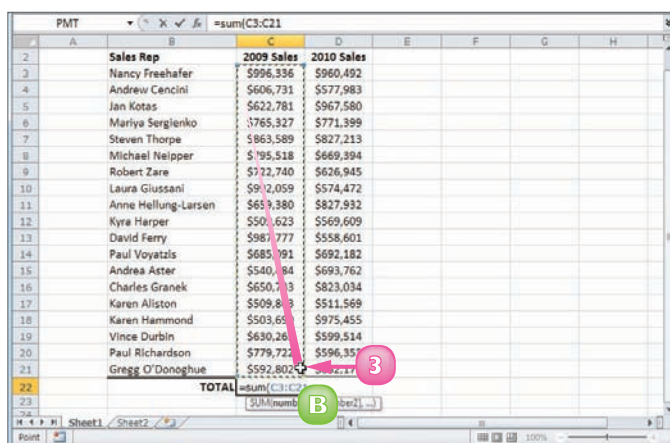
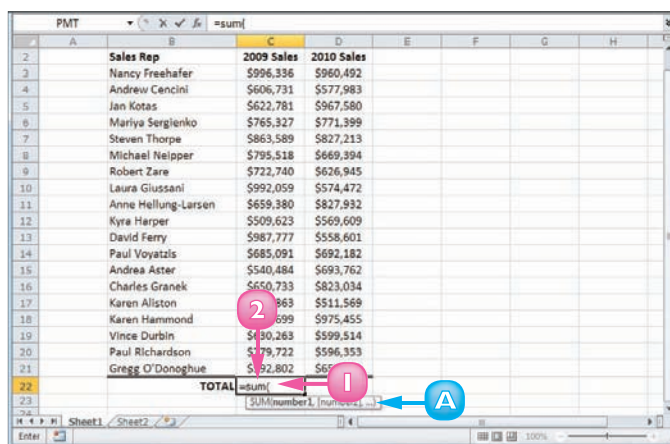
2 Type `=sum(`.

A When you begin a function, Excel displays a banner that shows you the function's arguments.

Note: In the function banner, arguments in bold are required and arguments that appear in square brackets are optional.

3 Use the mouse  to click and drag the row or column of numbers that you want to add.

B Excel adds a reference for the range to the formula.



- 4 Type).
- 5 Click ☒ or press **Enter**.

	A	B	C	D	E	F	G	H
2		Sales Rep	2009 Sales	2010 Sales				
3		Nancy Freehafer	\$996,336	\$960,492				
4		Andrew C.	\$606,731	\$577,983				
5		Jan Kotas	\$622,781	\$967,580				
6		Mariya Sergienko	\$765,327	\$771,399				
7		Steven Thorpe	\$863,589	\$827,213				
8		Michael Neipper	\$795,518	\$669,394				
9		Robert Zare	\$722,740	\$626,945				
10		Laura Giussani	\$992,059	\$574,472				
11		Anne Hellung-Larsen	\$659,380	\$827,932				
12		Kyra Harper	\$509,623	\$569,609				
13		David Ferry	\$987,777	\$558,601				
14		Paul Voyatzis	\$685,091	\$692,182				
15		Andrea Aster	\$540,484	\$693,762				
16		Charles Granek	\$650,733	\$823,034				
17		Karen Allston	\$509,863	\$511,569				
18		Karen Hammond	\$503,699	\$975,455				
19		Vince Durbin	\$630,263	\$599,514				
20		Paul Richardson	\$779,722	\$596,353				
21		Gregg O'Donoghue	\$592,802	\$652,171				
22		TOTAL	=sum(C3:C21)					

- C Excel enters the formula.
- D Excel displays the sum in the cell.

	A	B	C	D	E	F	G	H
2		Sales Rep	2009 Sales	2010 Sales				
3		Nancy Freehafer	\$996,336	\$960,492				
4		Andrew Cancini	\$606,731	\$577,983				
5		Jan Kotas	\$622,781	\$967,580				
6		Mariya Sergienko	\$765,327	\$771,399				
7		Steven Thorpe	\$863,589	\$827,213				
8		Michael Neipper	\$795,518	\$669,394				
9		Robert Zare	\$722,740	\$626,945				
10		Laura Giussani	\$992,059	\$574,472				
11		Anne Hellung-Larsen	\$659,380	\$827,932				
12		Kyra Harper	\$509,623	\$569,609				
13		David Ferry	\$987,777	\$558,601				
14		Paul Voyatzis	\$685,091	\$692,182				
15		Andrea Aster	\$540,484	\$693,762				
16		Charles Granek	\$650,733	\$823,034				
17		Karen Allston	\$509,863	\$511,569				
18		Karen Hammond	\$503,699	\$975,455				
19		Vince Durbin	\$630,263	\$599,514				
20		Paul Richardson	\$779,722	\$596,353				
21		Gregg O'Donoghue	\$592,802	\$652,171				
22		TOTAL	\$13,414,518					



The SUM function works not only with simple row and column ranges, but with any rectangular range. After you type =sum(, use the mouse  to click and drag the entire range that you want to sum.



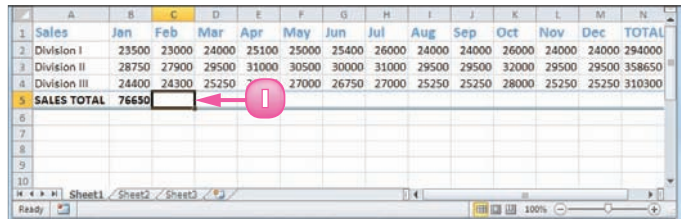
The SUM function can accept multiple arguments, so you can enter as many cells or ranges as you need. After you type =sum(, hold down **Ctrl** and either click each cell that you want to include in the total, or use the mouse  to click and drag each range that you want to sum.

BUILD AN AUTOSUM FORMULA

You can reduce the time it takes to build a worksheet as well as reduce the possibility of errors by using Excel's AutoSum feature. By default, the AutoSum tool adds a SUM function formula to a cell and automatically adds the function arguments based on the structure of the worksheet data. However, you can also use AutoSum to quickly create simple formulas that use common functions, such as AVERAGE, COUNT, MAX, or MIN.

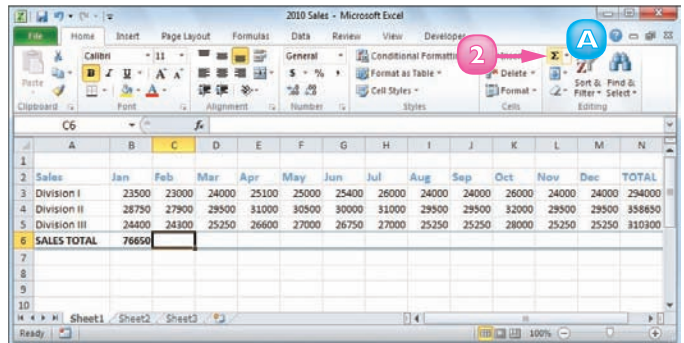
- 1** Click in the cell where you want the sum to appear.

Note: For AutoSum to work, the cell you select should be below or to the right of the range you want to sum.



- 2** Click the **Sum** button (Σ).

A If you want to use a function other than SUM, click the **Sum** Σ and then click the operation you want to use: Average, Count Numbers, Max, or Min.



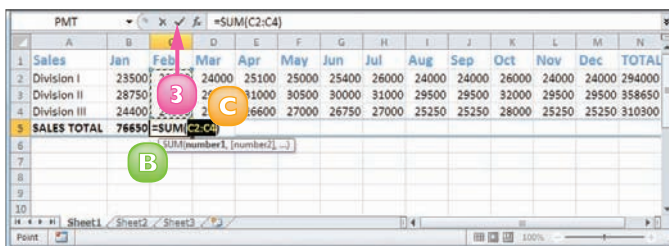
- B** Excel adds a SUM function formula to the cell.

Note: You can also press **Alt** + **=** instead of clicking **Σ**.

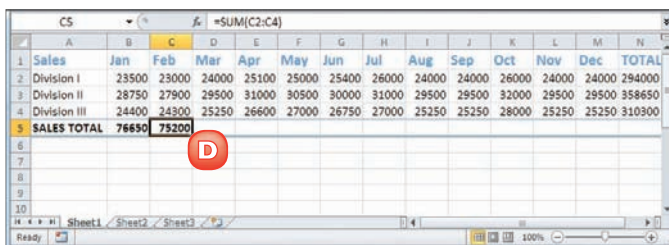
- C** Excel guesses that the range above (or to the left) of the cell is the one you want to add. If Excel guessed wrong, select the correct range.

- 3** Click ☒ or press **Enter**.

- D** Excel displays the sum.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Sales	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2	Division I	23500	23000	24000	25100	25000	25400	26000	24000	24000	26000	24000	24000	294000
3	Division II	28750	27900	29500	31000	30500	30000	31000	29500	29500	32000	29500	29500	358650
4	Division III	24400	24300	25250	26600	27000	26750	27000	25250	25250	28000	25250	25250	310300
5	SALES TOTAL	76650	=SUM(C2:C4)											
6														
7														
8														
9														
10														



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Sales	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2	Division I	23500	23000	24000	25100	25000	25400	26000	24000	24000	26000	24000	24000	294000
3	Division II	28750	27900	29500	31000	30500	30000	31000	29500	29500	32000	29500	29500	358650
4	Division III	24400	24300	25250	26600	27000	26750	27000	25250	25250	28000	25250	25250	310300
5	SALES TOTAL	76650	75200											
6														
7														
8														
9														
10														



You can use Excel's status bar to see the sum of a range without adding an AutoSum formula. When you select any range, Excel adds the range's numeric values and displays the result on the right side of the status bar – for example, Sum: 75200. By default, Excel also displays the Average and Count. If you want to see a different calculation, right-click the result in the status bar and then click the operation you want to use: Numerical Count, Maximum, or Minimum.



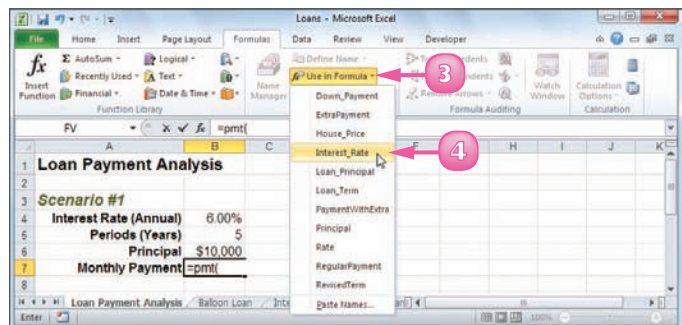
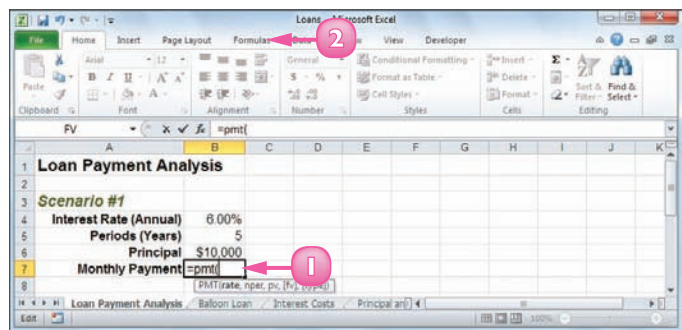
If the range you want to sum is a vertical column with a blank cell below it or a horizontal row with a blank cell to its right, select the range (including the blank cell) and then click **Σ** or press **Alt** + **=**. Excel populates the blank cell with a SUM formula that totals the selected range.

ADD A RANGE NAME TO A FORMULA

You can make your formulas easier to build, more accurate, and easier to read by using range names as operands. For example, the formula **=SUM(B2:B10)** is difficult to decipher on its own because you cannot tell at a glance what kind of data is in the range B2:B10. However, with the formula **=SUM(Expenses)**, it is immediately obvious that the formula is adding a range of expense values.

If you are not sure what range names are or how to define a range name, see Chapter 3 to learn more about range names, including how to define names for ranges in Excel.

- 1 Click in the cell in which you want to build the formula, type **=**, and then type any operands and operators you need before adding the range name.
- 2 Click the **Formulas** tab.
- 3 Click **Use in Formula**.
Excel displays a list of the range names in the current workbook.
- 4 Click the range name you want to use.



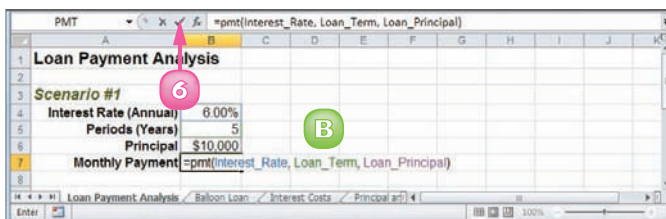
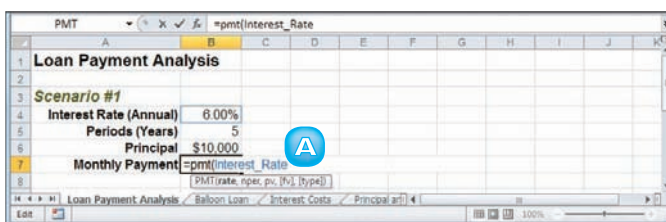
A Excel inserts the range name into the formula.

5 Type any operands and operators you need to complete your formula.

B If you need to insert other range names into your formula, repeat Steps **2** to **5** for each name.

6 Click ☒ or press **Enter**.

Excel calculates the formula result.



If you create a range name after building a formula, you can convert the range reference to the range name. Click the Formulas tab, the Define Name , and then Apply Names to open the Apply Names dialog box. Click the range name you want to use and then click OK. Excel replaces the associated range references with the range name in each formula in the current worksheet.



As you build your formula, you can type the range name, if you know it. You can also click a cell or select a range with a defined name. Excel adds the name to your formula instead of the range address. To work from a list of defined range names, click an empty area of the worksheet, click Formulas, Use in Formula, Paste Names, and then click Paste List.

REFERENCE ANOTHER WORKSHEET RANGE IN A FORMULA

You can add flexibility to your formulas by adding references to ranges that reside in other worksheets. This enables you to take advantage of work you have done in other worksheets so you do not have to waste time repeating your work on the current worksheet.

You can even add references to ranges that reside in other workbooks.

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- 1 Click in the cell in which you want to build the formula, type **=**, and then type any operands and operators you need before adding the range reference.

	2nd Quarter	Jul	Aug	Sep	3rd Quarter	Oct	Nov	Dec	4th Quarter	TOTAL
1 Sales										
2 Division I	75,500	36,000	34,000	34,000	74,000	36,000	34,000	34,000	74,000	384,000
3 Division II	91,500	31,000	29,500	29,500	90,000	32,000	29,500	29,500	91,000	358,500
4 Division III	80,350	27,000	25,250	25,250	77,300	28,000	25,250	25,250	78,800	310,000
5 SALES TOTAL	247,350	94,000	88,750	88,750	241,300	96,000	88,750	88,750	243,800	962,500
6 Expenses										
7 Cost of Goods	19,788	6,720	6,300	6,300	19,320	6,880	6,300	6,300	19,480	77,004
8 Advertising	15,750	5,500	5,200	5,200	15,800	4,500	5,200	5,200	14,900	60,550
9 Rent	6,900	2,100	2,100	2,100	6,900	2,100	2,100	2,100	6,900	26,200
10 Supplies	2,950	1,800	1,400	1,400	4,100	1,250	1,500	1,400	4,000	15,950
11 Salaries	50,000	17,000	17,000	17,000	51,000	17,000	17,500	17,500	52,000	201,500
12 Shipping	44,250	15,000	14,500	14,500	44,000	15,750	15,250	14,500	45,500	176,350
13 Utilities	1,800	650	600	600	1,850	650	600	600	1,850	7,200
14 EXPENSES TOTAL	141,838	48,270	47,100	47,100	142,470	48,130	48,300	47,600	144,030	583,654
15 GROSS PROFIT	105,512	35,730	31,650	31,650	99,030	37,870	30,450	31,150	99,470	398,896
16 Difference from Last Year's Profit										

- 2 Press **Ctrl** + **Page down** until the worksheet you want to use appears.

	Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter	Jul
1 Sales									
2 Division I	31,620	31,160	32,880	64,860	33,060	31,000	31,368	69,460	31,920
3 Division II	26,450	25,576	27,140	79,166	28,520	28,060	27,600	84,180	28,520
4 Division III	22,448	22,080	23,230	67,758	24,472	24,840	24,610	73,922	24,840
5 SALES TOTAL	70,518	68,816	72,450	211,784	76,084	75,900	73,578	227,562	77,280
6 Expenses									
7 Cost of Goods	5,924	5,784	6,088	17,796	6,391	6,376	6,349	19,115	6,492
8 Advertising	4,830	4,410	5,460	14,700	5,350	5,775	5,513	16,538	5,775
9 Rent	2,208	2,208	2,208	6,615	2,208	2,208	2,208	6,615	2,208
10 Supplies	1,365	1,260	1,470	4,095	1,365	1,313	1,470	4,148	1,365
11 Salaries	16,800	16,800	17,325	50,925	17,325	17,325	17,850	52,500	17,850
12 Shipping	14,963	14,438	15,225	44,625	15,750	15,225	15,488	46,463	15,750
13 Utilities	625	630	630	1,885	678	630	683	1,990	683
14 EXPENSES TOTAL	46,611	46,528	49,401	142,535	48,864	48,848	49,556	147,268	50,119
15 GROSS PROFIT	23,907	22,288	24,049	71,249	27,220	27,052	26,022	80,294	27,161
16									

- 3 Select the range you want to use.
- 4 Press **Ctrl** + **Page up** until you return to the original worksheet.

	2nd Quarter	Jul	Aug	Sep	3rd Quarter	Oct	Nov	Dec	4th Quarter	TOTAL
1	69,460	31,930	31,085	31,085	68,085	31,930	31,085	31,085	68,085	370,480
2	84,180	28,530	27,140	27,140	82,800	29,440	27,140	27,140	83,720	329,866
3	73,922	24,890	23,230	23,230	71,300	25,760	23,230	23,230	72,220	285,200
4	227,562	77,280	72,450	72,450	222,180	79,120	72,450	72,450	224,020	885,546
5	16,115	6,492	6,086	6,086	16,643	6,646	6,086	6,086	16,818	74,186
6	16,538	5,775	5,460	5,460	16,495	4,725	5,460	5,460	15,645	63,578
7	8,815	2,305	2,208	2,208	8,815	2,305	2,208	2,208	8,815	36,460
8	4,148	1,365	1,470	1,470	4,305	1,313	1,418	1,470	4,200	16,748
9	52,500	17,850	17,850	17,850	53,550	17,850	18,375	18,375	54,600	211,575
10	46,463	15,750	15,225	15,225	46,200	16,538	16,013	15,225	47,775	185,063
11	1,890	683	630	630	1,943	683	630	630	1,943	7,560
12	147,268	50,119	48,926	48,926	147,971	49,959	50,186	49,451	149,595	585,388
13	80,794	27,161	23,524	23,524	74,209	29,161	22,264	22,999	74,425	300,178

A A reference to the range on the other worksheet appears in your formula.

- 5 Type any operands and operators you need to complete your formula.

- 6 Click ☒ or press **Enter**.

Excel calculates the formula result.

	Jul	Aug	Sep	1st Quarter	Oct	Nov	Dec	4th Quarter	TOTAL
1	26,000	24,000	24,000	74,000	26,000	24,000	24,000	74,000	294,000
2	31,000	29,500	29,500	90,000	32,000	29,500	29,500	91,000	358,500
3	27,000	25,250	25,250	77,500	28,000	25,250	25,250	78,500	310,000
4	84,000	78,750	78,750	241,500	86,000	78,750	78,750	243,500	962,500
5	4,750	6,300	6,300	19,350	6,885	6,300	6,300	19,485	77,004
6	5,500	5,200	5,200	15,900	4,500	5,200	5,200	14,900	60,550
7	2,100	2,100	2,100	6,300	2,100	2,100	2,100	6,300	25,200
8	1,300	1,400	1,400	4,100	1,250	1,350	1,400	4,000	15,900
9	17,000	17,000	17,000	51,000	17,000	17,500	17,500	52,000	201,500
10	15,000	14,500	14,500	44,000	15,750	15,250	14,500	45,500	176,250
11	650	600	600	1,850	650	600	600	1,850	7,200
12	48,270	47,100	47,100	142,470	48,130	48,300	47,600	144,030	563,654
13	35,730	31,650	31,650	99,030	37,870	30,450	31,150	99,470	398,896



You can reference a range from another workbook. First make sure the workbook you want to reference is open. To add the reference, click the Excel icon () in the Windows taskbar and then click the other workbook to switch to it. Click the worksheet that has the range you want to reference and select the range. Click  and then click the original workbook to switch back to it. Excel adds the reference to the other workbook range to your formula.



You can type a range reference directly into your formula rather than selecting it with your mouse. Type the worksheet name, surrounded by single quotation marks (') if the name contains a space; type an exclamation mark (!); then type the cell or range address. Here is an example: 'Expenses 2010'!B2:B10.

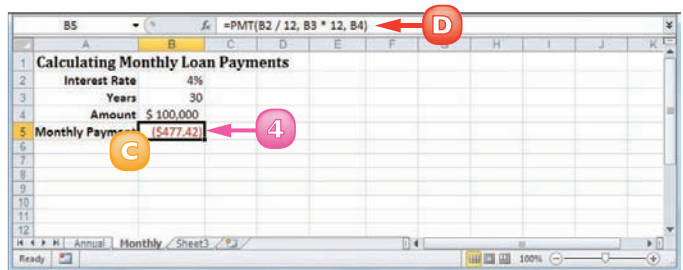
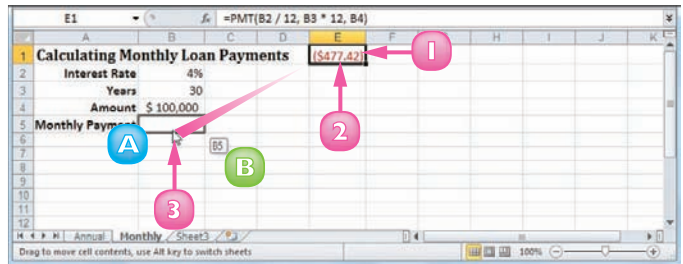
MOVE OR COPY A FORMULA

You can restructure or reorganise a worksheet by moving an existing formula to a different part of the worksheet. When you move a formula, Excel preserves the formula's range references.

Excel also enables you to make a copy of a formula, which is a useful technique if you require a duplicate of the formula elsewhere or if you require a formula that is similar to an existing formula. When you copy a formula, Excel adjusts the range references to the new location.

Move a Formula

- 1** Click the cell that contains the formula you want to move.
- 2** Position  over any outside border of the cell.
 changes to .
- 3** Click and drag the cell to the new location.
 changes to .
- A** Excel displays an outline of the cell.
- B** Excel displays the address of the new location.
- 4** Release the mouse button.
- C** Excel moves the formula to the new location.
- D** Excel does not change the formula's range references.



If you do not want Excel to adjust a range reference, switch the reference to the absolute format. Double-click the cell that contains the formula you want to edit, select the cell reference you want to change and then press **F4.**

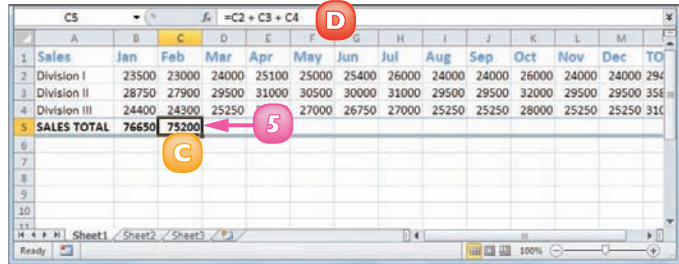
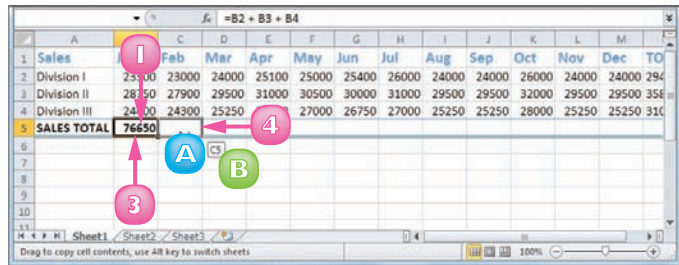
Copy a Formula

- 1 Click the cell that contains the formula you want to copy.
- 2 Press and hold **Ctrl**.
- 3 Position  over any outside border of the cell.
 changes to .
- 4 Click and drag the cell to the location where you want the copy to appear.
 - A Excel displays an outline of the cell.
 - B Excel displays the address of the new location.
- 5 Release the mouse button.
- 6 Release **Ctrl**.
 - A Excel creates a copy of the formula in the new location.
 - D Excel adjusts the range references.

Note: You can make multiple copies by dragging the bottom-right corner of the cell. Excel fills the adjacent cells with copies of the formula.



Excel assumes that a copy of a formula should reference ranges positioned relative to the ranges used in the original formula. For example, if the original formula references A1 and you copy it into the cell to the right, Excel adjusts the cell reference one column to the right, so it becomes B1.



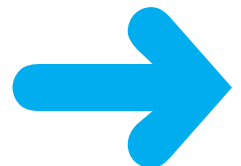
CONTENTS

- I 18** Create a New Worksheet
- I 20** Move a Worksheet
- I 22** Copy and Rename a Worksheet
- I 24** Delete a Worksheet
- I 26** Change the Gridline Colour
- I 28** Toggle Worksheet Gridlines On and Off
- I 29** Toggle Worksheet Headings On and Off

6

MANIPULATING EXCEL WORKSHEETS

An Excel worksheet is where you enter your headings and data and build your formulas. You will spend most of your time in Excel operating within a worksheet, so you need to know how to navigate a worksheet as well as how to perform useful worksheet tasks, such as creating new worksheets and moving, copying, and deleting worksheets. In this chapter, you also learn how to change the gridline colour and how to toggle gridlines and headings on and off.



