Teach Yourself VISUALLY™

Microsoft® Excel® 2010
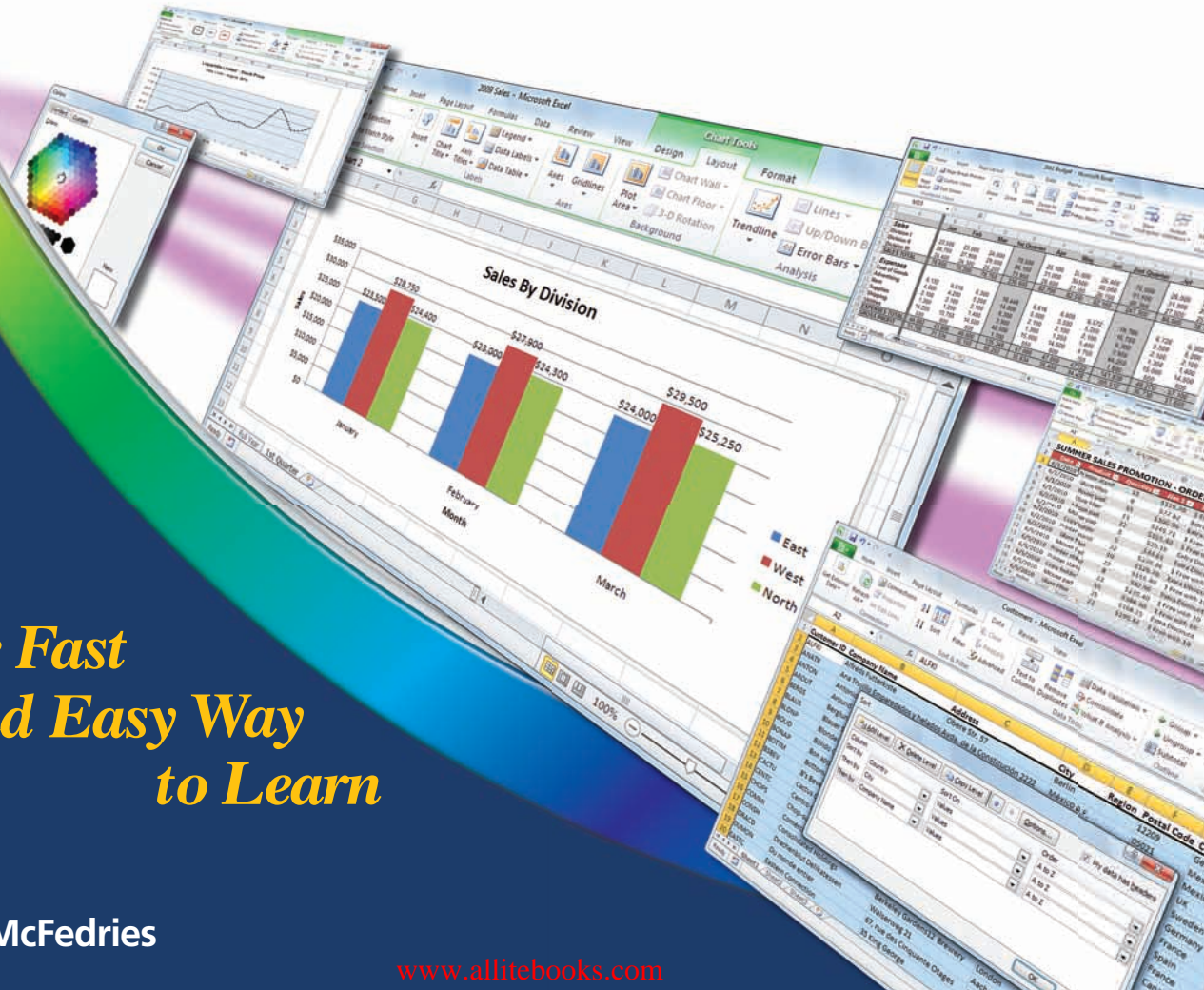
The Fast and Easy Way to Learn

Paul McFedries

Teach Yourself VISUALLY™

Excel® 2010

Visual

by Paul McFedries

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Teach Yourself VISUALLY™ Excel® 2010

Trademark Acknowledgments

Disclaimer

In order to get this information to you in a timely manner, this book was based on a pre-release version of Microsoft Office 2010. There may be some minor changes between the screenshots in this book and what you see on your desktop. As always, Microsoft has the final word on how programs look and function; if you have any questions or see any discrepancies, consult the online help for further information about the software.

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Paul McFedries is is a technical writer who has been authoring computer books since 1991. He has more than 60 books to his credit, which together have sold more than three million copies worldwide. These books include the Wiley titles *Teach Yourself VISUALLY Microsoft Office 2008 for Mac*, *Excel 2010 Visual Quick Tips*, and *Excel 2010 PivotTable and PivotCharts Visual Blueprint*. Paul also runs Word Spy, a Web site dedicated to tracking new words and phrases (see www.wordspy.com). Please visit Paul's personal Web site at www.mcfedries.com.

Author's Acknowledgments

How to Use This Book

Who This Book Is For

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

❶ 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.

❷ 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.

❸ Icons and Buttons

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

❹ Tips

Tips offer additional information, including warnings and shortcuts.

❺ Bold

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

❻ Italics

Italic type introduces and defines a new term.

Draw a Shape

Excel's Shapes gallery comes with more than 150 predefined objects called *shapes* (or sometimes *AutoShapes*) that enable you to quickly and easily draw anything from simple geometric figures such as lines, rectangles, and ovals, to more elaborate items such as starbursts, flowchart symbols, and callout boxes.

Adding and Editing Worksheet Graphics — chapter 14

Draw a Shape

❶ Display the worksheet on which you want to draw the shape.

❷ Click the **Insert** tab.

❸ Click **Shapes** (▢).

❹ Click the shape you want to draw.

  ○ 🔾 changes to +.

❺ Click and drag the mouse + to draw the shape.

❻ When the shape is the size you want, release the mouse button.

  ● The program draws the shape and adds edit handles around the shape's edges.

Note: *If you need to move or size the shape, see "Move or Resize a Graphic" later in this chapter.*

TIPS

Is there an easy way to draw a perfect circle or square?
Yes, Excel offers an easy technique for drawing circles and squares. Hold down the `Shift` key as you click and drag the shape to constrain the shape into a perfect circle or square. When you finish drawing the shape, release `Shift`.

Can I add text to a shape?
Yes. You can add text to the interior of any 2-D shape (that is, any shape that is not a line). After you draw the shape, right-click the shape, click **Edit Text**, and then type your text inside the shape. You can use the Home tab's Font controls to format the text. When you finish, click outside of the shape.

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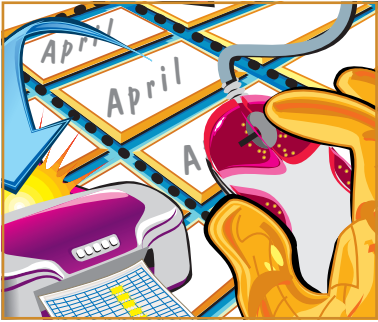
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Working with Excel

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, take a tour of the program's features, and learn how to customize some 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.

This section just 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.
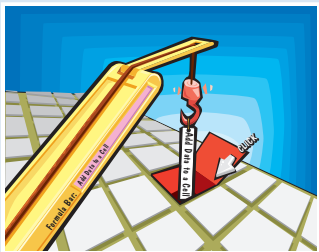
Add a Formula

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 equal sign (**=**) and then the formula text. For example, the formula =B1-B2 subtracts the value in cell B2 from the value in cell B1.
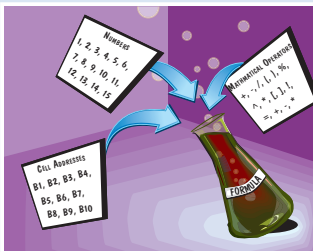
Add a Function

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** (f_x) to see a list of the available functions.

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. In Excel, you can also select the cells that you want to sum, and their total appears in the status bar.
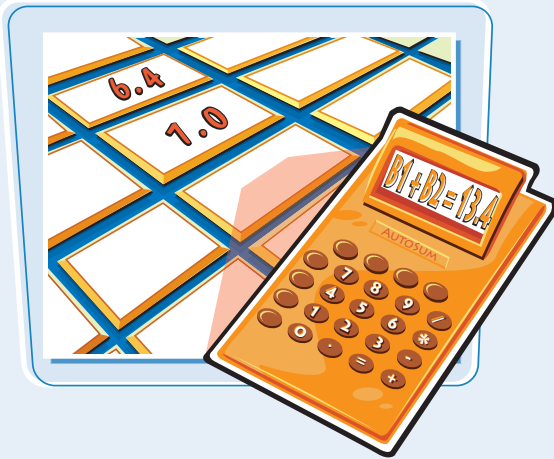
Fill a Series

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, as well as the names for weekdays and months.
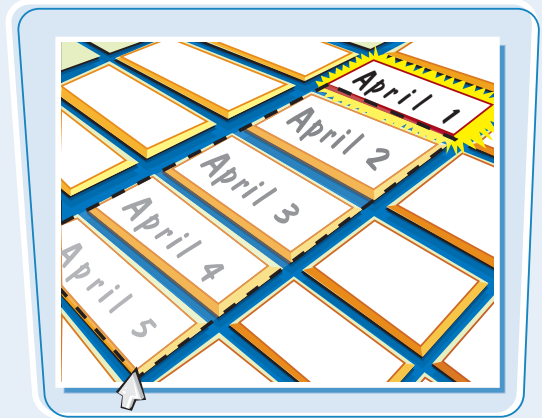
Manage Tables

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.

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.
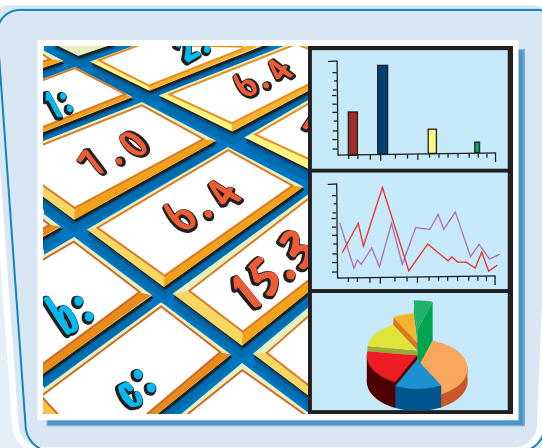
Start Excel

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.

Start Excel

1 Click **Start**.

The Start menu appears.

2 Click **All Programs**.
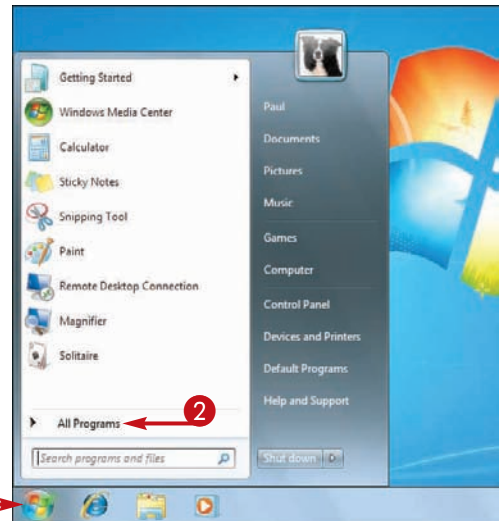
The App Programs menu appears.

3 Click **Microsoft Office**.
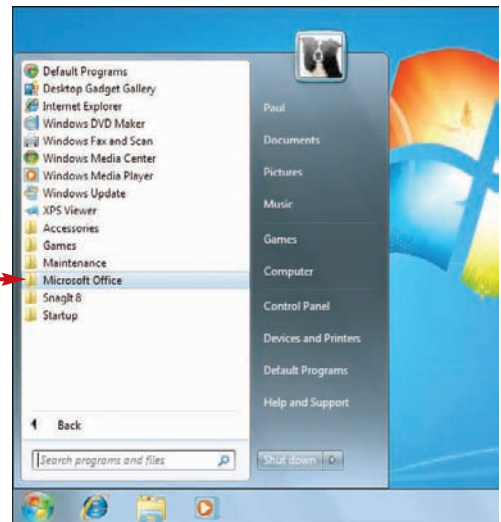
The Microsoft Office menu appears.

④ Click **Microsoft Excel 2010**.
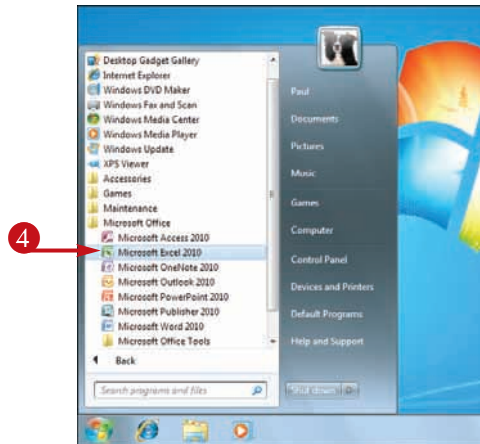
The Microsoft Excel window appears on the desktop.
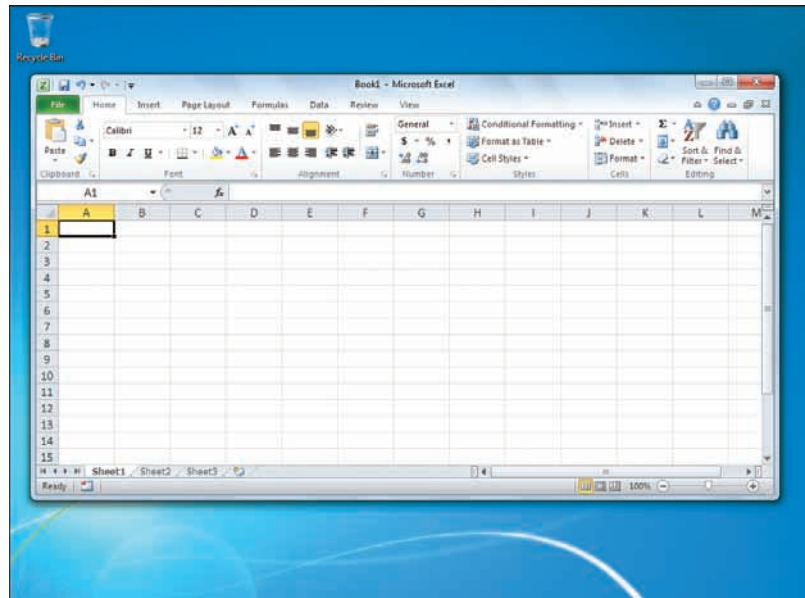
TIP

Are there faster methods I can use to start Excel?

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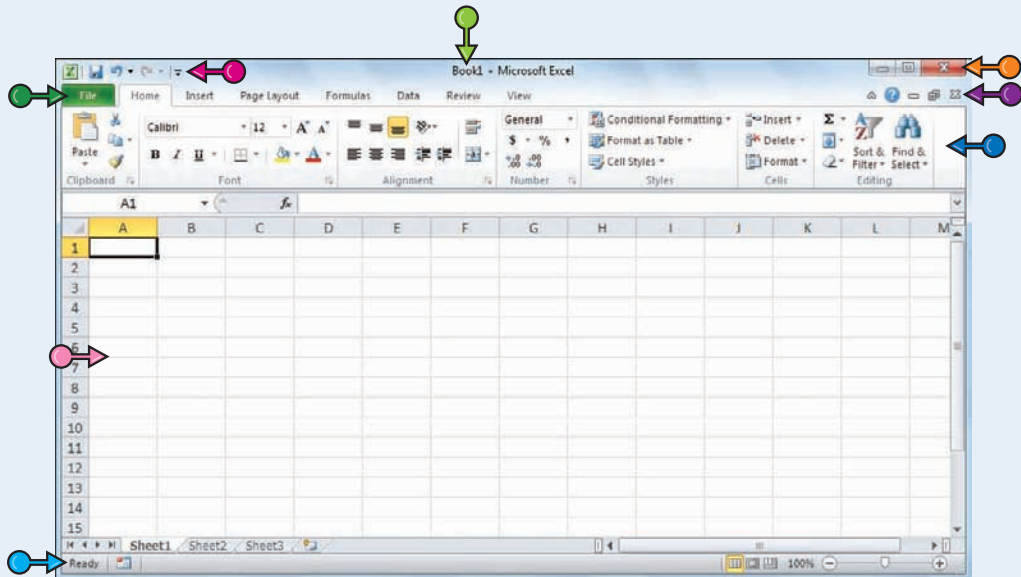
Title Bar

The title bar displays the name of the current workbook.

Quick Access Toolbar

This area gives you one-click access to a few often-used features. To learn how to customize this toolbar, see "Customize the Quick Access Toolbar."

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."

Excel Window Controls

You use these controls to minimize, maximize, restore, and close Excel's application window.

Workbook Window Controls

You use these controls to minimize, maximize, restore, and close the current workbook window.

File Tab

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

Worksheet

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

Status Bar

This area displays the 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 organized 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.
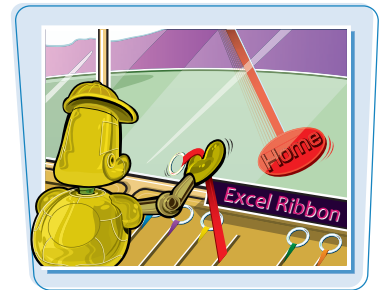
Work with Excel's Ribbon

1 Click the tab that contains the Excel feature you want to work with.
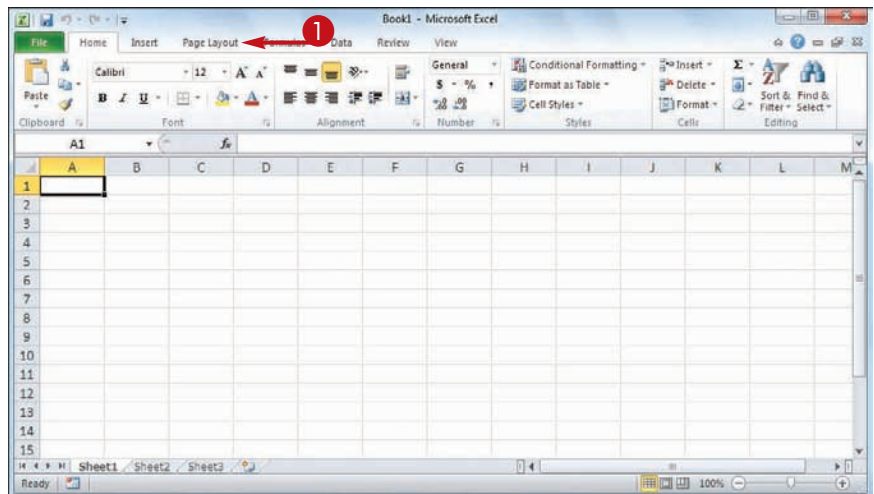
Excel displays the controls in the tab.

● Each tab is organized into groups of related controls, and the group names appear here.

● In many groups you can click the dialog box launcher button (◰) to display a dialog box that contains group settings.

2 Click the control for the feature.

● If the control displays a list of options, click the option you want.
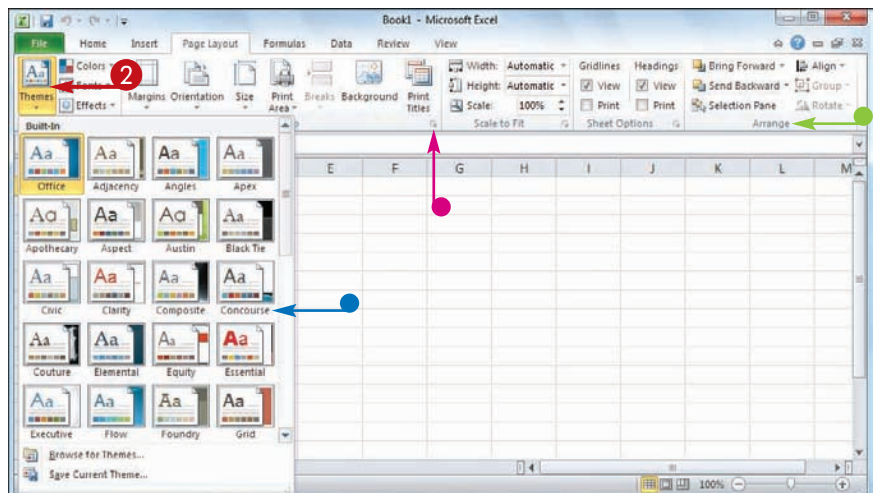
Excel runs the command or sets the option.

Work with Excel's Galleries

In Excel's Ribbon, a *gallery* is a collection of preset options that you can apply to the selected object in the worksheet. To get the most out of galleries, you need to know how they work.

Although some galleries are available all the time, in most cases you must select an object — such as a range of cells or a clip art image — before you work with a gallery.
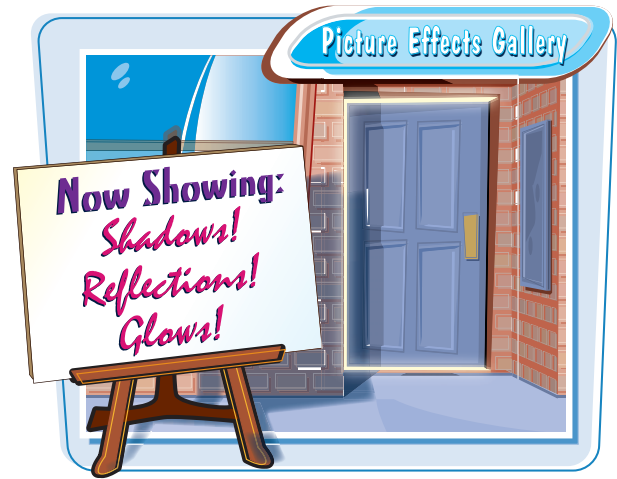
Work with Excel's Galleries

Work with a Gallery List

1 If necessary, click the object with which you want to apply an option from the gallery.

2 Click the tab that contains the gallery you want to use.

3 Click the gallery's **More** arrow (⊡).

● You can also scroll through the gallery by clicking the **Down** (⊡) and **Up** (⊡) arrows.
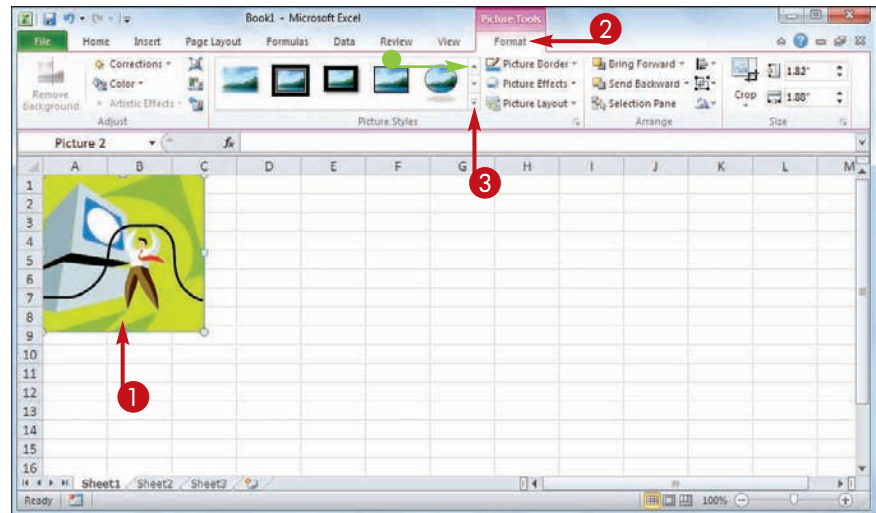
Excel displays a list of the gallery's contents.

4 Move the mouse ⌖ over a gallery option to see a preview of the effect.

● Excel displays a preview of the effect.

5 Click the gallery option you want to use.

Excel applies the gallery options to the selected object.
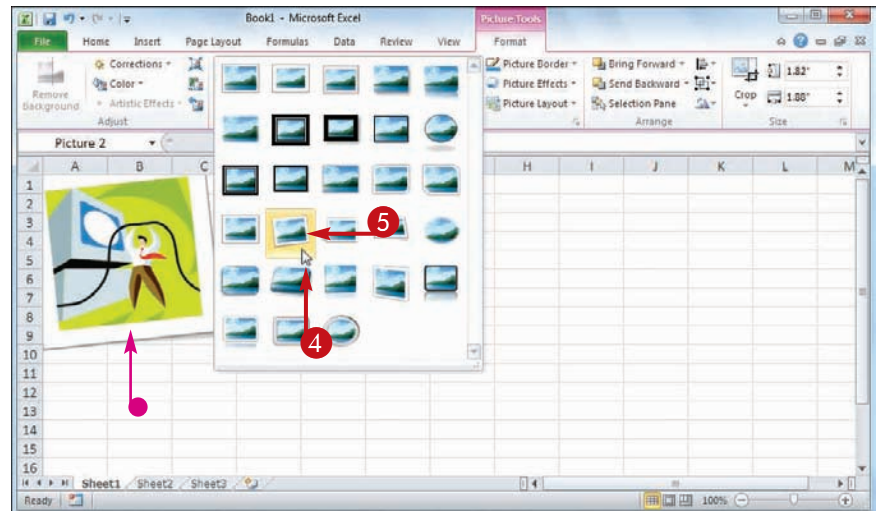
Work with a Drop-Down Gallery

1 If necessary, click the object with which you want to apply an option from the gallery.

2 Click the tab that contains the gallery you want to use.

3 Click the gallery's drop-down arrow ($\boxed{\cdot}$).

Excel displays a list of the gallery's contents.

4 If the gallery contains one or more subgalleries, click the subgallery you want to use.

Excel displays the subgallery's contents.

● If a gallery has commands that you can run, those commands appear at the bottom of the gallery menu.

5 Move the mouse $\searrow$ over a gallery option to see a preview of the effect.

● Excel displays a preview of the effect.

6 Click the gallery option you want to use.

Excel applies the gallery option to the selected object.
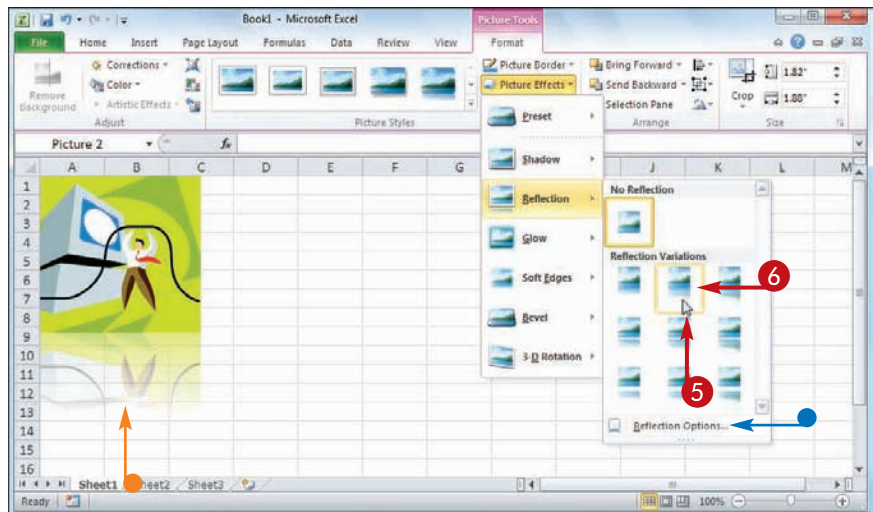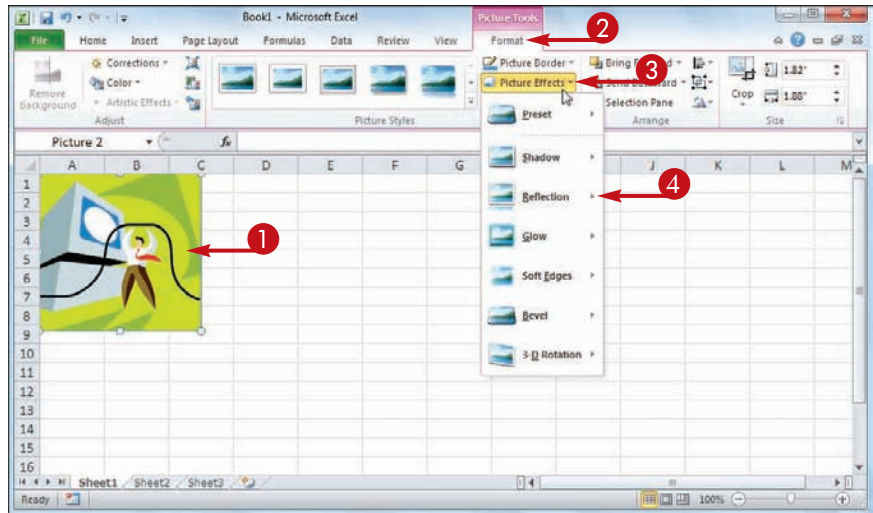
TIP

If I find the gallery preview feature distracting, can I turn it off?
Yes. The Live Preview feature is often handy because it shows you exactly what will happen when you click a gallery option. However, as you move the mouse $\searrow$ through the gallery, the previews can be distracting. To turn off Live Preview, click the **File** tab, click **Options**, click the **General** tab, click **Enable Live Preview** ($\boxed{\checkmark}$ changes to $\boxed{\ }$), and then click **OK**.