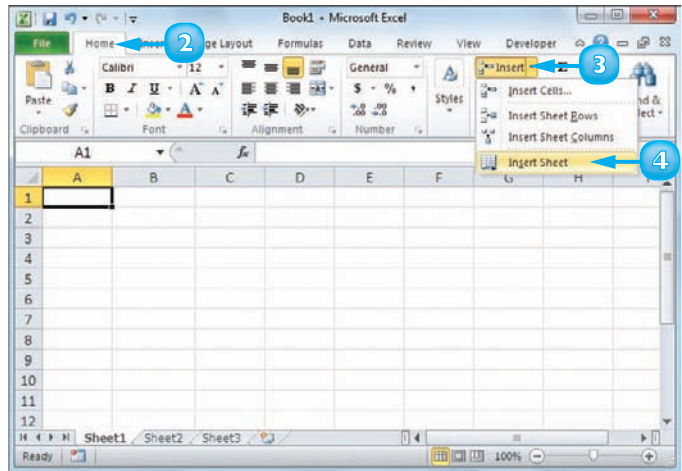
CREATE A NEW WORKSHEET

Excel supports multiple worksheets in a single workbook, so you can add as many worksheets as you need for your project or model.

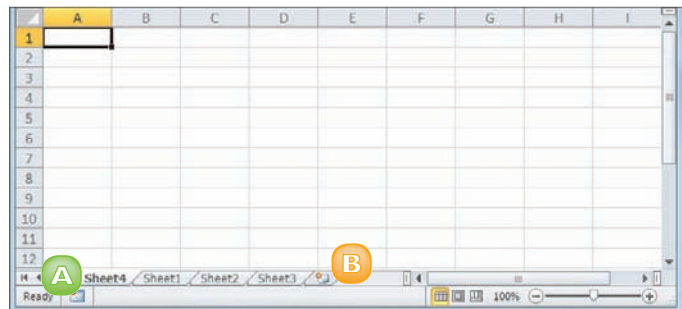
Each new Excel workbook comes with three worksheets but it is not uncommon to require four or more worksheets in a workbook. In most cases, you will add a blank worksheet but Excel also comes with several predefined worksheet templates that you can use. Note that there is no practical limit to the number of worksheets you can add to a workbook.

Insert a Blank Worksheet

- 1 Open the workbook to which you want to add the worksheet.
- 2 Click the **Home** tab.
- 3 Click the **Insert** button.
- 4 Click **Insert Sheet**.

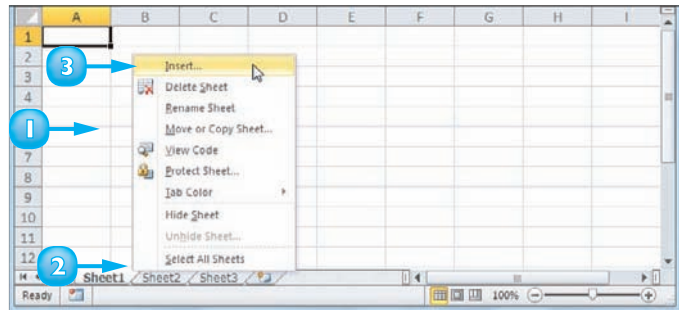


- A Excel inserts the worksheet.
- B You can also create a new worksheet by clicking **Insert Worksheet** (icon) or by pressing **Shift + F11**.



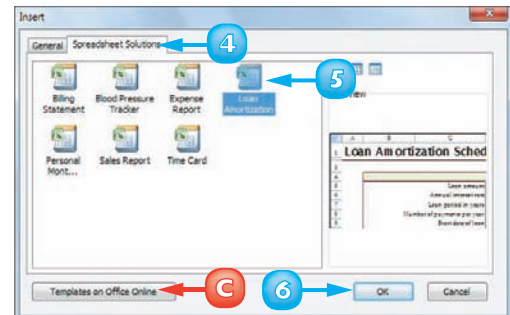
Insert a Worksheet from a Template

- 1 Open the workbook to which you want to add the worksheet.
- 2 Right-click a worksheet tab.
- 3 Click **Insert**.

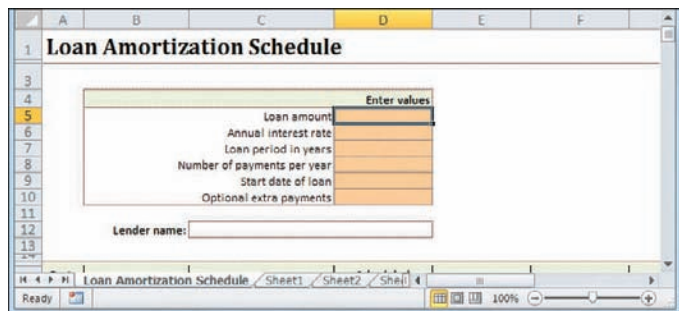


The Insert dialog box appears.

- 4 Click the **Spreadsheet Solutions** tab.
- 5 Click the type of worksheet you want to add.
- C You can also click **Templates on Office Online** to download worksheet templates from the Web.
- 6 Click **OK**.



Excel inserts the worksheet.



Press **Ctrl** + **Page down** to move to the next worksheet, and **Ctrl** + **Page up** to move to the previous worksheet. You can also click the following controls: **1** to move to the first worksheet, **2** to move to the previous worksheet, **3** to move to the next worksheet and **4** to move to the last worksheet.

MOVE A WORKSHEET

You can organise an Excel workbook and make it easier to navigate by moving your worksheets to different positions within the workbook.

Although you will most often move a worksheet to a different position within the same workbook, it is also possible to move a worksheet to another workbook.

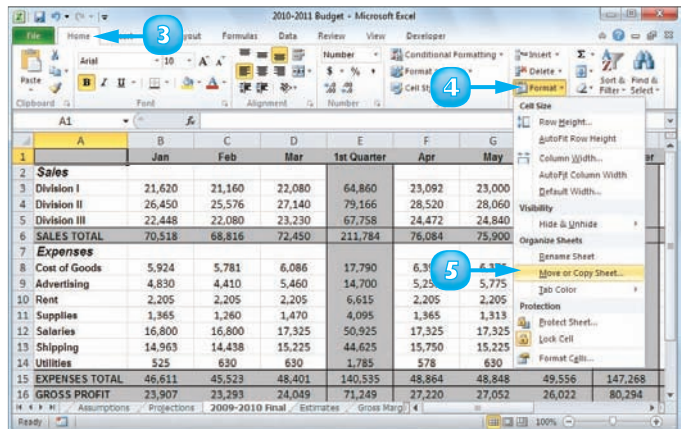
Move a Worksheet Between Workbooks

- 1 If you want to move the worksheet to another workbook, open that workbook and then return to the current workbook.
- 2 Click the tab of the worksheet you want to move.
- 3 Click the **Home** tab.
- 4 Click **Format**.
- 5 Click **Move or Copy Sheet**.

The Move or Copy dialog box appears.

Note: You can also right-click the tab and then click **Move or Copy Sheet**.

	Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter
Sales								
Division I	21,620	21,160	22,080	64,860	23,092	23,000	23,368	69,460
Division II	26,450	25,576	27,140	79,166	28,520	28,060	27,600	84,180
Division III	22,448	22,080	23,230	67,758	24,472	24,840	24,610	73,922
SALES TOTAL	70,518	68,816	72,450	211,784	76,084	75,900	75,578	227,562
Expenses								
Cost of Goods	5,924	5,781	6,086	17,790	6,391	6,376	6,349	19,115
Advertising	4,830	4,410	5,460	14,700	5,250	5,775	5,513	16,538
Rent	2,205	2,205	2,205	6,615	2,205	2,205	2,205	6,615
Supplies	1,365	1,260	1,470	4,095	1,365	1,313	1,470	4,148
Salaries	16,800	16,800	17,325	50,925	17,325	17,325	17,890	52,500
Shipping	14,963	14,438	15,225	44,625	15,750	15,225	15,488	46,463
Utilities	525	630	630	1,785	578	630	683	1,890
EXPENSES TOTAL	46,611	45,523	48,401	140,535	48,864	48,848	49,556	147,268
GROSS PROFIT	23,907	23,293	24,049	71,249	27,220	27,052	26,022	80,294



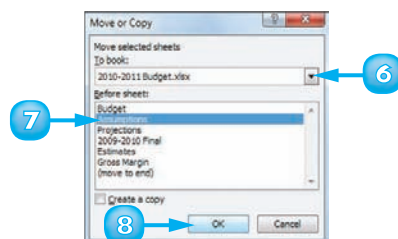
6 If you want to move the sheet to another workbook, click the **To book**  and then click the workbook.

7 Use the Before sheet list to click a destination worksheet.

The worksheet will appear to the left of the sheet you select in Step **7**.

8 Click **OK**.

Excel moves the worksheet.



	A	B	C	D	E	F	G	H	I
1		Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter
2	Sales								
3	Division I	21,620	21,160	22,080	64,860	23,092	23,000	23,368	69,460
4	Division II	26,450	25,576	27,140	79,166	28,520	28,060	27,600	84,180
5	Division III	22,448	22,080	23,230	67,758	24,472	24,840	24,610	73,922
6	SALES TOTAL	70,518	68,816	72,450	211,784	76,084	75,900	75,578	227,562
7	Expenses								
8	Cost of Goods	5,924	5,781	6,086	17,790	6,391	6,376	6,349	19,115
9	Advertising	4,830	4,410	5,460	14,700	5,250	5,775	5,513	16,538
10	Rent	2,205	2,205	2,205	6,615	2,205	2,205	2,205	6,615
11	Supplies	1,365	1,260	1,470	4,095	1,365	1,313	1,470	4,148
12	Salaries	16,800	16,800	17,325	50,925	17,325	17,325	17,850	52,500
13	Shipping	14,963	14,438	15,225	44,625	15,750	15,225	15,488	46,463
14	Utilities	525	630	630	1,785	578	630	683	1,890
15	EXPENSES TOTAL	46,611	45,523	48,401	140,535	48,864	48,848	49,556	147,268
16	GROSS PROFIT	23,907	23,293	24,049	71,249	27,220	27,052	26,022	80,294

Move a Worksheet Within the Same Workbook

1 Move  over the tab of the worksheet you want to move.

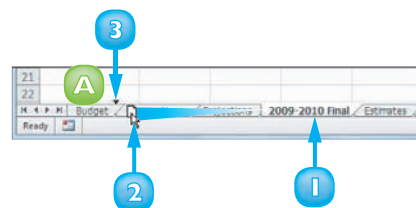
2 Click and drag the worksheet tab left or right to the new position within the workbook.

 changes to .

A As you drag, an arrow shows the position of the worksheet.

3 When you have the worksheet positioned where you want it, drop the worksheet tab.

Excel moves the worksheet.



COPY AND RENAME A WORKSHEET

Excel enables you to make a copy of a worksheet, which is a useful technique if you require a new worksheet that is similar to an existing worksheet. Rather than re-creating the new worksheet from scratch, you can make a copy of an existing worksheet and then edit the copy as needed.

Although you will most often copy a worksheet within the same workbook, it is also possible to copy the worksheet to another workbook.

Copy a Worksheet

1 If you want to copy the worksheet to another workbook, open that workbook and then return to the current workbook.

2 Click the tab of the worksheet you want to copy.

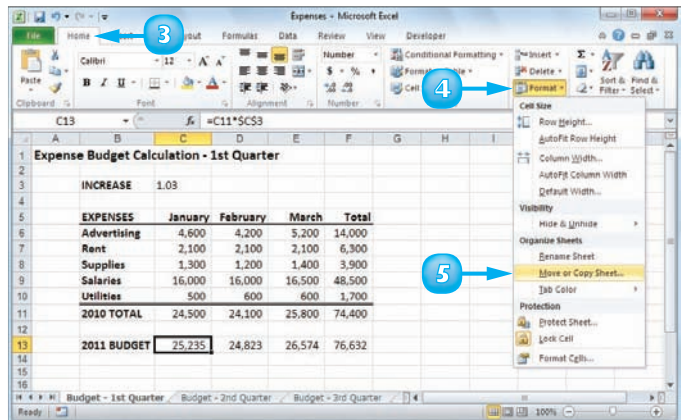
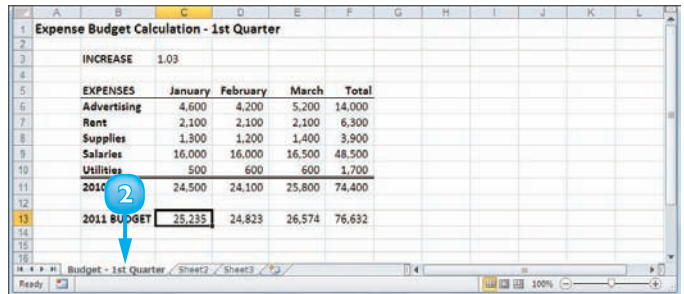
3 Click the **Home** tab.

4 Click **Format**.

5 Click **Move or Copy Sheet**.

The Move or Copy dialog box appears.

Note: You can also right-click the tab and then click **Move or Copy Sheet**.



- 6 If you want to copy the sheet to another workbook, click the **To book**  and then click the workbook.
- 7 Use the Before sheet list to click a destination worksheet.

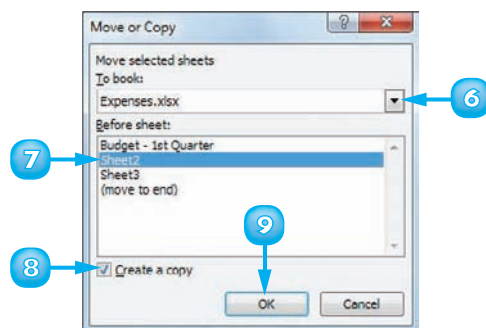
The copy will appear to the left of the sheet you select in Step 7.

- 8 Click the **Create a copy** check box (☐ changes to ☒.

- 9 Click **OK**.

Excel copies the worksheet.

A Excel gives the new worksheet the same name as the original, but with (2) appended.



	January	February	March	Total
EXPENSES				
Advertising	4,600	4,200	5,200	14,000
Rent	2,100	2,100	2,100	6,300
Supplies	1,900	1,200	1,400	3,900
Salaries	16,000	16,000	16,500	48,500
Utilities	500	600	600	1,700
2010 TOTAL	24,500	24,100	25,800	74,400
2011 BUDGET	25,235	24,823	26,574	76,632

Rename a Worksheet

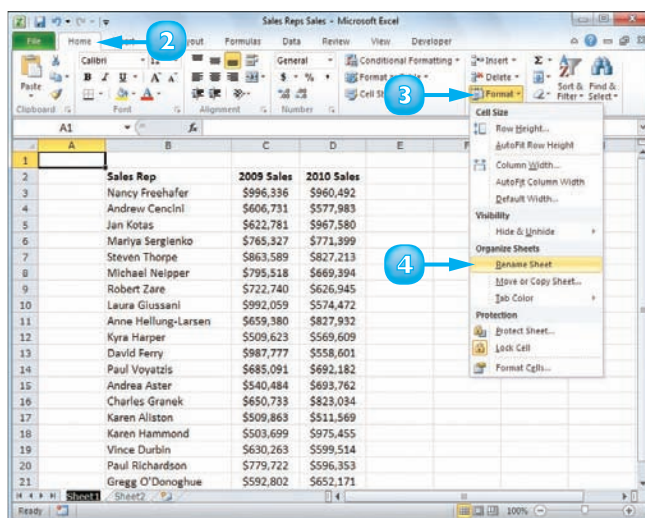
- 1 Display the worksheet you want to rename.
- 2 Click the **Home** tab.
- 3 Click **Format**.
- 4 Click **Rename Sheet**.

Excel opens the worksheet name for editing and selects the text.

Note: You can also double-click the worksheet's tab.

- 5 If you want to edit the existing name, press  or  to deselect the text.
- 6 Type the new worksheet name.
- 7 Press **Enter**.

Excel assigns the new name to the worksheet.



DELETE A WORKSHEET

If you have a worksheet that you no longer need, you can delete it from the workbook. This reduces the size of the workbook, reduces clutter in the worksheet tabs, and makes the workbook easier to navigate.

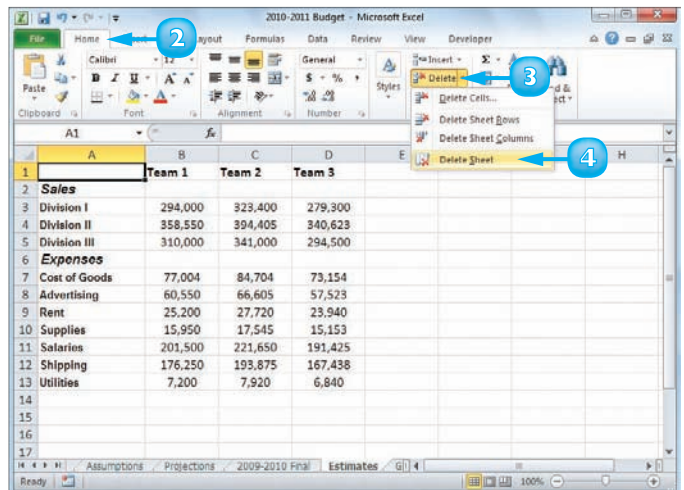
It is important to note that you cannot undo a worksheet deletion. Therefore, it is always a good practice to check the worksheet contents carefully before proceeding with the deletion. If the worksheet contains any data you need but you still want to remove the worksheet, cut or copy the data and paste it into another worksheet.

- 1 Click the tab of the worksheet you want to delete.

	Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter
Sales								
Division I	23,500	23,000	24,000	70,500	25,100	25,000	25,400	75,500
Division II	28,750	27,800	29,500	86,050	31,000	30,500	30,000	91,500
Division III	24,400	24,000	25,250	73,650	26,600	27,000	26,750	80,350
SALES TOTAL	76,650	74,800	78,750	230,200	82,700	82,500	82,150	247,350
Expenses								
Cost of Goods	6,132	5,984	6,300	18,416	6,616	6,600	6,572	19,788
Advertising	4,600	4,200	5,200	14,000	5,000	5,500	5,250	15,750
Rent	2,100	2,100	2,100	6,300	2,100	2,100	2,100	6,300
Supplies	1,300	1,200	1,400	3,900	1,300	1,250	1,400	3,950
Salaries	16,000	16,000	16,500	48,500	16,500	16,500	17,000	50,000
Shipping	14,250	13,750	14,500	42,500	14,500	14,500	14,750	44,250
Utilities	500	600	600	1,700	500	600	650	1,800
EXPENSES TOTAL	44,882	43,834	46,600	135,316	47,066	47,050	47,722	141,838
GROSS PROFIT	31,768	30,966	32,150	94,884	35,634	35,450	34,428	105,512

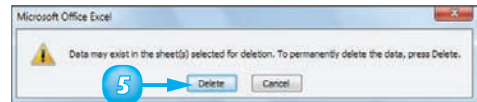
- 2 Click the **Home** tab.
- 3 Click the **Delete** button.
- 4 Click **Delete Sheet**.

Note: You can also right-click the tab and then click **Delete Sheet**.

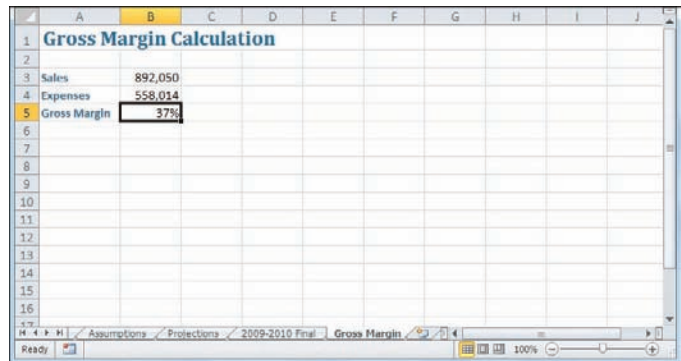


If the worksheet contains data, Excel asks you to confirm that you want to delete the worksheet.

5 Click **Delete**.



Excel removes the worksheet.



*You can delete several worksheets at once. Click the tab of one of the worksheets, hold down **Ctrl** and click the tabs of the other worksheets. Then follow Steps 3 to 5 to delete all the worksheets.*



*To remove the grouping of the worksheets, right-click any worksheet tab and then click **Ungroup Sheets**.*



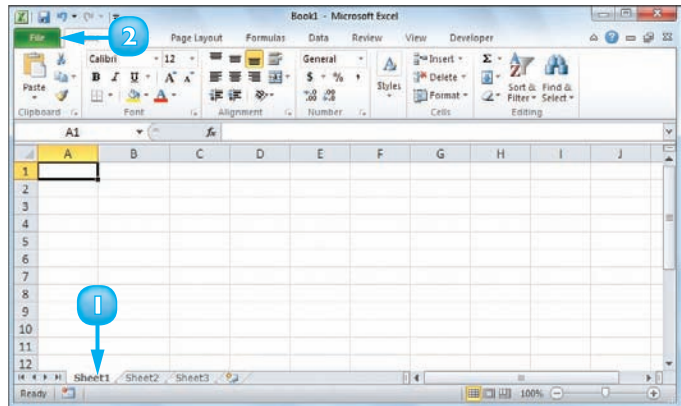
*If you want to delete most of the worksheets, right-click any worksheet tab and click **Select All Sheets**. Hold down **Ctrl** and then click the tabs of the worksheets that you do not want to delete to deselect them.*

CHANGE THE GRIDLINE COLOUR

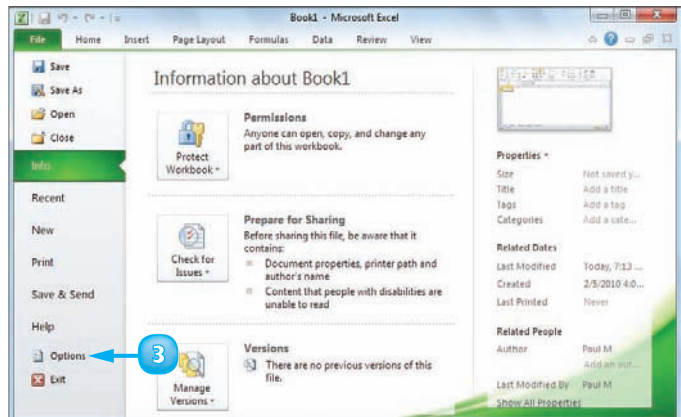
You can add some visual interest to your worksheet by changing the colour that Excel uses to display the gridlines. The default colour is black, but Excel offers a palette of 56 colours that you can choose from.

Changing the gridline colour also has practical value because it enables you to differentiate between the gridlines and the borders that you add to a range or a table.

- 1 Click the tab of the worksheet you want to customise.
- 2 Click the **File** tab.



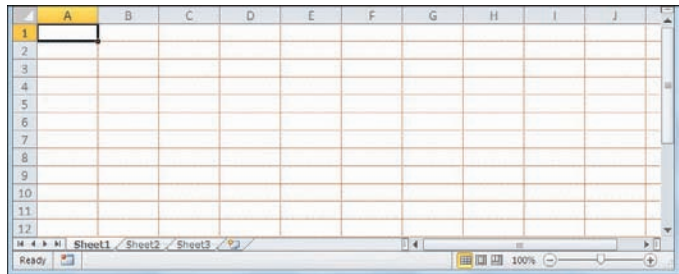
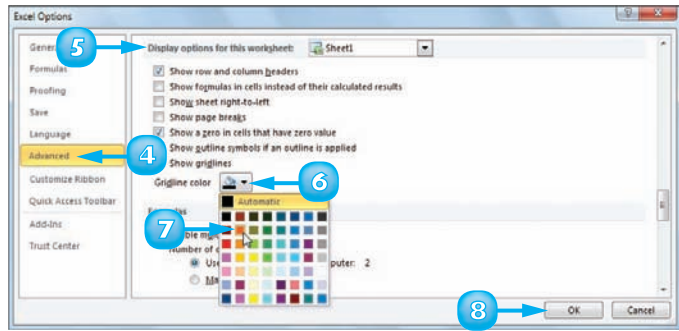
- 3 Click **Options**.



The Excel Options dialog box appears.

- 4 Click **Advanced**.
- 5 Scroll down to the Display options for this worksheet section.
- 6 Click the **Gridline color** ▾.
- 7 Click the colour you want to use.
- 8 Click **OK**.

Excel displays the gridlines using the colour you selected.



*To change the gridline colour for all the sheets in a workbook, right-click any worksheet tab and then click **Select All Sheets**. You can then follow Steps 2 to 8 to apply the new gridline colour to all your worksheets.*



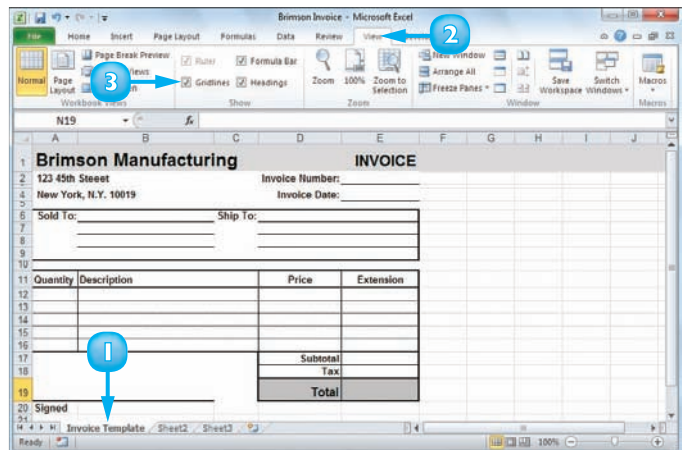
*To remove the grouping of the worksheets, right-click any worksheet tab and then click **Ungroup Sheets**.*

TOGGLE WORKSHEET GRIDLINES ON AND OFF

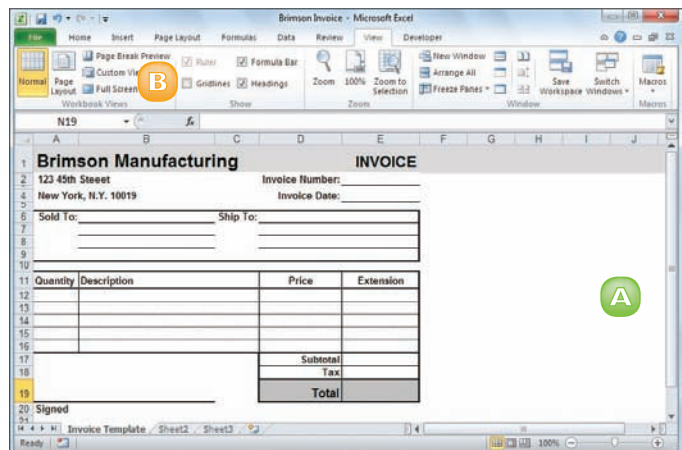
You can make your worksheet look cleaner and the text easier to read by turning off the sheet gridlines. When you do this, Excel displays the worksheet with a plain white background. If you find you have trouble selecting ranges with the gridlines turned off, you can easily turn them back on again.

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- 1 Click the tab of the worksheet you want to work with.
- 2 Click the **View** tab.
- 3 Click **Gridlines** (☒ changes to ☐).



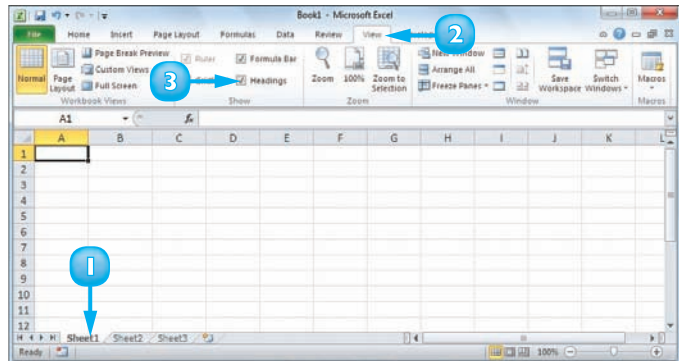
- A** Excel turns off the gridline display.
- B** To turn the gridlines back on, click **Gridlines** (☐ changes to ☒).



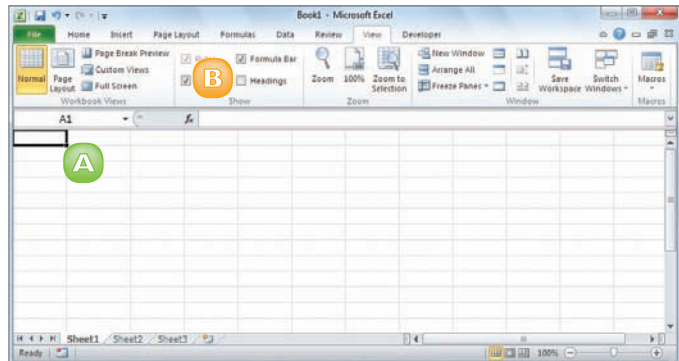
TOGGLE WORKSHEET HEADINGS ON AND OFF

You can give yourself a bit more room to work by turning off the worksheet's row headings – the numbers 1, 2, and so on to the left of the worksheet – and column headings – the letters A, B, and so on above the worksheet. If you find you have trouble reading your worksheet or building formulas with the headings turned off, you can easily turn them back on again.

- ❶ Click the tab of the worksheet you want to work with.
- ❷ Click the **View** tab.
- ❸ Click **Headings** (☒ changes to ☐).



- A** Excel turns off the headings.
- B** To turn the headings back on, click **Headings** (☐ changes to ☒).



CONTENTS

- I32** Create a New Blank Workbook
- I34** Create a New Workbook from a Template
- I36** Save a Workbook
- I37** Open a Workbook
- I38** Arrange Workbook Windows
- I40** Find and Replace Text in a Workbook
- I42** Modify Workbook Colours
- I44** Set Workbook Fonts
- I46** Choose Workbook Effects
- I48** Apply a Workbook Theme



DEALING WITH EXCEL WORKBOOKS

Everything you do in Excel takes place within a *workbook*, which is a standard Excel file. This chapter shows you how to get more out of workbooks by creating new workbooks, either blank or from a template; saving and opening workbooks; arranging workbooks within the Excel window; finding and replacing text within a workbook; and modifying the look of a workbook.

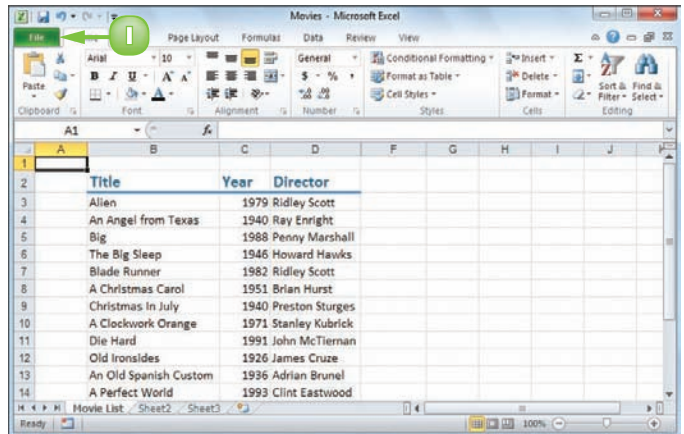


CREATE A NEW BLANK WORKBOOK

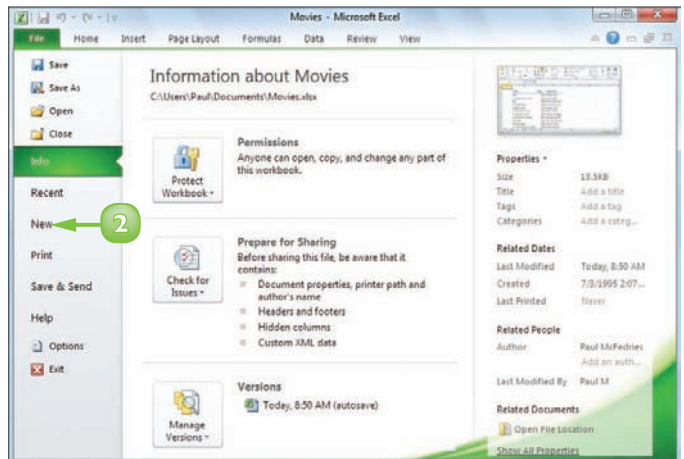
To perform new work in Excel, you need to first create a new, blank Excel workbook. Excel automatically creates a blank workbook each time you start the program, but for subsequent files you must create a new workbook yourself.

If you prefer to create a workbook based on one of Excel's templates, see "Create a New Workbook from a Template."

1 Click the **File** tab.



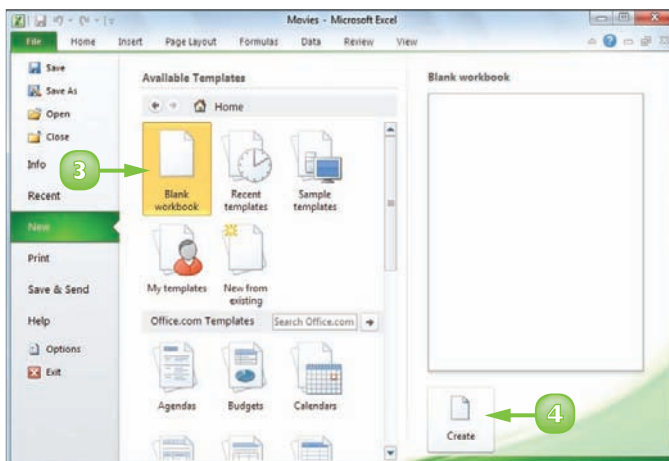
2 Click **New**.



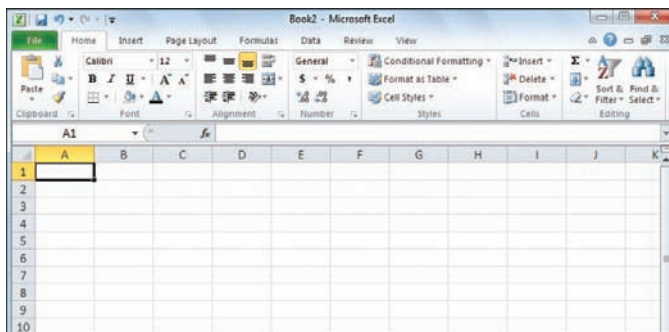
3 Click **Blank Workbook**.

4 Click **Create**.

Note: You can also create a workbook by pressing **Ctrl** + **N**.



Excel creates the blank workbook and displays it in the Excel window.



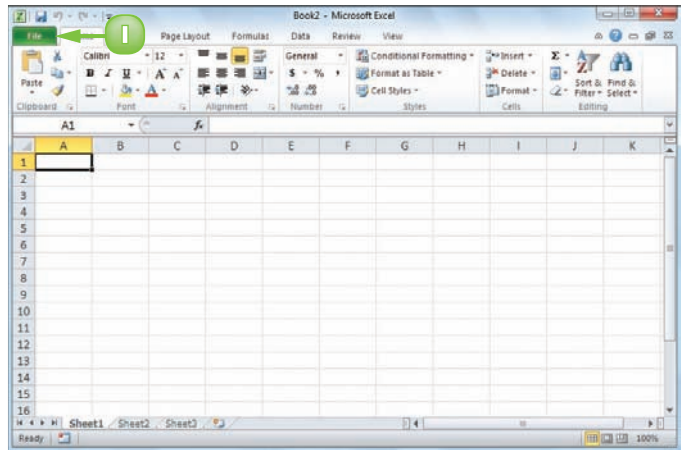
If you open an existing file without changing a blank workbook, Excel assumes you do not want to use the new workbook and closes it. To prevent this from happening, make a change to the blank workbook before opening any existing file.

CREATE A NEW WORKBOOK FROM A TEMPLATE

You can save time and effort by creating a new workbook based on one of Excel's template files. Each template includes a working spreadsheet model that includes predefined labels and formulas, as well as preformatted colours, fonts, styles, and more.

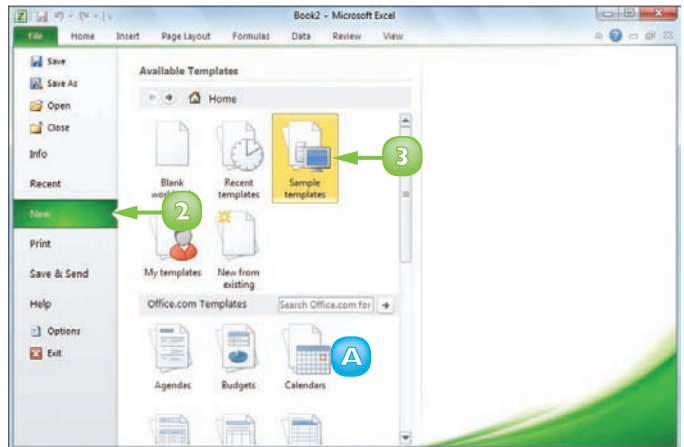
Excel 2010 offers seven templates, including Expense Report, Loan Amortization, and Personal Monthly Budget. However, there are many more templates available through Microsoft Office Online.

- 1 Click the **File** tab.

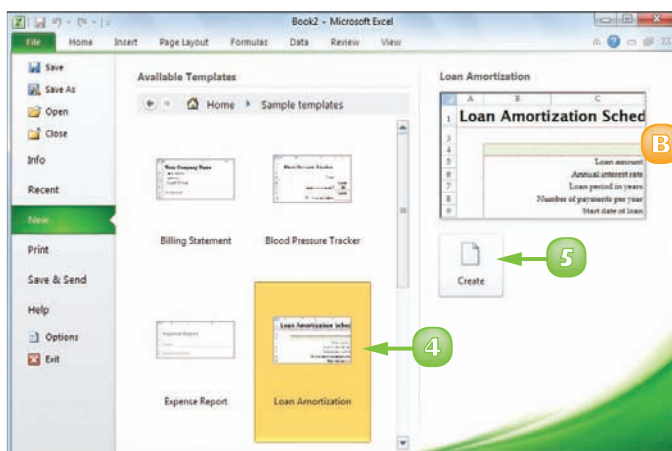


- 2 Click **New**.
- 3 Click **Sample templates**.

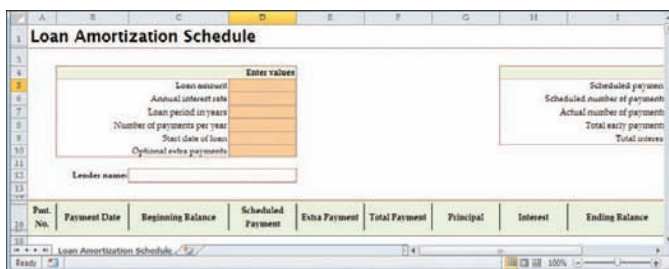
A To use an Office Online template, click a category in the Office.com Templates section. Click the template you want to use and then click **Download**.



- 4 Click the template you want to use.
- B A preview of the template appears here.
- 5 Click **Create**.



Excel creates the new workbook and displays it in the Excel window.



If you have a specific workbook structure that you use frequently, you should save it as a template. Open the workbook, click File and then click Save As. In the Save As dialog box, click the Save as type  and then click Excel Template. Type a file name and then click Save. To use the template, click File, click New, and then click My Templates.



You can create a new workbook based on an existing workbook. Click File, click New, and then click New from Existing. In the New from Existing Workbook dialog box, click the existing workbook and then click Open.

SAVE A WORKBOOK

After you create a workbook in Excel and make changes to it, you can save the document to preserve your work.

When you edit a workbook, Excel stores the changes in your computer's memory, which is erased each time you shut down your computer. Saving the document preserves your changes on your computer's hard drive so, to avoid losing your work, you should save a workbook as often as is practical.

- 1 Click the **File** tab.
- 2 Click **Save** (💾).

Note: You can also click 💾 in the Quick Access Toolbar or press **Ctrl + S**.

If you have saved the document previously, your changes are now preserved and you can skip the rest of these steps.

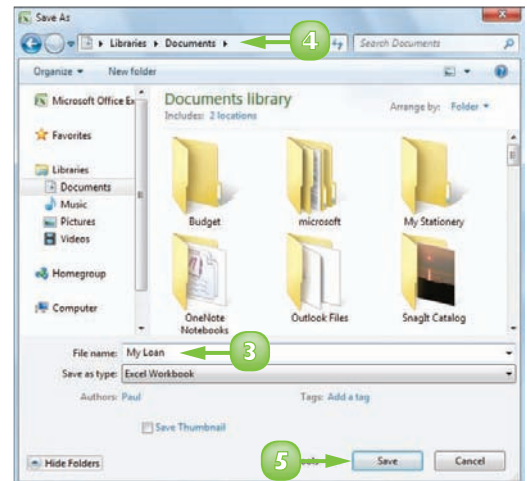


If this is a new document that you have never saved before, the Save dialog box appears.

- 3 Click in the **File name** text box and type the name that you want to use for the document.
- 4 Select a folder in which to store the file.
- 5 Click **Save**.

Excel saves the file.

Note: To learn how to save a workbook in an older Excel format, see Chapter 10.



OPEN A WORKBOOK

To view or make changes to an Excel workbook that you have saved in the past, you can open the workbook in Excel.

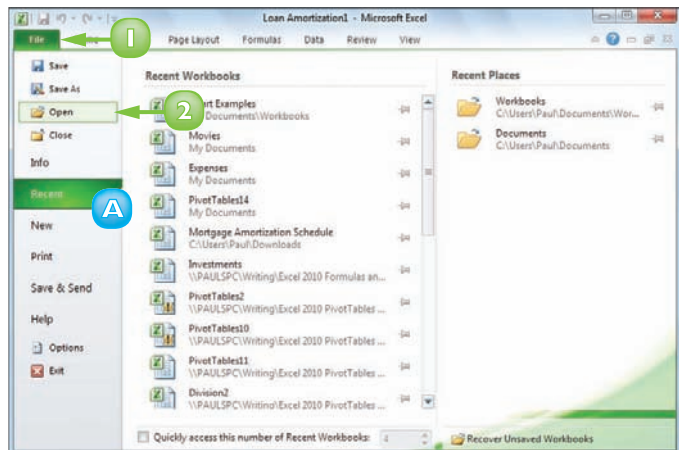
If you have used the workbook recently, you can save time by opening the workbook from Excel's Recent menu, which displays the most recent 22 files you worked with in Excel.

1 Click the **File** tab.

A You can click **Recent** to see a list of your recently used workbooks. If you see the file you want, click it and then skip the rest of these steps.

2 Click **Open** (📁).

Note: You can also press **Ctrl + O**.



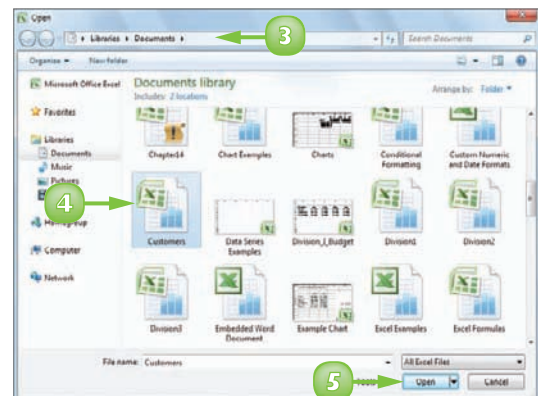
The Open dialog box appears.

3 Select the folder that contains the workbook you want to open.

4 Click the workbook.

5 Click **Open**.

The workbook appears in a window.

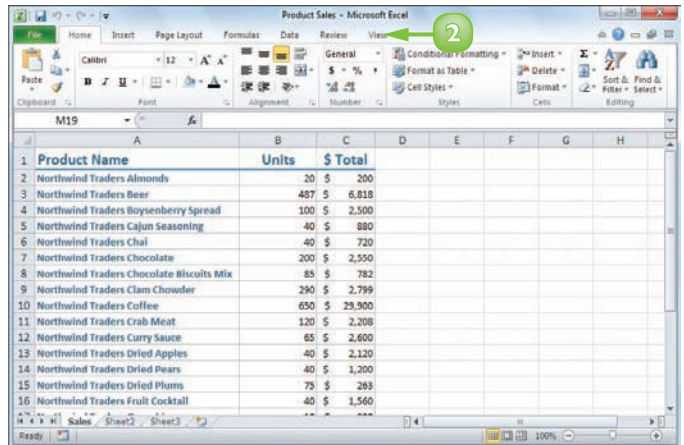


ARRANGE WORKBOOK WINDOWS

You can view two or more workbooks at once by arranging the workbook windows within the main Excel window. This enables you to easily compare the contents of the workbooks. Arranging workbook windows also enables you to more easily copy or move data among workbooks.

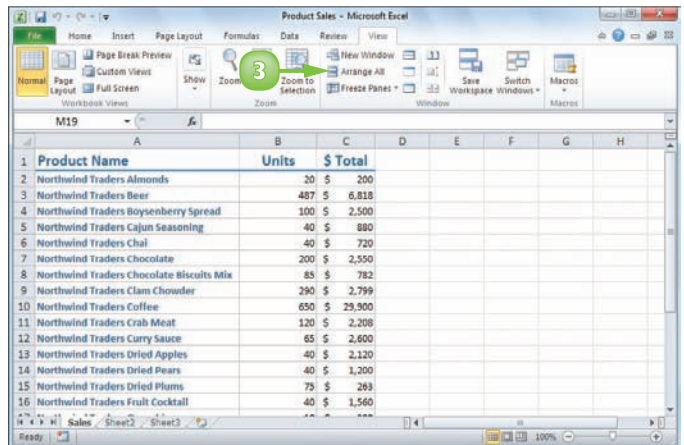
Excel offers four view modes for arranging workbook windows: Tiled, Horizontal, Vertical, and Cascade.

- 1 Open the workbooks you want to view.
- 2 Click the **View** tab.



- 3 Click **Arrange All** (📊).

The Arrange Windows dialog box appears.



- 4 Click a view mode (☉ changes to ☑):

Tiled arranges the workbooks evenly within the Excel window.

Horizontal stacks the workbooks one above the other.

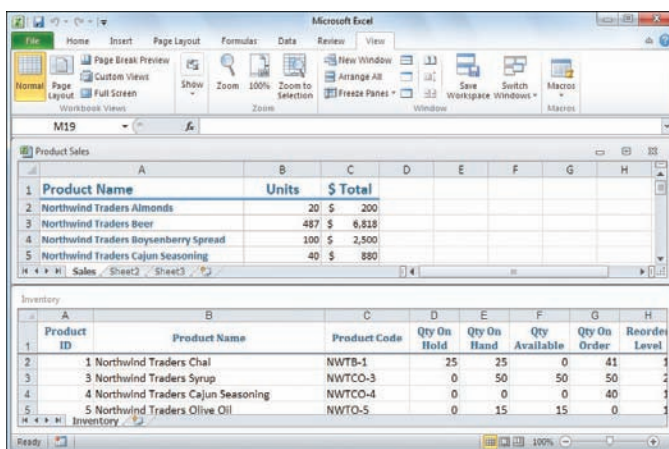
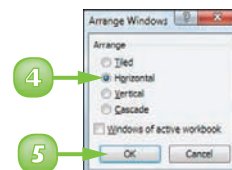
Vertical displays the workbooks side by side.

Cascade arranges the workbooks in an overlapping pattern.

- 5 Click **OK**.

Excel arranges the workbook windows.

This example shows two workbooks arranged with the Horizontal view mode.



To see only one workbook, click the workbook you want to use and then click the workbook window's Maximize button (☐). Excel maximises all the open workbooks but you only see them if you switch to them.



You can view two sections of a single workbook in different windows. Switch to the workbook you want to view, click the View tab and then click New Window (☐). Follow Steps 1 to 4 to open the Arrange Windows dialog box and select a view option. Click the Windows of active workbook check box (☐ changes to ☑), and then click OK.

FIND AND REPLACE TEXT IN A WORKBOOK

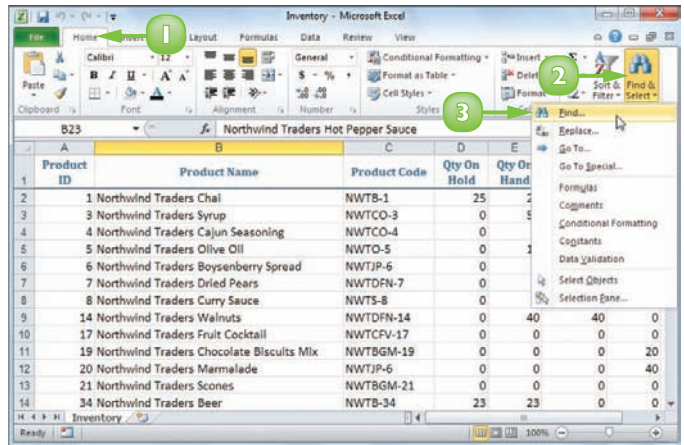
If you need to find specific text in a workbook, you can save a lot of time by using Excel's Find feature, which searches the entire workbook in the blink of an eye.

In a workbook that has only a small amount of data and just a few worksheets, you can usually find the data you want fairly quickly. However, in a large workbook with multiple sheets, it can be time-consuming to find specific text, so Excel's Find feature can help.

Find Text in a Workbook

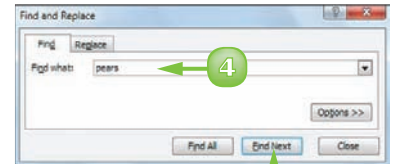
- 1 Click the **Home** tab.
- 2 Click **Find & Select**.
- 3 Click **Find**.

Note: You can also run the Find command by pressing **Ctrl + F**.



The Find and Replace dialog box appears.

- 4 Click in the **Find what** text box and type the text you want to find.
- 5 Click **Find Next**.



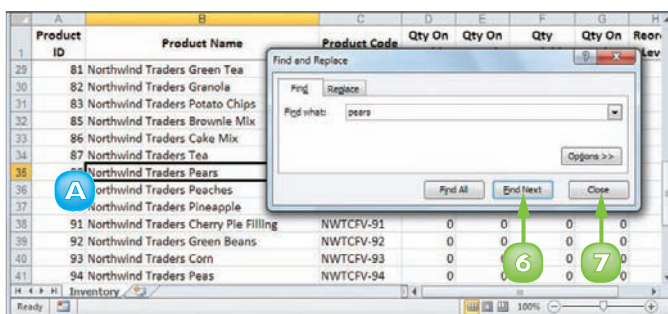
If Excel only looks in the current worksheet for your term, click Options in the Find and Replace dialog box. Click the Within ☐ and then click Workbook. This option tells Excel to examine the entire workbook for your search text.

- A** Excel selects the next cell that contains an instance of the search text.

Note: If the search text does not exist in the document, Excel displays a dialog box to let you know.

- 6** If the selected instance is not the one you want, click **Find Next** until Excel finds the correct instance.
- 7** Click **Close** to close the Find and Replace dialog box.

Excel leaves the cell selected.

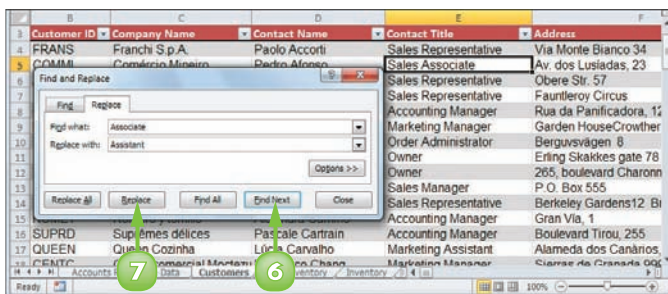


Replace Text in a Workbook

- 1** Click the **Home** tab.
- 2** Click **Find & Select**.
- 3** Click **Replace**.

Note: You can also run the Replace command by pressing **Ctrl + H**.

- 4** In the Find what text box, type the text you want to find.
- 5** In the Replace with text box, type the text you want to use as the replacement.
- 6** Click **Find Next**.
- 7** Click **Replace** or **Find Next**, as appropriate.
- 8** When you have replaced all of the instances you want to replace, click **Close**.



In the Find and Replace dialog box, click Replace All to tell Excel to replace every instance of the search text with the replacement text.