Live Preview

Customize the Quick Access Toolbar

You can make Excel easier to use by customizing 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 favorite 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.
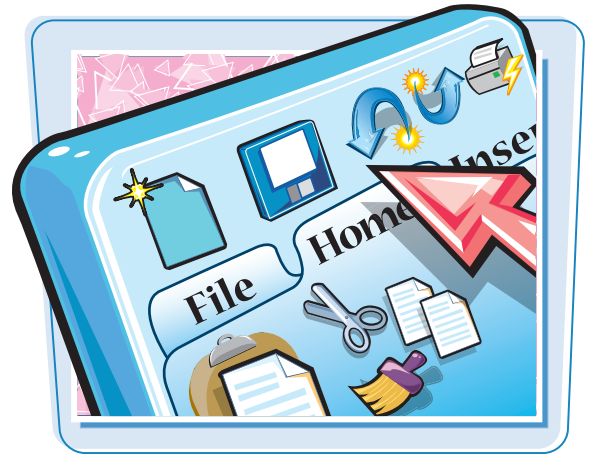
Customize the Quick Access Toolbar

① Click the **Customize Quick Access Toolbar** button (▼).

● 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.

● Excel automatically displays the Quick Access Toolbar tab.
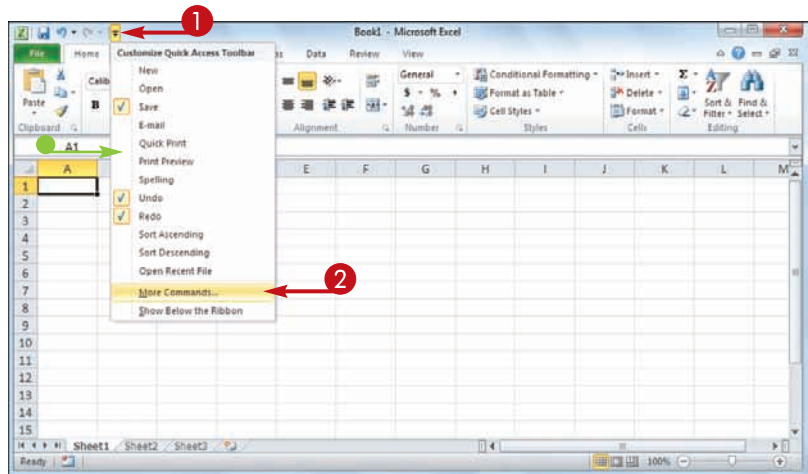
③ Click the **Choose commands from** ▼.

④ Click the command category you want to use.
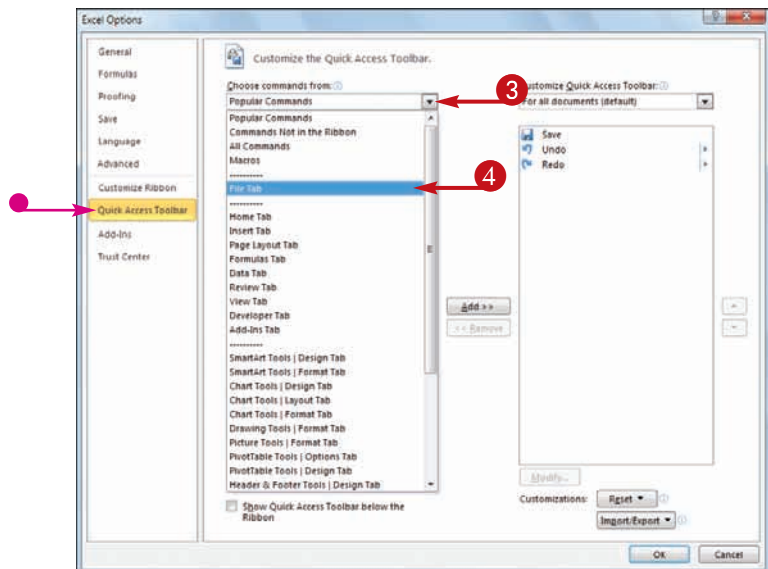
⑤ Click the command you want to add.

⑥ Click **Add**.

● Excel adds the command.

● To remove a command, click it and then click **Remove**.

⑦ Click **OK**.
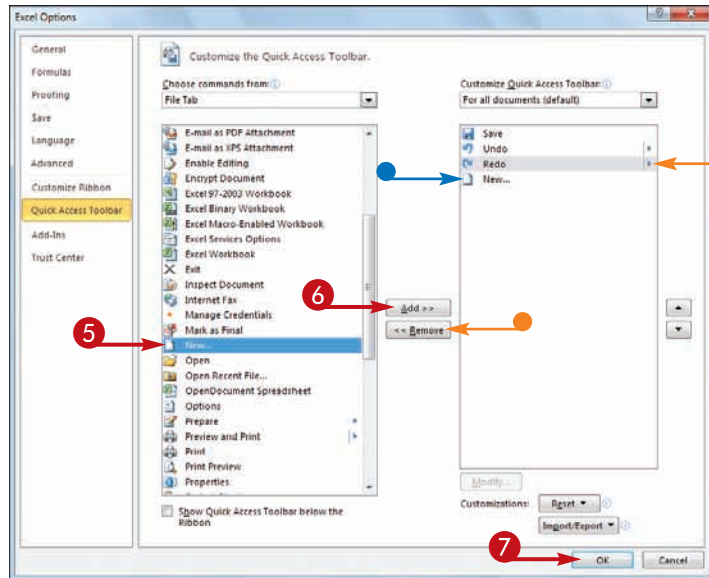
● Excel adds a button for the command to the Quick Access Toolbar.
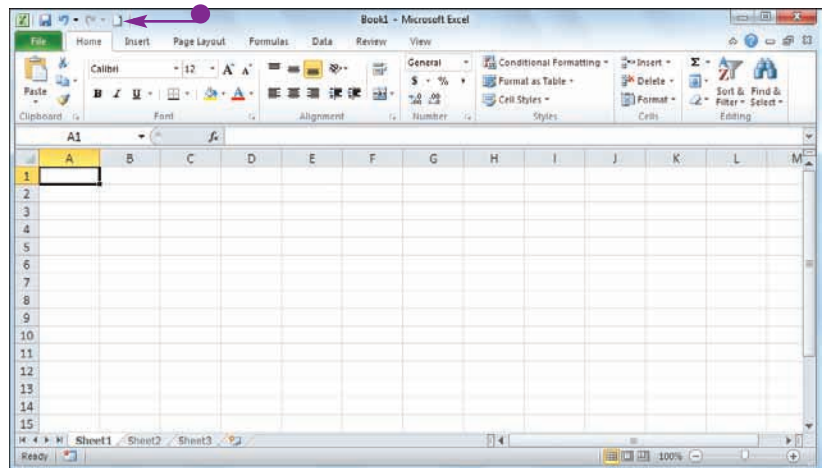
TIPS

Can I get more room on the Quick Access Toolbar to show more buttons?

Yes, you can increase the space available to the Quick Access Toolbar by moving it below the Ribbon. This gives the toolbar 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**.

Is there a faster way to add buttons to the Quick Access Toolbar?

Yes. If the command you want to add appears on the Ribbon, you can add a button for the command 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.

Customize the Ribbon

You can improve your Excel productivity by customizing the Ribbon with extra commands that you use 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.
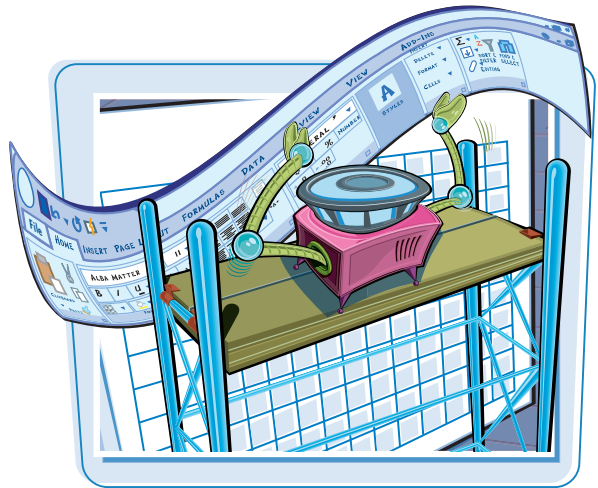
Customize the Ribbon

Display the Customize Ribbon Tab

1 Right-click any part of the Ribbon.

2 Click **Customize the Ribbon**.
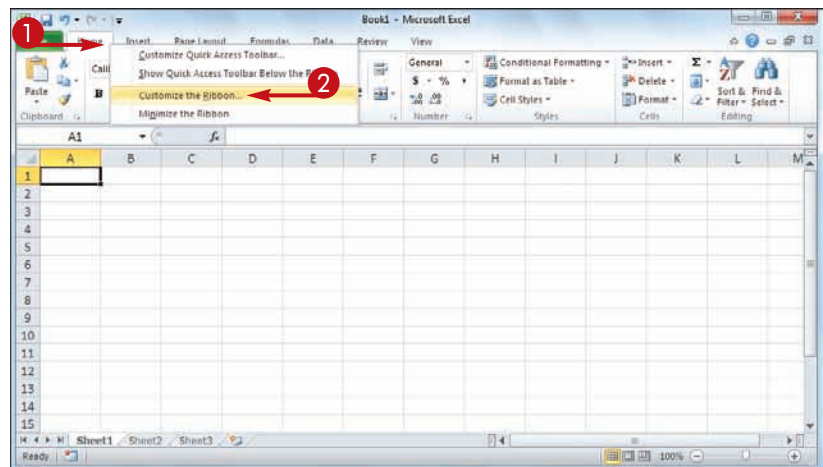
Add a New Tab or Group

The Excel Options dialog box appears.

● Excel automatically displays the Customize Ribbon tab.

1 Click the tab you want to customize.

● You can also click **New Tab** to create a custom tab.

2 Click **New Group**.

● Excel adds the group.

3 Click **Rename**.

4 Type a name for the group.

5 Click **OK**.
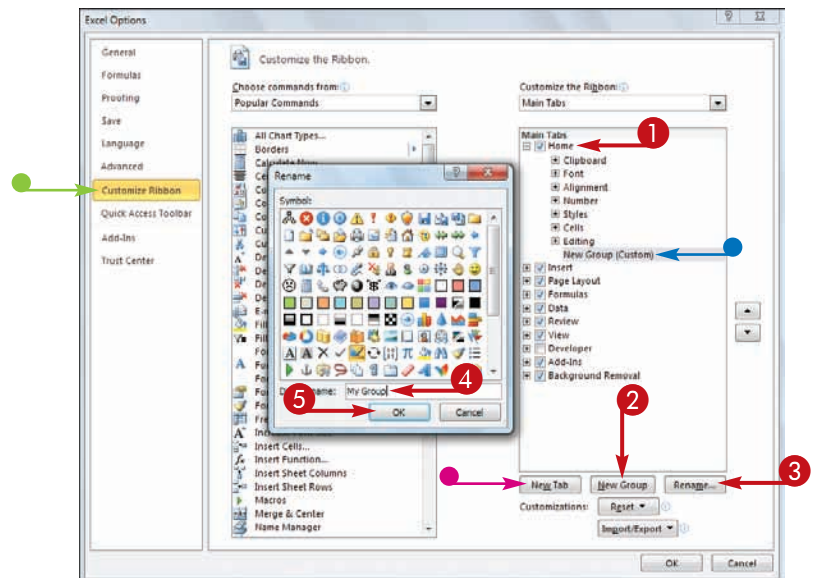
Add a Command

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**.

● Excel adds the command.

● To remove a custom command, click it and then click **Remove**.

6. Click **OK**.

● Excel adds the new group and command to the Ribbon.
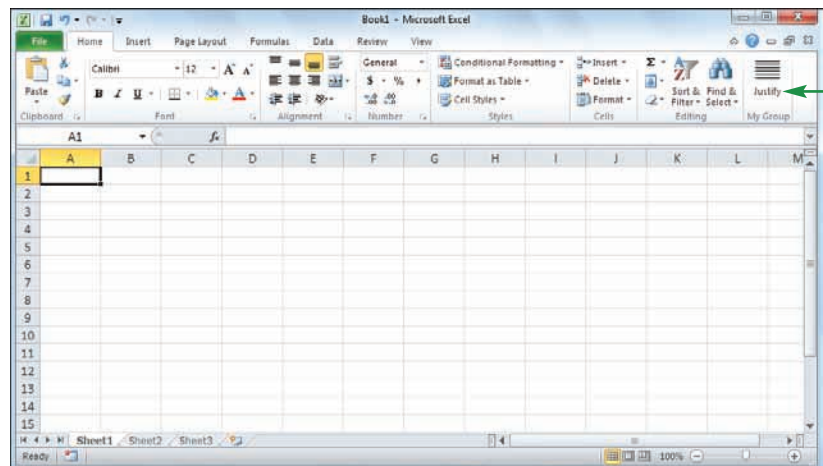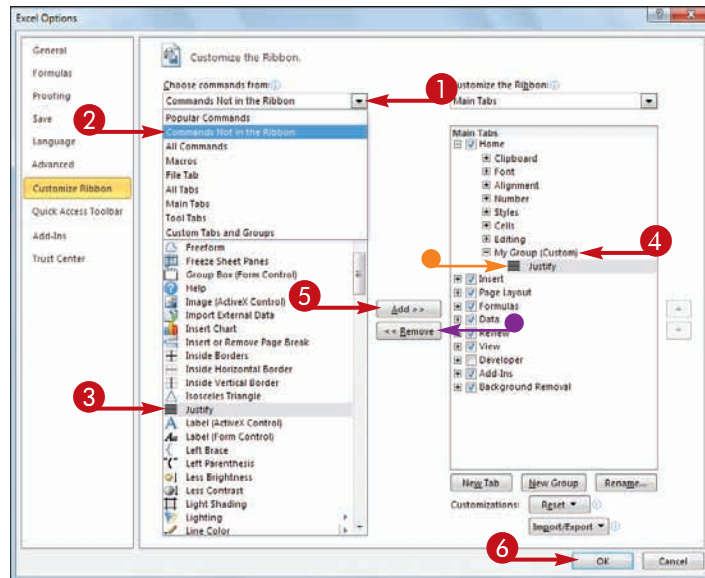
Can I customize the tabs that appear only when I select an Excel object?

Yes. Excel calls these *tool tabs*, and you can add custom groups and commands to any tool tab. Right-click any part of the Ribbon and then click **Customize the Ribbon** to display the Excel Options dialog box with the Customize Ribbon tab displayed. Click the **Customize the Ribbon** [▼] and then click **Tool Tabs**. Click the tab you want and then follow the steps in this section to customize it.

How do I restore the Ribbon to its default configuration?

Right-click any part of the Ribbon and then click **Customize the Ribbon** to display the Excel Options dialog box with the Customize Ribbon tab displayed. To restore a tab, click the tab, click **Restore Defaults**, and then click **Restore only selected Ribbon tab**. To remove all customizations, 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.

Work with Smart Tags

1 Perform an action that displays a smart tag, such as copying and pasting a cell as shown here.

● The smart tag appears.
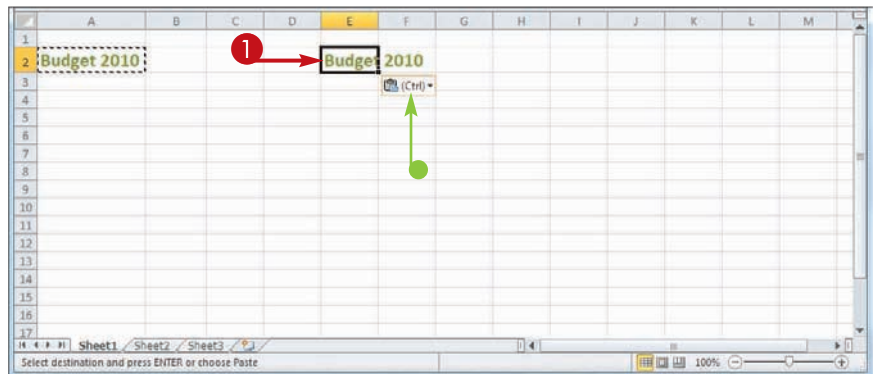
2 Click the smart tag.

● The smart tag displays a list of its options.
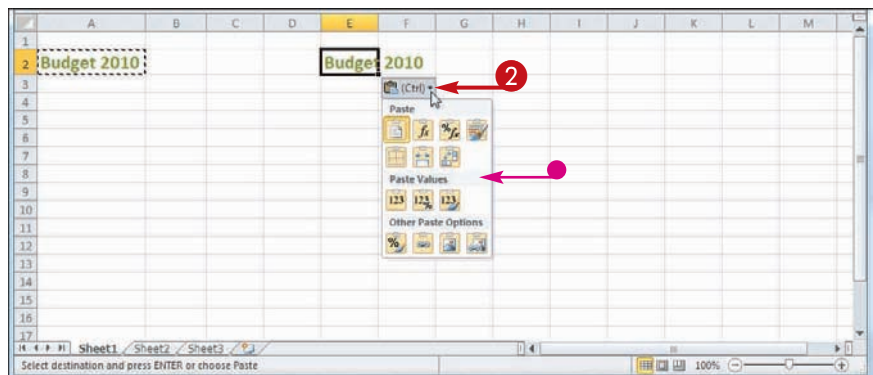
3 Click the option you want to apply.
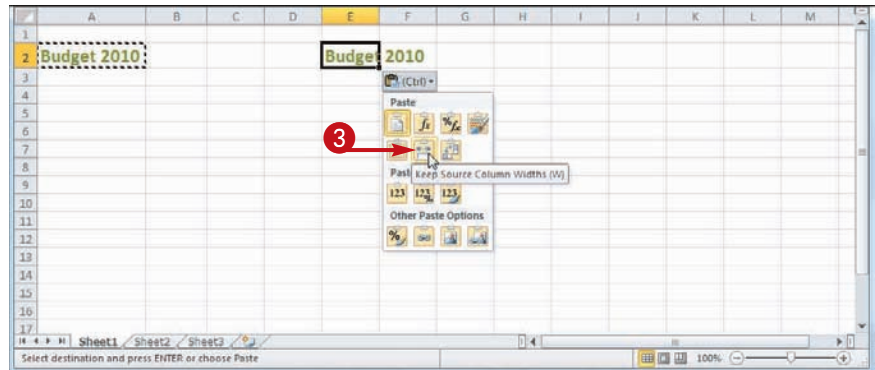
● Excel applies the option to the task you performed in Step **1**.
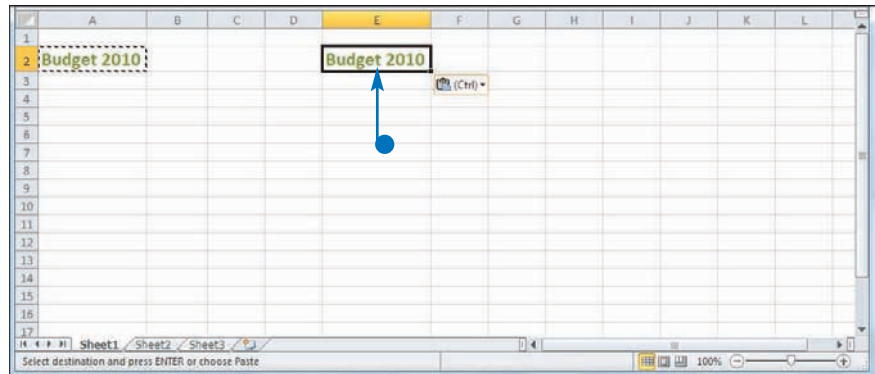
Are there other types of smart tags I can use?

Yes, Excel offers a few other smart tag types. For example, a Date smart tag recognizes a worksheet date and offers options such as scheduling a meeting on that date. To turn on these extra smart tags, click **File**, click **Options**, click **Proofing**, click **AutoCorrect Options**, and then click the **Smart Tags** tab. Click the **Label data with smart tags** check box (☐ changes to ☑), and then click the check box beside each smart tag in the **Recognizers** list (☐ changes to ☑). Click **OK**.
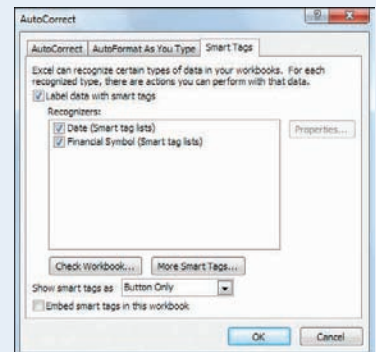
Change the View

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 different views: Normal, which is useful for building and editing worksheets; Page Layout, which displays worksheets as they would appear if you printed them out; and Page Break Preview, which displays the page breaks as blue lines, as described in the first Tip on the next page.
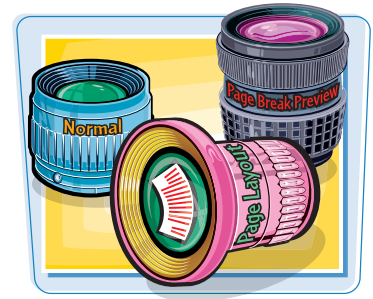
Excel offers three different views: Page Layout, which displays worksheets as printed pages; Page Break Preview, which displays the page breaks as blue lines, as described in the first Tip on the next page; and Normal, which is useful for building and editing worksheets.

Change the View

Switch to Page Layout View

1 Click the **View** tab.

2 Click **Page Layout**.

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

● Excel switches to Page Layout view.
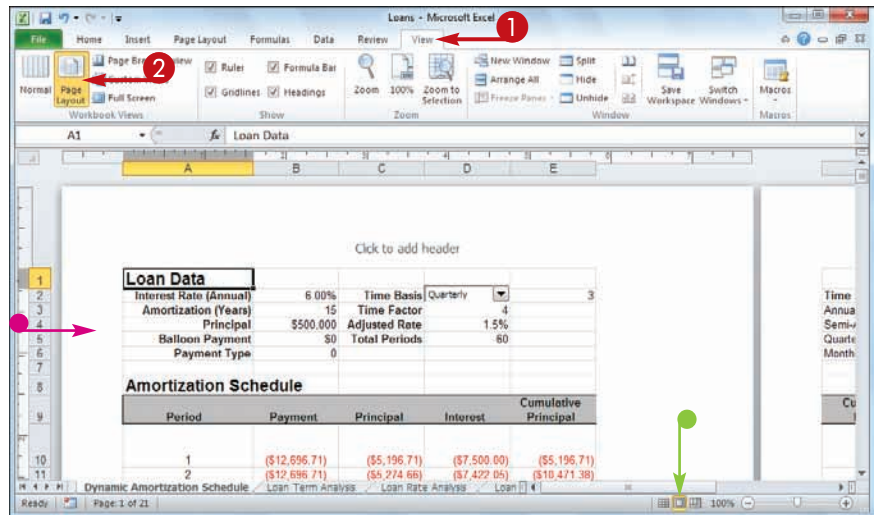
Switch to Page Break Preview

1 Click the **View** tab.

2 Click **Page Break Preview**.

● You can also click the **Page Break Preview** button (▣).
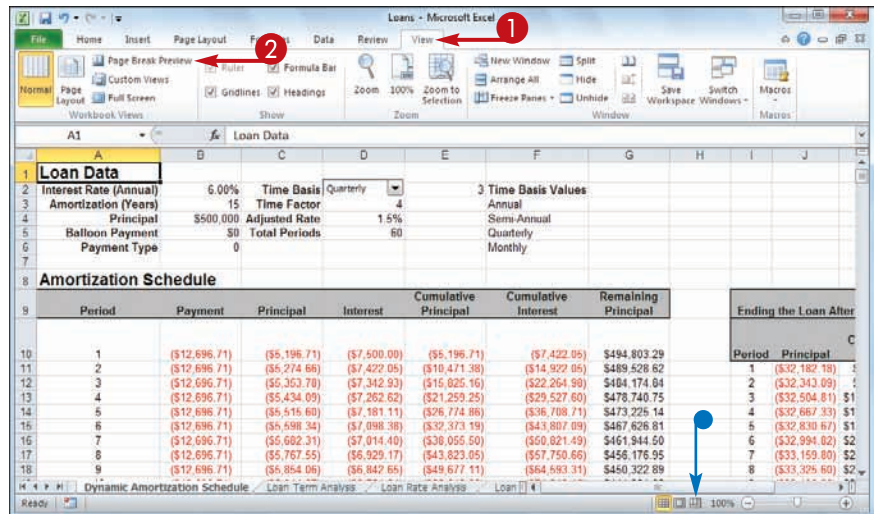
● The Welcome to Page Break Preview dialog box appears.

● Excel switches to Page Break Preview.

3 Click **OK**.
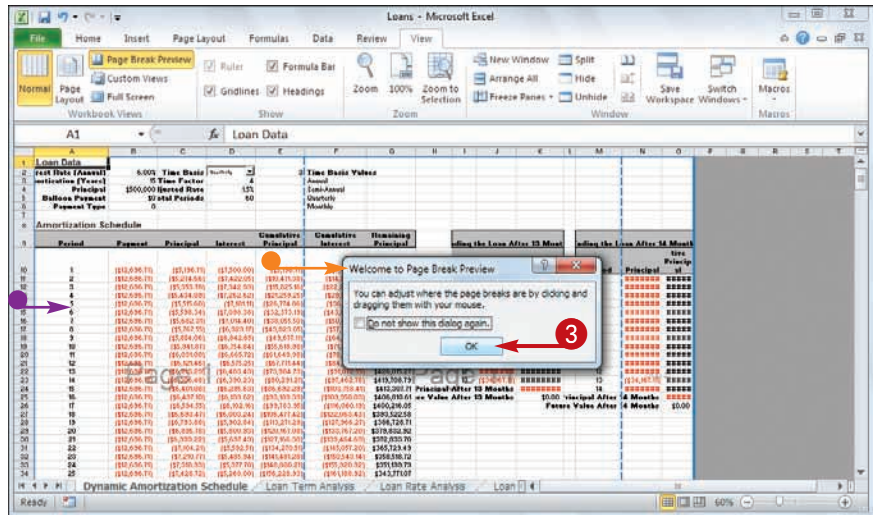
Switch to Normal View

1 Click the **View** tab.

2 Click **Normal**.

● You can also click the **Normal** button (⊞).

Excel switches to Normal view.
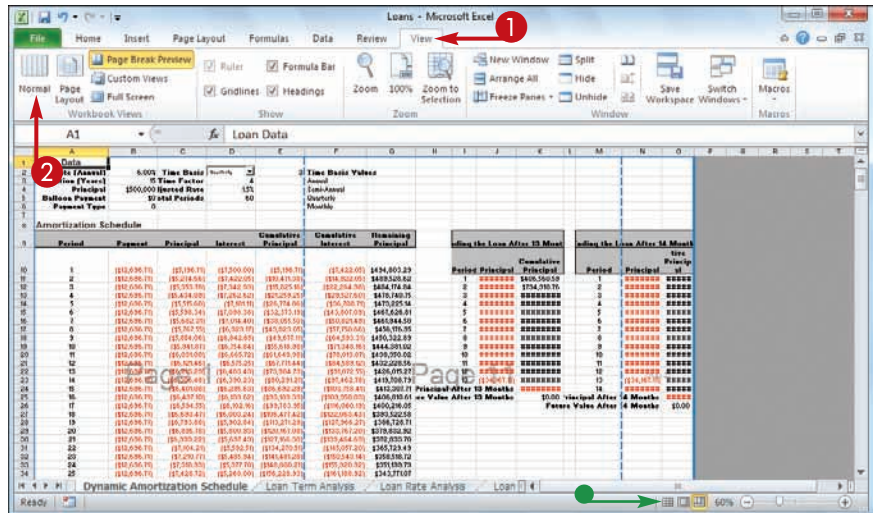
TIPS

What does Page Break Preview do?

In Excel, a *page break* is a position within a worksheet where a new page begins when you print the 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 the headings from a range, but not the cells below the headings — you can use your mouse ℞ to click and drag the page breaks to new positions.

What does Full Screen view do?

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 customize Excel and set up the program to suit the way you work by configuring the Excel options. To use these options, you must know how to display the Excel Options dialog box.