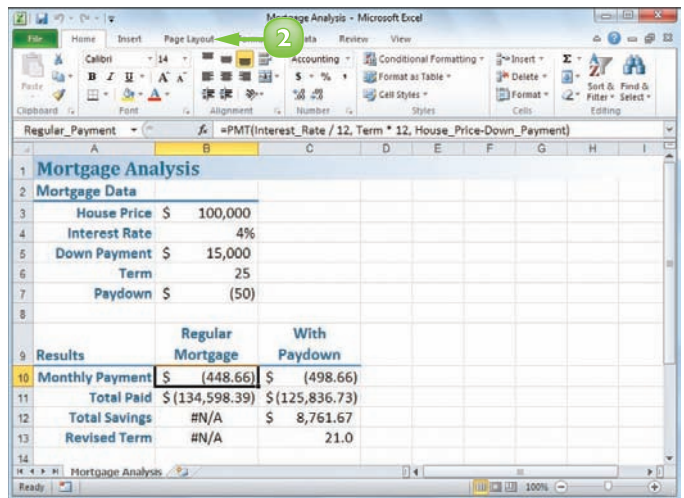
MODIFY WORKBOOK COLOURS

You can give your workbook a new look by selecting a different colour scheme. Each colour scheme affects the workbook's text colours, background colours, border colours, and more. Excel offers more than 20 colour schemes.

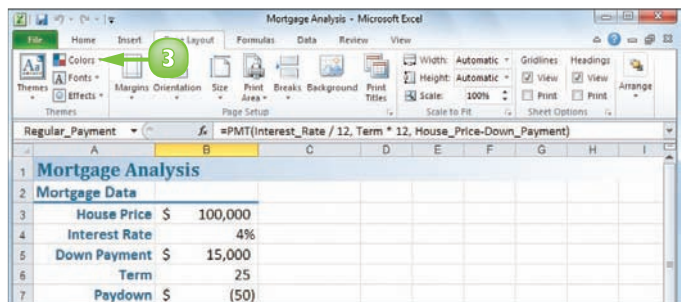
To get the most out of Excel's colour schemes, you must apply styles to your ranges, as described in Chapter 4.

Apply a Colour Scheme

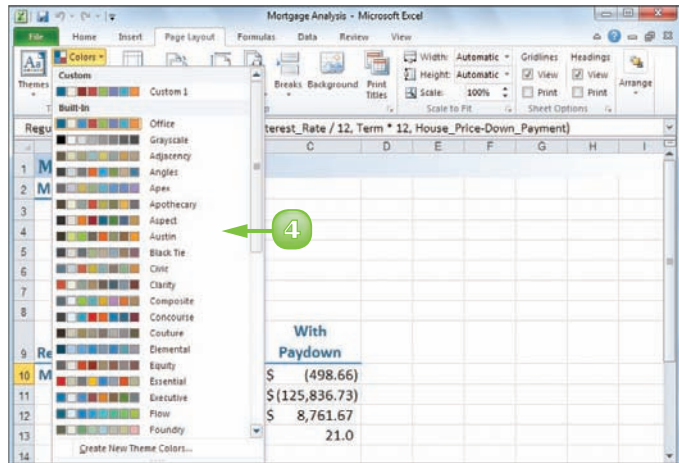
- 1 Open or switch to the workbook you want to format.
- 2 Click the **Page Layout** tab.



- 3 Click **Colors** ().



- 4 Click the colour scheme you want to apply.



Excel applies the colour scheme to the workbook.

Mortgage Analysis		
Mortgage Data		
House Price	\$	100,000
Interest Rate		4%
Down Payment	\$	15,000
Term		25
Paydown	\$	(50)
	Regular	With
Results	Mortgage	Paydown
Monthly Payment	\$ (448.66)	\$ (498.66)
Total Paid	\$ (134,598.39)	\$ (125,836.73)

Create a Colour Scheme

- 1 Click the **Page Layout** tab.
- 2 Click .
- 3 Click **Create New Theme Colors**.
- 4 For each item in the Theme colors list, click  and then click the colour you want to use.

A The Sample area shows what your theme colours look like.

- 5 Type a name for the custom colour scheme.
- 6 Click **Save**.



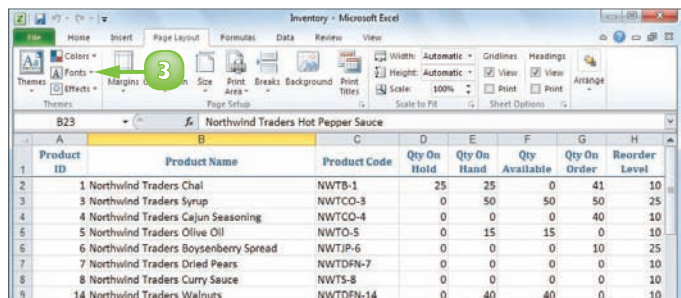
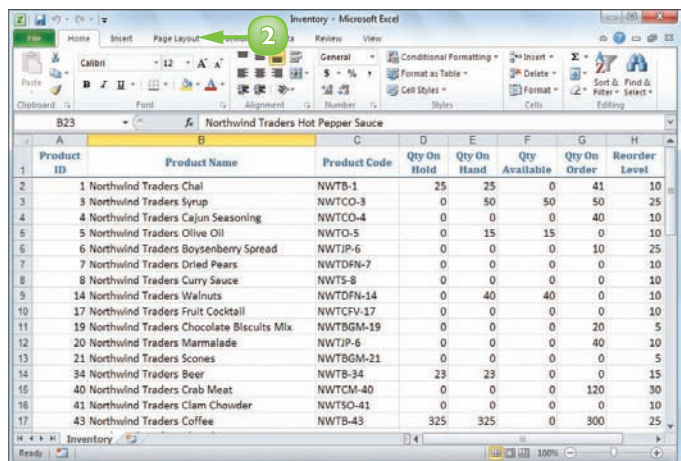
SET WORKBOOK FONTS

You can add visual appeal to your workbook by selecting a different font scheme. Each font scheme has two defined fonts: a *heading font* for the titles and headings and a *body font* for the regular worksheet text. Excel offers more than 20 font schemes.

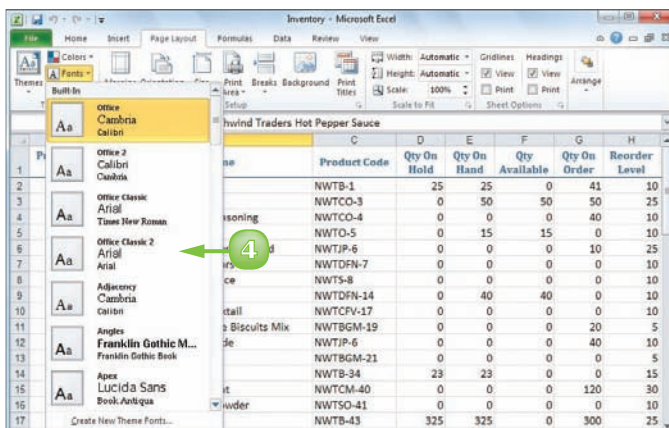
To get the most out of Excel's font schemes, particularly the heading fonts, you must apply styles to your ranges, as described in Chapter 4.

Apply Fonts to a Workbook

- 1 Open or switch to the workbook you want to format.
- 2 Click the **Page Layout** tab.
- 3 Click **Fonts** (A).



- 4 Click the font scheme you want to apply.

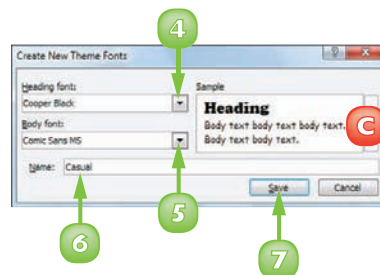


- A Excel applies the heading font to the workbook's headings.
- B Excel applies the body font to the workbook's regular text.

Product ID	Product Name	Product Code	Qty On Hand	Qty On Order	Reorder Level
1	Northwind Traders Chai	NWTFB-1	25	25	0
3	Northwind Traders Syrup	NWTCO-3	0	50	50
4	Northwind Traders Cajun Seasoning	NWTCO-4	0	0	40
5	Northwind Traders Olive Oil	NWTO-5	0	15	15
6	Northwind Traders Boysenberry Spread	NWTJP-6	0	0	10
7	Northwind Traders Dried Pears	NWTFDN-7	0	0	0
8	Northwind Traders Curry Sauce	NWTFDN-8	0	0	0
14	Northwind Traders Walnuts	NWTFDN-14	0	40	40
17	Northwind Traders Fruit Cocktail	NWTCFV-17	0	0	0
19	Northwind Traders Chocolate Biscuits Mix	NWTFBGM-19	0	0	20
20	Northwind Traders Marmalade	NWTFJP-6	0	0	40
21	Northwind Traders Scones	NWTFBGM-21	0	0	0
34	Northwind Traders Beer	NWTFB-34	23	23	0

Create a Font Scheme

- 1 Click the **Page Layout** tab.
- 2 Click .
- 3 Click **Create New Theme Fonts**.
- 4 Click the **Heading font**  and then click the font you want to use for titles and headings.
- 5 Click the **Body font**  and then click the font you want to use for regular worksheet text.
- C The Sample area shows what your theme fonts look like.
- 6 Type a name for the custom font scheme.
- 7 Click **Save**.

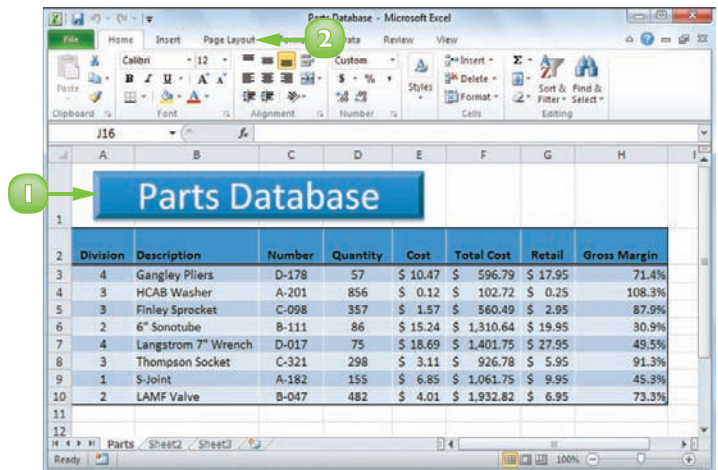


CHOOSE WORKBOOK EFFECTS

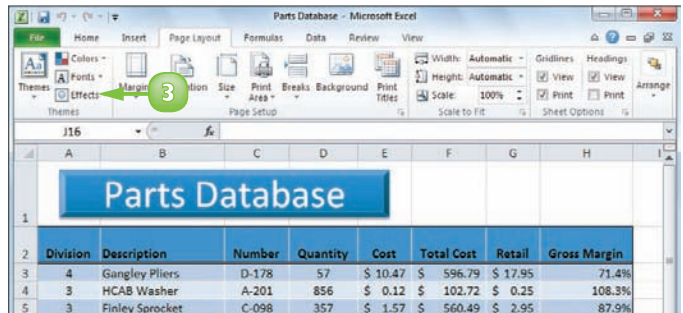
You can enhance the look of your workbook by selecting a different effect scheme. The effect scheme applies to charts and graphic objects, and each scheme defines a border style, fill style, and added effects, such as a drop shadow or glow. Excel offers more than 20 effect schemes.

To get the most out of Excel's effect schemes, you must apply styles to your charts, as described in Chapter 9.

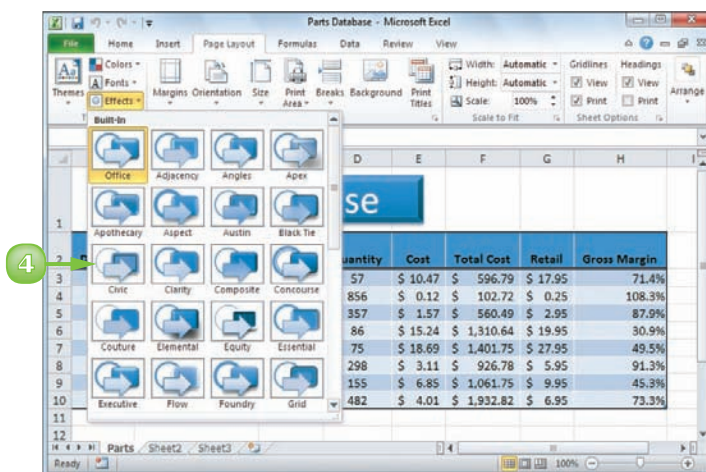
- 1 Open or switch to the workbook you want to format.
- 2 Click the **Page Layout** tab.



- 3 Click **Effects** (□).



- 4 Click the effect scheme you want to apply.



Excel applies the effect scheme to the workbook's charts and graphics.

The screenshot shows the 'Parts Database' table in Excel with the 'Office' effect scheme applied. The table has columns: Division, Description, Number, Quantity, Cost, Total Cost, Retail, and Gross Margin.

Division	Description	Number	Quantity	Cost	Total Cost	Retail	Gross Margin
4	Gangley Pliers	D-178	57	\$ 10.47	\$ 596.79	\$ 17.95	71.4%
3	HCAB Washer	A-201	856	\$ 0.12	\$ 102.72	\$ 0.25	108.3%
3	Finley Sprocket	C-098	357	\$ 1.57	\$ 560.49	\$ 2.95	87.9%
2	6" Sonotube	B-111	86	\$ 15.24	\$ 1,310.64	\$ 19.95	30.9%
4	Langstrom 7" Wrench	D-017	75	\$ 18.69	\$ 1,401.75	\$ 27.95	49.5%
3	Thompson Socket	C-321	298	\$ 3.11	\$ 926.78	\$ 5.95	91.3%
1	S-Joint	A-182	155	\$ 6.85	\$ 1,061.75	\$ 9.95	45.3%
2	LAMF Valve	B-047	482	\$ 4.01	\$ 1,932.82	\$ 6.95	73.3%



The colour you see in the effect schemes depends on the colour scheme you have applied to your workbook. If you want to use a custom effect colour, create a custom colour scheme and change the Accent 1 colour to the colour you want.



Excel does not have a feature that enables you to create your own effect scheme.

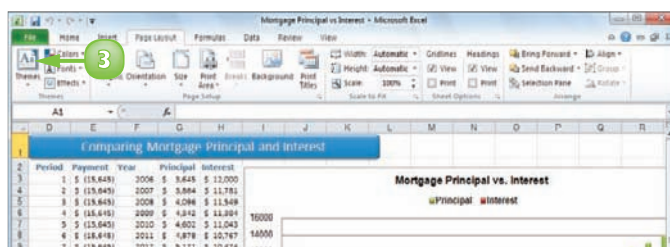
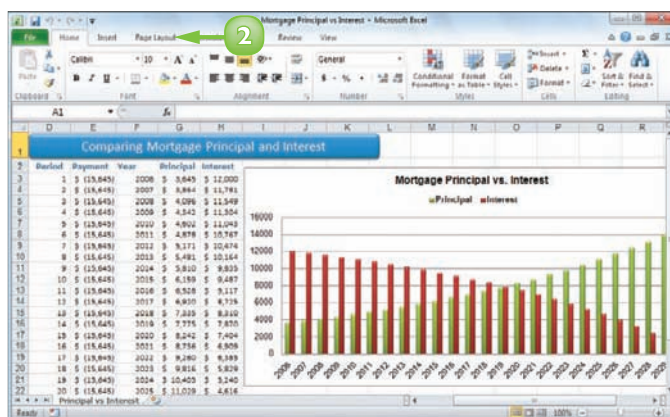
APPLY A WORKBOOK THEME

You can give your workbook a completely new look by selecting a different workbook theme. Each theme consists of the workbook's colours, fonts, and effects. Excel offers more than 20 predefined workbook themes.

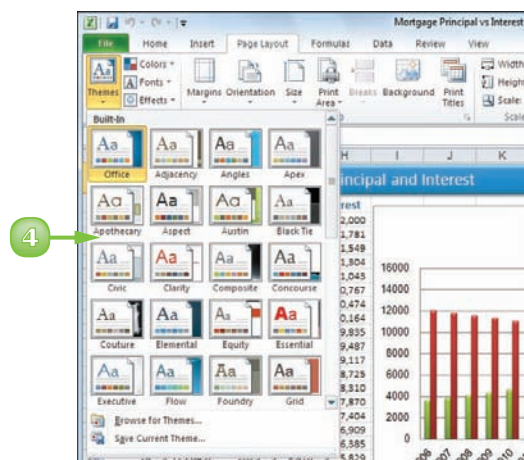
To get the most out of Excel's workbook themes, you must apply styles to your ranges, as described in Chapter 4, and to your charts, as described in Chapter 9.

Apply a Workbook Theme

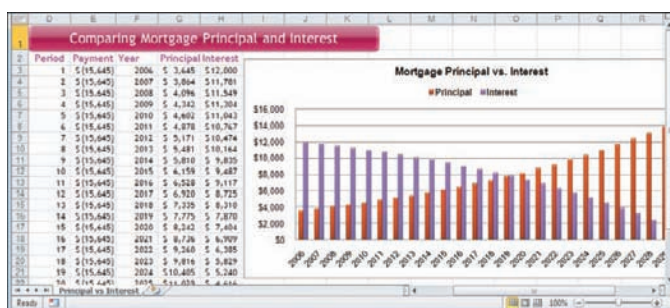
- 1 Open or switch to the workbook you want to format.
- 2 Click the **Page Layout** tab.
- 3 Click **Themes** ().



- 4 Click the workbook theme you want to apply.



Excel applies the theme to the workbook.

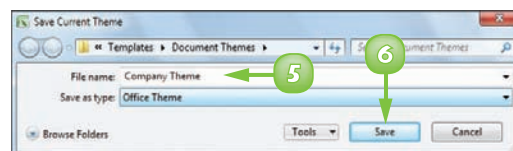


Create a Workbook Theme

- 1 Format the workbook with a colour scheme, font scheme, and effect scheme.
- 2 Click the **Page Layout** tab.
- 3 Click .
- 4 Click **Save Current Theme**.

The Save Current Theme dialog box appears.

- 5 Type a name for the custom theme.
- 6 Click **Save**.



CONTENTS

- I52** Sort a Range
- I54** Filter a Range
- I56** Set Data Validation Rules
- I58** Convert a Range to a Table
- I60** Create a Data Table
- I62** Summarise Data with Subtotals

8

ANALYSING EXCEL DATA

You can get more out of Excel by performing *data analysis*, which is the application of tools and techniques to organise, study and reach conclusions about a specific collection of information.

In this chapter you learn how to sort and filter a range, apply data validation rules to a range, convert a range to a table, create a data table and summarise data using subtotals.

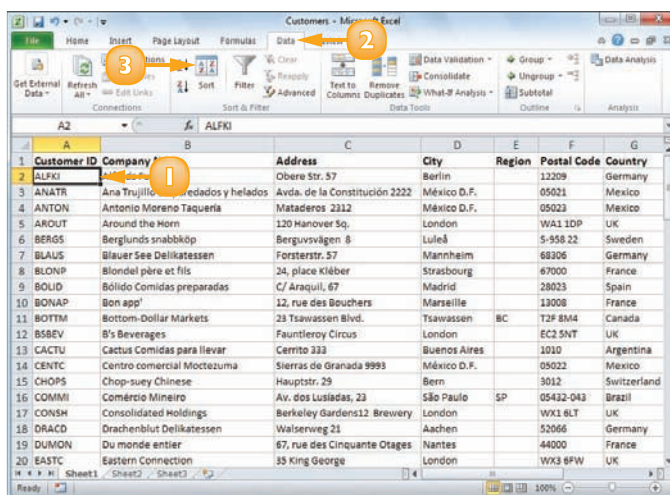


SORT A RANGE

You can make a range easier to read and easier to analyse by sorting the data based on the values in one or more columns.

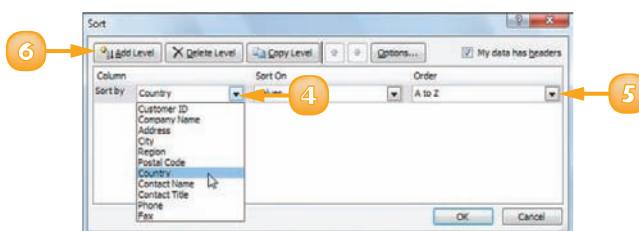
You can sort the data in either ascending or descending order. An ascending sort arranges the values alphabetically from A to Z or numerically from 0 to 9; a descending sort arranges the values alphabetically from Z to A or numerically from 9 to 0.

- 1 Click any cell in the range you want to sort.
- 2 Click the **Data** tab.
- 3 Click **Sort** ().



The Sort dialog box appears.

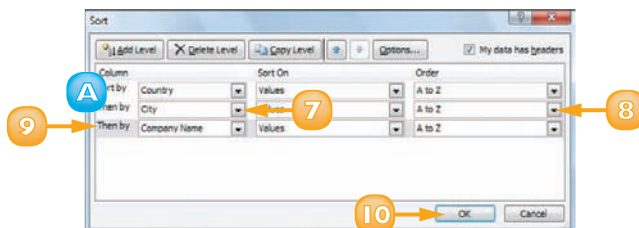
- 4 Click the **Sort by** and then click the field you want to use for the main sort level.
- 5 Click the **Order** and then click a sort order for the field.
- 6 To sort on another field, click **Add Level**.



A Excel adds another sort level.

- 7** Click the **Then by** ▾ and then click the field you want to use for the sort level.
- 8** Click the **Order** ▾ and then click a sort order for the field.
- 9** Repeat Steps **6** to **8** to add more sort levels as needed.
- 10** Click **OK**.

Excel sorts the range.



	A	B	C	D	E	F	G
1	Customer ID	Company Name	Address	City	Region	Postal Code	Country
2	CACTU	Cactus Comidas para llevar	Cerrito 333	Buenos Aires		1010	Argentina
3	OCEAN	Oceano Atlántico Ltda.	Ing. Gustavo Moncada 8585Piso 2	Buenos Aires		1010	Argentina
4	RANCH	Rancho grande	Av. del Libertador 900	Buenos Aires		1010	Argentina
5	ERNST	Ernst Handel	Kirchgasse 6	Graz		8010	Austria
6	PICCO	Piccolo und mehr	Geistweg 14	Salzburg		5020	Austria
7	MAISO	Maison Devery	Rue Joseph-Beno 332	Bruxelles		B-1180	Belgium
8	SUPRD	Suprêmes délices	Boulevard Tirou, 255	Charleroi		B-6000	Belgium
9	GOURL	Gourmet Lanchonettes	Av. Brasil, 442	Campinas	SP	04876-786	Brazil
10	WELLI	Wellington Importadora	Rua do Mercado, 12	Resende	SP	08737-363	Brazil
11	HANAR	Hanari Carnes	Rua do Papo, 87	Rio de Janeiro RJ		05454-876	Brazil
12	QUEDE	Que Delícia	Rua da Penficação, 12	Rio de Janeiro RJ		02389-673	Brazil
13	RICAR	Ricardo Adocidos	Av. Copacabana, 267	Rio de Janeiro RJ		02389-890	Brazil
14	COMMI	Comércio Mineiro	Av. dos Lusíadas, 23	São Paulo	SP	05412-043	Brazil
15	FAMIA	Família Arquibaldo	Rua Orco, 92	São Paulo	SP	05442-030	Brazil
16	QUEEN	Queen Cozinha	Alameda dos Canários, 891	São Paulo	SP	05487-020	Brazil
17	TRADH	Tradição Hipermarcados	Av. Inês de Castro, 414	São Paulo	SP	05634-030	Brazil
18	MEREP	Mère Pailarde	43 rue St. Laurent	Montréal	Québec	H1T 1C3	Canada
19	BOTTOM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada
20	LAUGH	Laughing Bacchus Wine Cellars	1900 Oak St.	Vancouver	BC	V3F 2K1	Canada



*If you need to sort on only one column, click in any cell in the column. Click the **Data** tab. In the **Sort & Filter** group, click  for an ascending sort or  for a descending sort.*



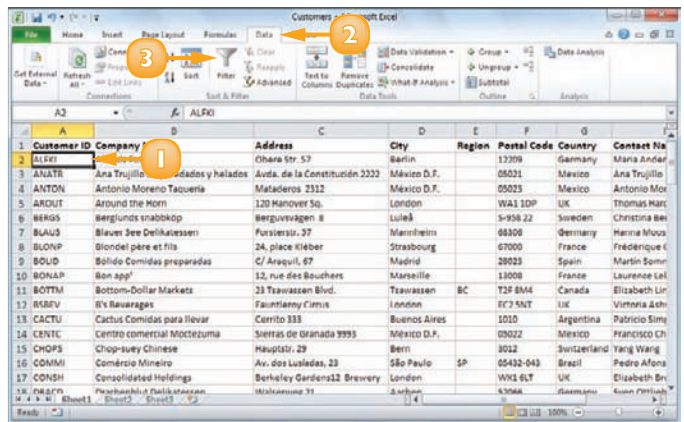
*You can tell Excel to sort a range from left to right based on the values in one or more rows. Follow Steps 1 to 3 to display the **Sort** dialog box. Click **Options** and select the **Sort left to right** option ( changes to ). Click **OK**.*

FILTER A RANGE

You can analyse table data much faster by filtering the data. *Filtering* a table means that you configure a field so that you only view the table records that you want to work with. One way to do this is to use the AutoFilter feature, which presents you with a list of check boxes for each unique value in a field. You filter the data by activating the check boxes for the records you want to see.

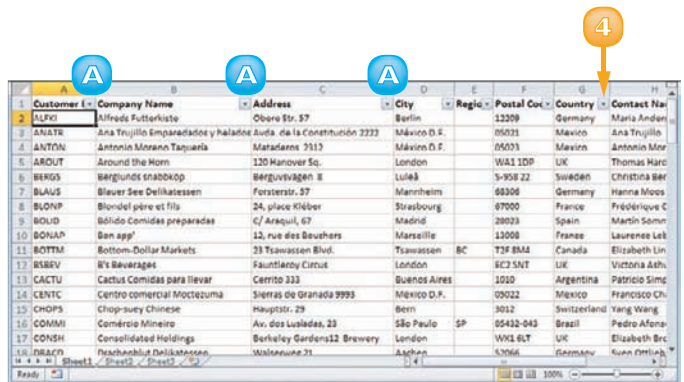
Apply a Filter

- 1 Click inside the table.
- 2 Click the **Data** tab.
- 3 Click **Filter** (🔍).