These options are dialog box controls such as check boxes, option buttons, and lists that enable you to configure many aspects of Excel.
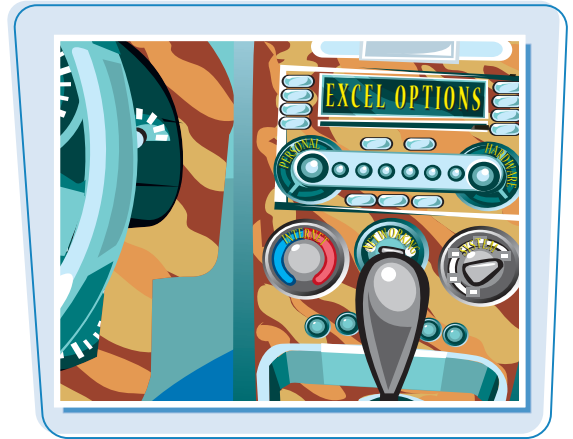
Configure Excel Options

① Click the **File** tab.
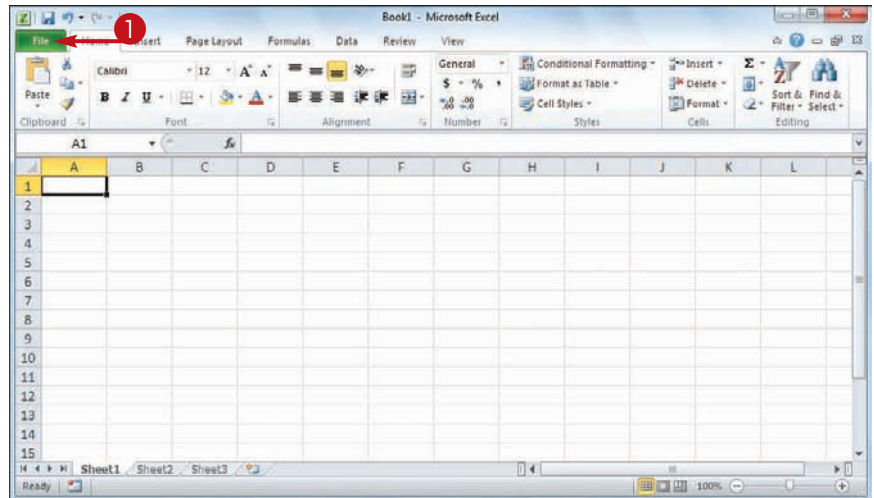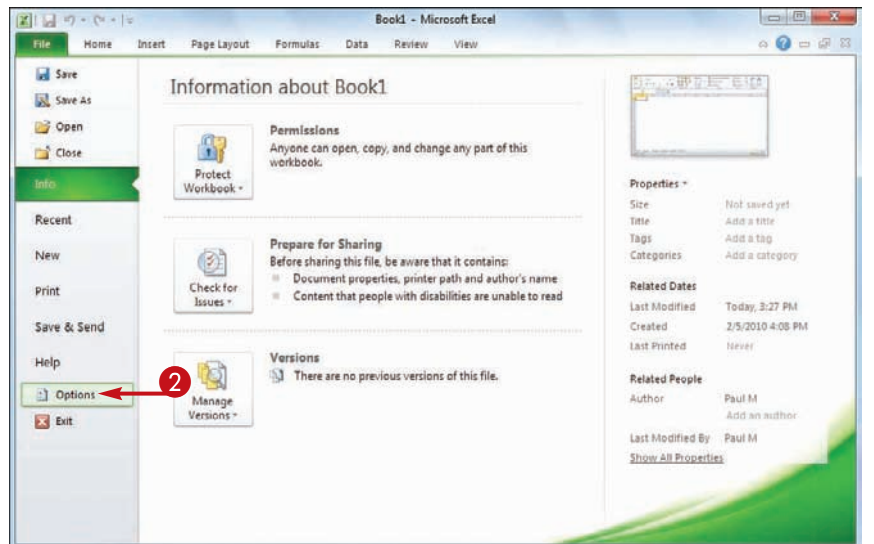
② Click **Options**.

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.

● The controls that appear on the right side of the dialog box change according to the tab you select.
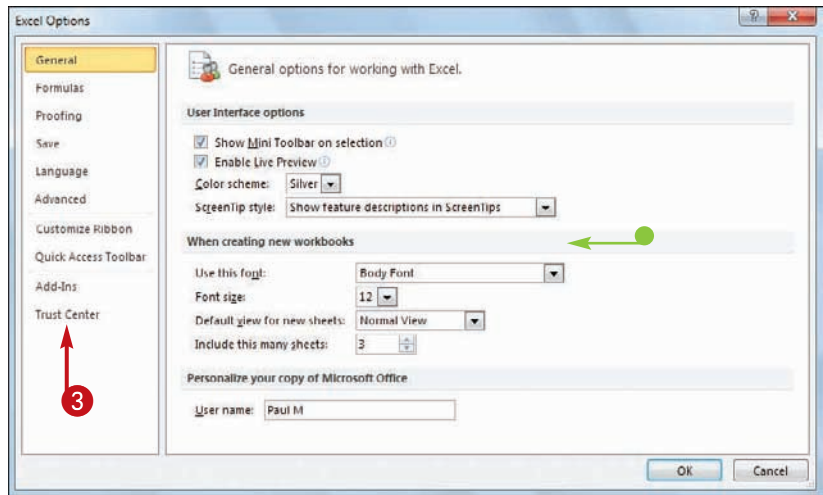
④ Use the controls on the right side of the dialog box to configure the options you want to change.

⑤ Click **OK**.

Excel puts the new options into effect.
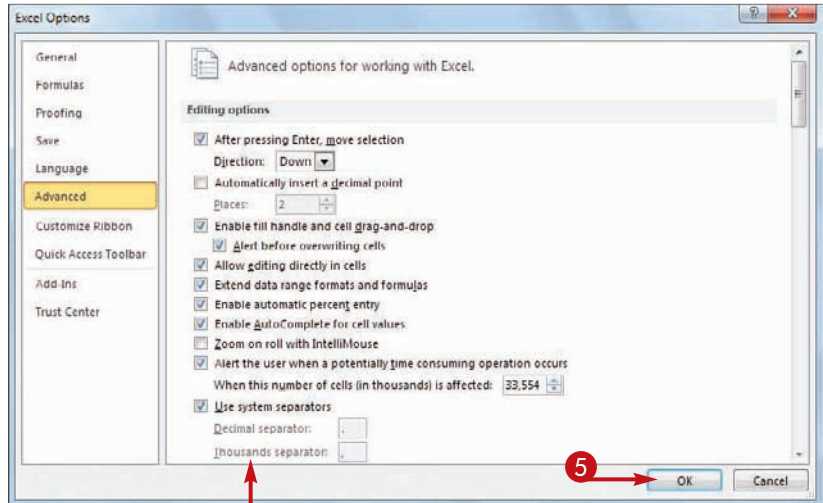
Are there faster methods I can use to open the Excel Options dialog box?

Yes. Some features of the Excel interface offer shortcut methods that get you to the Excel Options dialog box faster. For example, right-click the Ribbon and then click **Customize Ribbon** to open the Excel Options dialog box with the Customize Ribbon tab displayed. From the keyboard, you can open the Excel Options dialog box by pressing **Alt** + **F** and then pressing **I**.

How do I know what each option does?

Excel offers pop-up descriptions of some — but, unfortunately, not all — of the options. If you see a small *i* with a circle around it to the right of the option name, it means pop-up help is available for that option. Hover the mouse over the option and Excel displays a pop-up description of the option after a second or two.

Add Excel to the Windows 7 Taskbar

If you use Excel regularly, you can start the program with just a single mouse click by adding an icon for Excel to the Windows 7 taskbar.

This task requires that you are running Excel using the Windows 7 operating system.

Add Excel to the Windows 7 Taskbar

1 With Excel running, right-click the Excel icon in the taskbar.

2 Click **Pin this program to taskbar**.
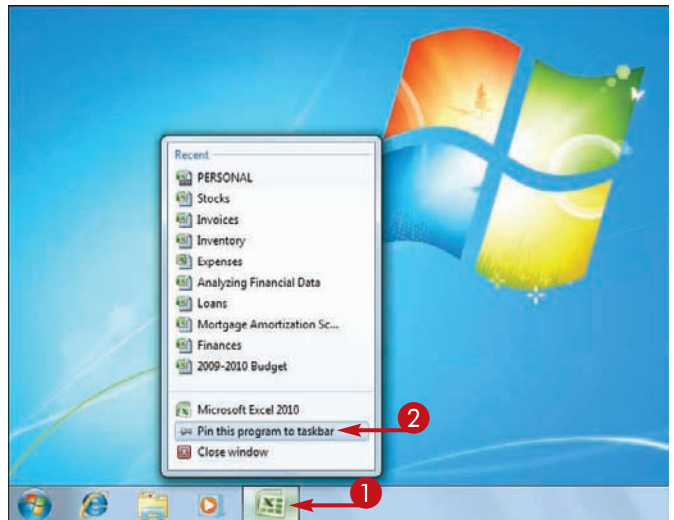
● After you quit Excel, the icon remains on the taskbar, and you can now launch Excel by clicking the icon.
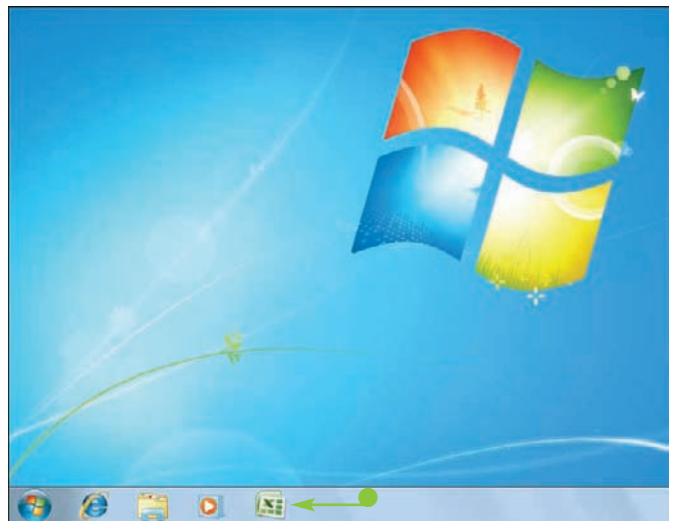
Quit Excel

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.

Quit Excel

Quit Excel Using the Office Menu

① Click the **File** tab.

② Click **Exit**.

Note: If you have any open documents with unsaved changes, Excel prompts you to save those changes.

Note: Another way to quit the program is to press **Alt** + **F4** .
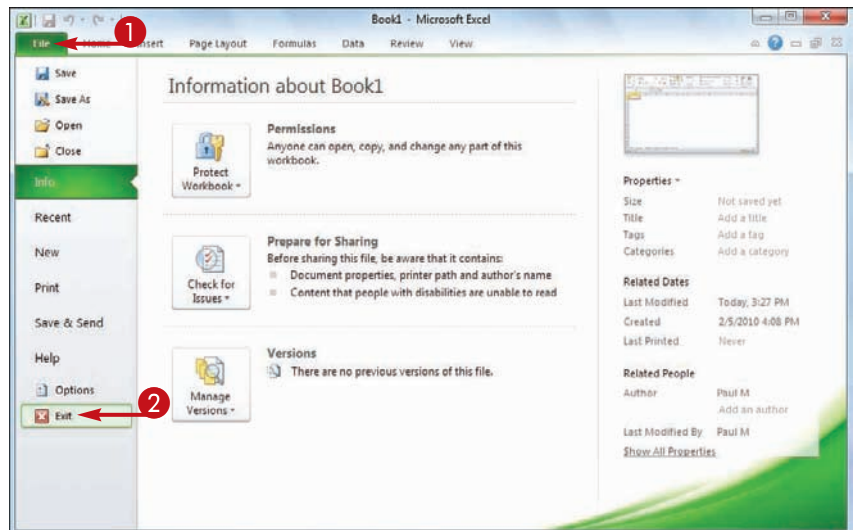
Quit Excel Using the Taskbar

① Right-click the Excel taskbar icon.

② Click **Close window**.

Note: If you have any open documents with unsaved changes, Excel prompts you to save those changes.

Entering and Editing Excel Data

Are you ready to start building a spreadsheet? To create a spreadsheet in Excel, you must know how to enter data 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 enter your data and formulas, so you need to know the layout of a typical worksheet.

Cell

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

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.

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.

Cell Address

Each cell has its own *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.

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:K16 is an example of a range of cells, and it refers to all of the cells selected between column H, cell 12 and column K, cell 16.

Worksheet Tab

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

Mouse Pointer

Use the Excel mouse ⊕ to select cells.
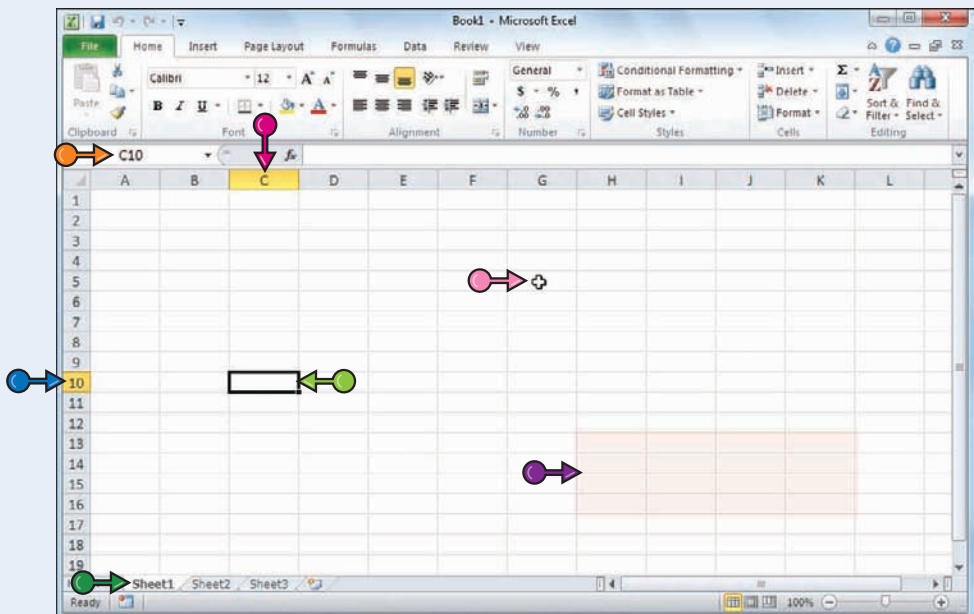
Understanding the Types of Data You Can Use

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 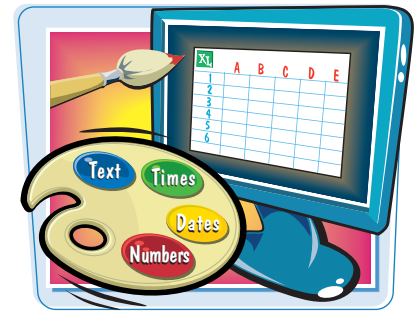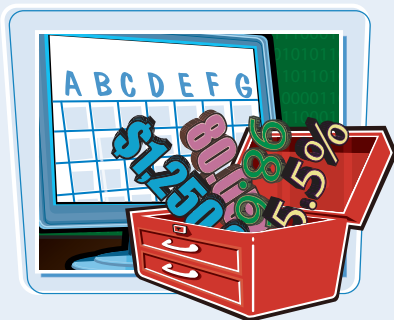are usually labels such as *Sales* or *Territory* that make a worksheet easier to read. However, text entries can also be text/number combinations for items such as phone numbers and account codes.

Numbers

Numbers are the most common type of Excel data. The numbers you enter into a cell can be dollar 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 dollar sign ($) or other currency symbol to indicate a monetary value, or follow a number with a percent sign (%) to indicate a percentage value.

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 August 23, 2010 — or use either the forward slash (/) or the hyphen (-) as a date separator — such as 8/23/2010 or 8-23-2010. Note that the order you enter the date values depends on your regional settings. For example, in the United States the format is month/day/year. For time values, you use a colon (:) as a time separator, followed by either AM or PM — such as 9:15 AM.

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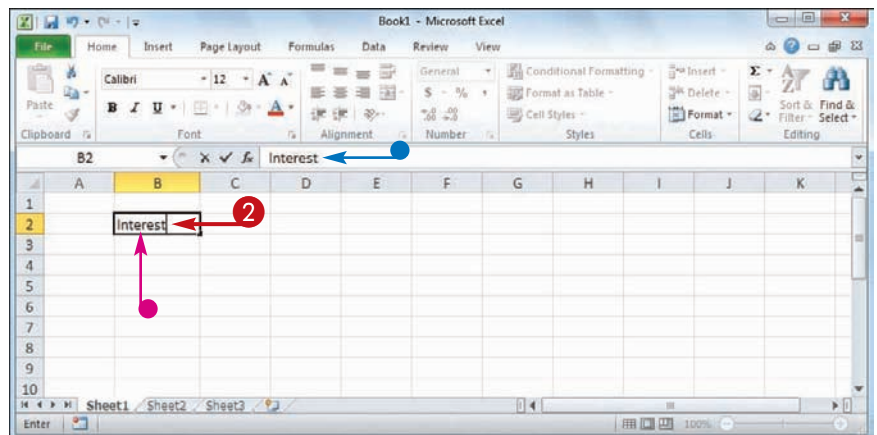
1 Click the cell in which you want to enter the text.

● Excel marks the current cell by surrounding it with a thick, black border.
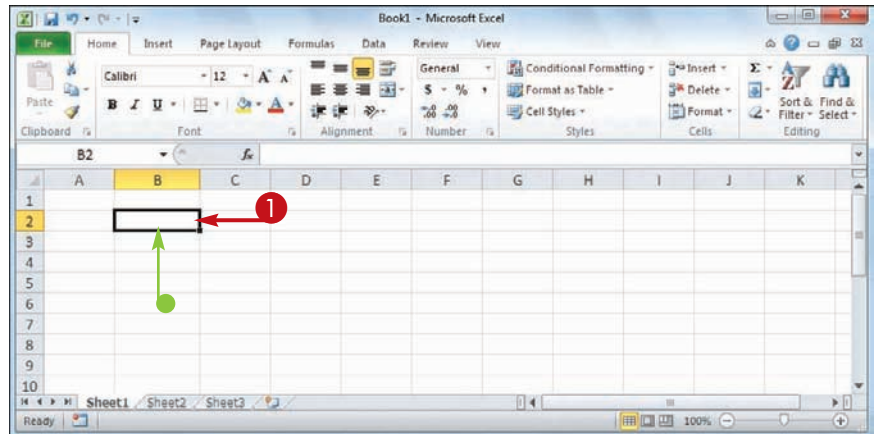
2 Start typing your text.

● Excel opens the cell for editing and displays the text as you type.

● 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**.

● If you do not want Excel to move the selection, click **Enter** (✓) or press **Ctrl** + **Enter** instead.
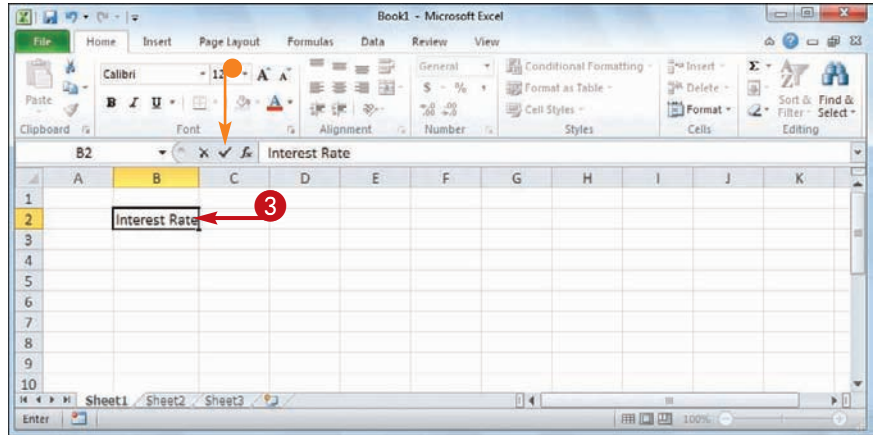
● Excel closes the cell for editing.

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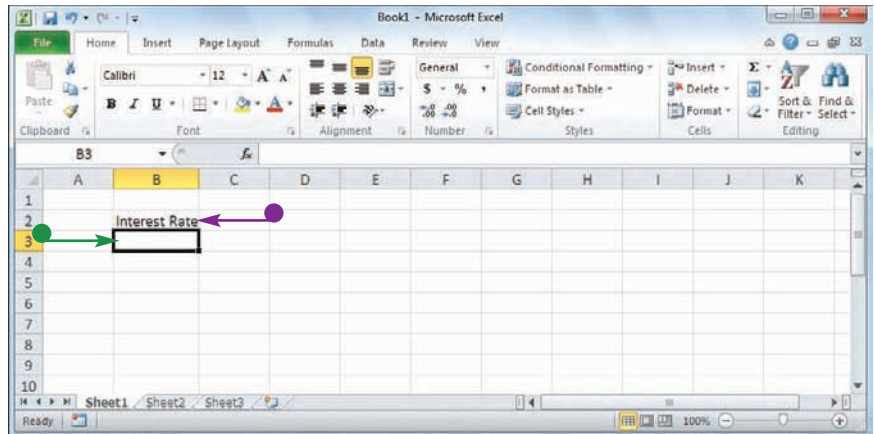
TIPS

When I press Enter the selection moves to the next cell down. Can I make the selection move to the right instead?

Yes. When you have finished adding the data to the cell, press ➡. This tells Excel 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 ⬆.
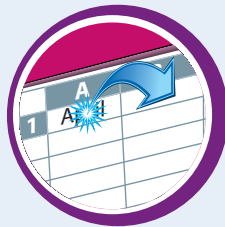
When I start typing text into a cell, why does Excel sometimes display the text from another cell?

This is part of an Excel feature called AutoComplete. If the letters you type at the start of a cell match the contents of another cell in the worksheet, Excel 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. To get the most out of Excel, you need to know how to enter numeric values, including percentages and currency values.
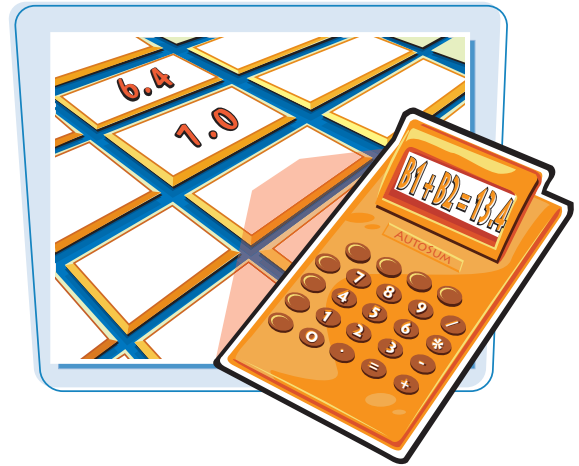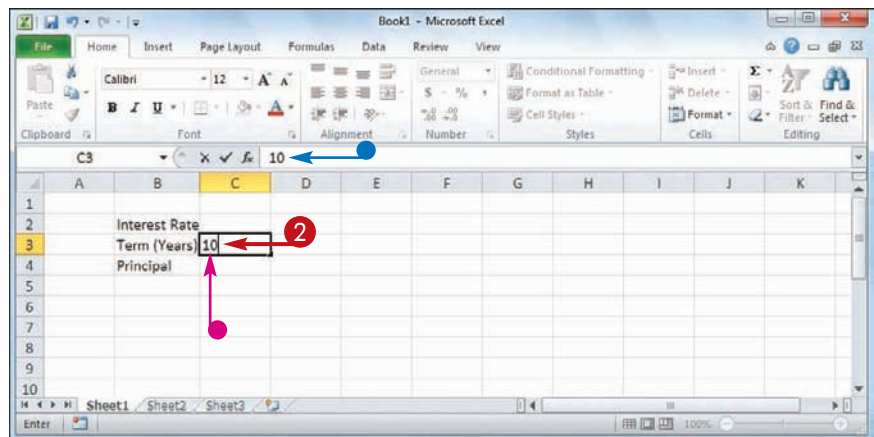

Enter a Number into a Cell

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.
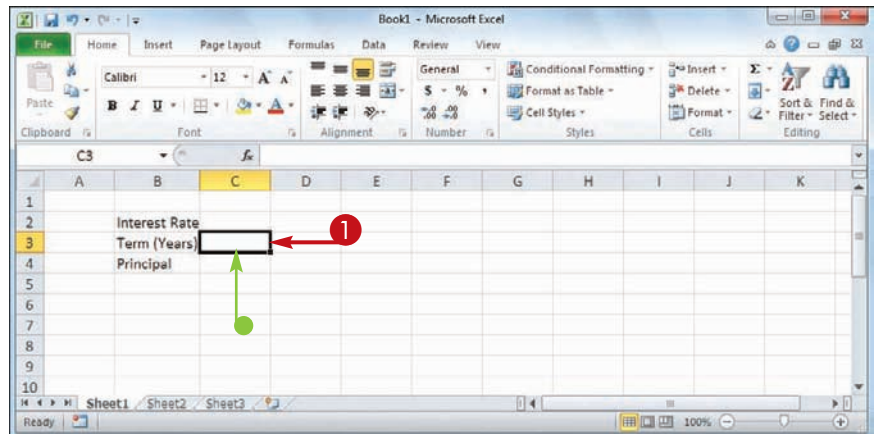
② Start typing your number.

● Excel opens the cell for editing and displays the number as you type.

● 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.
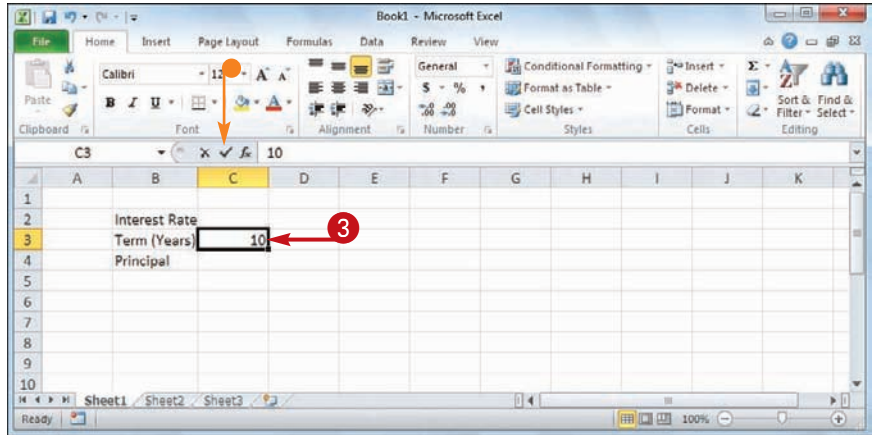
● Excel closes the cell for editing.

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

● To enter a currency value, type the dollar sign ($) followed by the number.
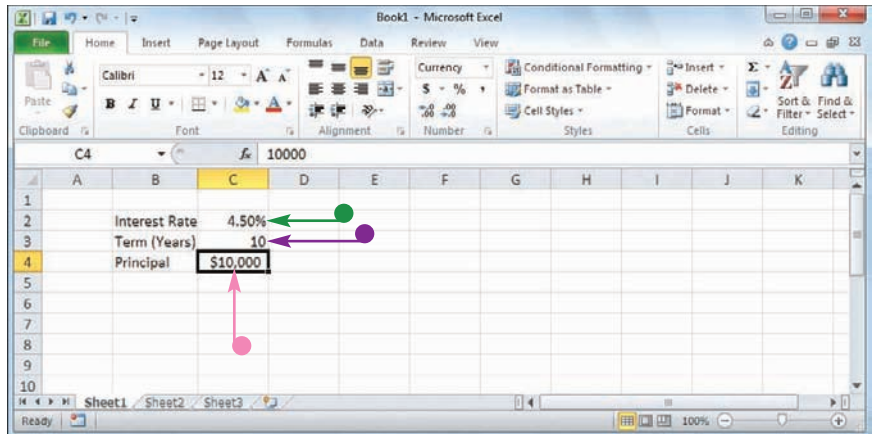
TIPS

Can I use symbols such as a comma, decimal point, or minus sign when I enter a numeric value?

Yes. If your numeric value is in the thousands, you can include the thousands separator (,) within the number. For example, if you enter **10000**, Excel displays the value as 10000; however, if you enter **10,000**, Excel displays the value as 10,000, which is easier to read. If your numeric value includes one or more decimals, you can include the decimal point (.) when you type the value. If your numeric value is negative, precede the value with a minus sign (–).
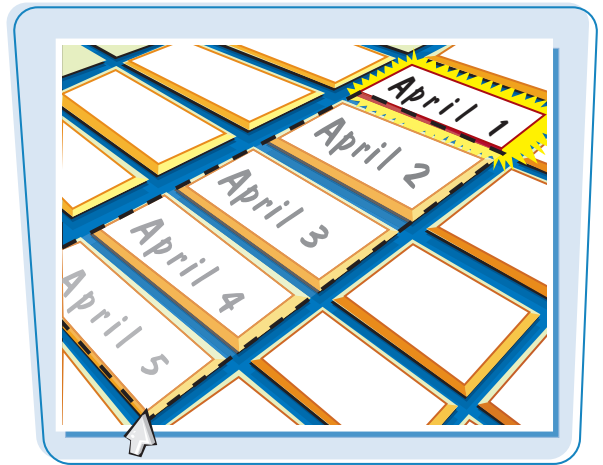
Is there a quick way to repeat a number rather than entering the entire number all over again?

Excel offers a few methods for doing this. The easiest method is to select the cell directly below the value you want to repeat and then press **Ctrl** +'. Excel adds the value to the cell. For another method, see "Fill a Range with the Same Data" in Chapter 3.

Enter a Date or Time into a Cell

Many Excel worksheets use dates and times either as part of the sheet data or for use in calculations, such as the number of days an invoice is overdue. For these and similar uses, you need to know how to enter date and time values into a cell.
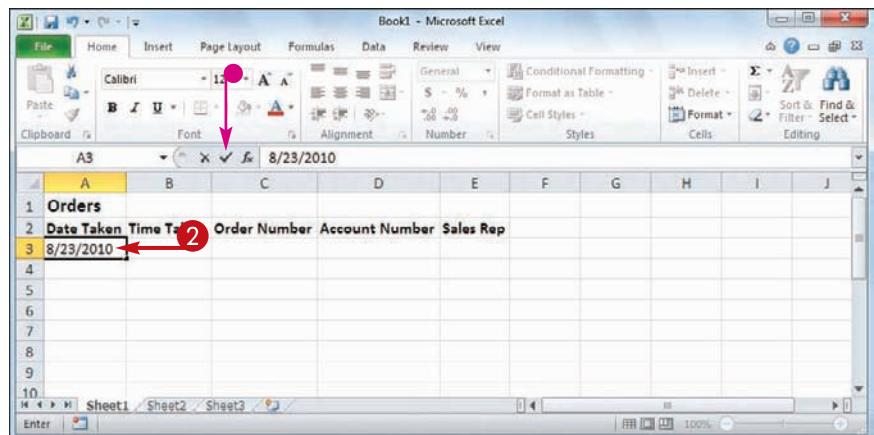
Enter a Date

① Click the cell in which you want to enter the date.

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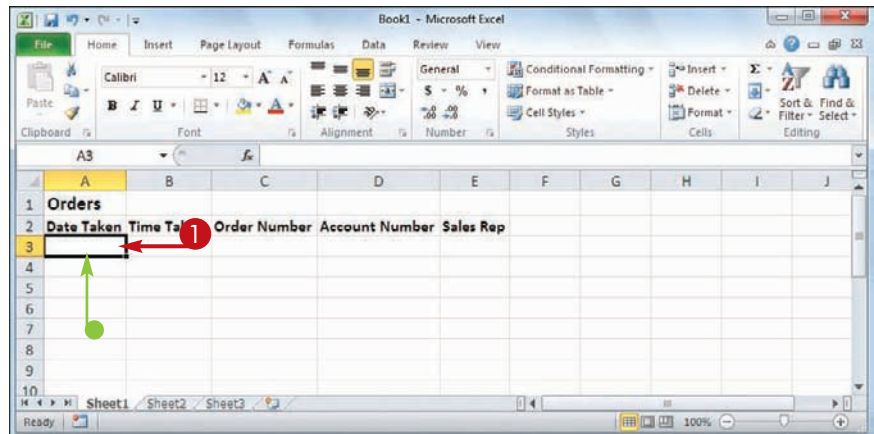

② Type the date.

Note: The format you use depends on your location. In the United States, for example, you can use the month/day/year format — 8/23/2010. See the Tip on the next page.

③ When your date 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.

Enter a Time

1 Click the cell in which you want to enter the time.

● Excel marks the current cell by surrounding it with a thick, black border.
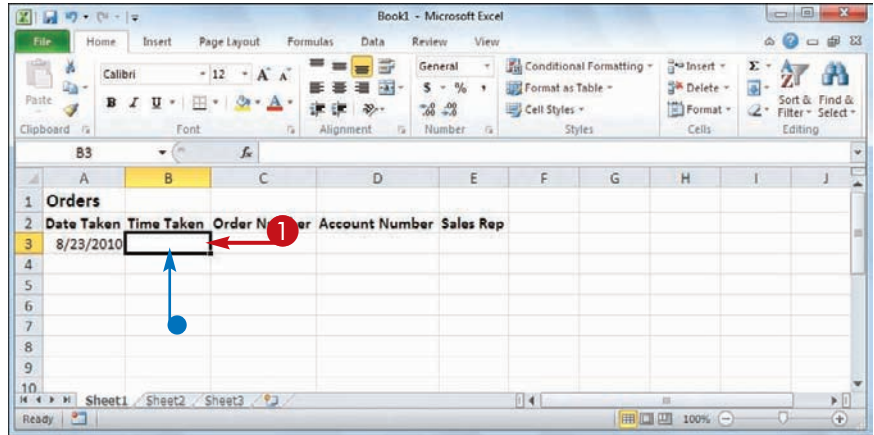
2 Type the time.

Note: The general format for entering a time is hour:minute:second AM/PM; for example, 3:15:00 PM. See the following Tip.

3 When your time 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.
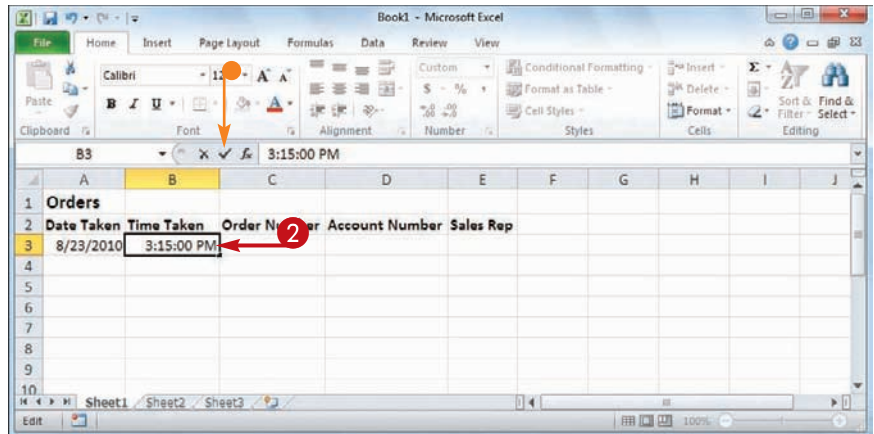
TIP

How can I tell which date and time formats my version of Excel accepts?

Follow these steps:

1 Click the **Home** tab.

2 Click the dialog box launcher button in the bottom right corner of the Number group.

3 Click the **Number** tab.

4 Click **Date**.

5 Click the **Locale (location)** drop-down arrow and then click your location.

6 Examine the Type list to see the formats you can use to enter dates.
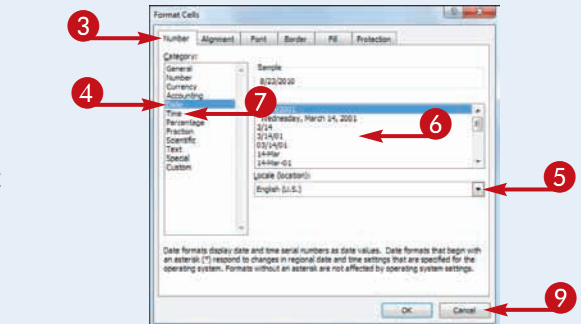
7 Click **Time**.

8 Examine the Type list to see the formats you can use to enter times.

9 Click **Cancel**.
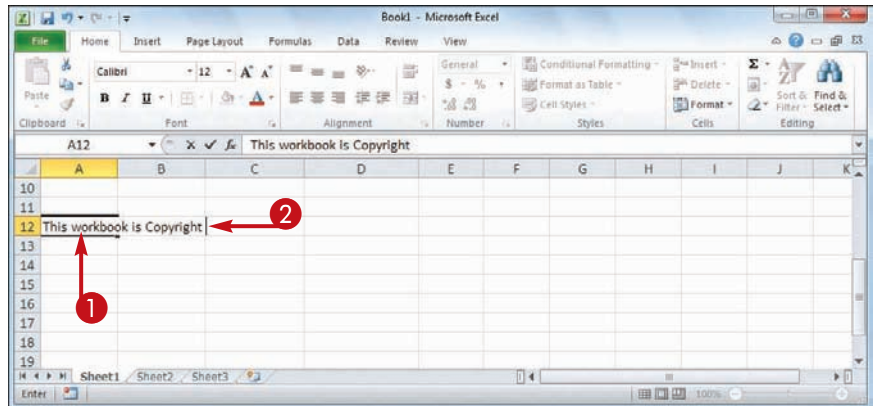
Insert a Symbol

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.
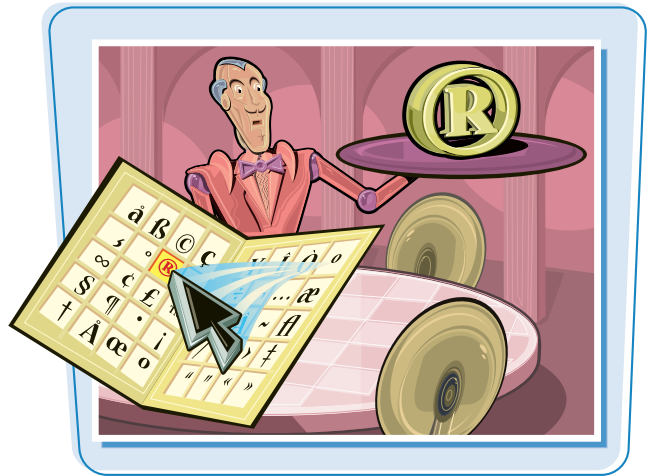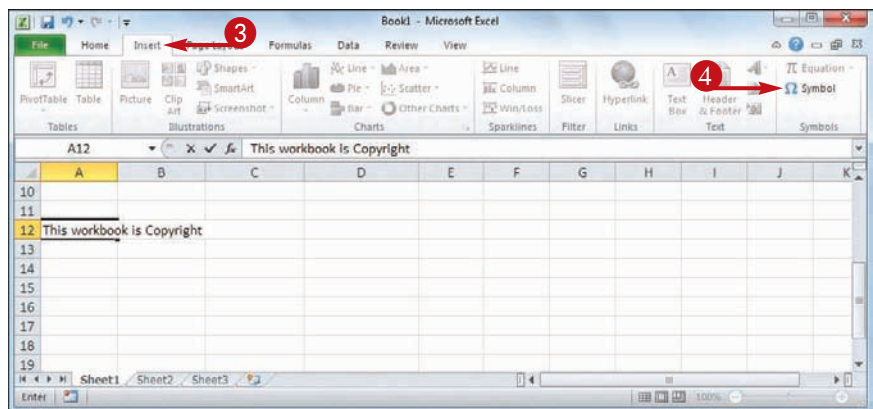
Insert a Symbol

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.

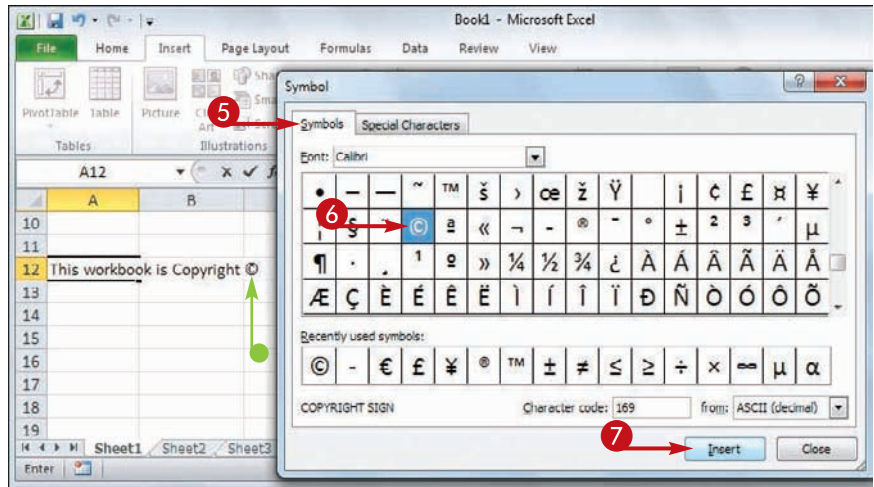**3** Click the **Insert** tab.

**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**.
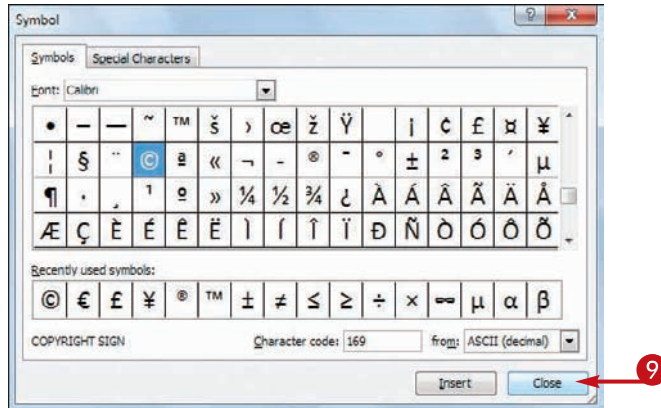
Are there keyboard shortcuts available for symbols I use frequently?

Yes, in many cases. 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 number in the Character code text box. This number tells you that you can enter the symbol via the keyboard by holding down **Alt**, pressing **0**, and then typing the number. 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.
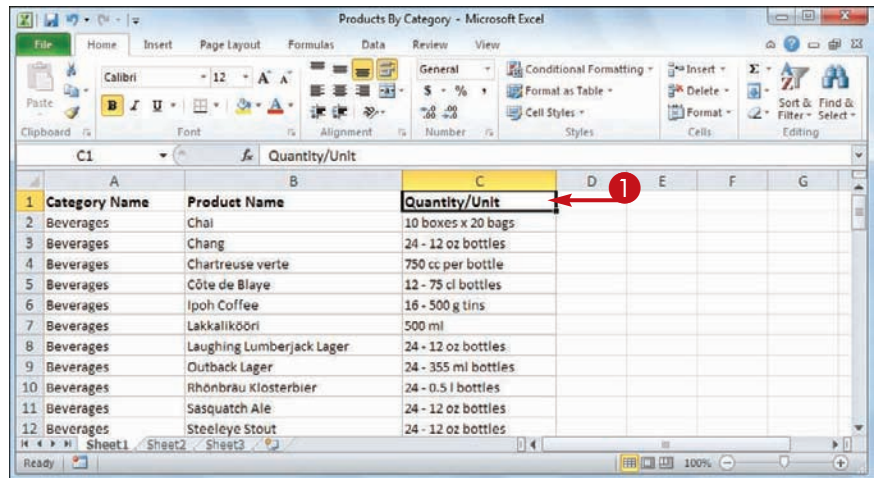
SHORT CUT

Edit Cell Data

If the data you entered into a cell has changed or is incorrect, you can edit the data. You can edit cell data either directly in the cell or by using the Formula bar.
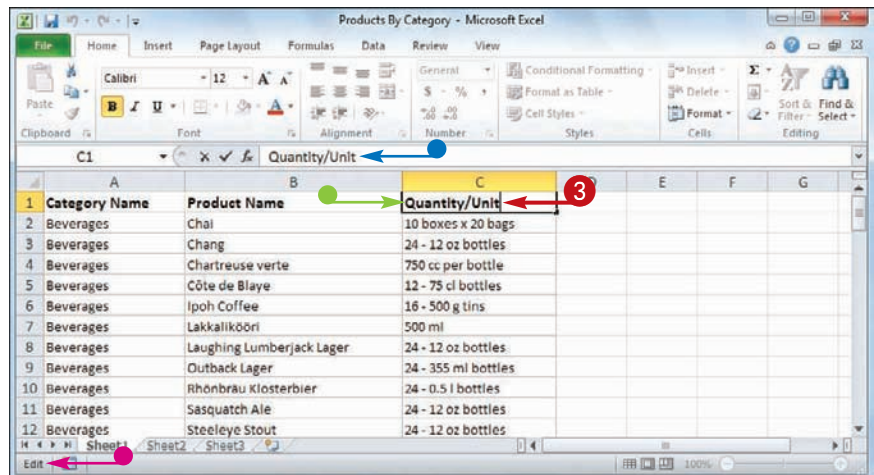

Edit Cell Data

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

2 Press F2.

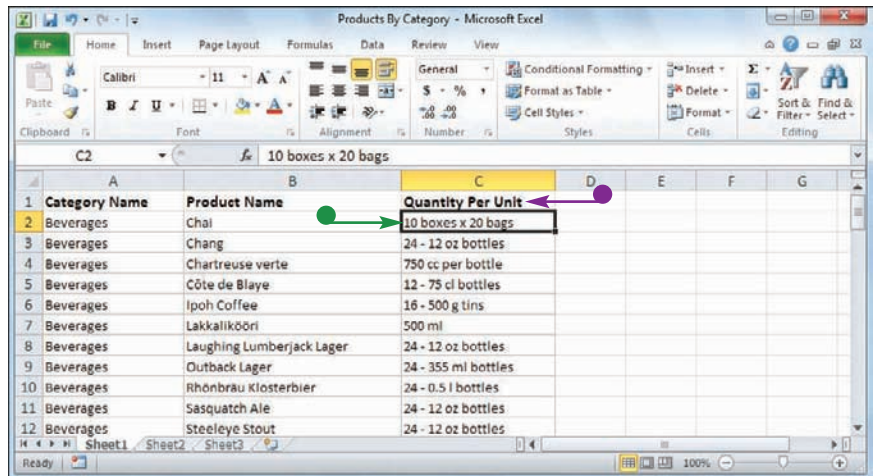You can also double-click the cell you want to edit.

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

● Excel displays Edit in the status bar.

● 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**.

● If you do not want Excel to move the selection, click **Enter** (✓) or press **Ctrl** + **Enter** instead.
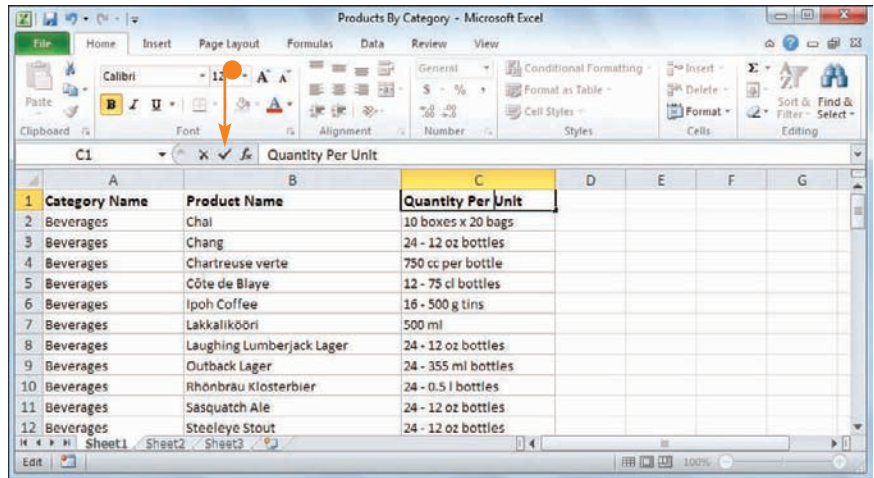
● Excel closes the cell for editing.

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


TIPS

Is there a faster way to open a cell for editing?

Yes. Move ⊕ over the cell you want to edit, and center ⊕ 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.

I made a mistake when I edited a cell. Do I have to fix the text by hand?

Most likely not. If 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. Note, however, that doing this will also 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.
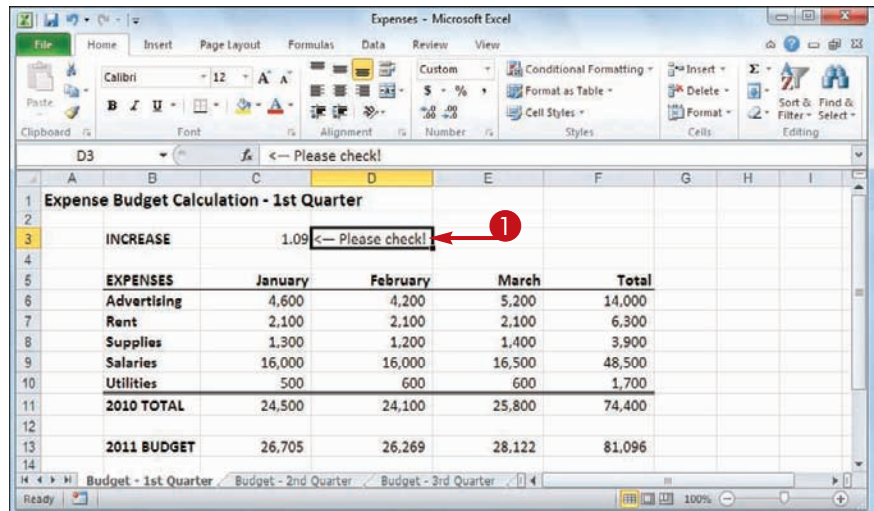
If you want to delete data from multiple cells, you must first select those cells; see "Select a Range" in Chapter 3. To delete cells and not just the data, see "Delete a Range" in Chapter 3.
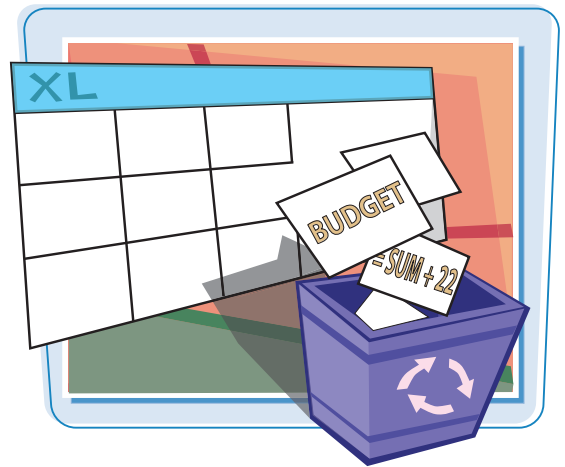
Delete Data from a Cell

Delete Cell Data

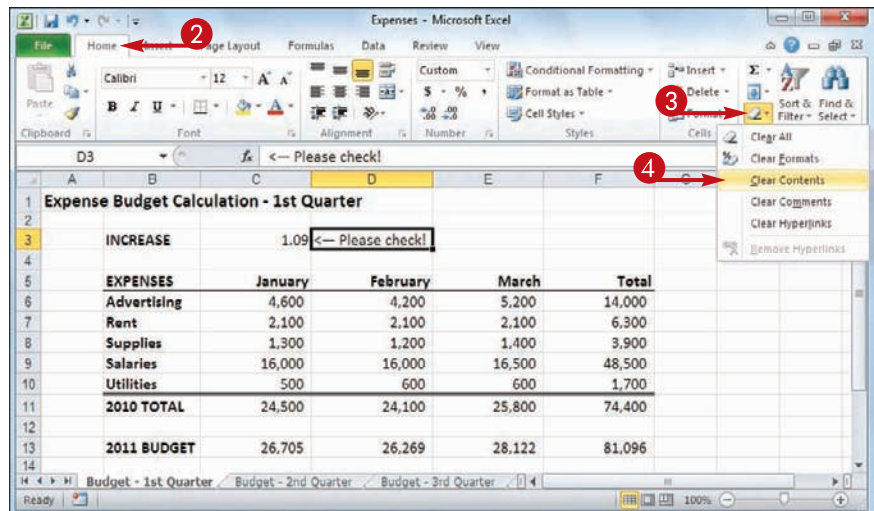1 Select the cell that contains the data you want to delete.
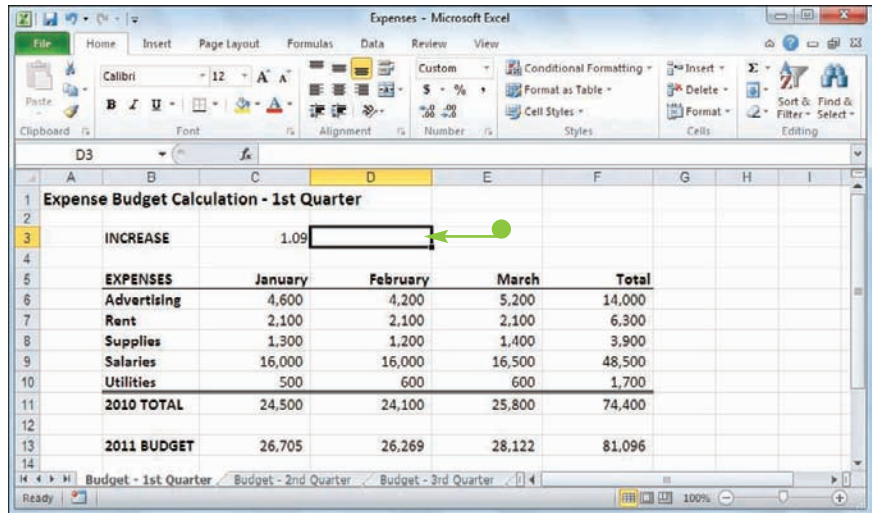

2 Click the **Home** tab.

3 Click **Clear** (⬦).

4 Click **Clear Contents**.

Note: You can also delete cell data by pressing Delete .
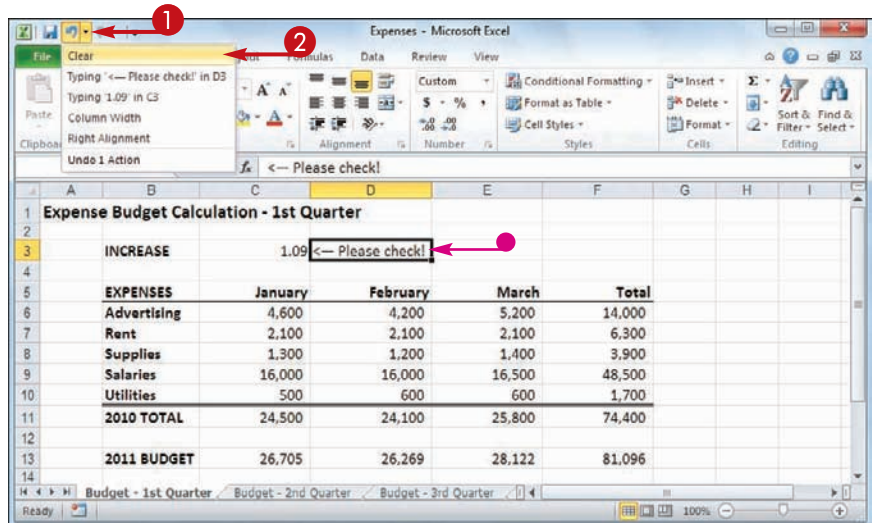
● Excel removes the cell data.

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.

When I delete cell data, Excel keeps the cell formatting intact. Is it possible to delete the data and the formatting?

Yes. Excel offers a command that deletes everything from a cell. First, select the cell with the data and formatting that you want to delete. Click **Home**, click , and then click **Clear All**. Excel removes both the data and the formatting from the selected cell.
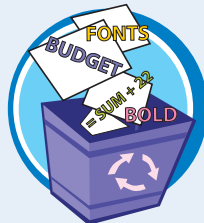
Is it possible to delete just a cell's formatting?

Yes. Excel offers a command that deletes just the cell formatting while leaving the cell data intact. Select the cell with the formatting that you want to delete. Click **Home**, click , and then click **Clear Formats**. Excel removes just the formatting from the selected cell.

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. This enables you to fill the range with values, move or copy the range, sort the range data, filter the range to show only certain values, and insert and delete ranges. You learn these and other range techniques in this chapter, and in later chapters you learn techniques such as formatting a range, applying a formula to a range, and building a chart from 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 it to another part of the worksheet, format the cells, 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.
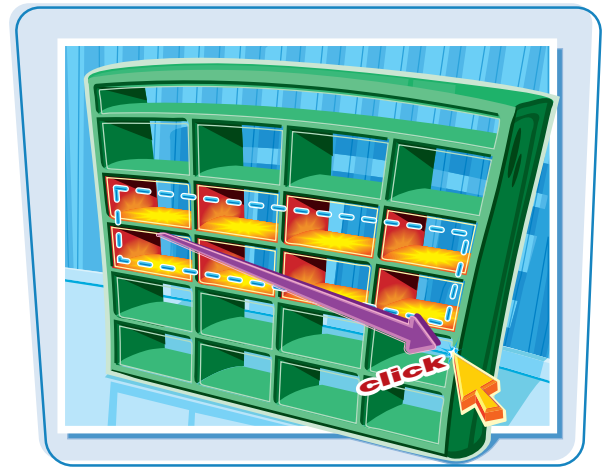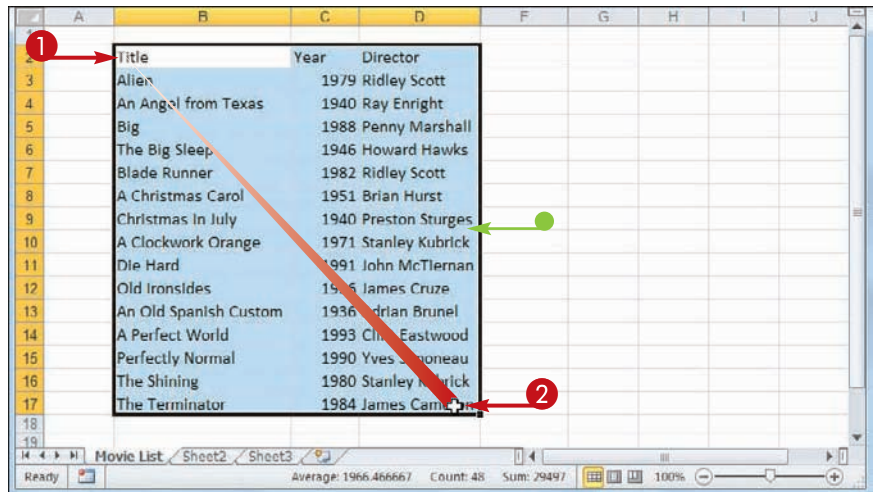

Select a Range

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.
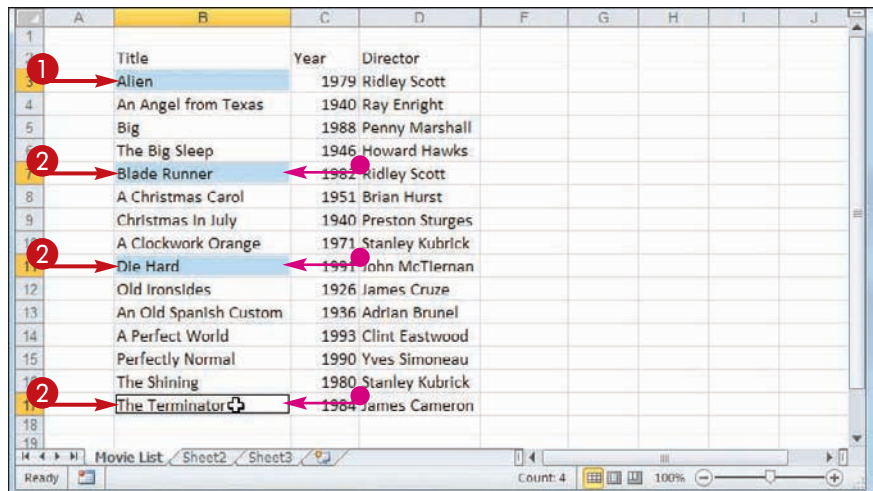

Select a Range of Individual Cells

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.