A Excel adds ▼ to each field.

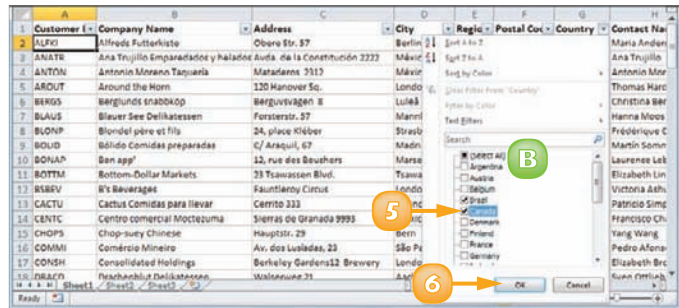
- 4 Click ▼ for the field you want to use as the filter.



B Excel displays a list of the unique values in the field.

5 Click the check box for each value you want to see (☐ changes to ☒).

6 Click **OK**.

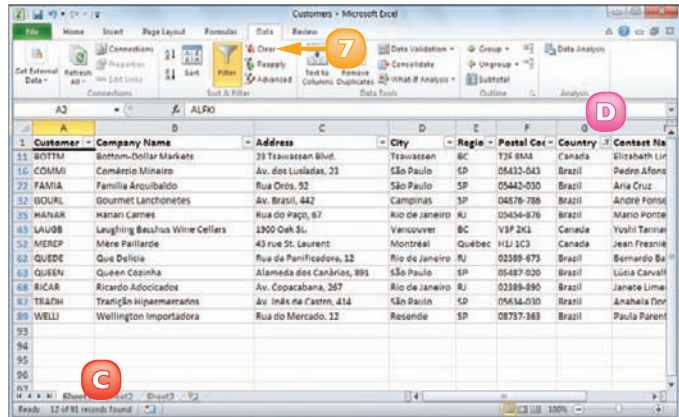


Excel filters the table to show only those records that have the field values you selected.

C Excel displays the number of records found.

D The field's drop-down list displays a filter icon (.

7 To remove the filter, click **Clear** (.



Create More Sophisticated Filters

1 Follow Steps **1** to **4** to apply a filter.

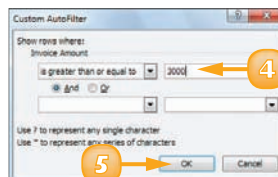
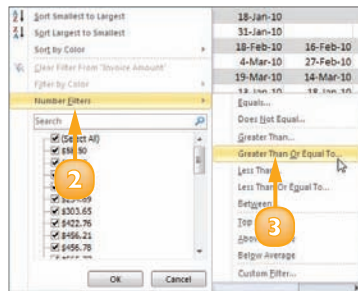
2 Click **Number Filters**.

Note: If the field is a date field, click **Date Filters**; if the field is a text field, click **Text Filters**.

3 Click the filter you want to use.

4 Type the value you want to use or use the list box to select a unique value from the field.

5 Click **OK**.

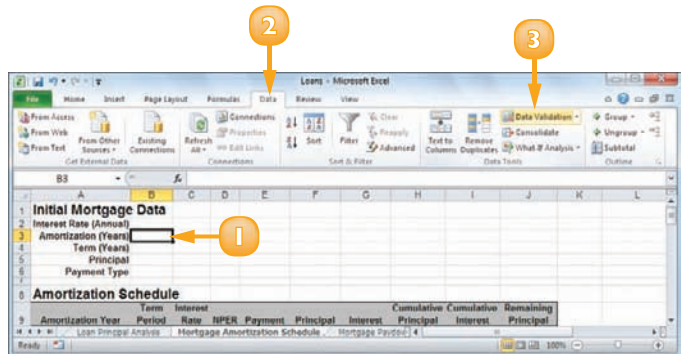


SET DATA VALIDATION RULES

You can make Excel data entry more efficient by setting up data entry cells to accept only certain values. To do this, you can set up a cell with data validation criteria that specify the allowed value or values.

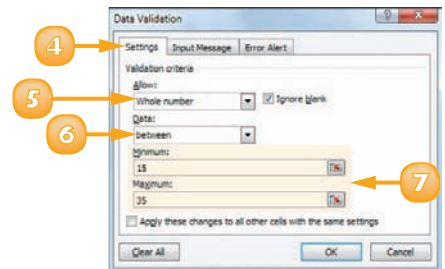
Excel also lets you tell the user what to enter by defining an input message that appears when the user selects the cell.

- 1 Click the cell you want to restrict.
- 2 Click the **Data** tab.
- 3 Click **Data Validation** ().



The Data Validation dialog box appears.

- 4 Click the **Settings** tab.
- 5 In the Allow list, click the type of data you want to allow in the cell.
- 6 Use the Data list to click the operator you want to use to define the allowable data.
- 7 Specify the validation criteria, such as the Maximum and Minimum allowable values shown here.

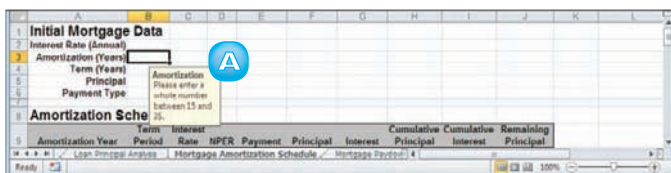
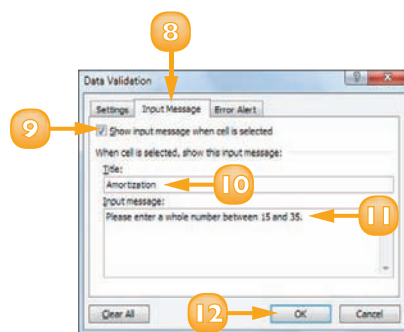


Note: The criteria boxes you see depend on the operator you chose in Step 6.

- 8 Click the **Input Message** tab.
- 9 Make sure the **Show input message when cell is selected** check box is clicked (☑).
- 10 Type a message title in the Title text box.
- 11 Type the message you want to display in the **Input message** text box.
- 12 Click **OK**.

Excel configures the cell to accept only values that meet your criteria.

A When the user selects the cell, the input message appears.



You can configure the cell to display a message if the user tries to enter an invalid value. Follow Steps 1 to 3 to open the Data Validation dialog box and then click the Error Alert tab. Make sure the Show error alert after invalid data is entered check box is clicked (☑) and then specify the Style, Title, and Error Message. Click OK.



If you no longer need to use data validation on a cell, you should clear the settings. Follow Steps 1 to 3 to display the Data Validation dialog box and then click Clear All. Excel removes all the validation criteria, as well as the input message and the error alert. Click OK.

CONVERT A RANGE TO A TABLE

You can apply Excel's powerful table tools to any range by first converting that range to a table. In Excel, a *table* is a collection of related information with an organisational structure that makes it easy to add, edit and sort data.

A table is a type of database where the data is organised into rows and columns: Each column represents a database field and each row represents a database record.

- 1 Click a cell within the range that you want to convert to a table.

Division	Description	Number	Quantity	Cost	Total Cost	Retail	Gross Margin
4	Gangley Pliers	D-178	57	\$10.47	\$596.79	\$17.95	71%
3	HCAB Washer	A-201	856	\$0.12	\$102.72	\$0.25	108%
3	Finley Sprocket	C-098	357	\$1.57	\$560.49	\$2.95	88%
2	6" Sonotube	B-111	86	\$15.24	\$1,310.64	\$19.95	31%
4	Langstrom 7" Wrench	D-017	75	\$18.69	\$1,401.75	\$27.95	50%
3	Thompson Socket	C-321	298	\$3.11	\$926.78	\$5.95	91%
1	S-Joint	A-182	155	\$6.85	\$1,061.75	\$9.95	45%
2	LAMP Valve	B-047	482	\$4.01	\$1,932.82	\$6.95	73%

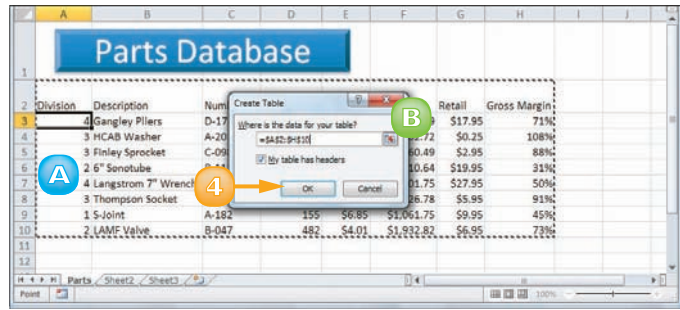
- 2 Click the **Insert** tab.
- 3 Click **Table** ().

Note: You can also choose the Table command by pressing **Ctrl + T**.

Division	Description	Number	Quantity	Cost	Total Cost	Retail	Gross Margin
4	Gangley Pliers	D-178	57	\$ 10.47	\$ 596.79	\$ 17.95	71.4%
3	HCAB Washer	A-201	856	\$ 0.12	\$ 102.72	\$ 0.25	108.3%
3	Finley Sprocket	C-098	357	\$ 1.57	\$ 560.49	\$ 2.95	87.9%
2	6" Sonotube	B-111	86	\$ 15.24	\$ 1,310.64	\$ 19.95	30.9%
4	Langstrom 7" Wrench	D-017	75	\$ 18.69	\$ 1,401.75	\$ 27.95	49.5%
3	Thompson Socket	C-321	298	\$ 3.11	\$ 926.78	\$ 5.95	91.3%
1	S-Joint	A-182	155	\$ 6.85	\$ 1,061.75	\$ 9.95	45.3%
2	LAMP Valve	B-047	482	\$ 4.01	\$ 1,932.82	\$ 6.95	73.3%

The Create Table dialog box appears.

- A** Excel selects the range that it will convert to a table.
- B** If you want to change the range, click , drag the mouse  over the new range and then click .

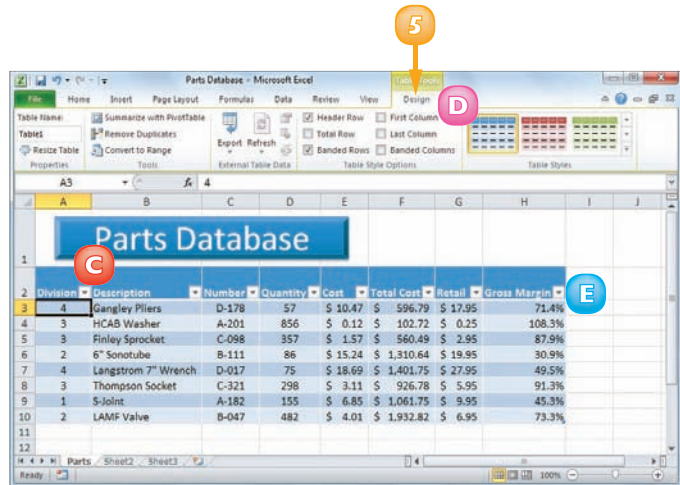


- 4** Click **OK**.

Excel converts the range to a table.

- C** Excel applies a table format to the range.
- D** The Table Tools contextual tab appears.
- E** AutoFilter drop-down lists appear in each field heading.

- 5** Click the **Design** tab to see Excel's table design tools.



To add a record to the end of a table, click inside the table, press **Ctrl + ↓** and then **Ctrl + →** to move to the last field in the last record and then press **Tab**. To add a record within the table, right-click the record above where you want to insert the new record, click **Insert** and then click **Table Rows Above**.



If you no longer require the table tools, you can convert the table back into a regular range. Select any cell within the table, click the **Design** tab and then click **Convert to Range** (). When Excel asks you to confirm, click **Yes**. Excel removes the AutoFilter drop-down lists and hides the **Table Tools** contextual tab.

CREATE A DATA TABLE

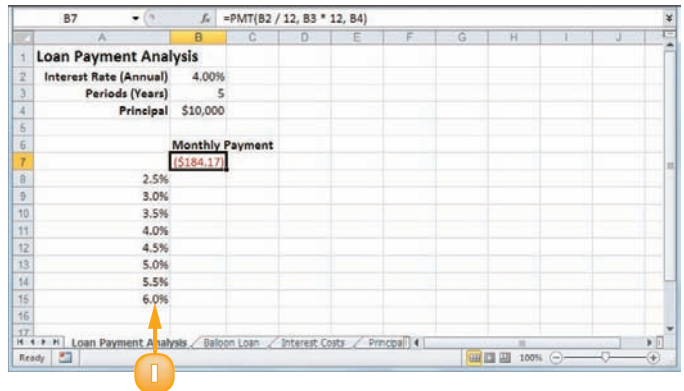
If you are interested in studying the effect a range of values has on a formula, you can set up a *data table*. This is a table that consists of the formula you are using and multiple input values for that formula. Excel automatically creates a solution to the formula for each different input value.

Do not confuse data tables with the Excel tables that you learned about in “Convert a Range to a Table.” A data table is a special range that Excel uses to calculate multiple solutions to a formula.

1 Type the input values:

To enter the values in a column, start the column one cell down and one cell to the left of the cell containing the formula, as shown here.

To enter the values in a row, start the row one cell up and one cell to the right of the cell containing the formula.

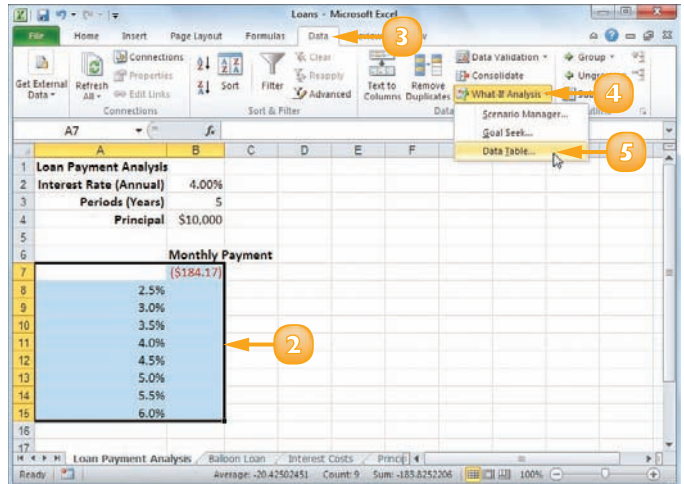


2 Select the range that includes the input values and the formula.

3 Click the **Data** tab.

4 Click **What-If Analysis** (What-If Analysis icon).

5 Click **Data Table**.



The Data Table dialog box appears.

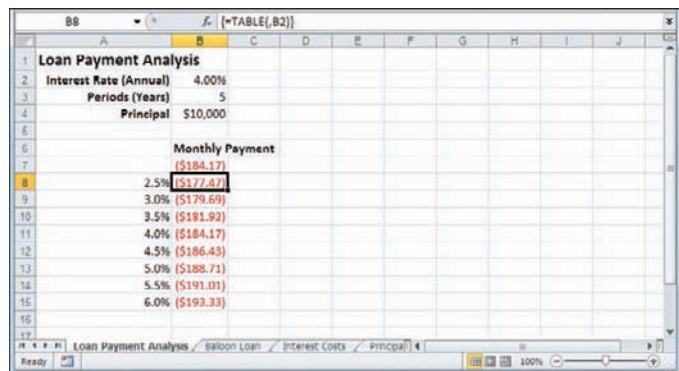
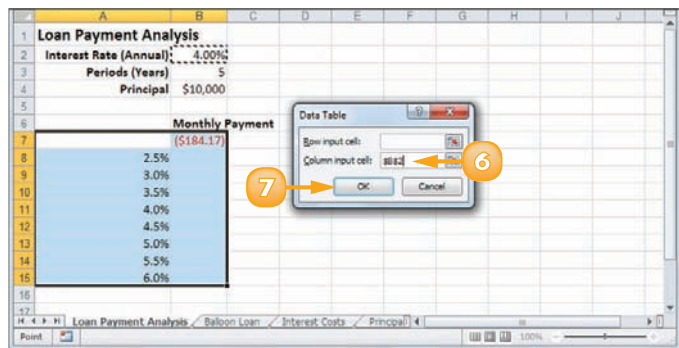
- 6 Specify the formula cell you want to use as the data table's input cell:

If the input values are in a column, enter the input cell's address in the Column input cell text box.

If you entered the input values in a row, enter the input cell's address in the Row input cell text box.

- 7 Click **OK**.

Excel displays the results.



The technique called what-if analysis is perhaps the most basic method for analysing worksheet data. With what-if analysis, you first calculate a formula D, based on the input from variables A, B and C. You then say, “What happens to the result if I change the value of variable A?”, “What happens if I change B or C?”, and so on.



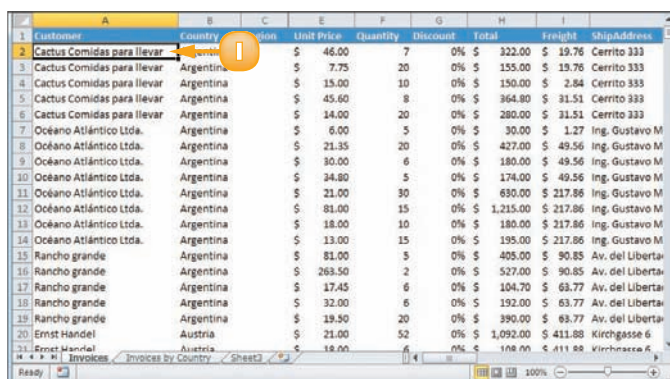
Data table results are created as an array formula, which is a special formula that Excel treats as a unit. This means that you cannot move or delete part of the results. If you need to work with the data table results, you must first select the entire results range.

SUMMARISE DATA WITH SUBTOTALS

When you need to summarise your data, Excel offers a feature that enables you to quickly and easily add subtotals to a range of data.

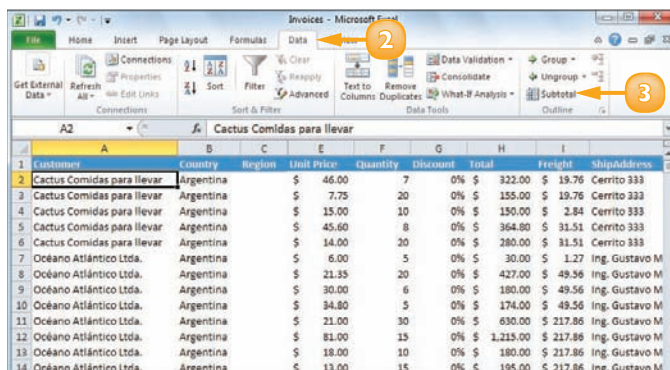
Although you can use formulas and worksheet functions to summarise your data in various ways, including sums, averages, counts, maximums, and minimums, if you are in a hurry, or if you just need a quick summary of your data, you can get Excel to do most of the work for you. The secret here is a feature called *automatic subtotals*, which are formulas that Excel adds to a worksheet automatically.

- 1 Click a cell within the range you want to subtotal.



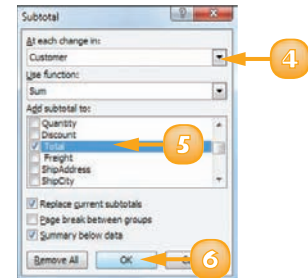
Customer	Country	Region	Unit Price	Quantity	Discount	Total	Freight	ShipAddress
Cactus Comidas para llevar	Argentina		\$ 46.00	7	0%	\$ 322.00	\$ 19.76	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 7.75	20	0%	\$ 155.00	\$ 19.76	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 15.00	10	0%	\$ 150.00	\$ 2.84	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 45.60	8	0%	\$ 364.80	\$ 31.51	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 14.00	20	0%	\$ 280.00	\$ 31.51	Cerrito 333
Océano Atlántico Ltda.	Argentina		\$ 6.00	5	0%	\$ 30.00	\$ 1.27	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 21.35	20	0%	\$ 427.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 30.00	6	0%	\$ 180.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 34.80	5	0%	\$ 174.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 21.00	30	0%	\$ 630.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 81.00	15	0%	\$ 1,215.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 18.00	10	0%	\$ 180.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 13.00	15	0%	\$ 195.00	\$ 217.86	Ing. Gustavo M
Rancho grande	Argentina		\$ 81.00	5	0%	\$ 405.00	\$ 90.85	Av. del Libertador
Rancho grande	Argentina		\$ 263.50	2	0%	\$ 527.00	\$ 90.85	Av. del Libertador
Rancho grande	Argentina		\$ 17.45	6	0%	\$ 104.70	\$ 63.77	Av. del Libertador
Rancho grande	Argentina		\$ 32.00	6	0%	\$ 192.00	\$ 63.77	Av. del Libertador
Rancho grande	Argentina		\$ 19.50	20	0%	\$ 390.00	\$ 63.77	Av. del Libertador
Ernst Handel	Austria		\$ 21.00	52	0%	\$ 1,092.00	\$ 411.88	Kirchgasse 6
Ernst Handel	Austria		\$ 18.00	6	0%	\$ 108.00	\$ 111.88	Kirchgasse 6

- 2 Click the **Data** tab.
- 3 Click **Subtotal** (Σ).



Customer	Country	Region	Unit Price	Quantity	Discount	Total	Freight	ShipAddress
Cactus Comidas para llevar	Argentina		\$ 46.00	7	0%	\$ 322.00	\$ 19.76	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 7.75	20	0%	\$ 155.00	\$ 19.76	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 15.00	10	0%	\$ 150.00	\$ 2.84	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 45.60	8	0%	\$ 364.80	\$ 31.51	Cerrito 333
Cactus Comidas para llevar	Argentina		\$ 14.00	20	0%	\$ 280.00	\$ 31.51	Cerrito 333
Océano Atlántico Ltda.	Argentina		\$ 6.00	5	0%	\$ 30.00	\$ 1.27	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 21.35	20	0%	\$ 427.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 30.00	6	0%	\$ 180.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 34.80	5	0%	\$ 174.00	\$ 49.56	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 21.00	30	0%	\$ 630.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 81.00	15	0%	\$ 1,215.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 18.00	10	0%	\$ 180.00	\$ 217.86	Ing. Gustavo M
Océano Atlántico Ltda.	Argentina		\$ 13.00	15	0%	\$ 195.00	\$ 217.86	Ing. Gustavo M

The Subtotal dialog box appears.



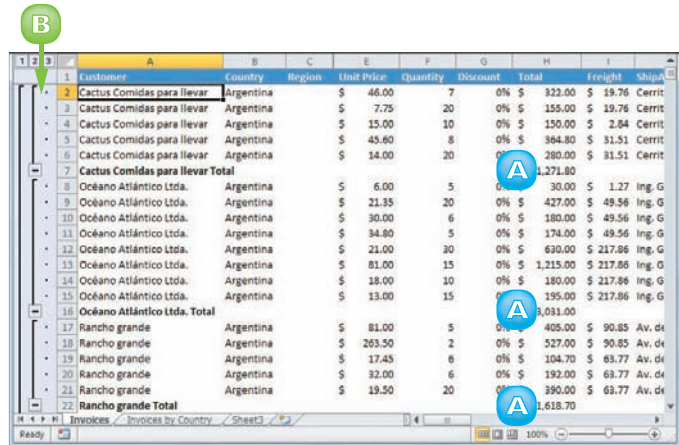
4 Click the **At each change in**  and then click the column you want to use to group the subtotals.

5 In the **Add subtotal to** list, click the check box for the column you want to summarise ( changes to ).

6 Click **OK**.

A Excel calculates the subtotals and adds them into the range.

B Excel adds outline symbols to the range.



	A	B	C	D	E	F	G	H	I	J
	Customer	Country	Region	Unit Price	Quantity	Discount	Total	Freight	Ship	
2	Cactus Comidas para llevar	Argentina		\$ 46.00	7	0%	\$ 322.00	\$ 19.76	Cerrit	
3	Cactus Comidas para llevar	Argentina		\$ 7.75	20	0%	\$ 155.00	\$ 19.76	Cerrit	
4	Cactus Comidas para llevar	Argentina		\$ 15.00	10	0%	\$ 150.00	\$ 2.84	Cerrit	
5	Cactus Comidas para llevar	Argentina		\$ 45.60	8	0%	\$ 364.80	\$ 31.51	Cerrit	
6	Cactus Comidas para llevar	Argentina		\$ 14.00	20		\$ 280.00	\$ 81.51	Cerrit	
7	Cactus Comidas para llevar Total						1,271.80			
8	Océano Atlántico Ltda.	Argentina		\$ 6.00	5	0%	\$ 30.00	\$ 1.27	Ing. G	
9	Océano Atlántico Ltda.	Argentina		\$ 21.35	20	0%	\$ 427.00	\$ 49.56	Ing. G	
10	Océano Atlántico Ltda.	Argentina		\$ 30.00	6	0%	\$ 180.00	\$ 49.56	Ing. G	
11	Océano Atlántico Ltda.	Argentina		\$ 34.80	5	0%	\$ 174.00	\$ 49.56	Ing. G	
12	Océano Atlántico Ltda.	Argentina		\$ 21.00	30	0%	\$ 630.00	\$ 217.86	Ing. G	
13	Océano Atlántico Ltda.	Argentina		\$ 81.00	15	0%	\$ 1,215.00	\$ 217.86	Ing. G	
14	Océano Atlántico Ltda.	Argentina		\$ 18.00	10	0%	\$ 180.00	\$ 217.86	Ing. G	
15	Océano Atlántico Ltda.	Argentina		\$ 13.00	15		\$ 195.00	\$ 217.86	Ing. G	
16	Océano Atlántico Ltda. Total						3,011.00			
17	Rancho grande	Argentina		\$ 81.00	5	0%	\$ 405.00	\$ 90.85	Av. dr	
18	Rancho grande	Argentina		\$ 263.50	2	0%	\$ 527.00	\$ 90.85	Av. dr	
19	Rancho grande	Argentina		\$ 17.45	8	0%	\$ 104.70	\$ 63.77	Av. dr	
20	Rancho grande	Argentina		\$ 22.00	6	0%	\$ 132.00	\$ 63.77	Av. dr	
21	Rancho grande	Argentina		\$ 19.50	20	0%	\$ 390.00	\$ 63.77	Av. dr	
22	Rancho grande Total						1,618.70			

 Excel sets up automatic subtotals based on data groupings in a selected field. For example, if you ask for subtotals based on the Customer field, Excel runs down the Customer column and creates a new subtotal each time the name changes. To get useful summaries, then, you need to sort the range on the field containing the data groupings you are interested in.