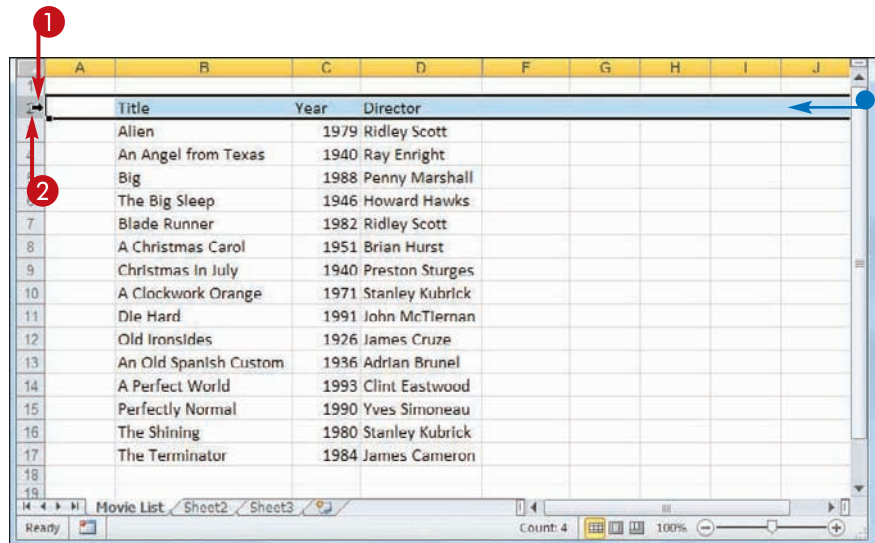**3** Release Ctrl to end the range selection.

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.
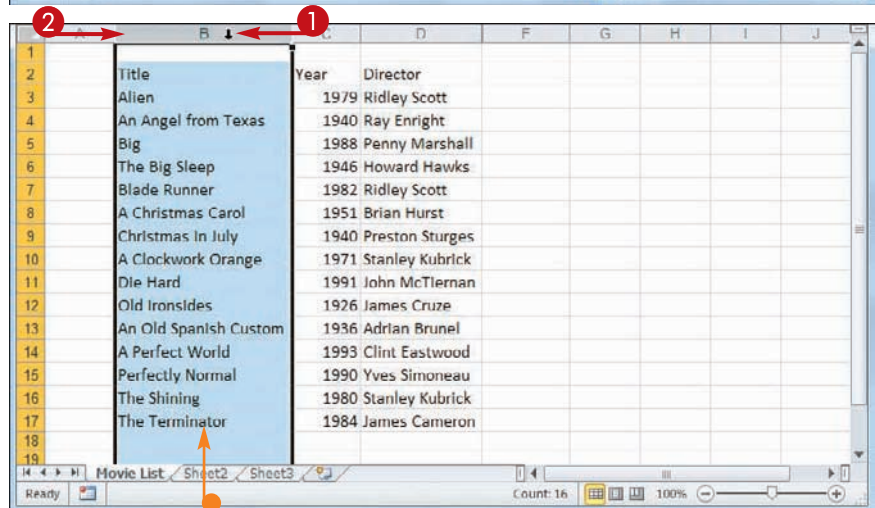
TIPS

Are there keyboard techniques I can use to select a range?

Yes. To select a rectangular range, navigate to the first cell that you want to include in the range, hold down Shift, and then press ← or ↓ 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.
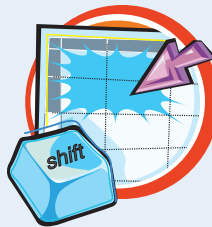
Is there an easy way to select every cell in the worksheet?

Yes. Excel offers two methods you can use. Either 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. Excel's AutoFill feature makes it easy to fill a vertical or horizontal range with the same value, but you can also fill any selected range.

See "Select a Range" to learn how to select a range of cells.
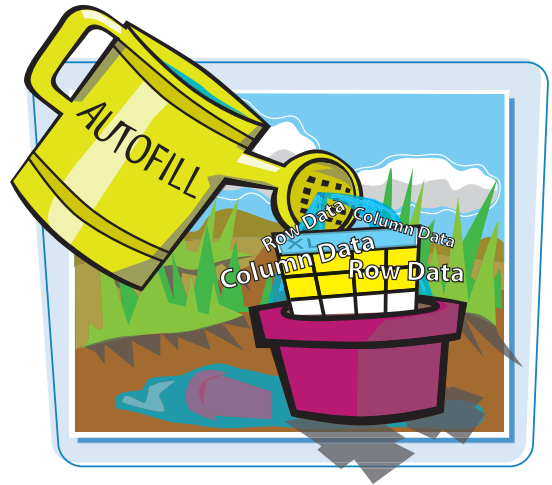
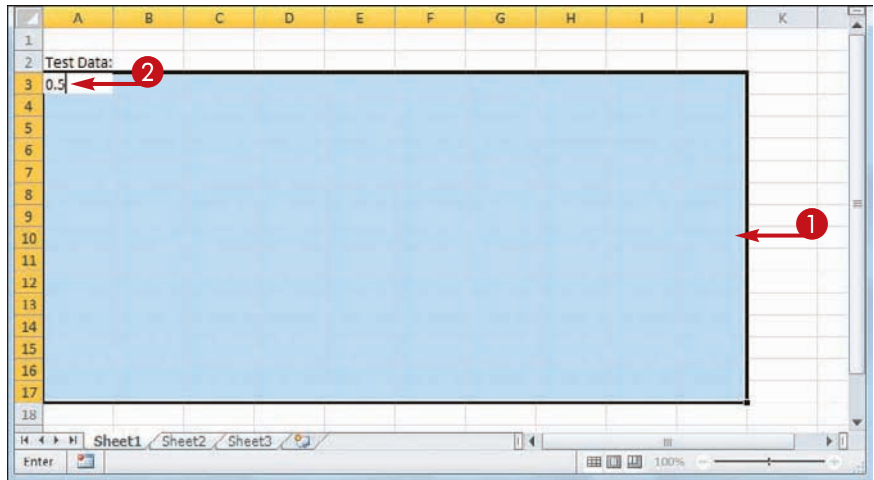## Fill a Vertical or Horizontal Range

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

❶ Select the range you want to fill.

❷ Type the text, number, or other data.

❸ Press Ctrl + Enter.

● Excel fills the range with the value you typed.
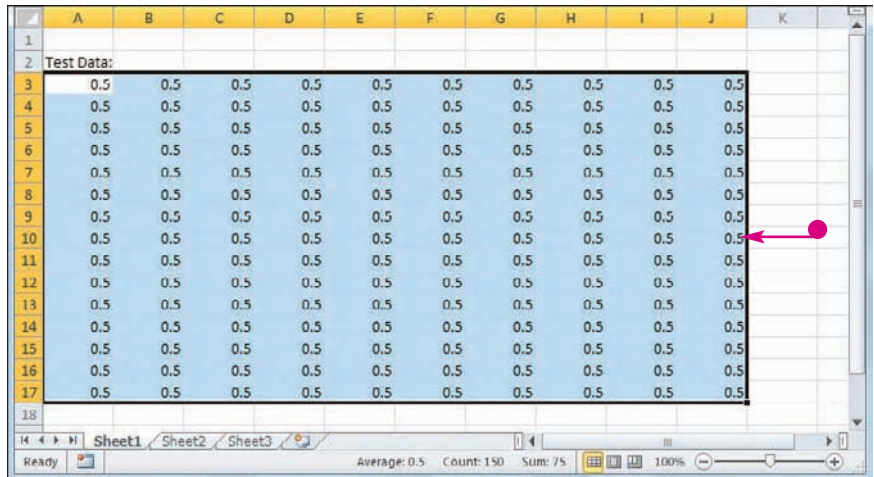
How do I fill a vertical or horizontal range without also copying the formatting of the original cell?

Follow these steps:

❶ Perform Steps **1** to **4** to fill the data.

● Excel displays the AutoFill Options smart tag (⬛).

❷ Click the AutoFill Options ⬝.

❸ 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 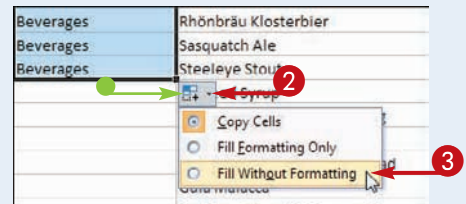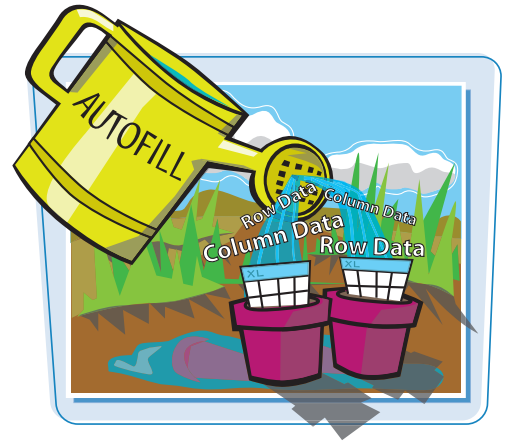of numeric values such as 5, 10, 15, 20, and so on; a series of date values such as January 1, 2011, January 2, 2011, and so on; or a series of alphanumeric values such as Chapter 1, Chapter 2, Chapter 3, and so on.

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

Fill a Range with a Series of Values

AutoFill a Series of Numeric, Date, or Alphanumeric Values

❶ Click in the first cell and type the first value in the series.

❷ Click in an adjacent cell and type the second value in the series.

❸ Select the two cells.

❹ Position ⬍ over the bottom-right corner of the second cell.

　⬍ changes to ✛.

❺ Click and drag ✛ down to fill a vertical range or across to fill a horizontal range.

● As you drag through each cell, Excel displays the series value that it will add to the cell.

❻ Release the mouse button.

● Excel fills the range with a series that continues the pattern of the initial two cell values.
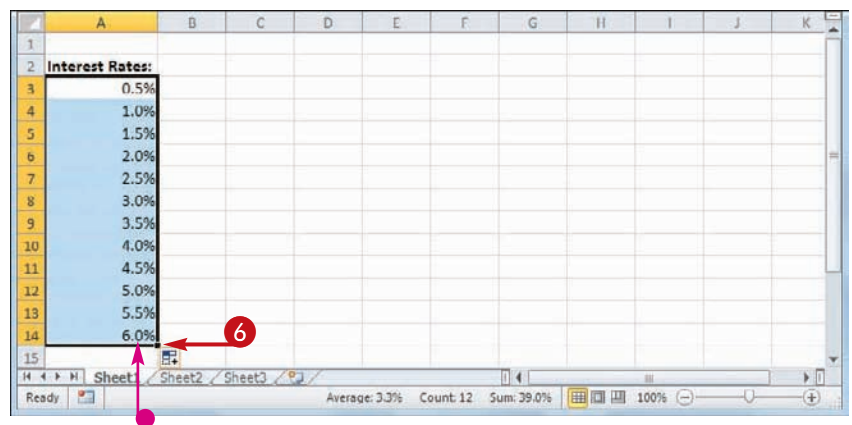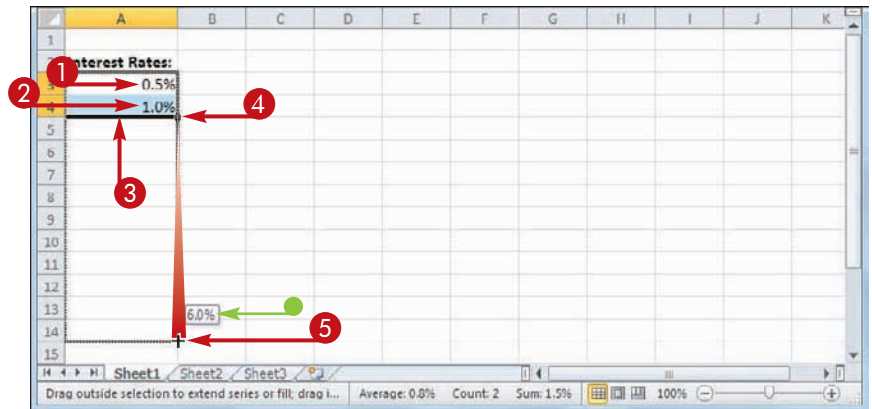
Fill a Custom Series of Values

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.

TIP
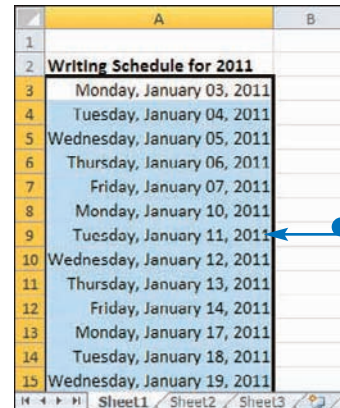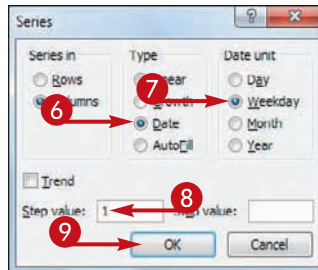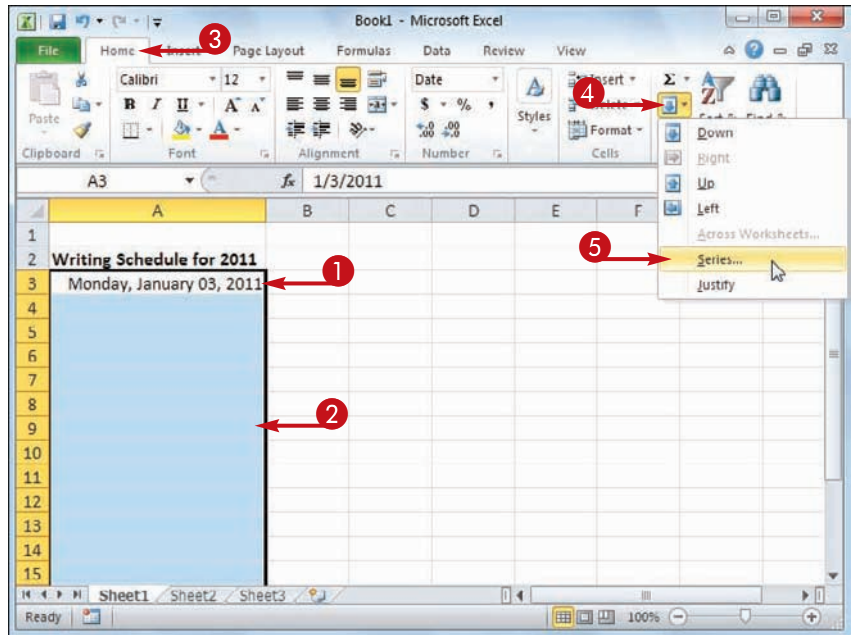
Can I create my own AutoFill series?
Yes. Follow these steps:

1 Click the **File** tab.

2 Click **Options**.

3 Click **Advanced**.

4 Click **Edit Custom Lists**.

5 Click **NEW LIST**.

6 In the List entries box, type each item in your list, and press **Enter** after each item.

7 Click **Add**.

8 Click **OK**.
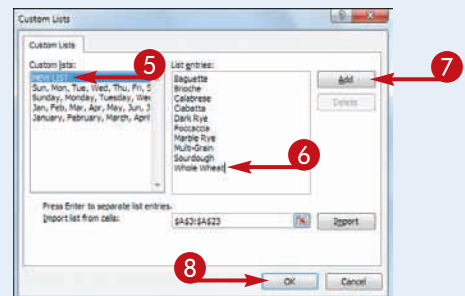
Move or Copy a Range

You can restructure or reorganize a worksheet by moving an existing range to a different part of the worksheet.

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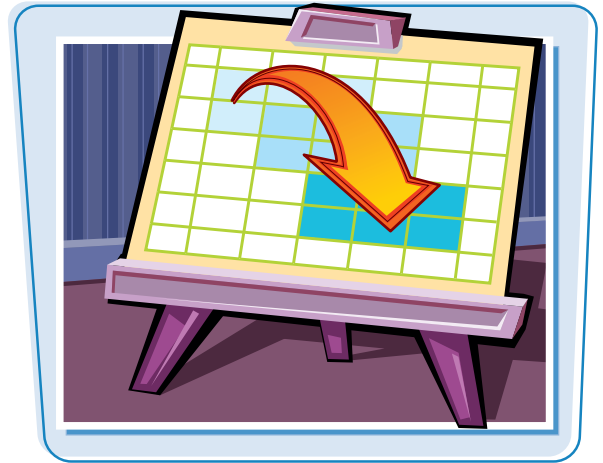
Move or Copy a Range

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 ⬁.

● Excel displays an outline of the range.

● 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.

● Excel displays an outline of the range.

● 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.
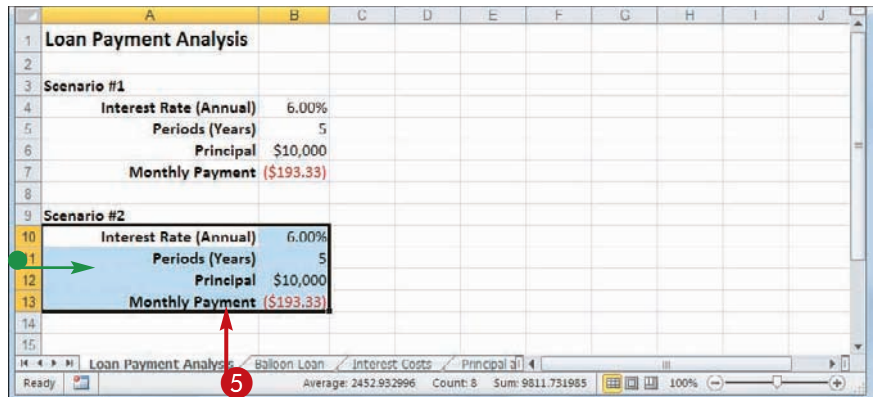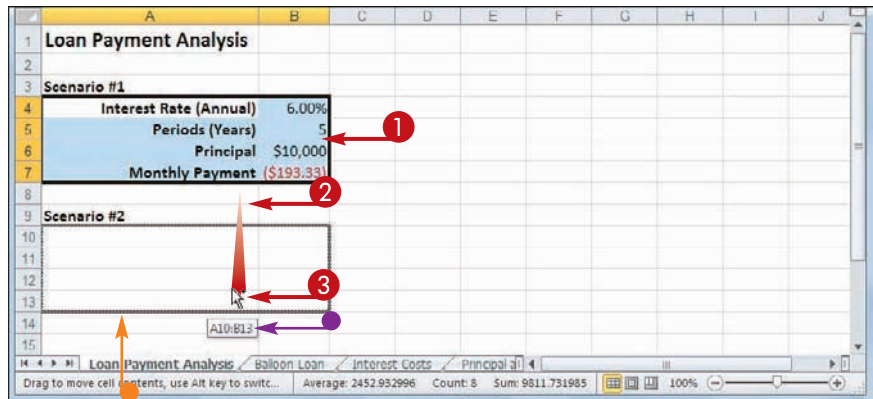
Can I move or copy a range to another worksheet?

Yes. Click and drag the range as described in this section. 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.

Can I move or copy a range to another workbook?

Yes. If you can see the other workbook on-screen, click and drag the range as described in this section, and then drop it on the other workbook. Remember to hold down **Ctrl** if you are copying the range. 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.
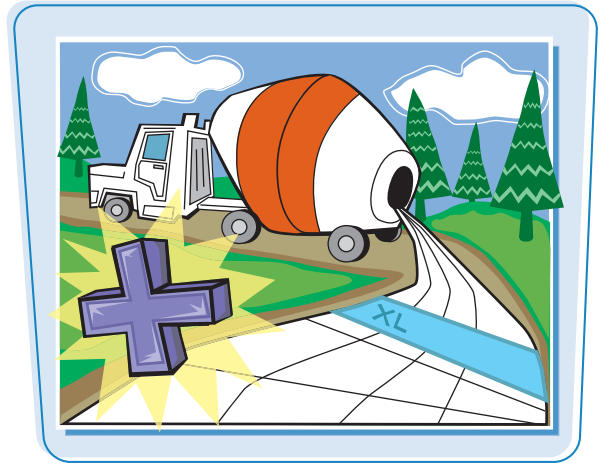
Insert a Row or Column

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**.
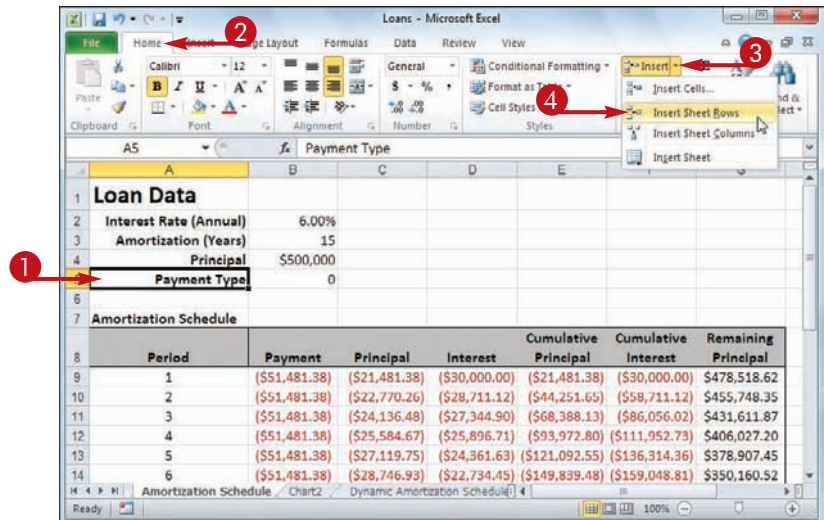
- Excel inserts the new row.

- 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 ◉).
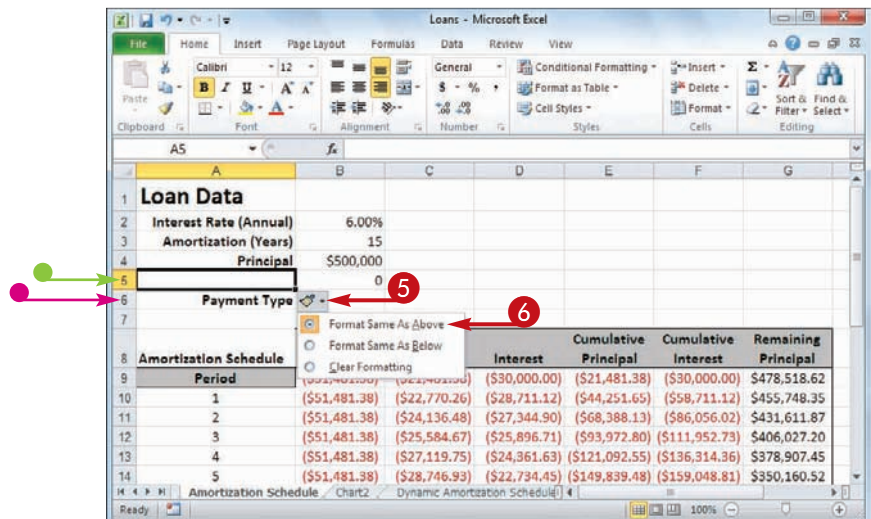
Insert a Column

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**.
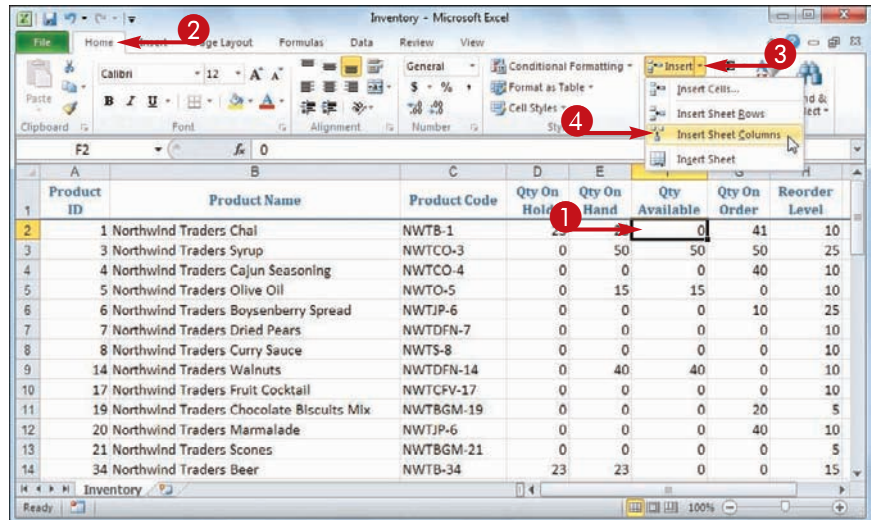
● Excel inserts the new column.

● 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 ◉).
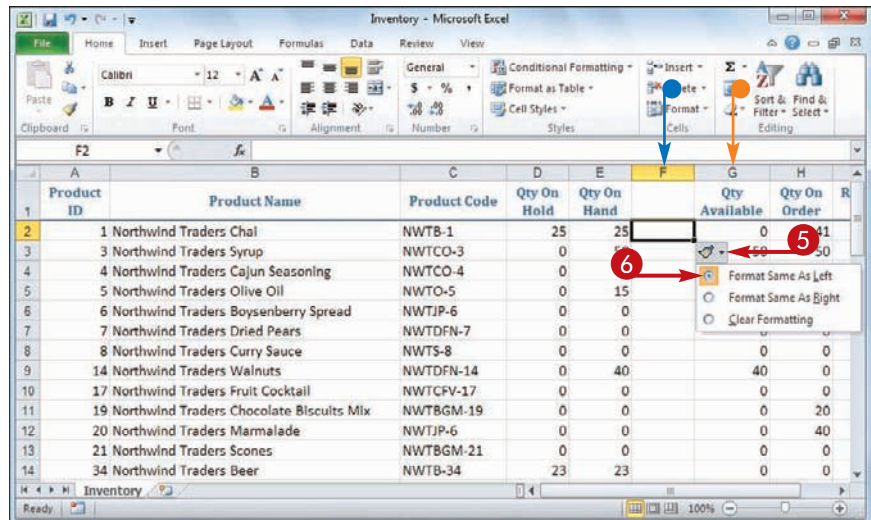
Can I insert more than one row or column at a time?

Yes. You can insert as many new rows or columns as you need. First, select the same number of rows or columns that 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.
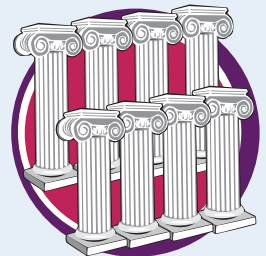
Insert a Cell or Range

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 range, Excel shifts the existing data to accommodate the new cells.
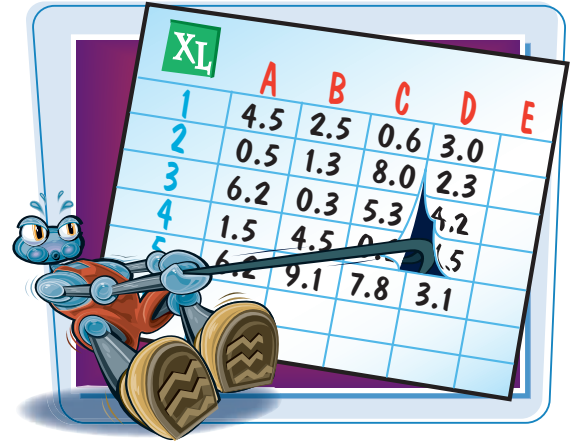
1 Select the cell or range where you want the inserted cell or range to appear.
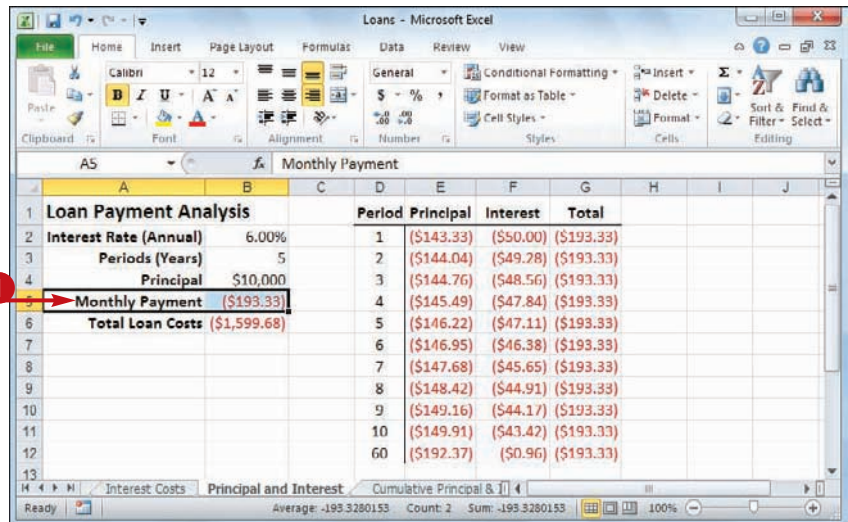
2 Click the **Home** tab.

3 Click the **Insert** ⬇.

4 Click **Insert Cells**.

Note: You can also press `Ctrl` + `Shift` + `=` .
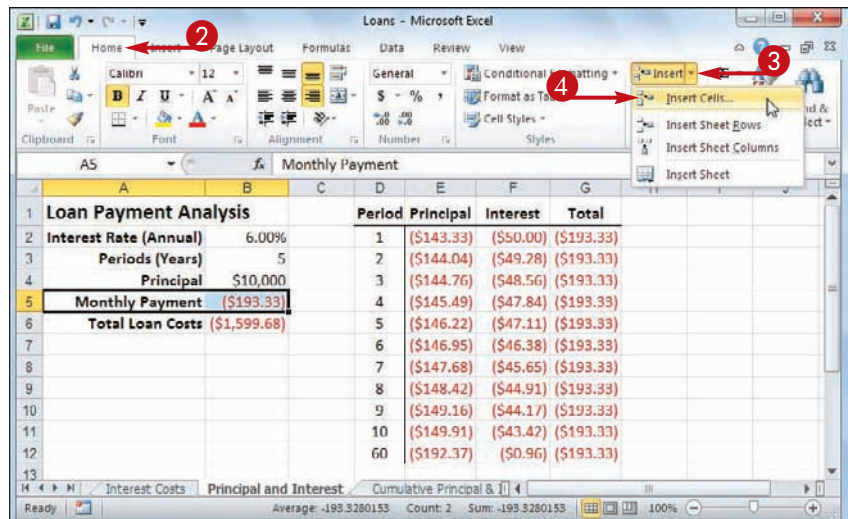
The Insert dialog box appears.

5 Select the option that corresponds to how you want Excel to shift the existing cells to accommodate your new cells (◎ changes to ◉).
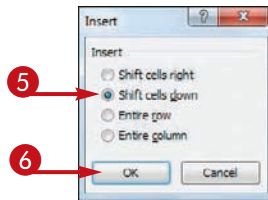
*Note: In most cases, if you selected a horizontal range, click the **Shift cells down** option; if you selected a vertical range, click the **Shift cells right** option.*

6 Click **OK**.

● Excel inserts the cell or range.

● 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 ◉).
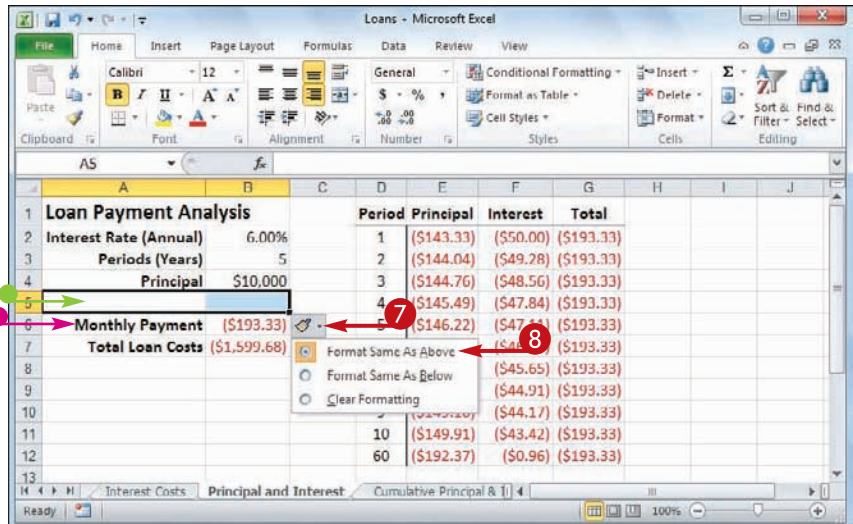
Under what circumstances would I insert a cell or range instead of inserting an entire row or column?

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.
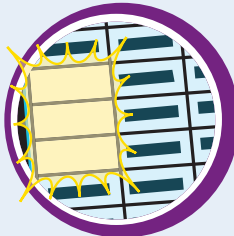
How do I know which cells to select to get my inserted cell or range in the correct position?

The easiest way to do this is to select the existing cell or range that is exactly where you want the new cell or range to appear. For example, if you want the new range to be A5:B5 as shown in this section's example, you first select the existing A5:B5 range. When you insert the new range, Excel shifts the existing cells down (in this case) to accommodate it.
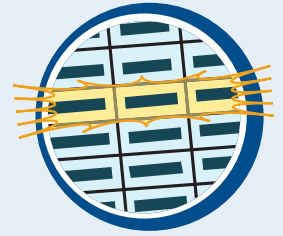
Delete Data from a Range

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.

If you want to delete cells and not just the data, see "Delete a Range" later in this chapter.
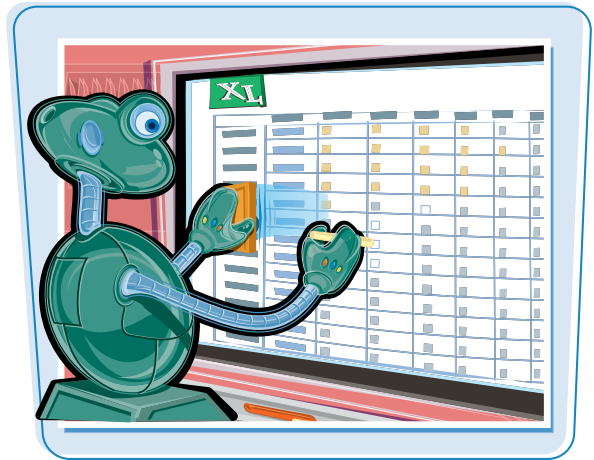
Delete Data from a Range

Delete Range Data

1 Select the range that contains the data you want to delete.
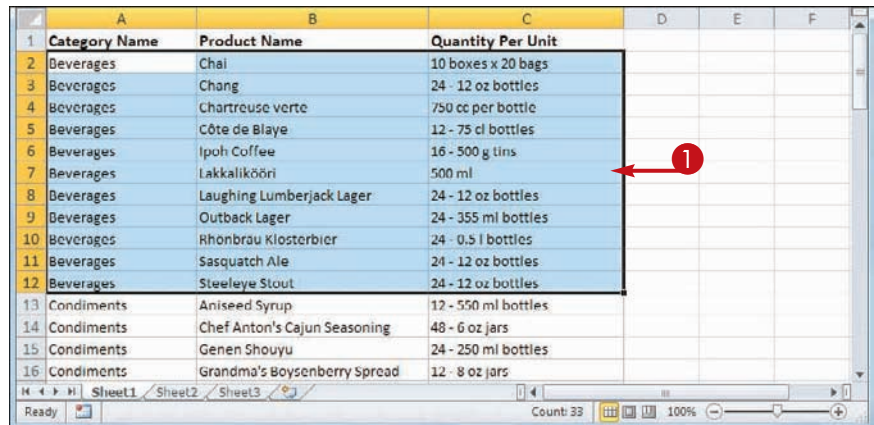
2 Click the **Home** tab.

3 Click **Clear** (⬚).

4 Click **Clear Contents**.

● If you want to delete the range data and its formatting, click **Clear All** instead.
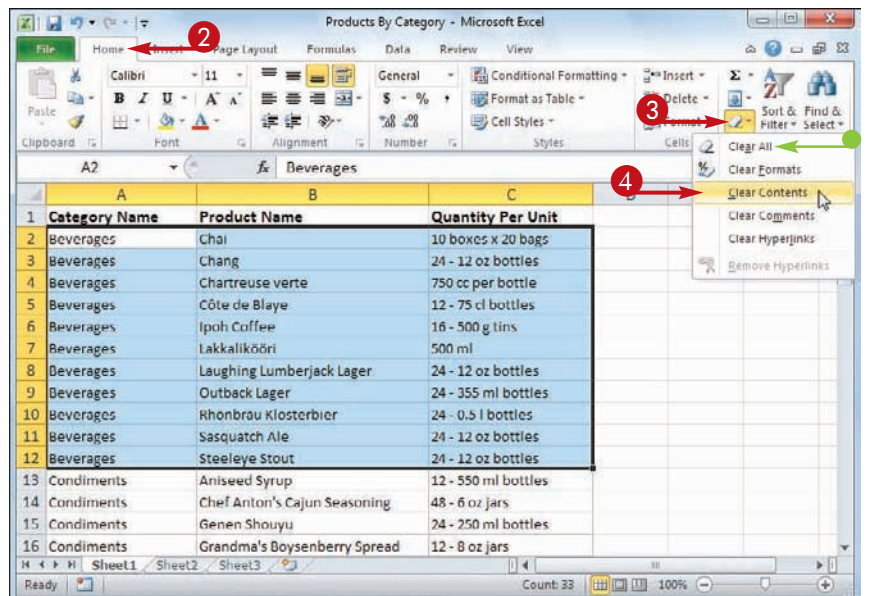
● Excel removes the range data.
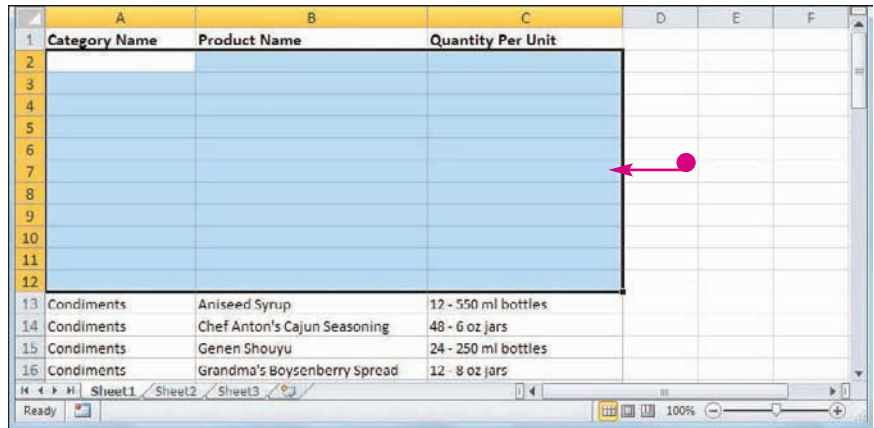
Undo Range Data Deletion

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.
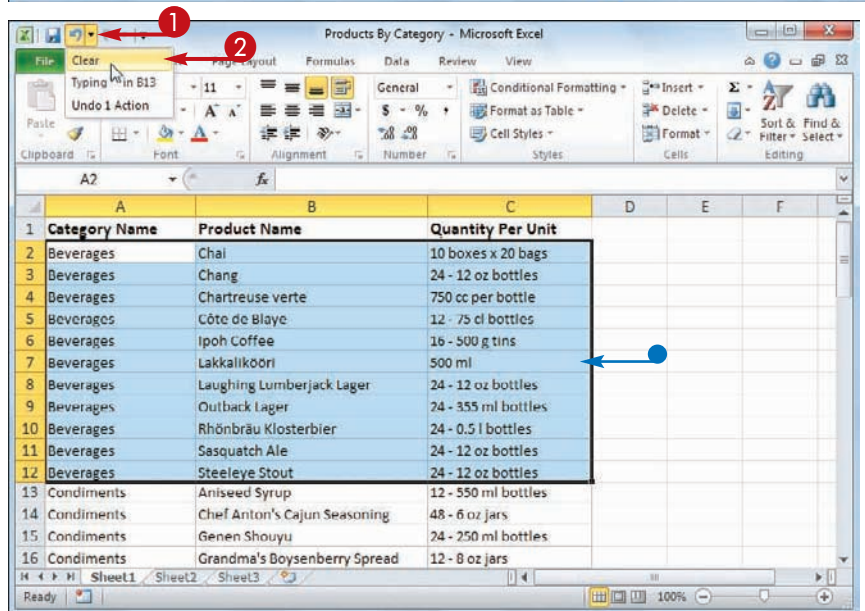
TIPS

Are there faster ways to delete the data from a range?
Yes. Probably the fastest method is to select the range and then press Delete . You can also select the range, right-click any part of the range, and then click **Clear Contents**.

Is it possible to delete a cell's numeric formatting?
Yes. Select the range with the formatting that you want to delete, click **Home**, click ➡, and then click **Clear Formats**. Excel removes all the formatting from the selected range. If you prefer to delete only the numeric formatting, click **Home**, click the **Number Format** ▾, and then click **General**.

Delete a Range

If your worksheet contains a range that you no longer need, you can delete that range. 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.
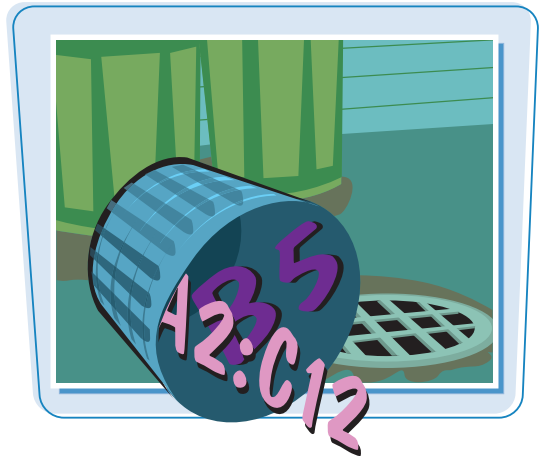
Delete a Range

1 Select the range that you want to delete.
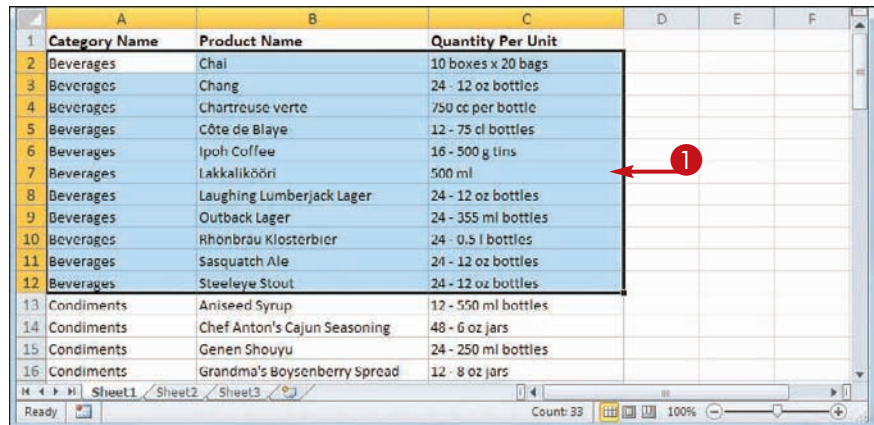
2 Click the **Home** tab.

3 Click the **Delete** ▾.

4 Click **Delete Cells**.
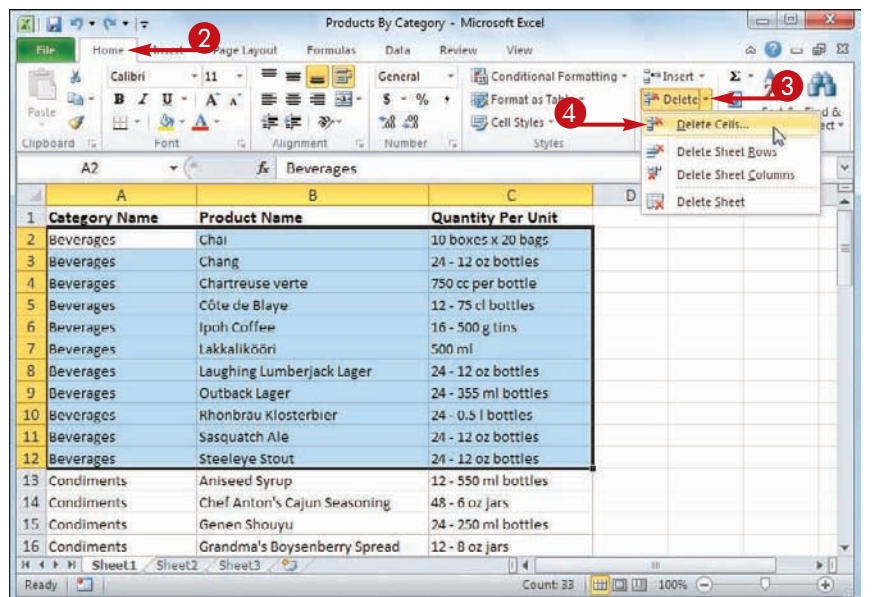
The Delete dialog box appears.

5 Select the option that corresponds to how you want Excel to shift the remaining cells after it deletes the range (◎ changes to ◉).

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

6 Click **OK**.

● Excel deletes the range and shifts the remaining data.

Are there faster ways to delete a range?

Yes. Probably the fastest method is to select the range and then press 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.

SHORTCUT

How do I delete a row or column?

To delete a row, select any cell in the row, click the **Home** tab, click the **Delete** ⊡, and then click **Delete Sheet Rows**. To delete a column, select any cell in the column, click the **Home** tab, click the **Delete** ⊡, and then click **Delete Sheet Columns**. Note, too, that you can delete multiple rows or columns by selecting at least one cell in each row or column.

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.
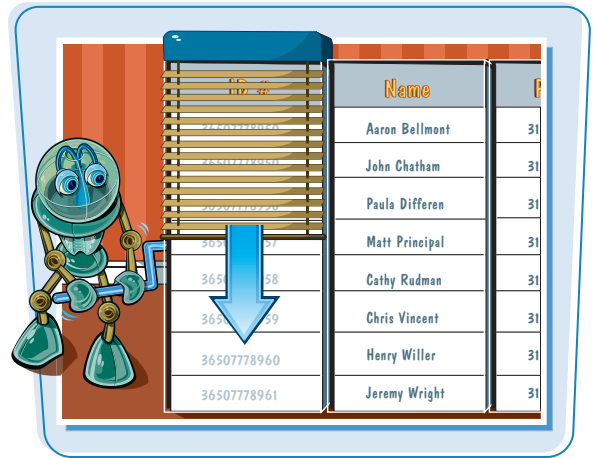
Hide a Row

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** .
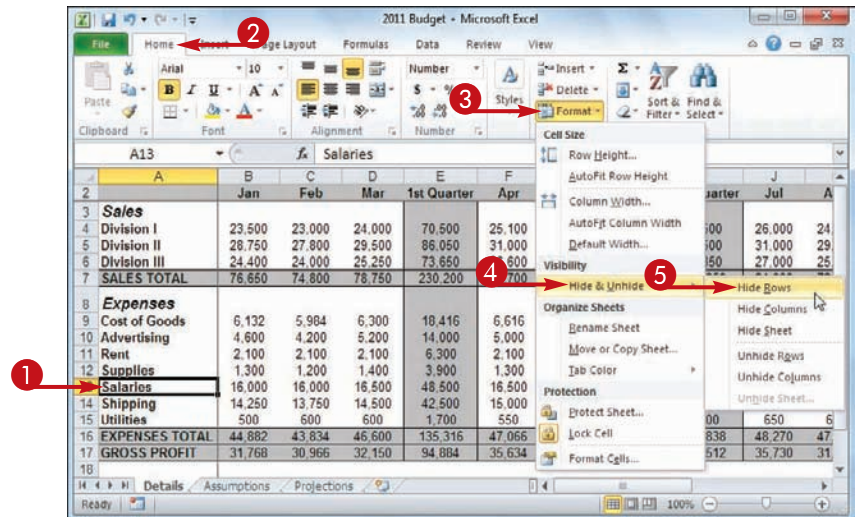
● Excel removes the row from the worksheet display.

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

Another way to hide a row is to move ⬚ over the bottom edge of the row heading (⬚ changes to ╬) and then click and drag the edge up until the height displays 0.
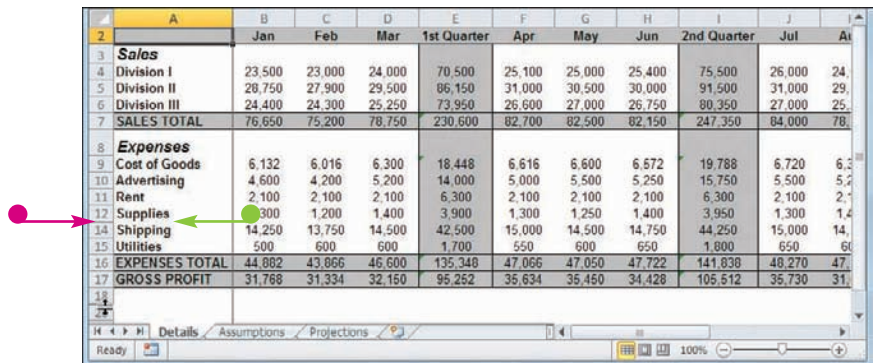
Hide a Column

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**.
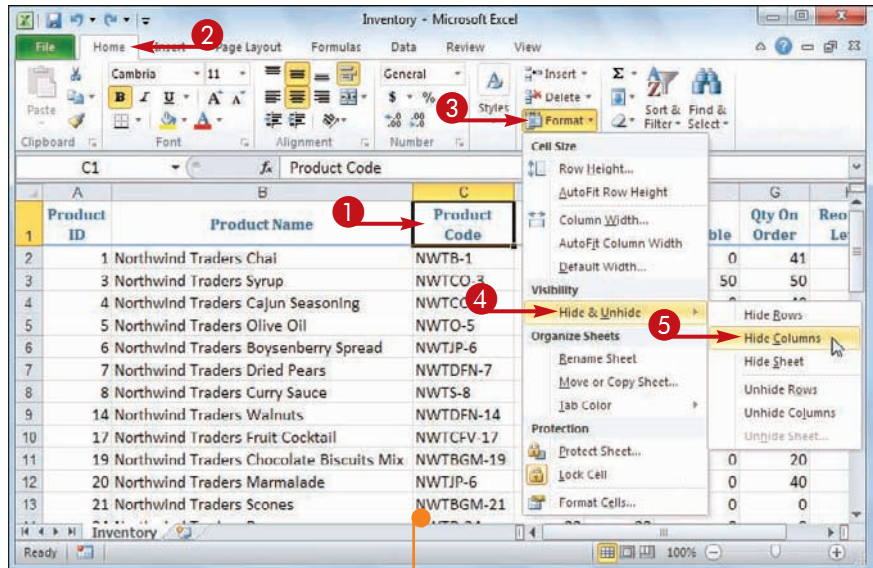
● Excel removes the column from the worksheet display.

● 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.
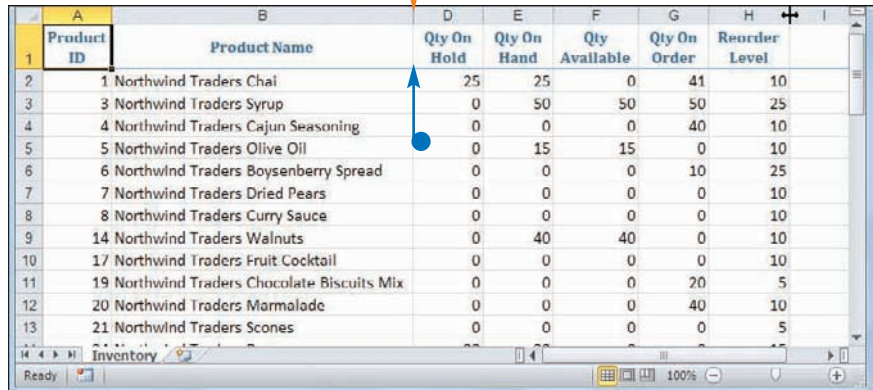
TIP

How do I display a hidden row or column?

To display a hidden row, select the row above and the row below the hidden row, click **Home**, click **Format**, click **Hide & Unhide**, and then click **Unhide Rows**. Alternatively, move ⬚ between the headings of the selected rows (⬚ changes to ÷) and then double-click. To unhide row 1, right-click the top edge of the row 2 header and then click **Unhide**.

To display a hidden column, select the column to the left and the column to the right of the hidden column, click **Home**, click **Format**, click **Hide & Unhide**, and then click **Unhide Columns**. Alternatively, move ⬚ between the headings of the selected columns (⬚ changes to +|+) and then double-click. To unhide column A, right-click the left edge of the column B header and then click **Unhide**.
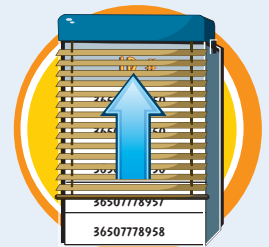
Freeze Rows or Columns

You can keep your column labels in view as you scroll the worksheet by freezing the row or rows that contain the labels. This makes it easier to review and add 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.
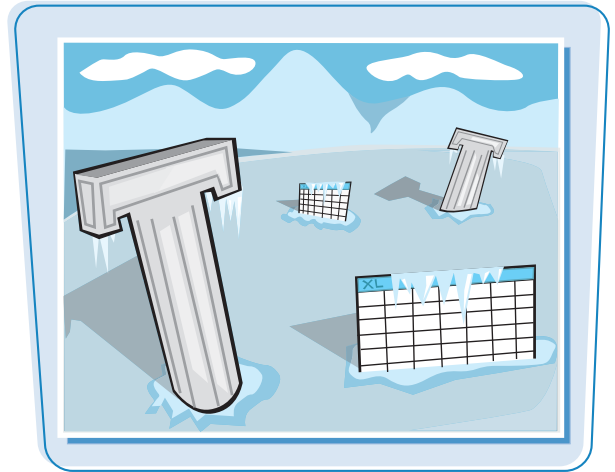
Freeze Rows or Columns

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.
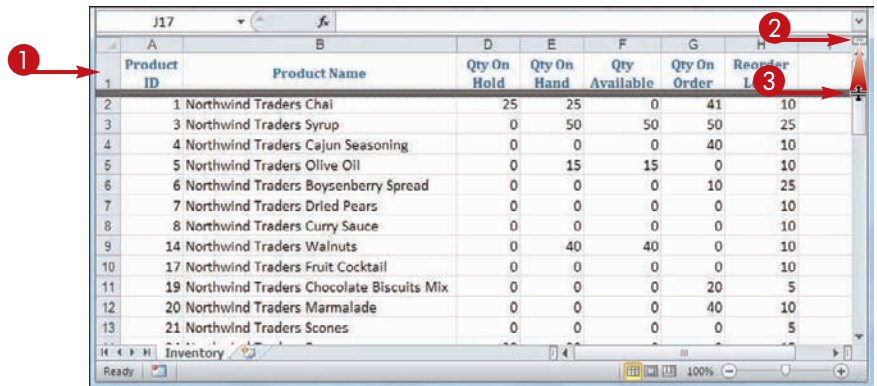
● Excel splits the worksheet into two horizontal panes.

④ Click the **View** tab.

⑤ Click **Freeze Panes**.

⑥ Click **Freeze Panes**.

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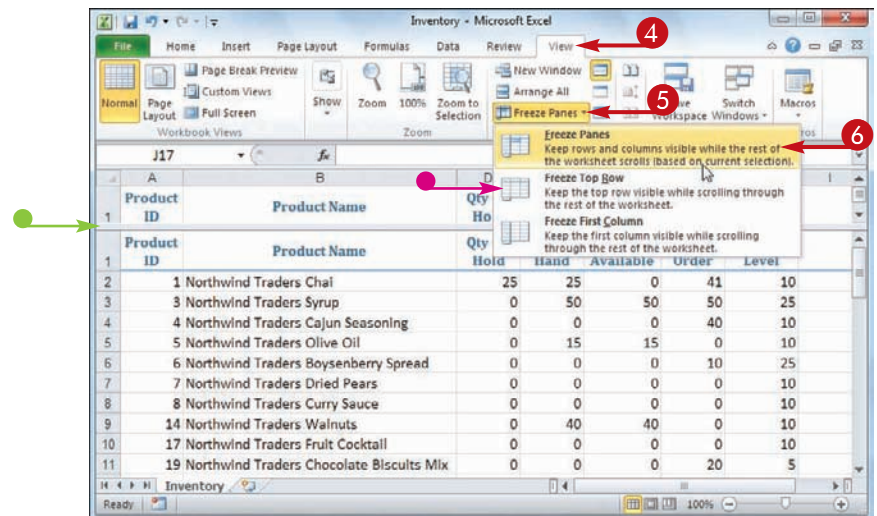
Excel freezes the panes.