 The word “subtotal” is a bit misleading because you can summarise more than just totals. You can also count values, calculate the average of the values, determine the maximum or minimum value, and more. To change the summary calculation, follow Steps 1 to 4, click the Use function  and then click the function you want to use for the summary.

CONTENTS

- 166** Examining Chart Elements
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- 172** Position the Chart Legend
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- 174** Display a Data Table
- 175** Change the Chart Layout and Style
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- 180** Set a Chart Element's Outline
- 182** Add Effects to a Chart Element
- 184** Apply a Style to a Chart Element

9

VISUALISING DATA WITH EXCEL CHARTS

You can take a worksheet full of numbers and display them as a chart. Visualising your data in this way makes the data easier to understand and analyse. To help you see your data exactly the way you want, Excel offers a wide variety of chart types, including pie charts, column charts and stock charts. Excel also offers a large number of chart options that enable you to add chart titles and data labels, control the chart legend and gridlines, format the chart layout and style, change the chart type and format chart elements.



EXAMINING CHART ELEMENTS

A *chart* is a graphic representation of spreadsheet data that uses columns, points, pie wedges, and other forms to represent numbers from a range. As the data in the spreadsheet changes, the chart also changes to reflect the new numbers. To get the most out of charts, you need to familiarise yourself with the basic chart elements.

A Plot Area

The area bounded by the category and value axes. It contains the data points and gridlines.

B Category Axis

The axis (usually the X axis) that contains the category groupings.

C Value Axis

The axis (usually the Y axis) that contains the data values.

D Chart Title

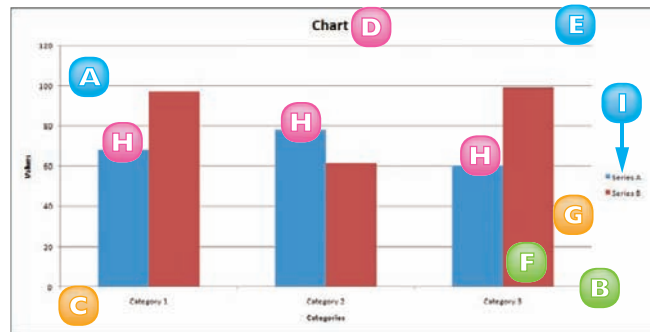
The title of the chart.

E Gridlines

Optional horizontal and vertical extensions of the axis tick marks. These make data values easier to read.

F Data Value

A single piece of data. Also called a *data point*.



G Data Marker

A symbol that represents a specific data value. The symbol used depends on the chart type.

H Data Series

A collection of related data values. Normally, the marker for each value in a series has the same pattern.

I Legend

A guide that shows the colours, patterns, and symbols used by the markers for each data series.

UNDERSTANDING CHART TYPES

Excel offers 11 different types of chart, including column charts, bar charts, line charts, and pie charts. The chart type you use depends on the type of data and how you want to present that data visually. Although you must select a particular chart type when you first construct your chart, you can quickly and easily change to a different chart type later on if you need to.

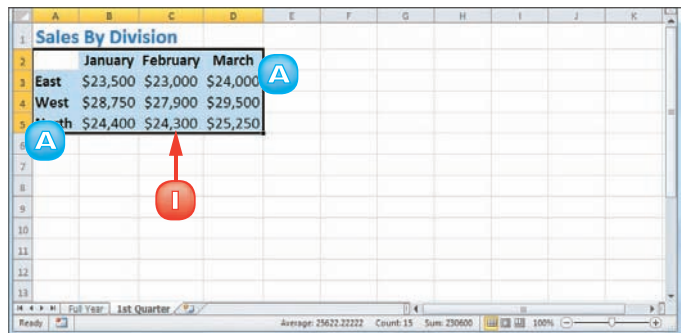
Chart Type	Description
Area	A chart that shows the relative contributions over time that each data series makes to the whole picture.
Bar	A chart that compares distinct items or shows single items at distinct intervals. A bar chart is laid out with categories along the vertical axis and values along the horizontal axis.
Bubble	A chart with three data series; in the third series, the individual plot points are displayed as bubbles (the larger the value, the larger the bubble). It is similar to an XY chart.
Column	A chart that, like a bar chart, compares distinct items or shows single items at distinct intervals. However, a column chart is laid out with categories along the horizontal axis and values along the vertical axis.
Doughnut	A chart that, like a pie chart, shows the proportion of the whole that is contributed by each value in a data series. The advantage of a doughnut chart is that you can plot multiple data series.
Line	A chart that shows how a data series changes over time. The category (X) axis usually represents a progression of even increments (such as days or months) and the series points are plotted on the value (Y) axis.
Pie	A chart that shows the proportion of the whole that is contributed by each value in a single data series. The whole is represented as a circle (the "pie"), and each value is displayed as a proportional "slice" of the circle.
Radar	A chart that makes comparisons within a data series and between data series relative to a centre point. Each category is shown with a value axis extending from the centre point.
Stock	A chart that is designed to plot stock market prices, such as a stock's daily high, low and closing values.
Surface	A chart that analyses two sets of data and determines the optimum combination of the two.
XY	A chart that shows the relationship between numeric values in two different data series. It can also plot a series of data pairs in XY coordinates. It is also called a scatter chart.

CREATE A CHART

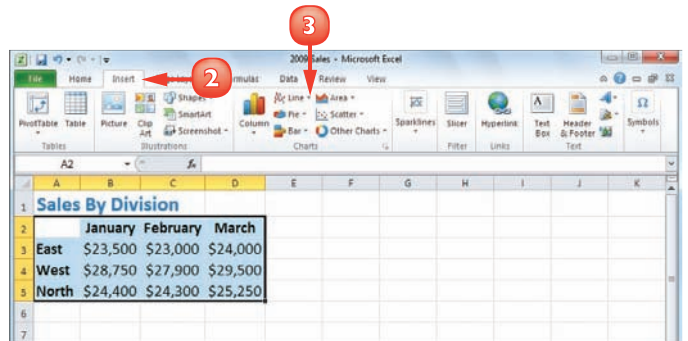
You can create a chart from your Excel worksheet data with just a few mouse clicks. As shown in “Understanding Chart Types,” Excel comes with 11 main chart types. However, each of these types has several predefined varieties, so in all Excel offers more than 70 default chart configurations, which means there should always be a type that best visualises your data.

Regardless of the chart type you choose originally, you can change to a different chart type at any time.

- I** Select the data that you want to visualise in a chart.
- A** *If your data includes headings, be sure to include those headings in the selection.*

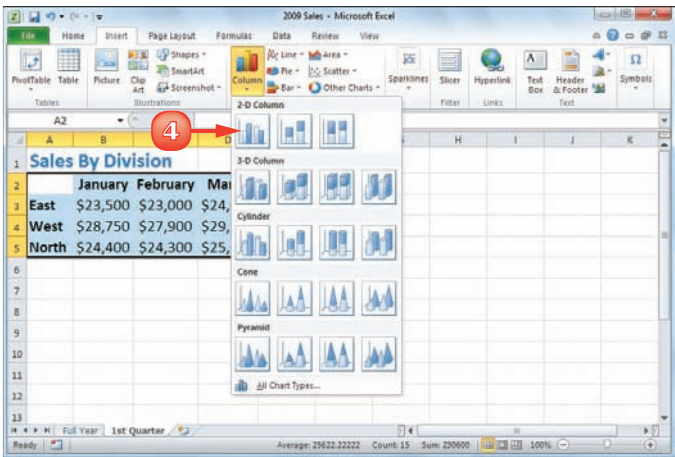


- 2** Click the **Insert** tab.
- 3** Click a chart type.

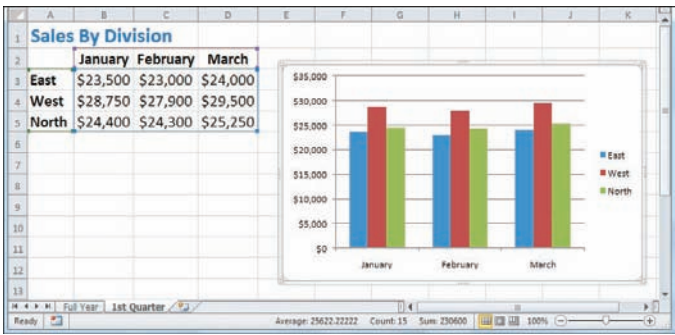


Excel displays a gallery of configurations for the chart type.

- 4 Click the chart configuration you want to use.



Excel inserts the chart.



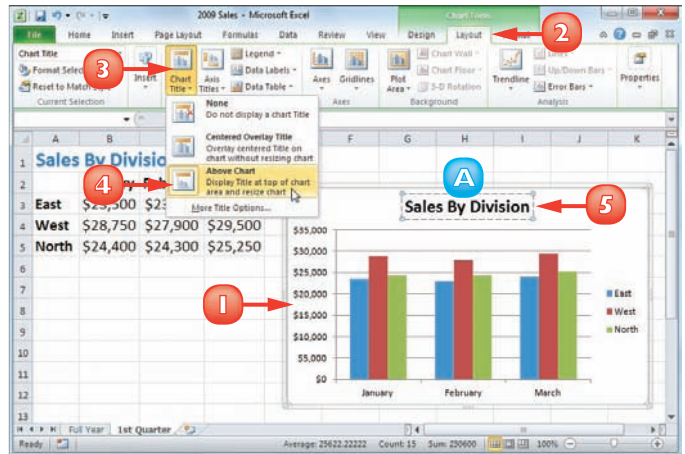
You can create a chart on a special workbook sheet called a chart sheet. Select the worksheet data, right-click any worksheet tab and then click Insert to display the Insert dialog box. Click the General tab, click Chart and then click OK. Excel creates a new chart sheet and inserts the chart.

ADD CHART TITLES

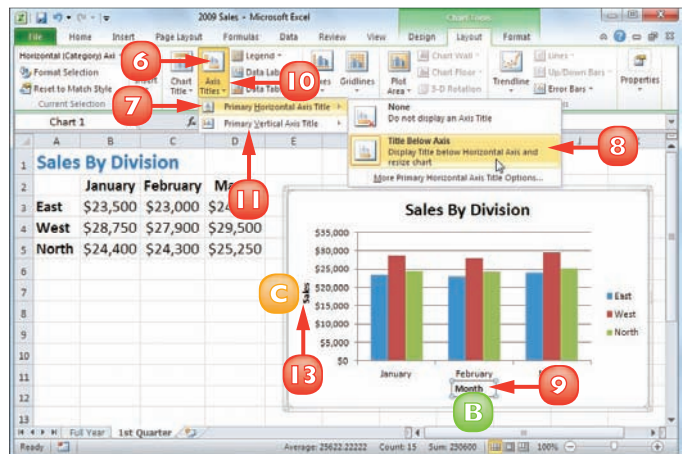
You can make your chart easier to read and easier to understand by adding one or more titles to the chart.

You can add a *chart title*, which appears at the top of the chart and is usually a word or short phrase that describes the chart data. You can also add titles to the chart axes. The *primary horizontal axis title* is a title that appears below the chart's category (X) axis; the *primary vertical axis title* is a title that appears the left of the chart's value (Y) axis.

- 1 Click the chart.
 - 2 Click the **Layout** tab.
 - 3 Click **Chart Title** ().
 - 4 Click **Above Chart**.
- A Excel adds the title area.
- 5 Type the title.



- 6 Click **Axis Titles** ().
 - 7 Click **Primary Horizontal Axis Title**.
 - 8 Click **Title Below Axis**.
- B Excel adds the title area.
- 9 Type the title.
 - 10 Click ().
 - 11 Click **Primary Vertical Axis Title**.
 - 12 Click **Rotated Title**.



- C Excel adds the title area.
- 13 Type the title.

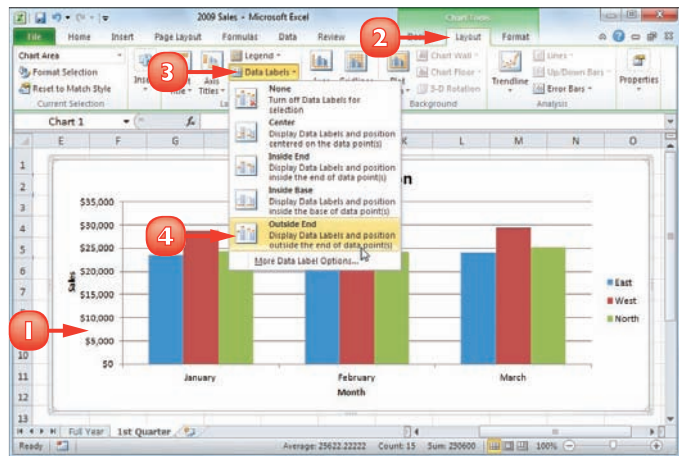
ADD DATA LABELS

You can make your chart easier to read by adding data labels. A *data label* is a small text box that appears in or near a data marker and displays the value of that data point.

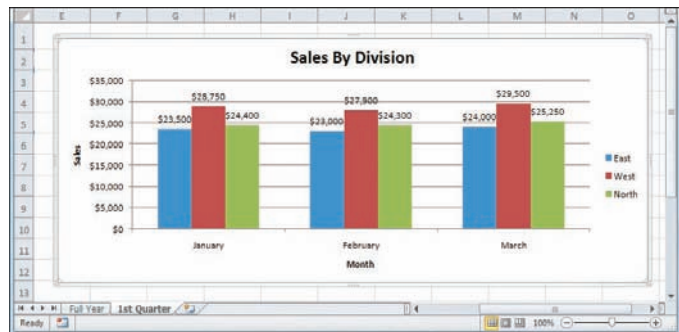
Excel offers several position options, which depend on the chart type, for the data labels. For example, with a column chart you can place the data labels within or above each column and for a line chart you can place the labels to the left, right, above or below, the data marker.

- 1 Click the chart.
- 2 Click the **Layout** tab.
- 3 Click **Data Labels** (📊).
- 4 Click the position you want to use for the data labels.

Note: Remember that the position options you see depend on the chart type.



Excel adds the labels to the chart.



POSITION THE CHART LEGEND

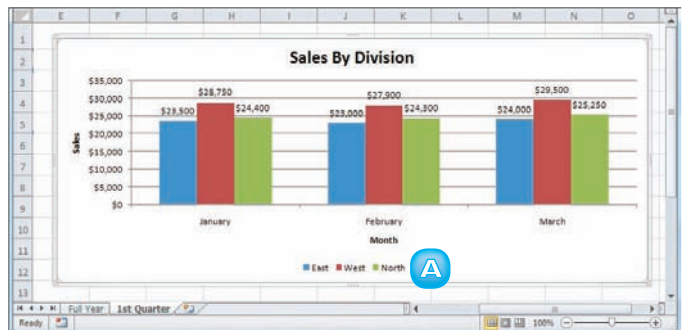
The chart *legend* is a box that appears alongside the chart and serves to identify the colours associated with each data series in the chart. By default, the legend appears to the right of the chart's plot area but you might prefer a different location.

For example, you might find the legend easier to read if it appears to the left of the chart. Alternatively, if you want more horizontal room to display your chart, you can move the legend above or below the chart.

- 1 Click the chart.
- 2 Click the **Layout** tab.
- 3 Click **Legend** (📊).
- 4 Click the position you want to use for the legend.



A Excel moves the legend.



DISPLAY CHART GRIDLINES

You can make your chart easier to read and easier to analyse by adding gridlines. Horizontal gridlines extend from the vertical (value) axis and are useful with area, bubble, and column charts. Vertical gridlines extend from the horizontal (category) axis and are useful with bar and line charts.

Major gridlines are gridlines associated with the *major units*: the values you see displayed on the vertical and horizontal axes; *minor gridlines* are gridlines associated with the *minor units*: values between each major unit.

- 1 Click the chart.
- 2 Click the **Layout** tab.
- 3 Click **Gridlines** ().
- 4 Click **Primary Horizontal Gridlines**.
- 5 Click the horizontal gridline option you prefer.

A Excel displays the horizontal gridlines.



- 6 Click ().
- 7 Click **Primary Vertical Gridlines**.
- 8 Click the vertical gridline option you prefer.

B Excel displays the vertical gridlines.



DISPLAY A DATA TABLE

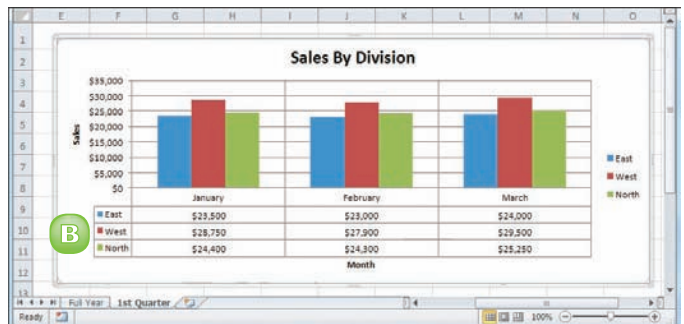
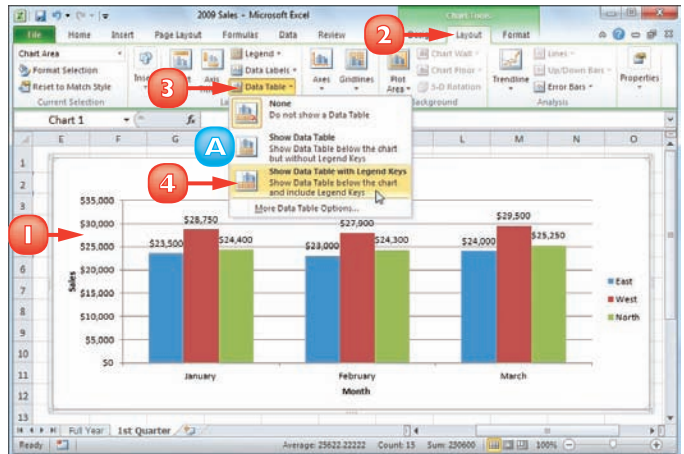
You can make it easier for yourself and others to interpret your chart by adding a data table. A *data table* is a tabular grid where each row is a data series from the chart, each column is a chart category and each cell is a chart data point.

Excel gives you the option of displaying the data table with or without *legend keys*, which are markers that identify each series.

- 1 Click the chart.
- 2 Click the **Layout** tab.
- 3 Click **Data Table** ().
- 4 Click **Show Data Table with Legend Keys**.

A If you prefer not to display the legend keys, click **Show Data Table**.

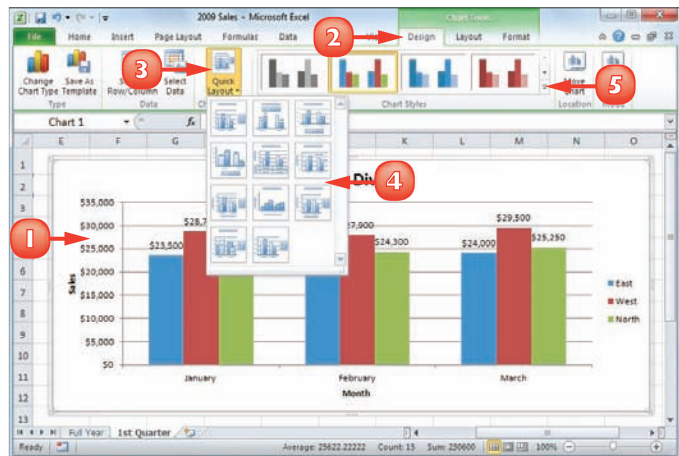
B Excel adds the data table below the chart.



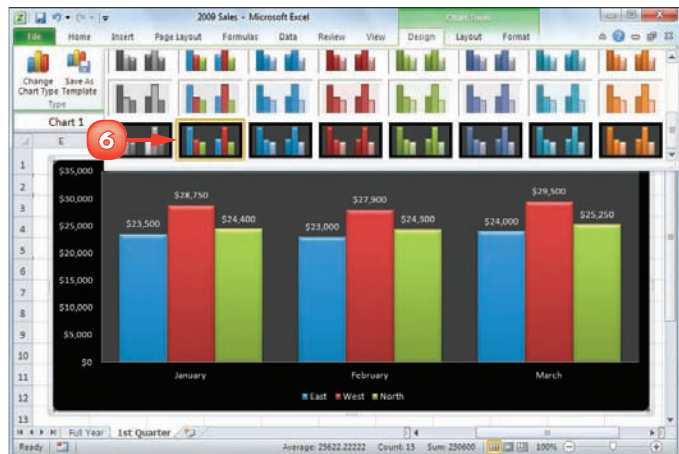
CHANGE THE CHART LAYOUT AND STYLE

You can quickly format your chart by applying a different chart layout and a different chart style. The chart layout includes elements such as the titles, data labels, legend, gridlines, and data table. Excel's Quick Layouts feature enables you to apply these elements in different combinations with just a few mouse clicks. The chart style represents the colours used by the chart data markers and background.

- 1 Click the chart.
- 2 Click the **Design** tab.
- 3 Click **Quick Layout** ().
- 4 Click the layout you want to use.
Excel applies the layout.
- 5 Click the **Chart Styles** ().



- 6 Click the chart style you want to use.
Excel applies the style to the chart.



FORMAT CHART ELEMENTS

You can customise the look of your chart by formatting the various chart elements. These elements include the axes, titles, labels, legend, gridlines, data series, plot area (the area where the chart data appears) and the chart area (the overall background of the chart).

You can format chart elements using either the Format dialog box or the Ribbon. The rest of the sections in this chapter provide you with more detail on using the Ribbon commands.

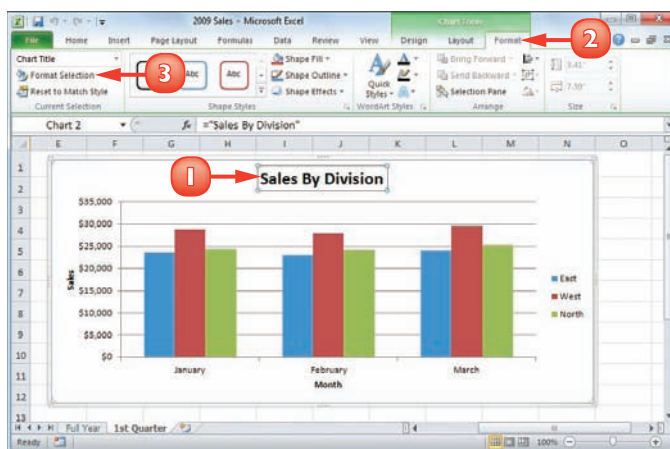
Format Chart Elements Using the Format Dialog Box

1 Click the chart element you want to format.

2 Click the **Format** tab.

Note: You can also select a chart element by clicking the **Chart Title**  and then clicking the object.

3 Click **Format Selection** .



The Format dialog box appears for the object you selected. Here, it is the Format Chart Title dialog box.

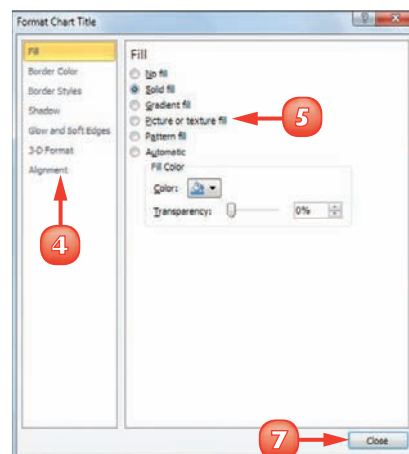
4 Click a tab.

5 Change the formatting options.

6 Repeat Steps 4 and 5 to set other formatting options.

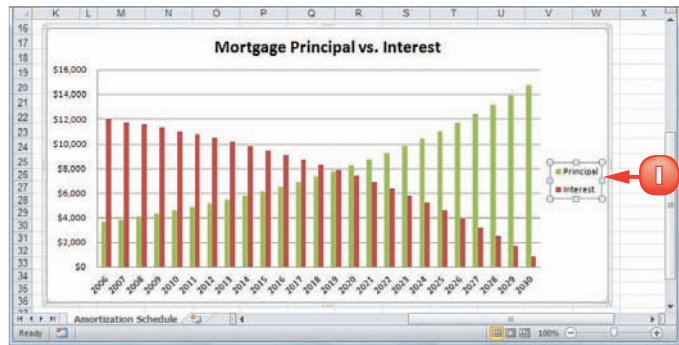
7 Click **Close**.

Excel applies the formatting.



Format Chart Elements Using the Ribbon

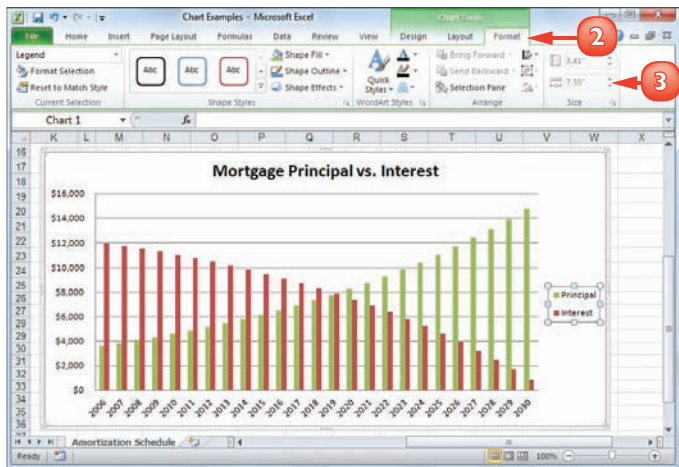
- 1 Click the chart element you want to format.



- 2 Click the **Format** tab.
- 3 Use the Ribbon controls to change the formatting options.

Note: Not all of the Ribbon controls are available for each chart element.

Excel applies the formatting.



Excel offers several methods for opening the Format dialog box. If you are using your mouse, position the mouse over the element you want to format and double-click. With the chart element selected, you can press **Ctrl+1** on the keyboard. You can also right-click the chart element and then click Format Element (where Element is the name of the element).