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.
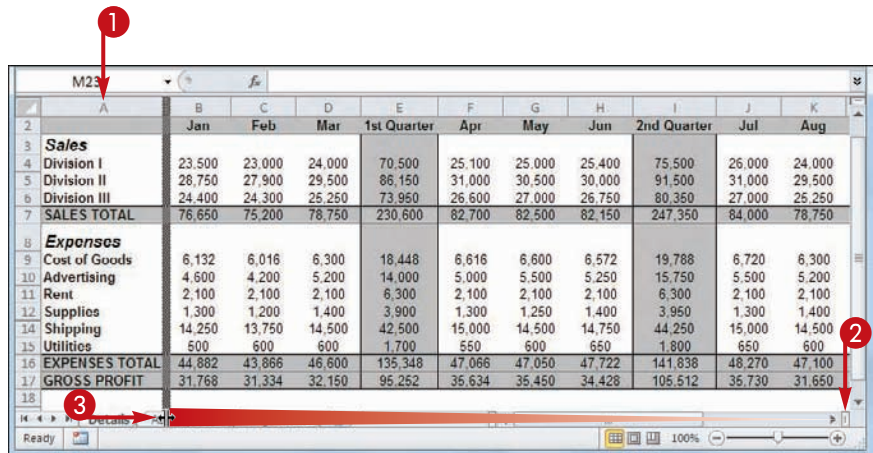
● Excel splits the worksheet into two vertical panes.

4 Click the **View** tab.

5 Click **Freeze Panes**.

6 Click **Freeze Panes**.

● 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.
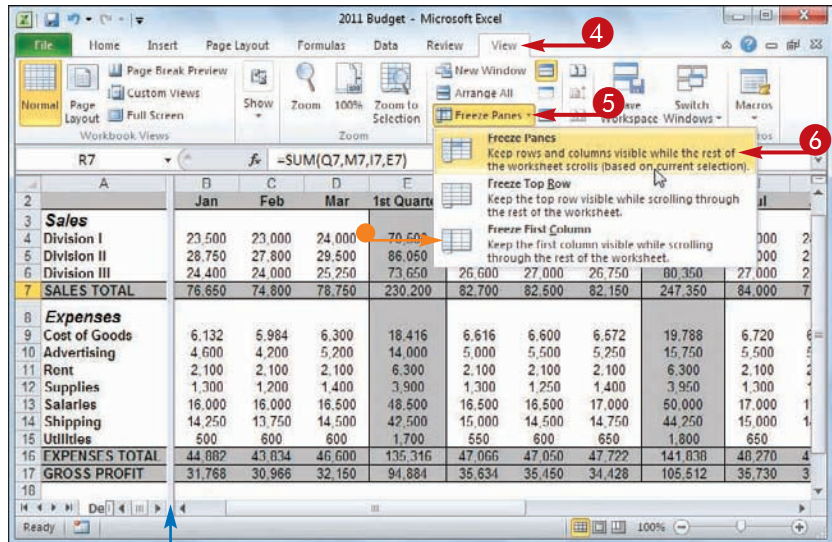
TIPS

Can I adjust the position of a frozen row or column?

Yes. Begin by unfreezing the panes: click **View**, click **Freeze Panes**, and then click **Unfreeze Panes**. Excel unfreezes the panes and displays the split bar. Click and drag the split bar to the new location. Click **View**, click **Freeze Panes**, and then click **Freeze Panes**.

How do I unfreeze a row or column?

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

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.

① Select the cells that you want to merge.

② Click the **Home** tab.

③ Click the **Merge and Center** ▾.

④ Click **Merge Cells**.

● Excel merges the selected cells into a single cell.

❺ Type your text in the merged cell.

TIP

How do I center text across multiple columns?

This is a useful technique for your worksheet titles or headings. You can center a title across the entire worksheet, or you can center 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 centered within the cell.

Transpose 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.

COLUMN TWO

ROW THREE
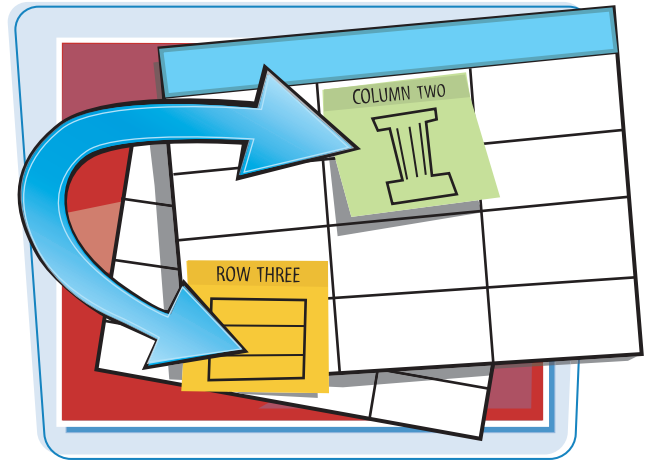
① Select the range that includes the data you want to transpose.
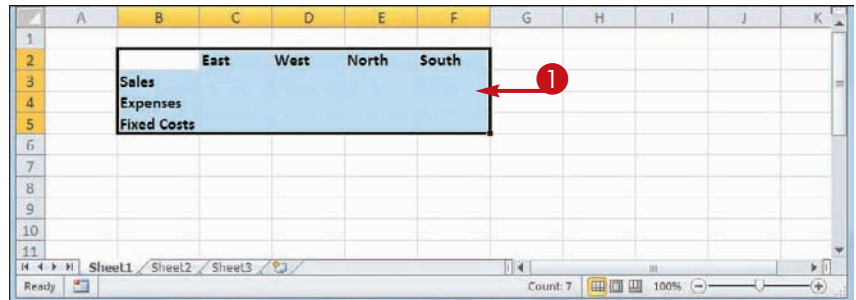
② Click the **Home** tab.

③ Click **Copy** (□).
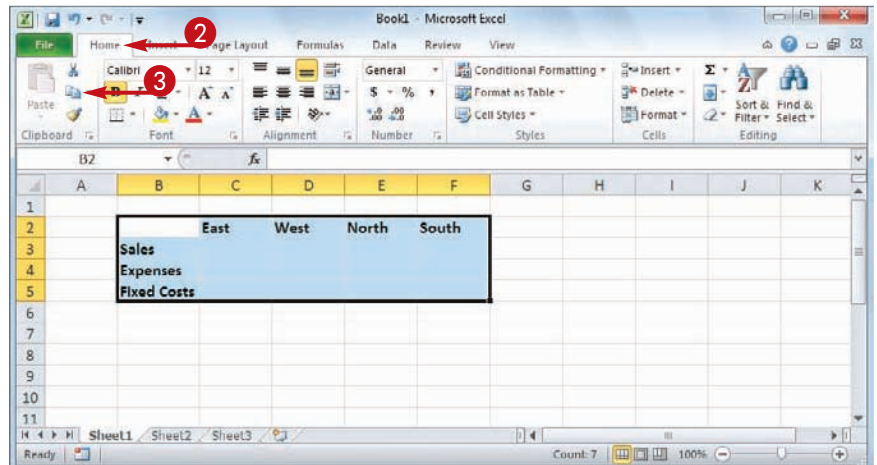
4 Click where you want the transposed range to appear.

5 Click the **Paste** ▾.

6 Click **Transpose** (▦).
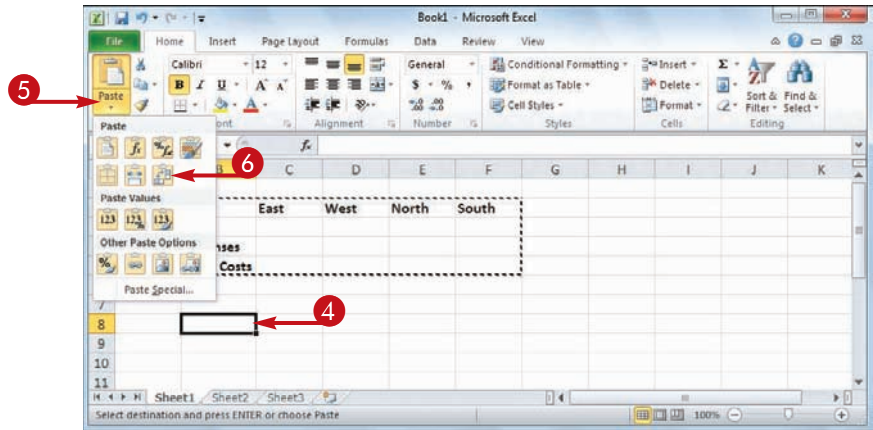
● Excel transposes the data and then pastes it to the worksheet.
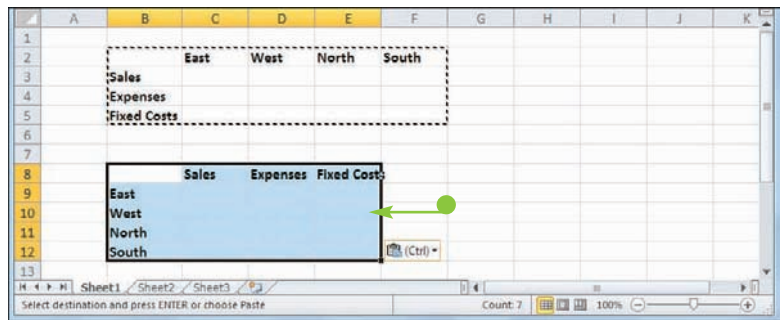
How do I know which cells to select?

The range you select before copying depends on what you want to transpose. 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.

Can I transpose range values as well as range labels?

Yes, 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.

Working with Range Names
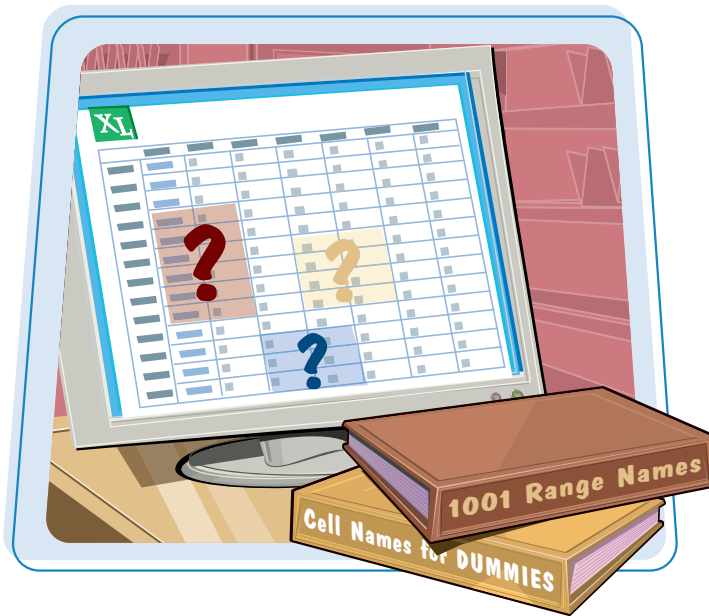
You can make it easier to navigate Excel worksheets and build Excel formulas by applying names to your ranges. This chapter explains range names and shows you how to define, edit, and use range names.

Understanding the Benefits of Using Range Names

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.

Range Name Benefits
✔ More Intuitive
✔ More Accurate
✔ Easier to Remember
✔ Easier Navigation
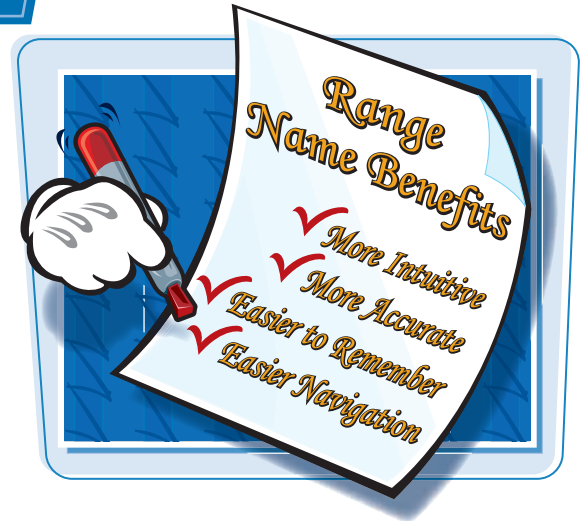
More Intuitive

Range names are more intuitive than range coordinates, particularly in formulas. For example, if you see the range B2:B10 in a formula, the only way to know what the range refers to is to look at the data. However, if you see the name Quarterly_Sales in the formula, then you already know what the range refers to.
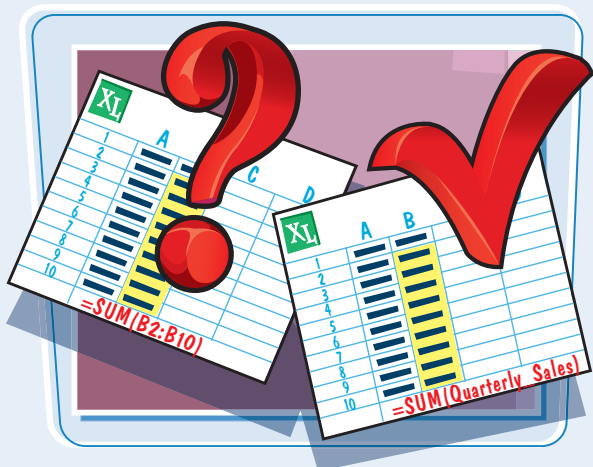
More Accurate

Range names are more accurate than range coordinates. For example, consider the range address A1:B3, which consists of four different pieces of information: the column (A) and row (1) of the cell in the upper left corner of the range, and the column (B) and row (3) of the cell in the lower right corner. If you get even one of these values wrong, it can cause errors throughout a spreadsheet. By contrast, with a range name you need only reference the name itself.

Easier to Remember

Range names are easier to remember than range coordinates. For example, if you want to use a particular range in a formula, but that range is not currently visible, to get the coordinates you must scroll until you can see the range and then determine the range's coordinates. However, if you have already assigned the range an intuitive name such as Project_Expenses, you can add that name directly without having to view the range.
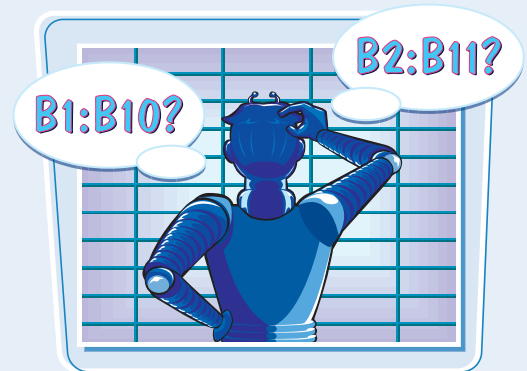
Names Do Not Change

Range names do not change when you adjust the position of a range, as they do with range coordinates. For example, if you move the range A1:B5 to the right by five columns, the range coordinates change to F1:G5. If you have a formula that references that range, Excel updates the formula with the new range coordinates, which could confuse someone examining the worksheet. By contrast, a range name does not change when you move a range.
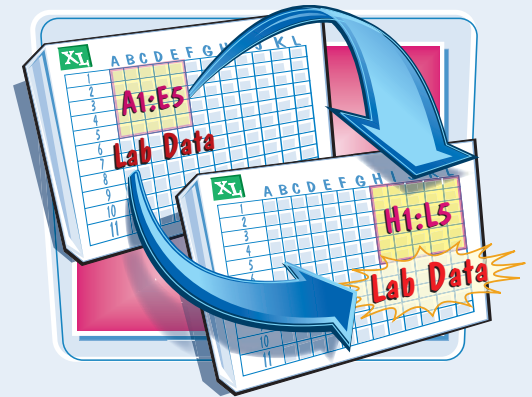
Easier Navigation

Range names make it easier to navigate a worksheet. For example, Excel has a Go To command that enables you to choose a range name and Excel takes you directly to the range. You can also use the Name box to select a range name and navigate to that range. You can also use Go To and the Name box to specify range coordinates, but range coordinates are much more difficult to work with.

Define a Range Name

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.

You can create range names by hand, or you can get Excel to create the names for you automatically based on the existing text labels in a worksheet. For the latter, see "Use Worksheet Text to Define a Range Name."

Define a Range Name

① Select the range you want to name.
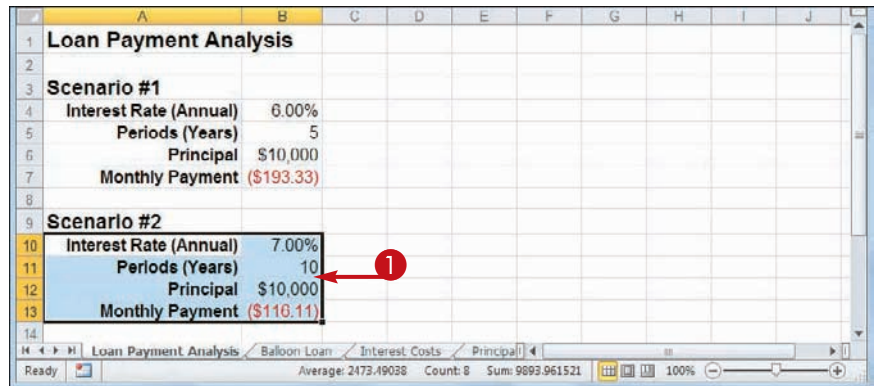
② Click the **Formulas** tab.

③ Click **Define Name**.
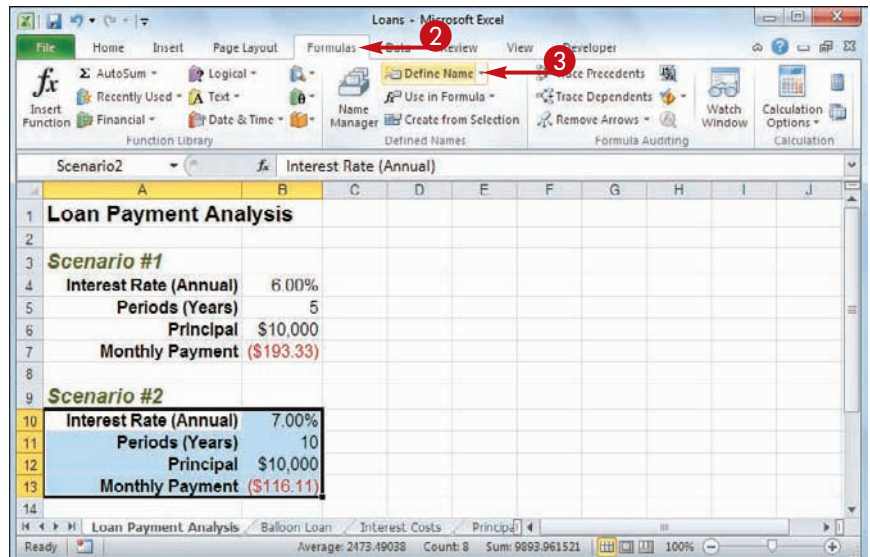
The New Name dialog box appears.

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.

● The new name appears in the Name box whenever the range is selected.

TIP
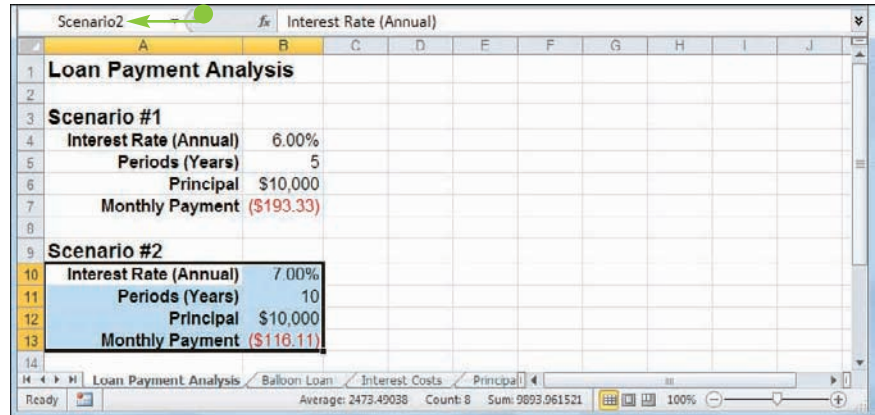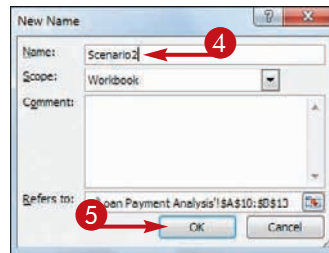
Is there an easier way to define a range name?

Yes, you can follow these steps to bypass the New Name dialog box:

① Select the range you want to name.

② Click inside the **Name** box.

③ Type the name you want to use.

④ Press **Enter**.

Excel assigns the name to the range.
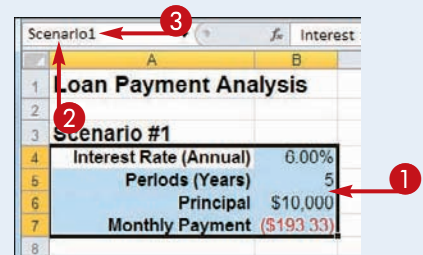
Use Worksheet Text to Define a Range Name

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.

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.

1 Select the range or ranges you want to name.

● Be sure to include the text labels you want to use for the range names.
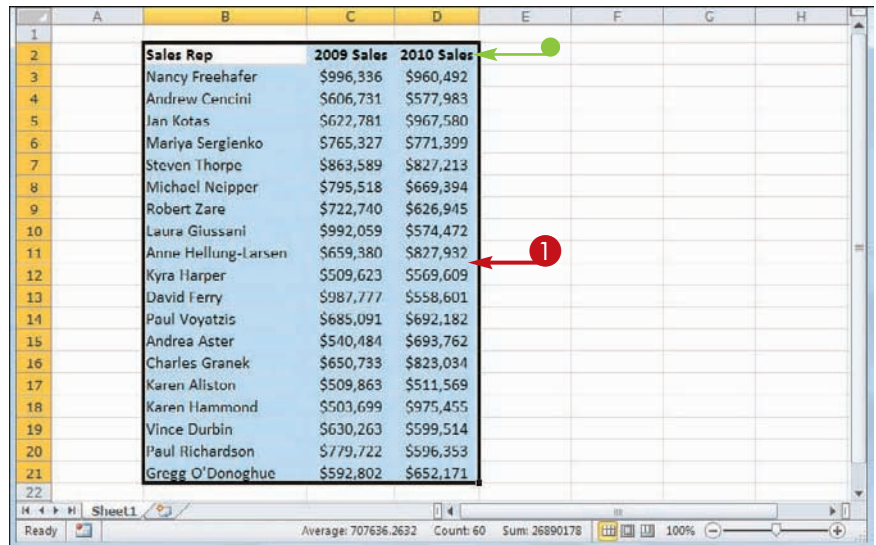
2 Click the **Formulas** tab.

3 Click **Create from Selection**.
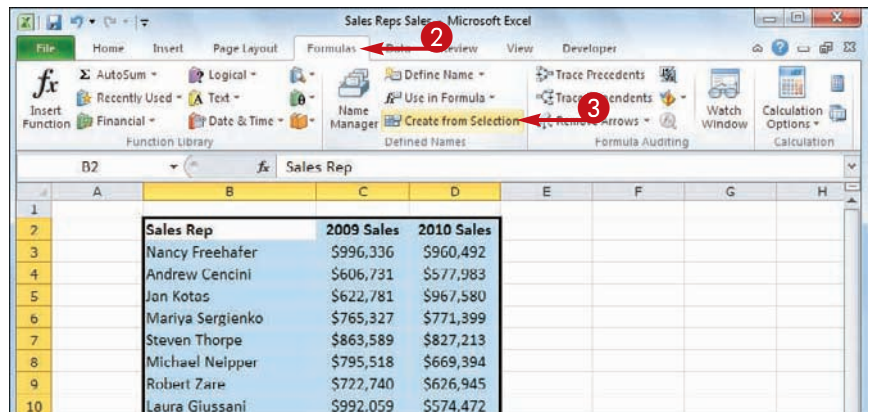
The Create Names from Selection dialog box appears.

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.

● 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 (_).

	Sales Rep	2009 Sales	2010 Sales
	Nancy Freehafer	$996,336	$960,492
	Andrew Cencini	$606,731	$577,983
	Jan 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 Aliston	$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

TIPS

Is there a faster way to run the Create from Selection command?

Yes, Excel offers a keyboard shortcut for the command. Select the range or ranges you want to work with and then press `Ctrl` + `Shift` + `F3`. Excel displays the Create Names from Selection dialog box. Follow Steps **4** and **5** to create the range names.

Given a table with labels in the top row and left column, is there a way to automatically assign a name to the table data?

	A	B	C	D
1	GDP Growth	2004	2003	2002
2	Canada	2.9	2	3.4
3	France	2.3	0.8	1.2
4	Germany	1.6	0	0.2
5	United Kingdom	3.1	2.2	1.8
6	United States	4.2	3.1	1.9

Yes. The table data refers to the range of cells that does not include the table headings in the top row and left column. To assign a name to the data range, type a label in the top left corner of the table. When you run the Create from Selection command on the entire table, Excel assigns the top left label to the data range, as shown here.

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.

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

Navigate a Workbook Using Range Names

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.

● Excel selects the range.
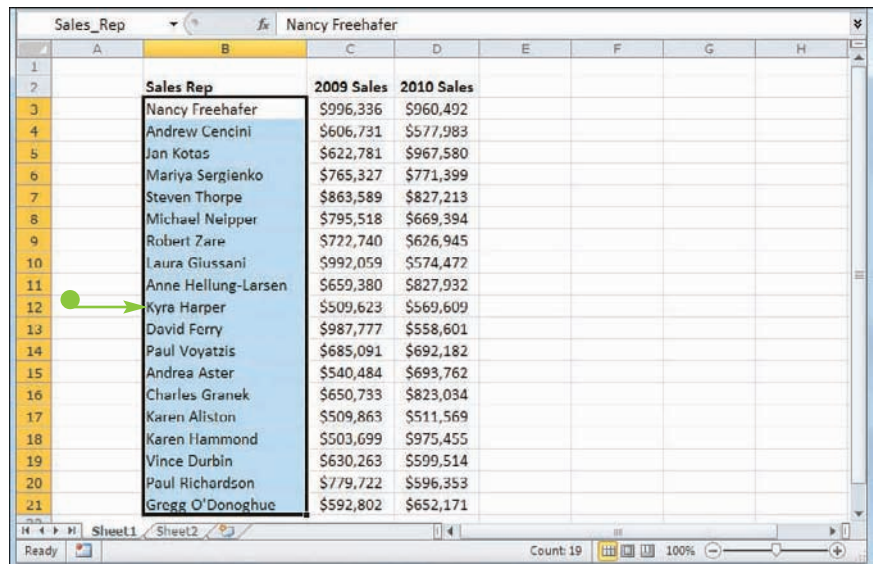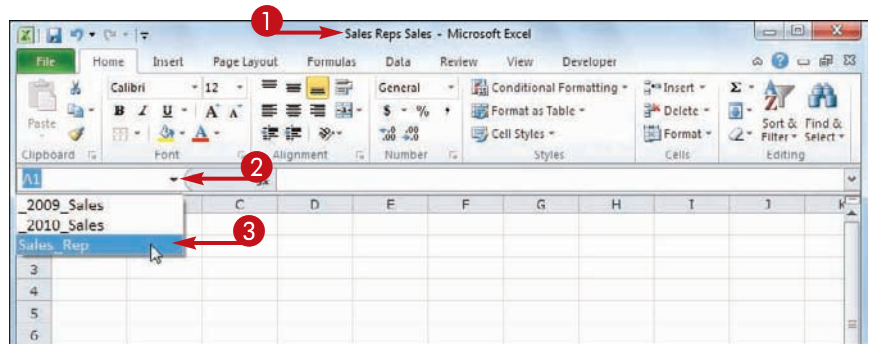
Navigate Using the Go To Command

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** .
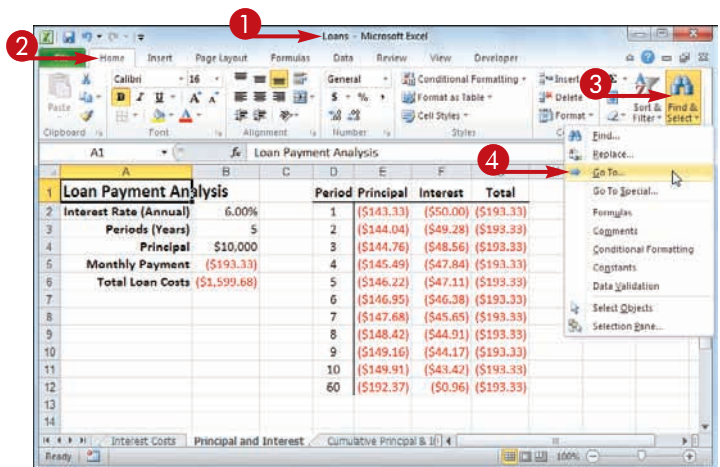
The Go To dialog box appears.