The easiest way to be sure you are clicking the correct chart element is to position the mouse over the object. If the mouse is positioned correctly, a banner appears and the banner text displays the name of the chart element. If the banner does not appear or if the banner displays a chart element name other than the one you want to format, move the mouse until the correct banner appears.

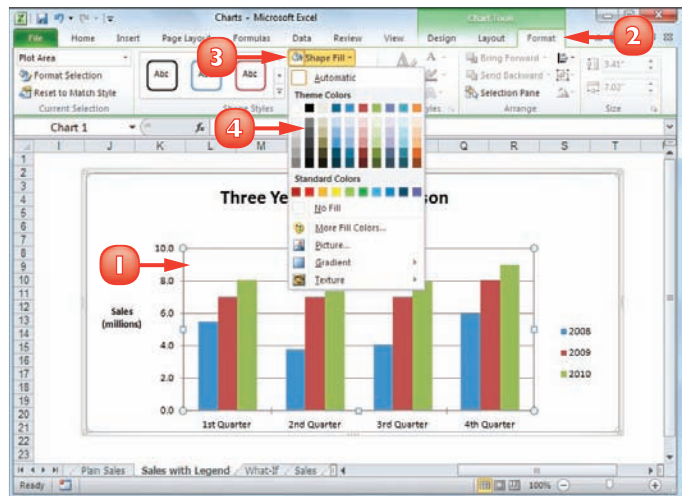
CUSTOMISE A CHART ELEMENT BACKGROUND

You can add visual interest to a chart element by customising the element's background, or what Excel calls the *fill*.

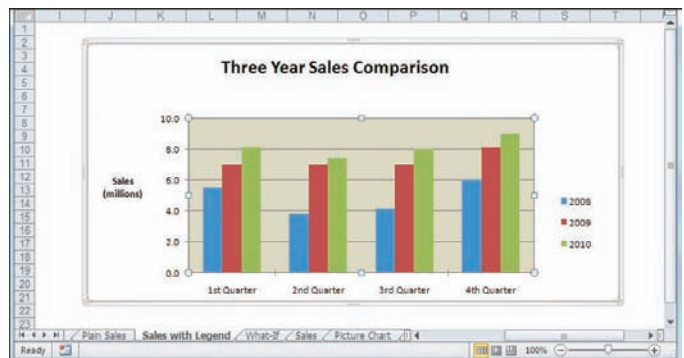
Most fills consist of a single colour but you can also apply a colour gradient, a texture, or even a picture. However, you should be careful about the background you choose for certain chart elements. Since some chart elements – particularly the chart area, plot area, value axis and category axis – display data, be sure to choose a background that does not make that data difficult to read.

Apply a Colour Fill

- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Fill** .
- 4 Click the colour you want to apply.



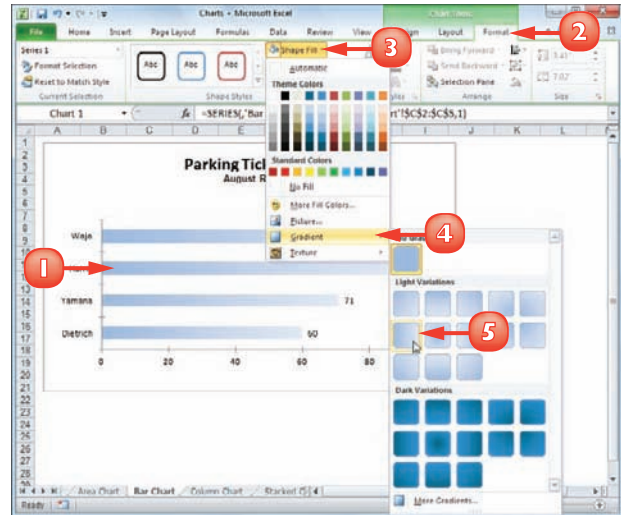
Excel formats the element's background with the colour you selected.



Apply a Gradient Fill

- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Fill** .
- 4 Click **Gradient**.
- 5 Click the gradient you want to apply.

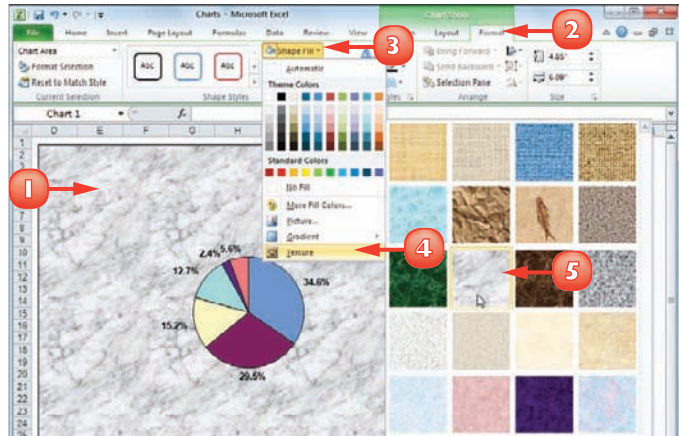
Excel formats the element's background with the gradient you selected.



Apply a Texture Fill

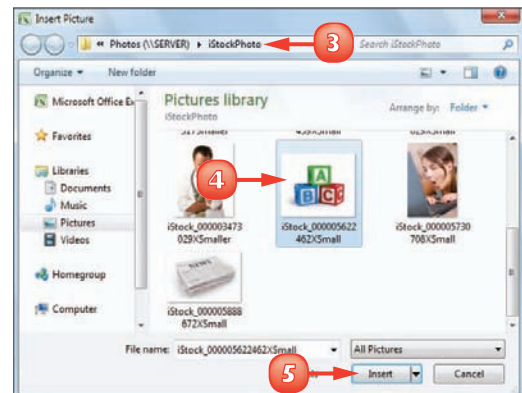
- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Fill** .
- 4 Click **Texture**.
- 5 Click the texture you want to apply.

Excel formats the element's background with the texture you selected.



Apply a Picture Fill

- 1 Click the **Shape Fill**  for the chart element you want to format.
- 2 Click **Picture**.
- 3 Click the folder that contains the image file.
- 4 Click the image file you want to use as the background.
- 5 Click **Insert**.



SET A CHART ELEMENT'S OUTLINE

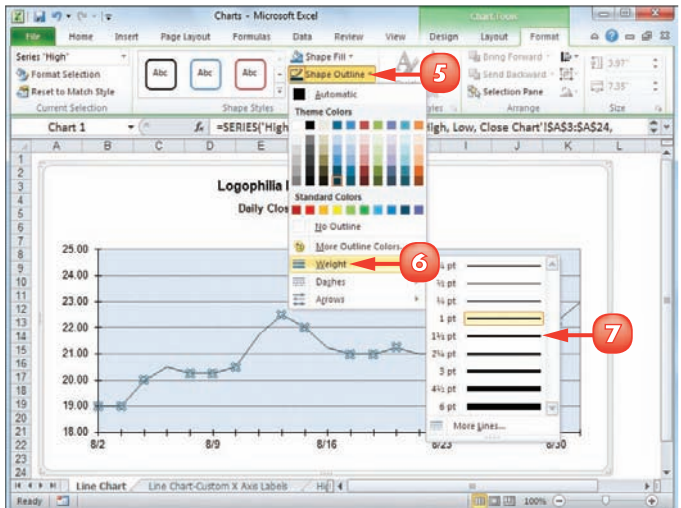
You can make a chart element stand out by customising the element's outline, which refers to the border that appears around the element as well as to single-line elements, such as gridlines and axes.

You can customise the outline's colour, its weight – that is, its thickness – and whether the line is solid or consists of a series of dots or dashes.

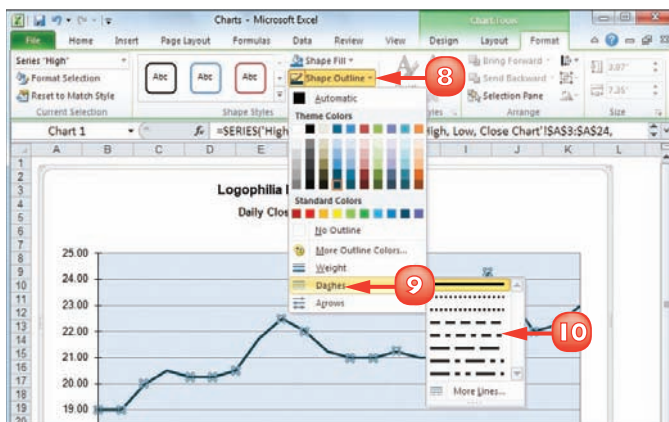
- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Outline** .
- 4 Click the colour you want to apply.



- 5 Click the **Shape Outline** .
- 6 Click **Weight**.
- 7 Click the line thickness you want to apply.



- 8 Click the **Shape Outline** .
- 9 Click **Dashes**.
- 10 Click the line style you want to apply.

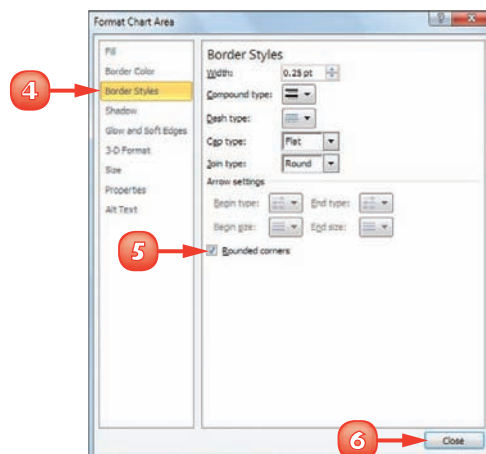


Excel formats the element's outline with the colour, weight, and style you selected.



Apply a Rounded Outline to a Chart

- 1 Click the chart border to select the chart area element.
- 2 Click the **Format** tab.
- 3 Click **Format Selection** (.
- 4 Click the **Border Styles** tab.
- 5 Click **Rounded corners** ( changes to .
- 6 Click **Close**.



ADD EFFECTS TO A CHART ELEMENT

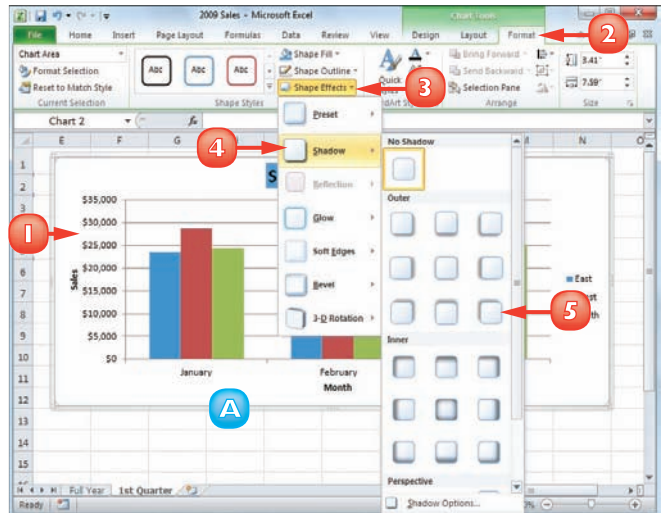
You can make your chart elements more visually striking by customising them with special effects.

For most chart elements, you can add one or more effects, including a shadow, glow, soft edges, or bevel. In all cases, however, make sure that the effects you apply do not make the element more difficult to read or decipher, and that the effects you use do not distract the reader from the chart itself.

Add a Shadow Effect

- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Effects** .
- 4 Click **Shadow**.
- 5 Click the shadow effect you want to apply.

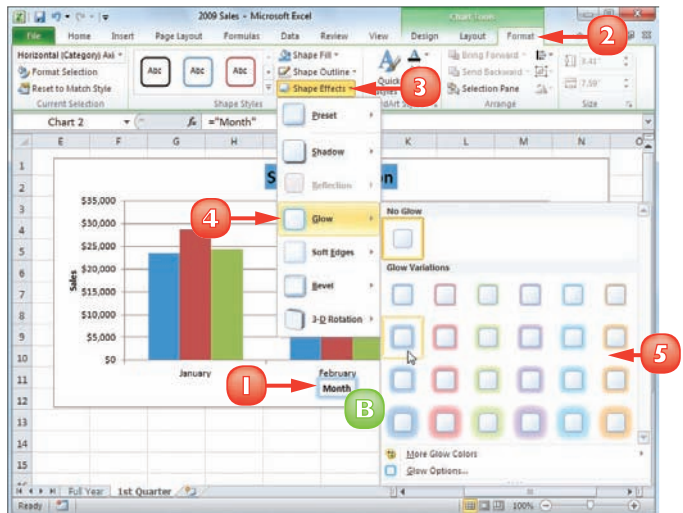
A Excel formats the element with the shadow you selected.



Add a Glow Effect

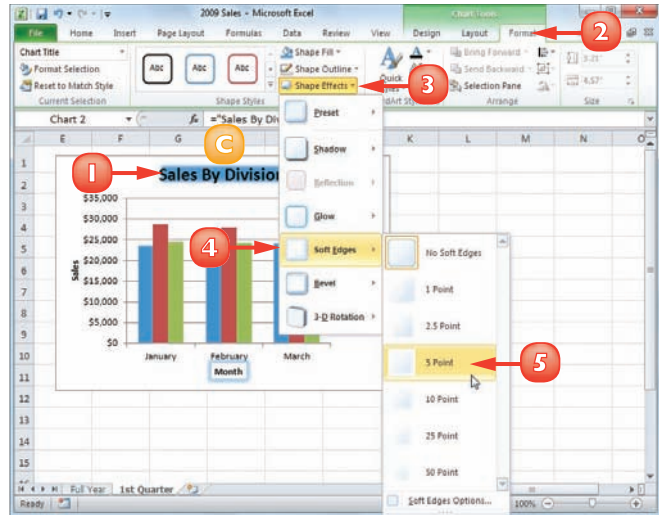
- 1 Click the chart element you want to format.
- 2 Click the **Format** tab.
- 3 Click the **Shape Effects** .
- 4 Click **Glow**.
- 5 Click the glow effect you want to apply.

B Excel formats the element with the glow you selected.



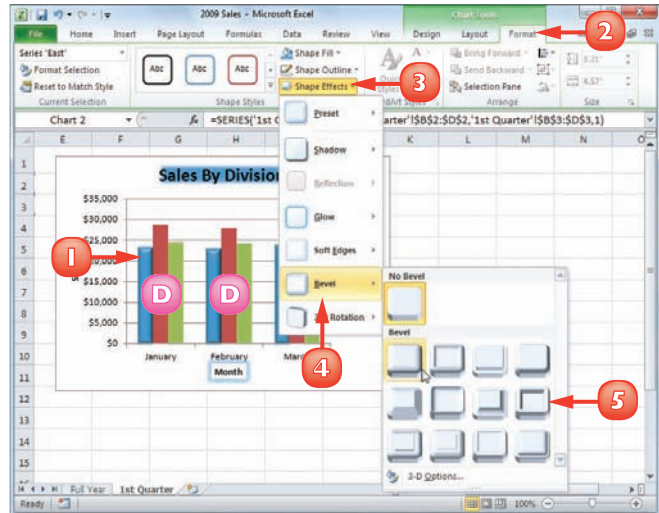
Add a Soft Edges Effect

- 1 Click the chart element you want to format.
 - 2 Click the **Format** tab.
 - 3 Click the **Shape Effects** .
 - 4 Click **Soft Edges**.
 - 5 Click the soft edges effect you want to apply.
- C** Excel formats the element with the soft edges you selected.



Add a Bevel Effect

- 1 Click the chart element you want to format.
 - 2 Click the **Format** tab.
 - 3 Click the **Shape Effects** .
 - 4 Click **Bevel**.
 - 5 Click the bevel effect you want to apply.
- D** Excel formats the element with the bevel you selected.



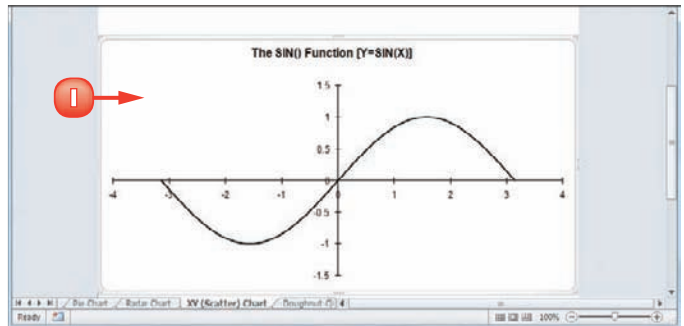
Excel offers several controls that enable you to manually adjust various aspects of the shadow. In the list of shadows, click **Shadow Options**. Use the **Size** spin box to increase the size of the shadow and the **Distance** spin box to increase the space between the chart element and the shadow. Click **Close** when you are done.

APPLY A STYLE TO A CHART ELEMENT

You can reduce the time it takes to format a chart element by applying a style to that element. Excel comes with more than 40 predefined element styles, each of which is a collection of chart formatting features.

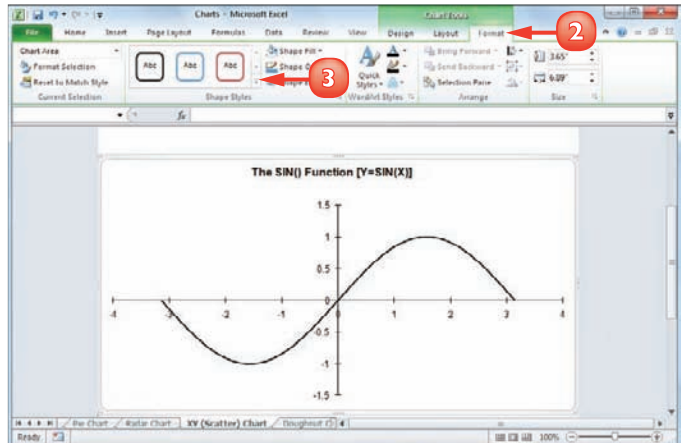
Each style includes one or more of the following formatting features: a background, which is usually either a solid colour or a colour gradient; an outline, which is usually a solid line with a colour that matches or complements the background; and one or more special effects, such as a shadow or bevel.

- 1 Click the chart element you want to format.



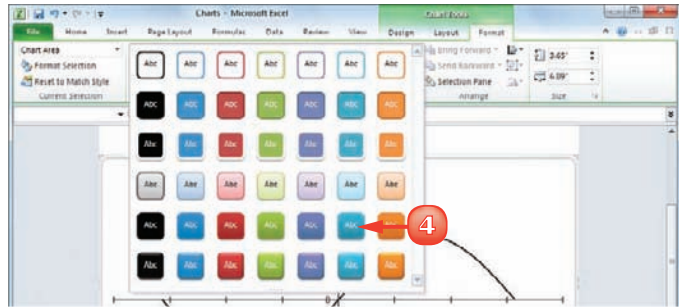
- 2 Click the **Format** tab.

- 3 Click the **Shape Styles** .

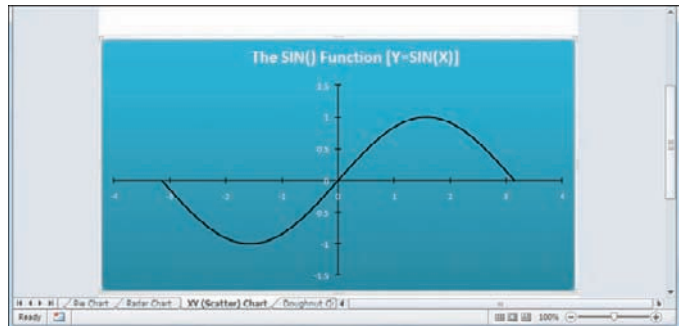


Excel displays the Shape Styles gallery.

- 4 Click the style you want to apply.



Excel applies the style.



Excel does not offer a simple method for removing a style from a chart element. You must remove the background, outline and effects individually. To begin, click the chart element you want to work with and then click the Format tab. For the background, click the Shape Fill  and then click No Fill. For the outline, click the Shape Outline  and then click No Outline. For the special effects, click the Shape Effects , click Preset and then click No Presets.

CONTENTS

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- 190** Protect a Workbook
- 192** Share a Workbook with Other Users
- 194** Track Workbook Changes
- 196** Accept or Reject Workbook Changes
- 198** Make a Workbook Compatible with Earlier Versions of Excel
- 200** Collaborate on a Workbook Online

10

COLLABORATING WITH OTHER PEOPLE

Although you will most often create and edit an Excel workbook on your own, you may have some workbooks that require input from other people. For the times when you need to collaborate with other people on a workbook, Excel has the tools to get the job done.

In this chapter, you learn many ways to collaborate on a workbook, including adding comments to a cell, sharing a workbook and working on a spreadsheet online. You also learn ways to make collaboration safer by protecting any data you do not want changed, tracking changes that are made by others and accepting or rejecting those changes.



ADD A COMMENT TO A CELL

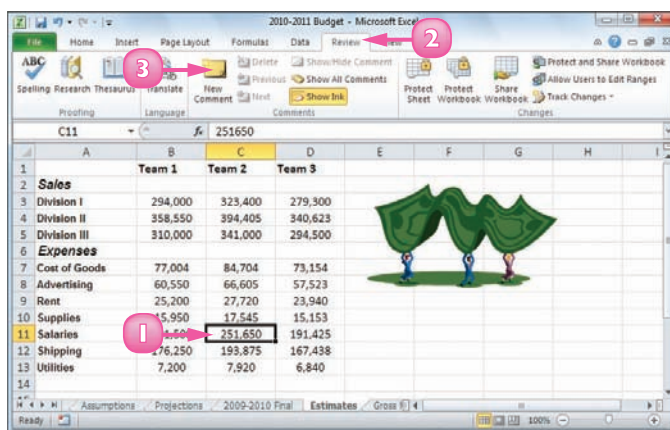
If you have received a workbook from another person, you can provide feedback to that person by adding a comment to a cell in the workbook. A comment is often the best way to give feedback because it does not change anything on the worksheet itself.

Comments are attached to a particular cell and Excel displays an indicator on any cell that has a comment. When you hover your mouse pointer over such a cell, Excel displays the comment in a balloon.

Add a Comment

- 1 Click the cell you want to comment on.
- 2 Click the **Review** tab.
- 3 Click **New Comment** (🗨️).

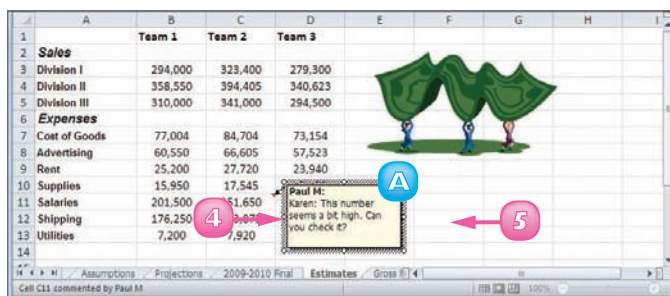
Note: You can also right-click the cell and then click **Insert Comment**.



Excel displays a comment balloon.

A Excel precedes the comment with your Excel user name.

- 4 Type your comment.
- 5 Click outside the comment balloon.

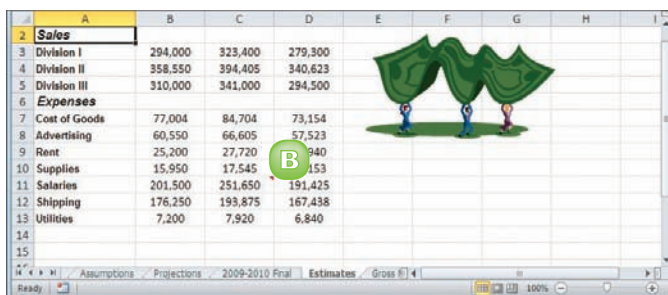


To remove a comment, click the cell that contains the comment, click the Review tab and then click Delete (🗑️).



If you change your user name, it does not change your user name in any existing comments.

- B** Excel adds a comment indicator (🗨️) to the top right corner of the cell.



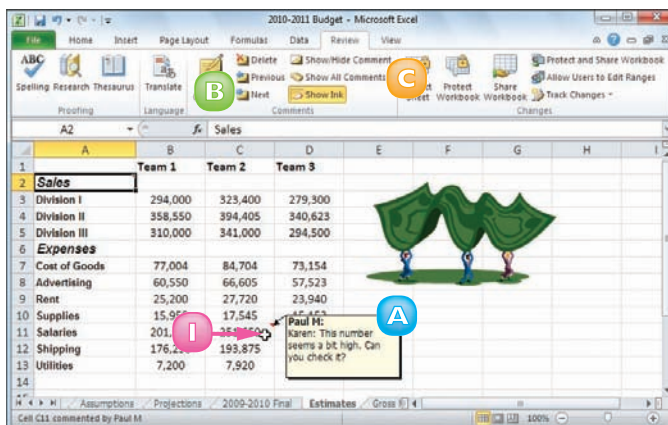
View a Comment

- I** Move the mouse 🖱️ over the cell.

- A** Excel displays the comment in a balloon.

- B** In the **Review** tab, you can click **Next** (🔍) and **Previous** (🔍) to run through the comments.

- C** In the **Review** tab, you can also click **Show All Comments** (🗨️) to display every comment at once.



To edit an existing comment, click the cell that contains the comment, click the **Review** tab, click **Edit Comment** (🗨️) to open the comment in a balloon and then edit the balloon text.



Your user name is important because it tells other people who added the comments. To change it, click **File** and then click **Options** to open the **Excel Options** dialog box. Click the **General** tab and then use the **User name** text box to edit the name. Click **OK**.

PROTECT A WORKBOOK

If you will be distributing a workbook to other people, you can enable Excel's options for safeguarding worksheet data by activating the sheet's protection feature. You can also prevent unwanted changes to a workbook by activating protection for its windows and structure. You can configure the worksheet and workbook to require a password to unprotect them. There are two main methods you can use to safeguard worksheet data: you can unlock only the cells that users are allowed to edit and you can configure a range to require a password before it can be edited.

Protect a Worksheet's Data

- 1 Display the worksheet you want to protect.
- 2 Click the **Review** tab.
- 3 Click **Protect Sheet** (🔒).

Excel displays the Protect Sheet dialog box.

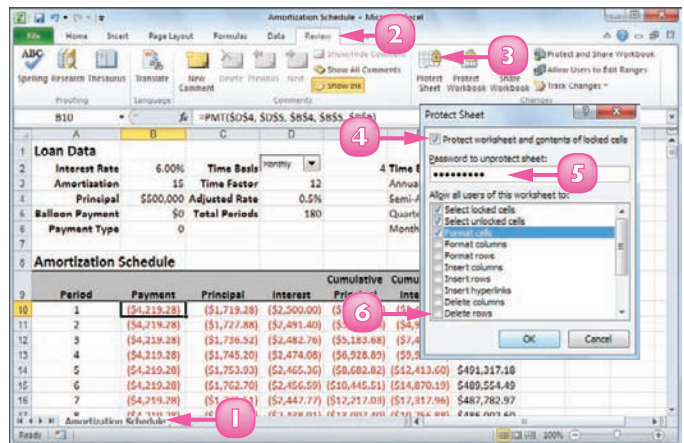
- 4 Make sure the **Protect worksheet and contents of locked cells** check box is activated (☑).

- 5 Use the **Password to unprotect sheet** text box to type a password, if required.

- 6 Click the check box beside each action that you want to allow unauthorised users to perform (☐ changes to ☑).

- 7 Click **OK**.

If you specified a password, Excel asks you to confirm the password.



If you want to make changes to a worksheet, click the Review tab, click Unprotect Sheet (🔓), type the unprotect password and click OK.



You can configure a range to require a password before a user can edit it. Select the range you want to protect, click the Review tab and then click Allow Users to Edit Ranges. Click New to open the New Range dialog box. Type a title for the range, use the Range password box to type a password and then click OK. When Excel prompts you to reenter the password, type the password and then click OK.

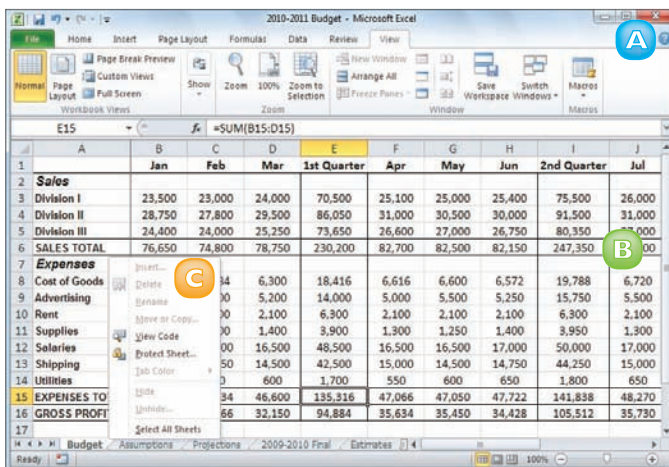
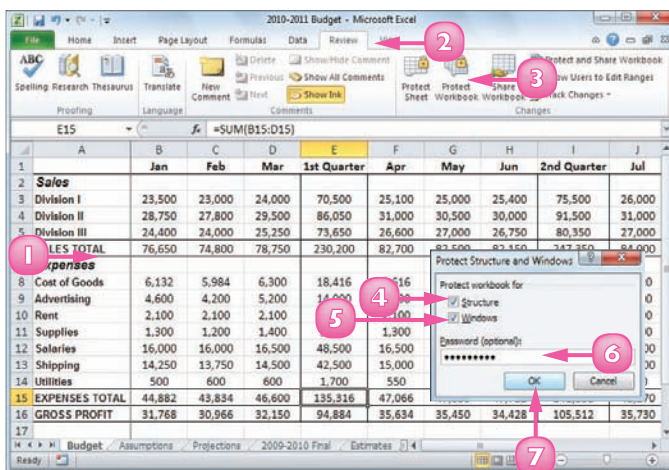
Protect a Workbook's Structure and Windows

- 1 Display the workbook you want to protect.
 - 2 Click the **Review** tab.
 - 3 Click **Protect Workbook** (🔒).
- Excel displays the Protect Structure and Windows dialog box.
- 4 Click the **Structure** check box to protect the workbook's structure (☐ changes to ☑).
 - 5 Click the **Windows** check box to protect the workbook's windows (☐ changes to ☑).
 - 6 Type a password in the Password text box, if required.
 - 7 Click **OK**.

If you specified a password, Excel asks you to confirm it.

If you protected the windows:

- A Excel hides the window controls. If the workbook is not maximised, Excel also disables the window borders, which means the window cannot be moved, sized, or closed.
- B Excel disables many window-related commands on the **View** tab.
- C If you protected the structure, Excel disables most commands on the **Sheet Shortcut** menu.

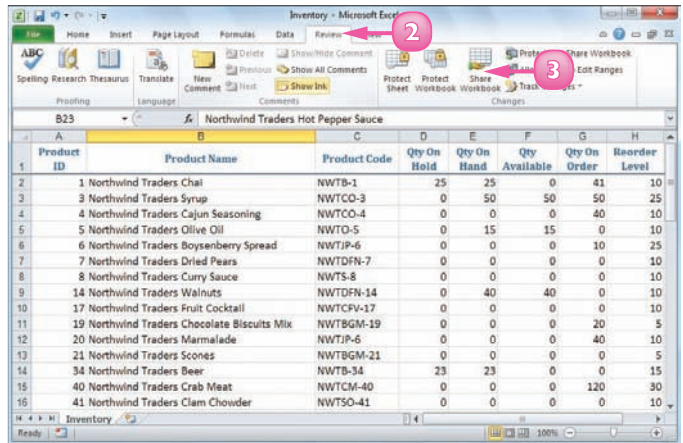


SHARE A WORKBOOK WITH OTHER USERS

You can allow multiple users to modify a workbook simultaneously by sharing the workbook. Once you have shared a workbook, other users can open the workbook via a network connection and edit the file at the same time.

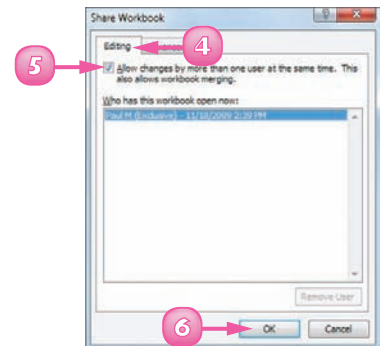
When you share a workbook, Excel automatically begins tracking the changes made to the file. For more information on this feature, see “Track Workbook Changes” later in this chapter. This task assumes you have saved the workbook in a folder that other people can access over the network.

- 1 Display the workbook you want to share.
- 2 Click the **Review** tab.
- 3 Click **Share Workbook** (📄).

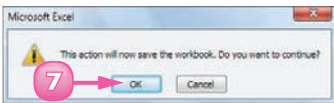


The Share Workbook dialog box appears.

- 4 Click the **Editing** tab.
- 5 Click the **Allow changes by more than one user at the same time** check box (☐ changes to ☒.
- 6 Click **OK**.



Excel tells you that it will now save the workbook.



7 Click **OK**.

Excel saves the workbook and activates sharing.

A Excel displays *[Shared]* in the title bar.

Product ID	Product Name	Product Code	Qty On Hand	Qty On Order	Qty Available	Qty On Order	Reorder Level
1	Northwind Traders Chai	NWTB-1	25	25	0	41	10
2	Northwind Traders Syrup	NWTCO-3	0	50	50	50	25
3	Northwind Traders Cajun Seasoning	NWTCO-4	0	0	0	40	10
4	Northwind Traders Olive Oil	NWTCO-5	0	15	15	0	10
5	Northwind Traders Boysenberry Spread	NWTJP-6	0	0	0	10	25
6	Northwind Traders Dried Pears	NWTFN-7	0	0	0	0	10
7	Northwind Traders Curry Sauce	NWTS-8	0	0	0	0	10

You and users on your network can now edit the workbook at the same time.

See Users with the Workbook Open

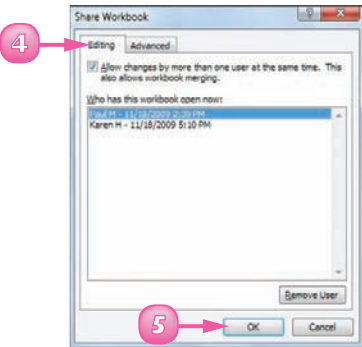
1 Display the shared workbook.

2 Click the **Review** tab.

3 Click

The Share Workbook dialog box appears.

4 Click the **Editing** tab.



The Who has this workbook open now list displays the users who are currently editing the file.

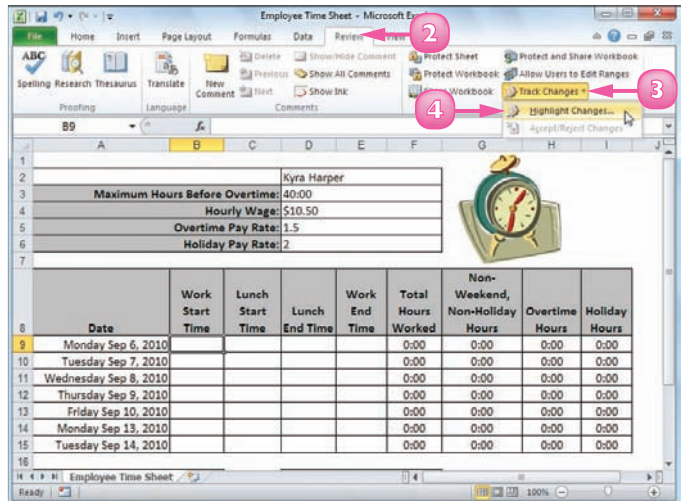
5 Click **OK**.

TRACK WORKBOOK CHANGES

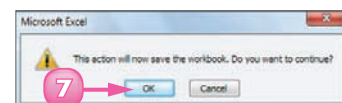
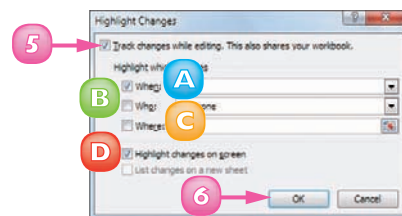
If you want other people to make changes to a workbook, you can keep track of those changes so you can either accept or reject them (see “Accept or Reject Workbook Changes”). Excel’s Track Changes feature enables you to do this.

When you turn on Track Changes, Excel monitors the activity of each reviewer and stores that reviewer’s cell edits, row and column additions and deletions, range moves, worksheet insertions, and worksheet renames. When you open the workbook later on, you see all of these changes onscreen, along with the name of each person who made the change.

- 1 Display the workbook you want to track.
- 2 Click the **Review** tab.
- 3 Click **Track Changes** (🔍).
- 4 Click **Highlight Changes**.



The Highlight Changes dialog box appears.



- 5** Click the **Track changes while editing** check box (☐ changes to ☒).

A Leave the **When** check box activated (☒) and leave All selected in the list.

B Click the **Who** check box, the **Who** ☐ and then click **Everyone but Me** to show every user's changes but your own.

C Click the **Where** check box, click inside the **Where** range box, and then select a range to track changes only in that range.

D Leave the **Highlight changes on screen** check box activated (☒) to view the workbook changes.

- 6** Click **OK**.

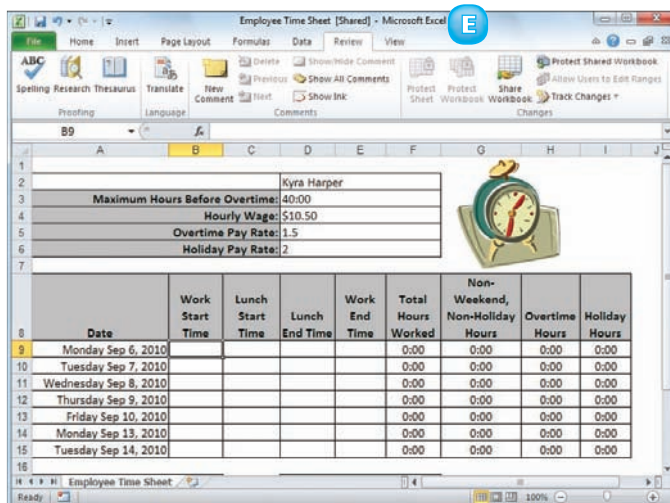
Excel tells you it will now save the workbook.

- 7** Click **OK**.

Excel activates the Track Changes feature.

E Excel shares the workbook and indicates this by displaying *[Shared]* beside the workbook name.

Note: See “Share a Workbook with Other Users” to learn more about workbook sharing.

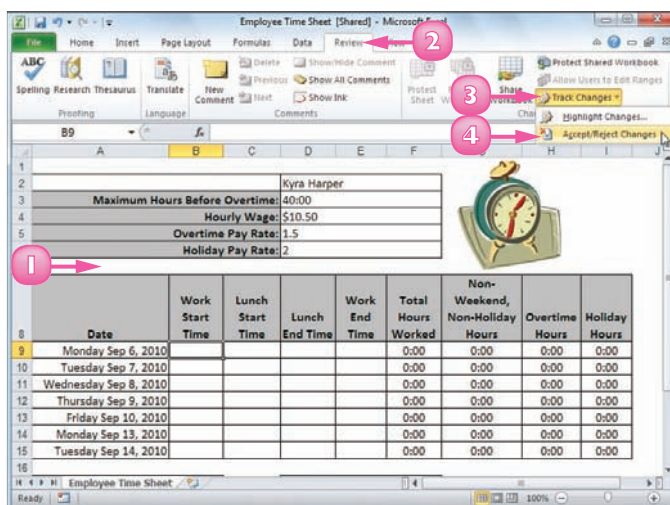


ACCEPT OR REJECT WORKBOOK CHANGES

After you turn on Excel's Track Changes features (see "Track Workbook Changes"), you can accept or reject the changes that other users make to the workbook.

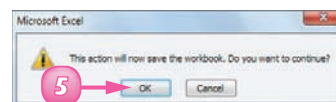
Track Changes enables you to see exactly which parts of the workbook others have changed and who made each of those changes. Track Changes also enables you to accept those changes that you think are useful or accurate and reject those changes that are not needed or that are incorrect.

- 1 Display the workbook you are tracking.
- 2 Click the **Review** tab.
- 3 Click **Track Changes** ().
- 4 Click **Accept/Reject Changes**.



If your workbook has unsaved changes, Excel tells you it will now save the workbook.

- 5 Click **OK**.



*Unless you know that other people still require access to the workbook, you should turn off the tracking feature when your review is complete. To do this, click the **Review** tab, click  and then click **Highlight Changes** to open the **Highlight Changes** dialog box. Click the **Track changes while editing** check box (☒ changes to ☐) and then click **OK**.*

The Select Changes to Accept or Reject dialog box appears.

A Leave the **When** check box activated (☒) and “Not yet reviewed” selected in the list.

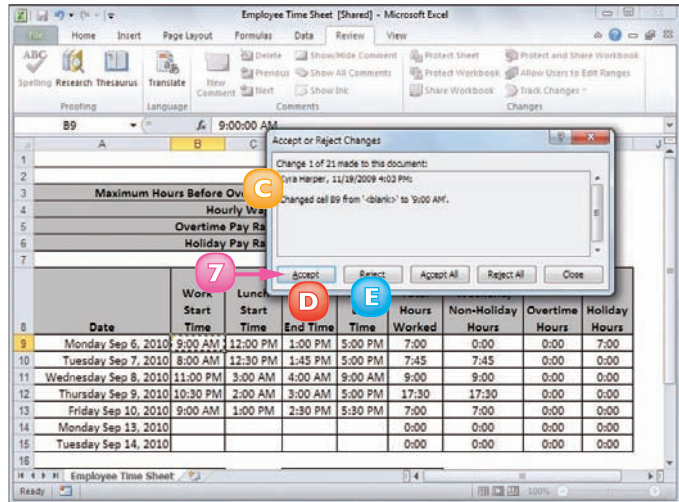
B If you only want to review changes made by a particular user, click the **Who** check box, the **Who** ☐, and then the user’s name.



6 Click **OK**.

The Accept or Reject Changes dialog box appears.

C Excel displays the details of the current change.



7 Click an action for the change:

D Click **Accept** to leave the change in the workbook.

E Click **Reject** to remove the change from the workbook.

Excel displays the next change.

8 Repeat Step **7** to review each of the changes.

Note: You can also click **Accept All** or **Reject All** to accept or reject all changes at once.

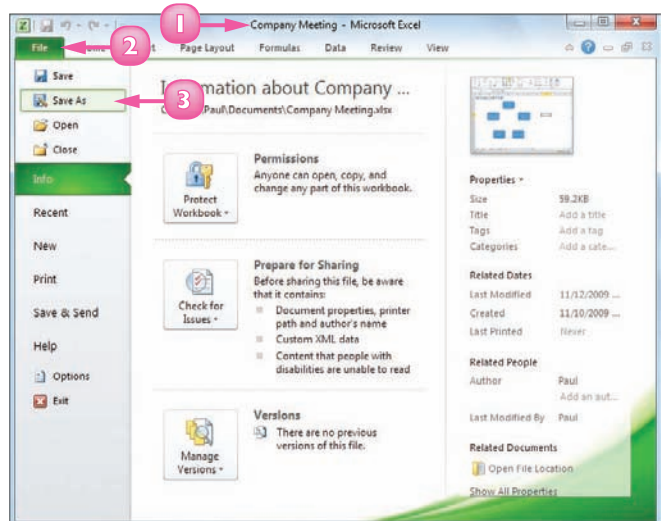


If another user makes changes that affects cells that you change, when you save the workbook, Excel displays the Resolve Conflicts dialog box, which shows your change and the other user’s change. If your change is the correct one, click **Accept Mine**; otherwise, click **Accept Other**. If there are multiple conflicts, you can save time by clicking either **Accept All Mine** or **Accept All Others**.

MAKE A WORKBOOK COMPATIBLE WITH EARLIER VERSIONS OF EXCEL

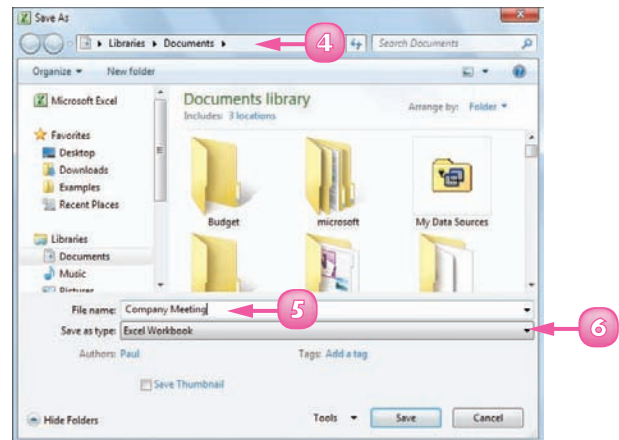
You can save an Excel workbook in a format that makes it compatible with earlier versions of Excel. This enables you to share your workbook with other Excel users who do not have the most recent version of the program. Versions of Excel prior to Excel 2007 cannot read documents in the standard format used by Excel 2007 and Excel 2010.

- 1 Open the workbook you want to make compatible.
- 2 Click **File**.
- 3 Click **Save As**.

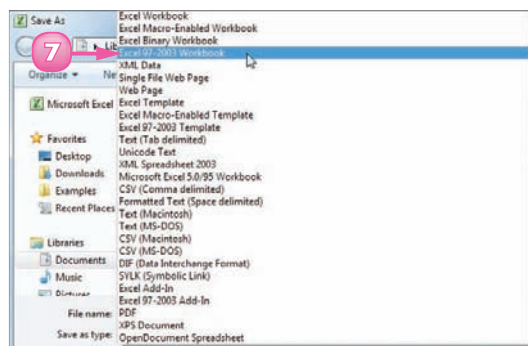


The Save As dialog box appears.

- 4 Select the folder in which to store the new workbook.
- 5 Click in the **File name** text box and type the name that you want to use for the new workbook.
- 6 Click the **Save as type** dropdown arrow.

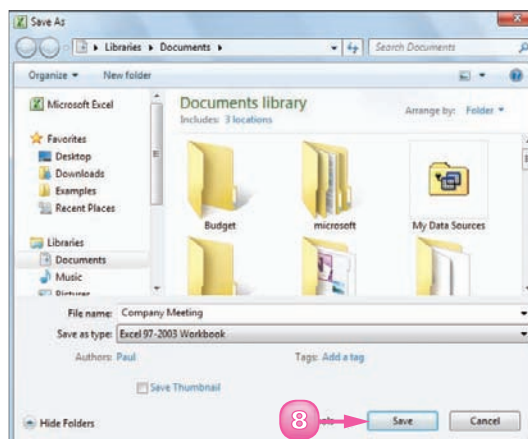


- 7 Click the **Excel 97-2003 Workbook** file format.



- 8 Click **Save**.

Excel saves the file using the Excel 97-2003 Workbook format.



The same file format is used by Excel 2010 and Excel 2007. If you work with people who use only these Excel versions, then you should stick with the default file format – which is called Excel Workbook – because it offers many benefits in terms of Excel features.



On Windows, the Excel 97-2003 Workbook file format is compatible with Excel 97, Excel 2000, Excel XP and Excel 2003. On Mac OS, the Excel 97-2003 Workbook file format is compatible with Excel 98, Excel 2001 and Office 2004.

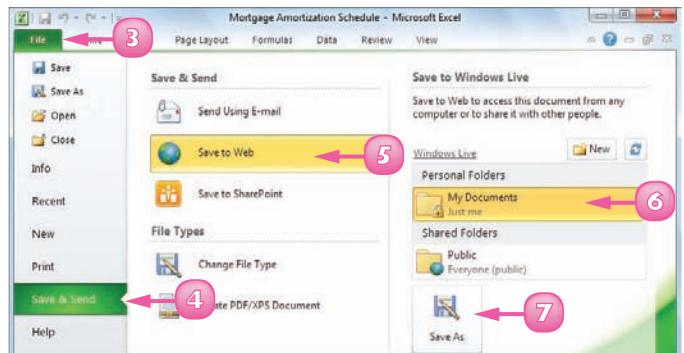
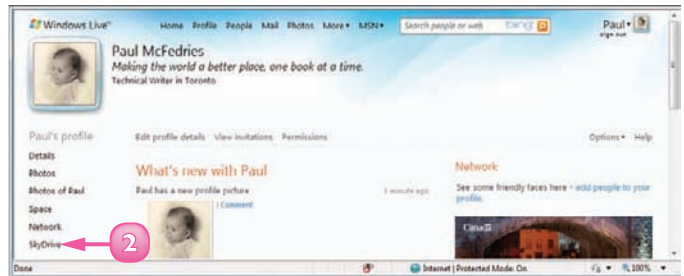
COLLABORATE ON A WORKBOOK ONLINE

If you have a Windows Live account, you can use the SkyDrive online storage feature to store an Excel workbook in an online folder and then allow other users to collaborate on that workbook using the Excel Web App.

For another person to collaborate with you on your online workbook, that person must have a Windows Live ID. If the person does not have a Windows Live ID, he or she can go to <https://signup.live.com/> to register for a free account from Microsoft.

Save a Workbook to Your Windows Live SkyDrive

- 1 Sign in to your Windows Live account.
- 2 Open the workbook you want to share.
- 3 Click the **File** tab.
- 4 Click **Save & Send**.
- 5 Click **Save to Web**.
- 6 Click the Web folder you want to use.
- 7 Click **Save As**.
- 8 Click **Save**.



Allow Another User Access to Your Windows Live SkyDrive

1 Log on to your Windows Live account.

2 Click **SkyDrive**.

Your Windows Live SkyDrive appears.

3 Click the folder that contains the workbooks you want to share.

4 Click **More**.

5 Click **Edit permissions**.

The folder's Edit Permissions page appears.

6 Type the Windows Live e-mail address of the person you want to collaborate with.

7 Press **Tab**.

A Windows Live adds the person to the list.

8 Click ☐ here and then click **Can add, edit details, and delete files**.

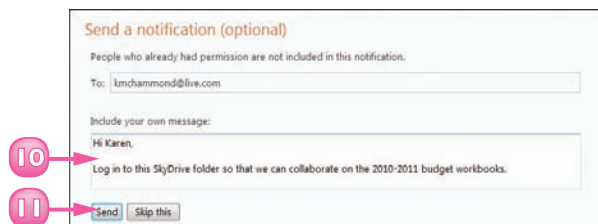
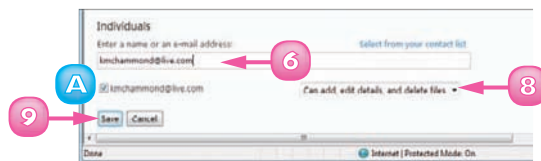
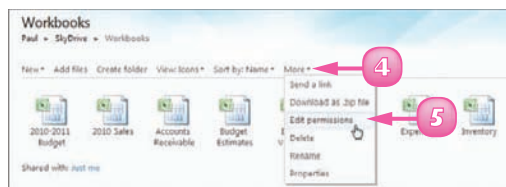
9 Click **Save**.

Windows Live prompts you to send a notification for the folder.

10 Type a message to the user.

11 Click **Send**.

Windows Live sends an e-mail message to the user. The user can click the link in that message, log on to Windows Live and edit a workbook in the shared folder.



When you open a workbook using the Excel Web App, examine the lower right corner of the Excel screen. If you see 1 person editing, it means you are the only user who is working on the file. However, if you see 2 people editing, then it means another person is collaborating on the workbook with you.

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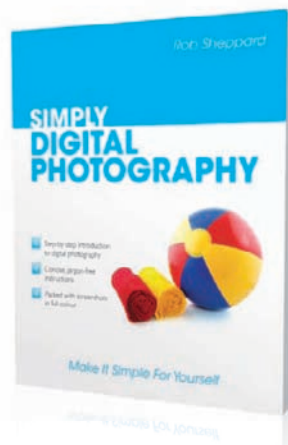


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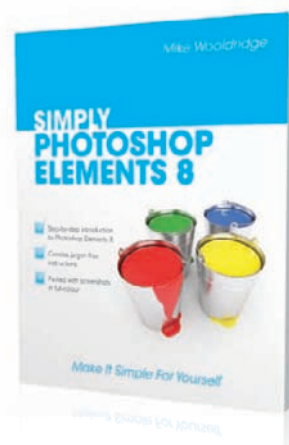
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