5. Click the name of the range you want to select.

6. Click **OK**.
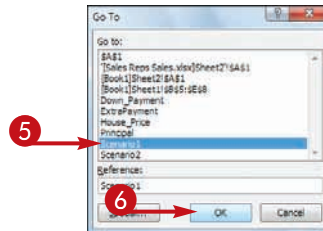
● Excel selects the range.
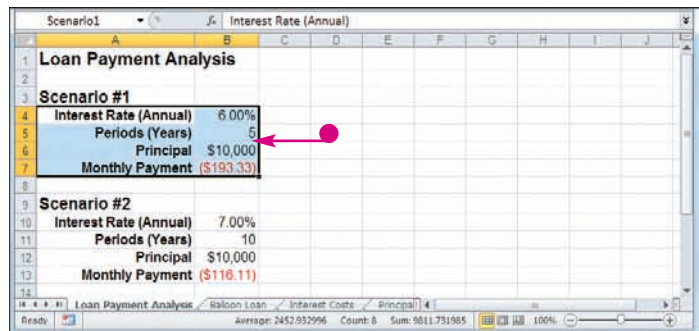
TIP

Is it possible to navigate to a named range in a different workbook?

Yes, but it is not easy or straightforward:

1. Follow Steps **1** to **4** on this page 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**.
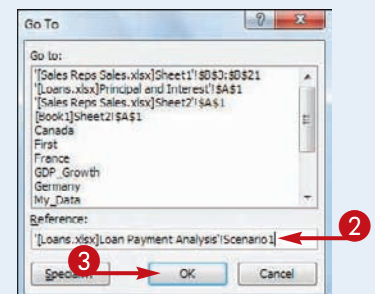
Change a Range Name

You can change any range name to a more suitable or accurate name. This is useful if you are no longer satisfied with the original name you applied to a range, or if you do not like the name that Excel generated automatically from the worksheet labels.

If you want to change the range coordinates associated with a range name, see the second Tip on the next page.

Change a Range Name

❶ Open the workbook that contains the range name you want to change.

❷ Click the **Formulas** tab.

❸ Click **Name Manager**.

The Name Manager dialog box appears.

❹ Click the name you want to change.

❺ Click **Edit**.
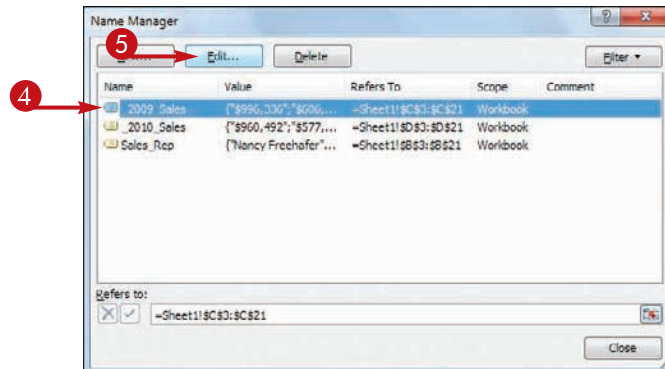
The Edit Name dialog box appears.

6 Use the Name text box to edit the name.

7 Click **OK**.

Edit Name

Name: Sales_for_2009 ◄──── 6

Scope: Workbook

Comment:

Refers to: =Sheet1!$C$3:$C$21

7 ───► OK   Cancel

● The new name appears in the Name Manager dialog box.

8 Repeat Steps **4** to **7** to rename other ranges as needed.

9 Click **Close**.

Name Manager

New...   Edit...   Delete   Filter ▾

Name	Value	Refers To	Scope	Comment
_2010_Sales	{"$960,492";"$577,...	=Sheet1!$D$3:$D$21	Workbook	
Sales_for_2009	{"$996,336";"$606,...	=Sheet1!$C$3:$C$21	Workbook	
Sales_Rep	{"Nancy Freehafer"...	=Sheet1!$B$3:$B$21	Workbook	

Refers to:

✕ ✓ =Sheet1!$C$3:$C$21

9 ───► Close
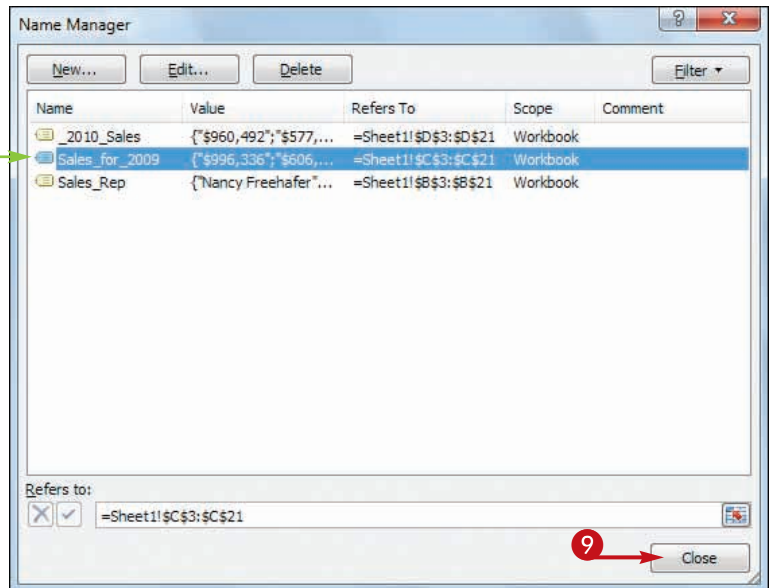
TIPS

Is there a faster method I can use to open the Name Manager dialog box?

Yes, Excel offers a shortcut key that enables you to bypass Steps **2** and **3**. Open the workbook that contains the range name you want to change, and then press Ctrl + F3. Excel opens the Name Manager dialog box.

Can I assign a name to a different range?

Yes. If you add another range to your workbook and you feel that an existing name would be more suited to that range, you can modify the name to refer to the new range. Follow Steps **1** to **5** to 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**.

Delete a Range Name

If you have a range name that you no longer need, you should delete it. This reduces clutter in the Name Manager dialog box, and makes the Name box easier to navigate.
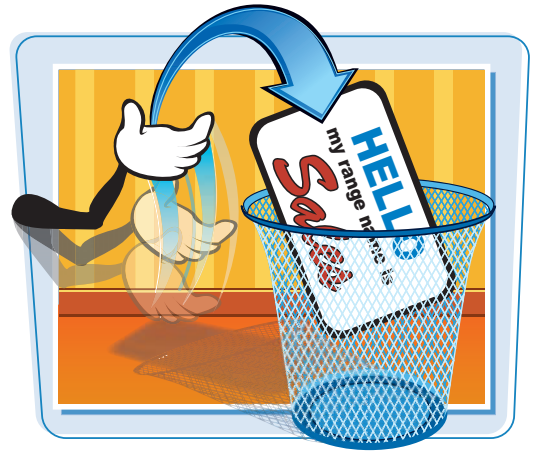
Delete a Range Name

1 Open the workbook that contains the range name you want to delete.

2 Click the **Formulas** tab.

3 Click **Name Manager**.

Note: You can also select the Name Manager command by pressing Ctrl + F3 .
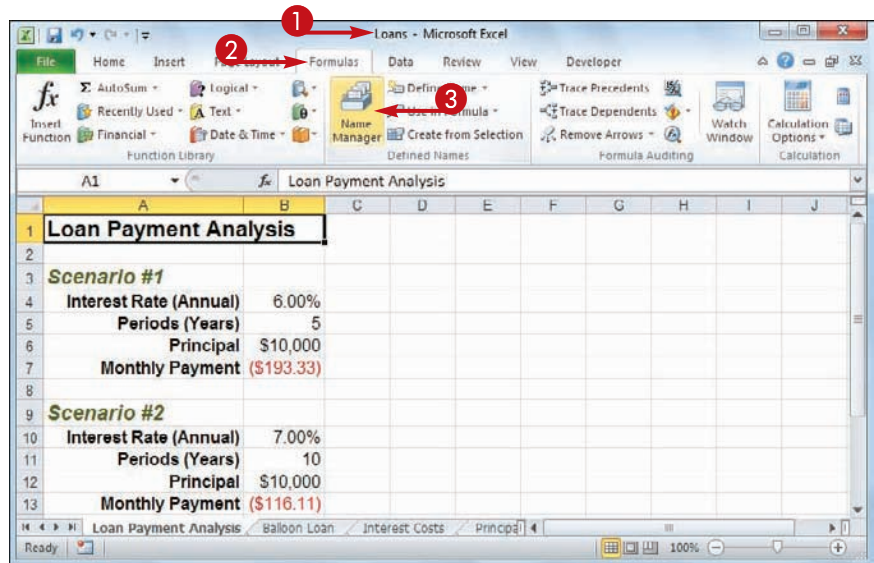
The Name Manager dialog box appears.

4 Click the name you want to delete.

5 Click **Delete**.
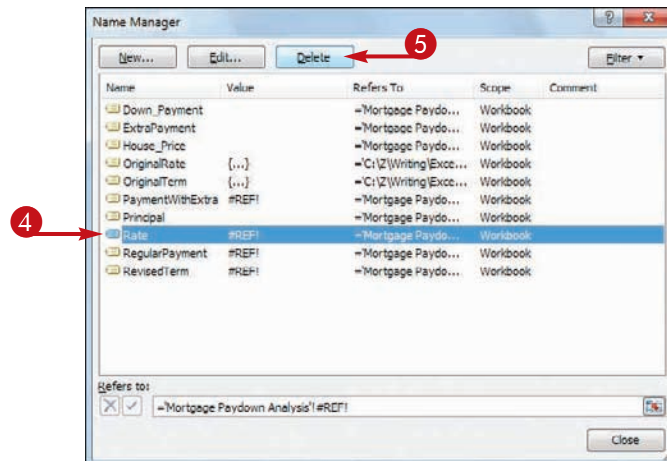
Excel asks you to confirm the deletion.

⑥ Click **OK**.

⑥ → OK   Cancel

● Excel deletes the range name.

⑦ Repeat Steps **4** to **6** to delete other range names as needed.

⑧ Click **Close**.

Name Manager

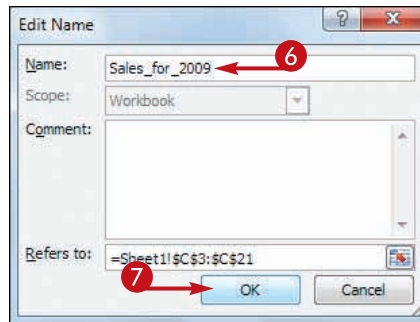| Name	Value	Refers To	Scope	Comment
Down_Payment		='Mortgage Paydo...	Workbook	
ExtraPayment		='Mortgage Paydo...	Workbook	
House_Price		='Mortgage Paydo...	Workbook	
OriginalRate	{...}	='C:\Z\Writing\Exce...	Workbook	
OriginalTerm	{...}	='C:\Z\Writing\Exce...	Workbook	
PaymentWithExtra	#REF!	='Mortgage Paydo...	Workbook	
Principal		='Mortgage Paydo...	Workbook	
RegularPayment	#REF!	='Mortgage Paydo...	Workbook	
RevisedTerm	#REF!	='Mortgage Paydo...	Workbook	

Refers to:

⑧ → Close

TIP

Is there a faster way to delete multiple range names?

Yes, you can delete two or more range names at once. First, follow Steps **1** to **3** to display the Name Manager dialog box. Next, select the range names you want to delete: To select consecutive names, click the first name you want to delete, hold down Shift, and then click the last name you want to delete; to select nonconsecutive names, hold down Ctrl and click each name you want to delete. When you have selected the name you want to remove, click **Delete** and then click **OK** when Excel asks you to confirm the deletion.

Paste a List of Range Names

To make your workbook easier to use, especially for other people who are not familiar with the name you have defined, you can paste a list of the workbook's range names to a worksheet.

The pasted list contains two columns: one for the range names and one for the range coordinates associated with each name.
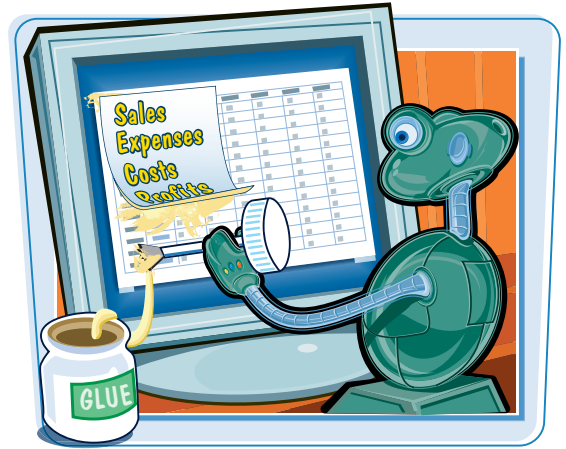
Paste a List of Range Names

① Open the workbook that contains the range names you want to paste.

② Select the cell where you want the pasted list to appear.

Note: Excel will overwrite existing data, so select a location where there is no existing cell data or where the existing cell data is okay to delete.
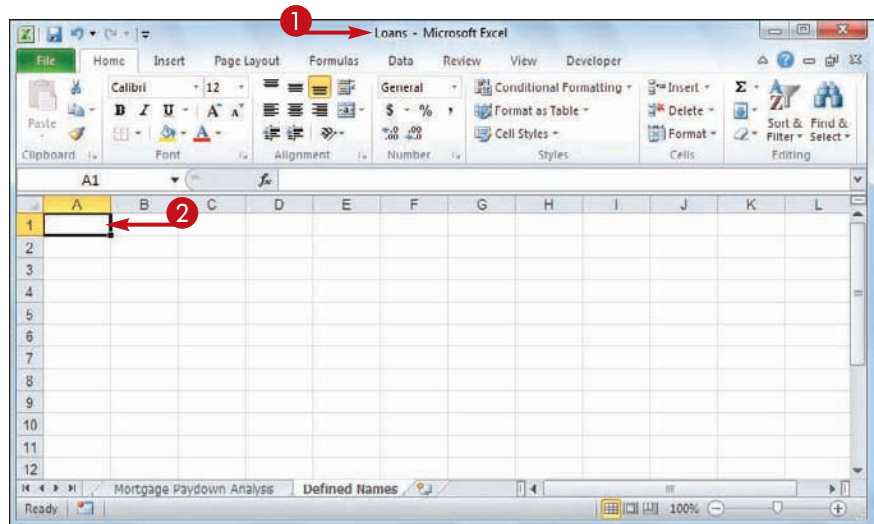
③ Click the **Formulas** tab.

④ Click **Use in Formula**.

⑤ Click **Paste Names**.
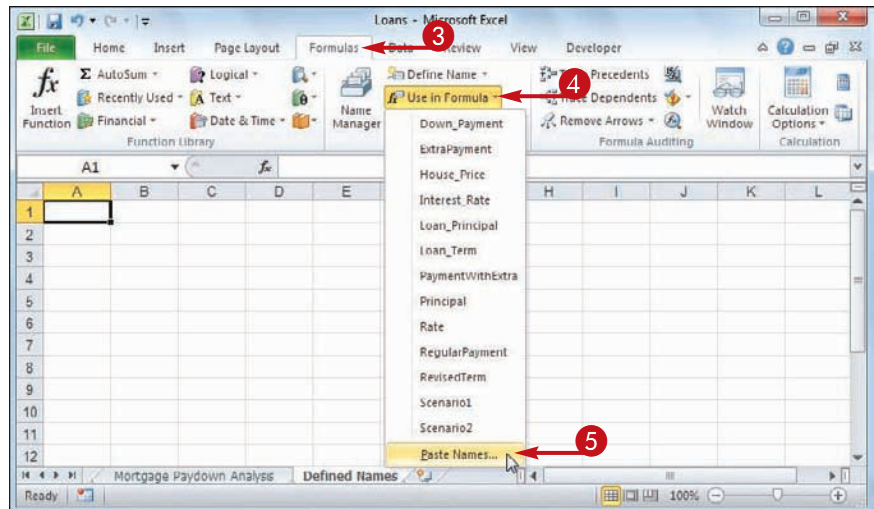
The Paste Name dialog box appears.

6 Click **Paste List**.
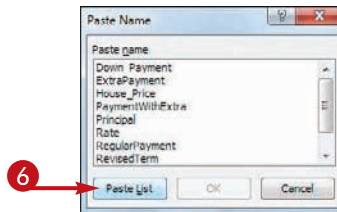
Excel closes the Paste Name dialog box.

● Excel pastes the list of range names to the worksheet.
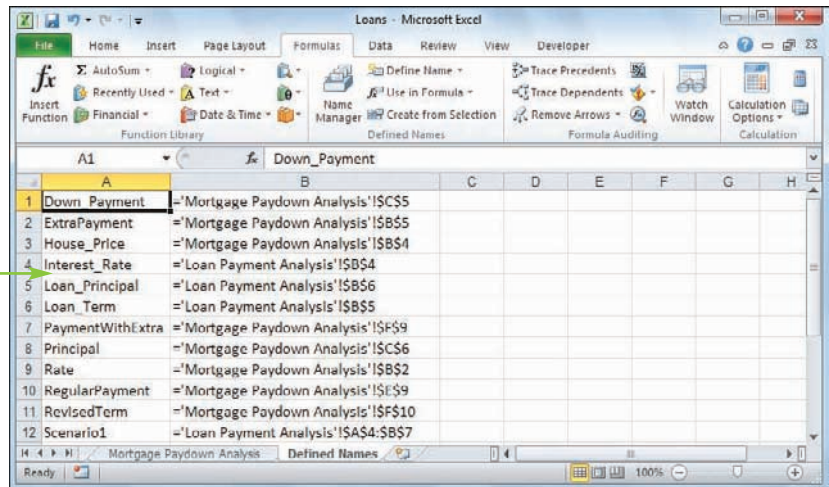
Is there a faster method I can use to paste a list of range names?

Yes, Excel offers a handy keyboard shortcut that you can use. Open the workbook that contains the range names you want to paste, and then select the cell where you want the pasted list to appear. Press `F3` to open the Paste Name dialog box, and then click **Paste List**.

SHORTCUT

5

Formatting Excel Ranges

Microsoft Excel 2010 offers many commands and options for formatting ranges, including the font, text color, text alignment, background color, number format, column width, row height, 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. Also, the font size is measured in *points,* where there are roughly 72 points in an inch.
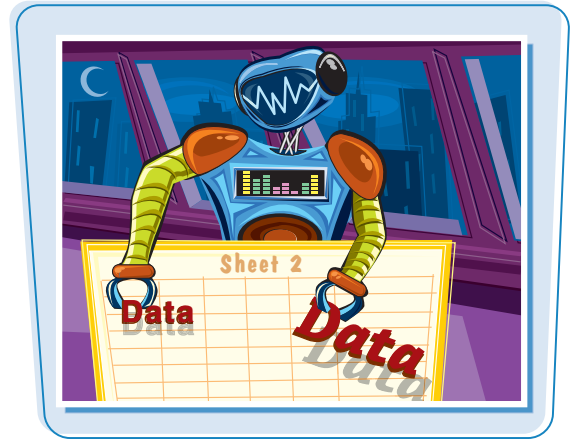
Change the Font and Font Size

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.
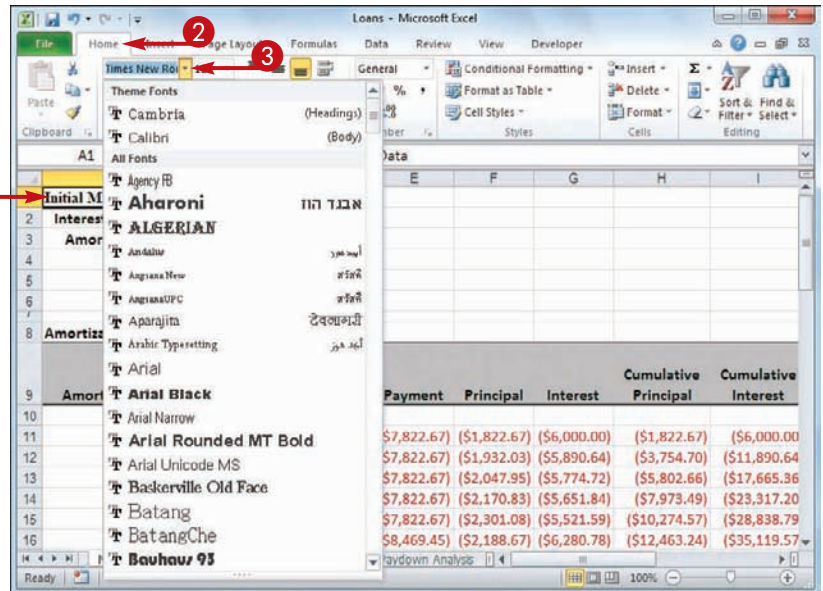
● Excel applies the font to the text in the selected range.
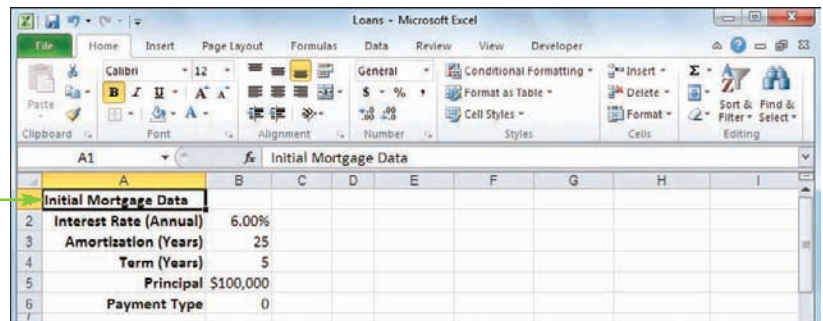
④ To change the font size, click ▼ in the **Font Size** list and then click the size you want to apply.

● You can also type the size you want in the Size text box.
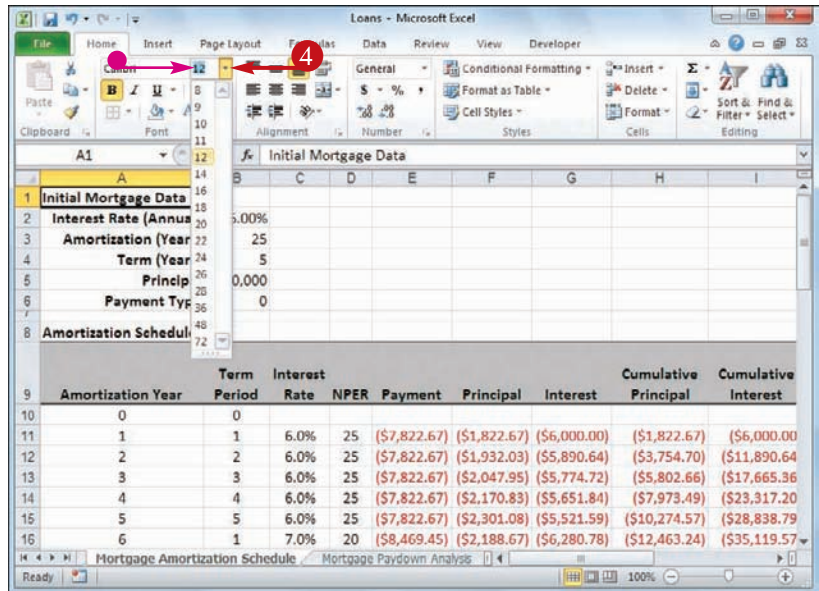
● Excel applies the font size to the text in the selected range.
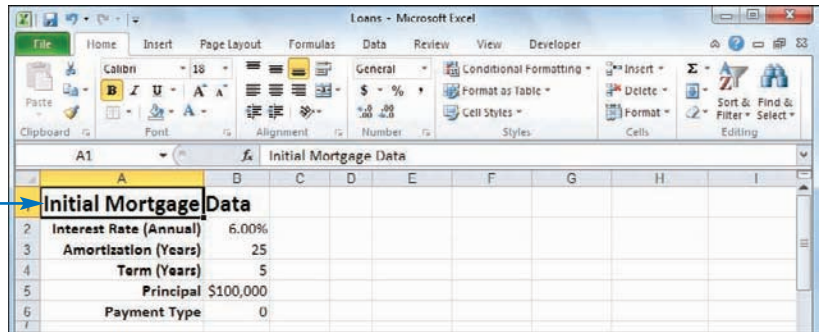
In the Theme Fonts section of the Font list, what do the designations Body and Headings mean?

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

Can I change the default font and font size?

Yes. Click the **File** tab and then click **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**.
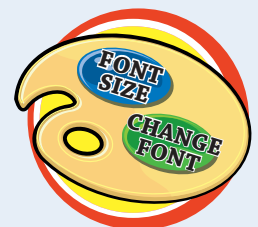
Apply Font Effects

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

Font effects include common formatting such as bold, italic, and underline, as well as special effects such as strikethrough, superscripts, and subscripts.

Apply Font Effects

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**).

● Excel applies the bold effect to the selected range.
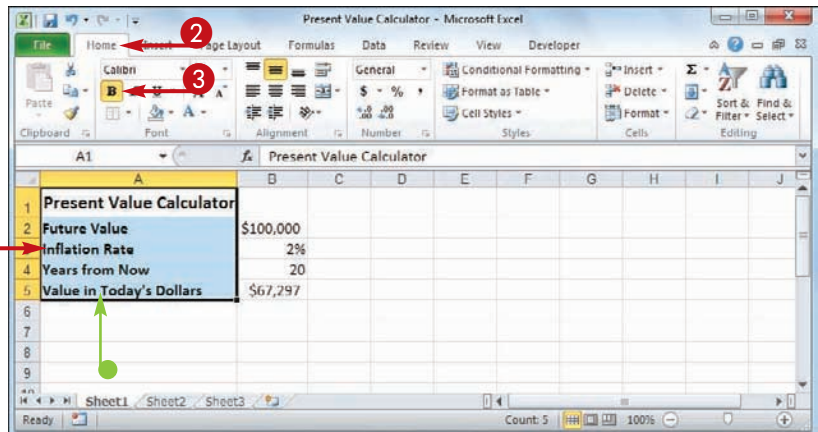
4 To format the text as italic, click the **Italic** button (**I**).

5 To format the text as underline, click the **Underline** button (**U**).

● Excel applies the effects to the selected range.

6 Click the **Font** dialog box launcher (☐).
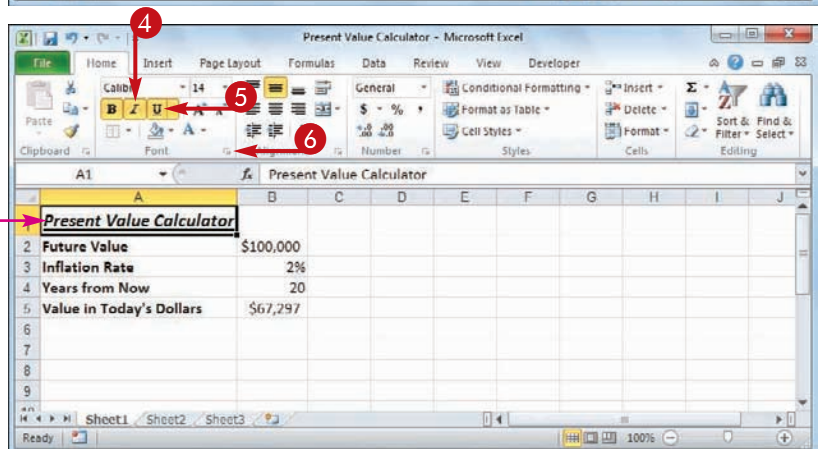
The Format Cells dialog box appears with the Font tab displayed.

7 To format the text as strikethrough, click **Strikethrough** (☐ changes to ☑).
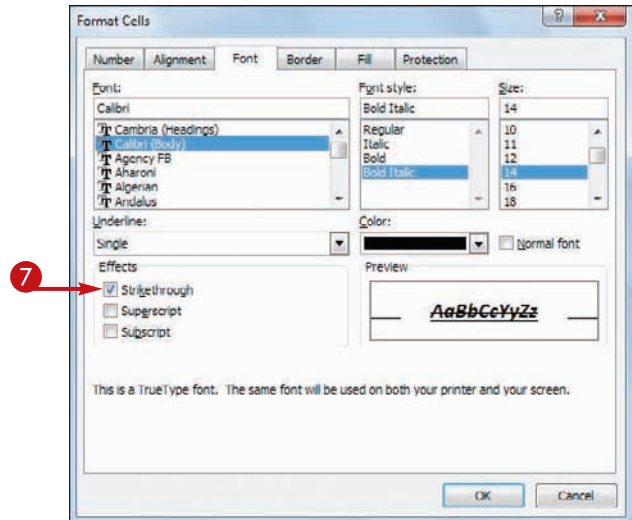
8 To format the text as a superscript, click **Superscript** (☐ changes to ☑).

● To format the text as a subscript, click **Subscript** (☐ changes to ☑).

9 Click **OK**.

Excel applies the font effects.
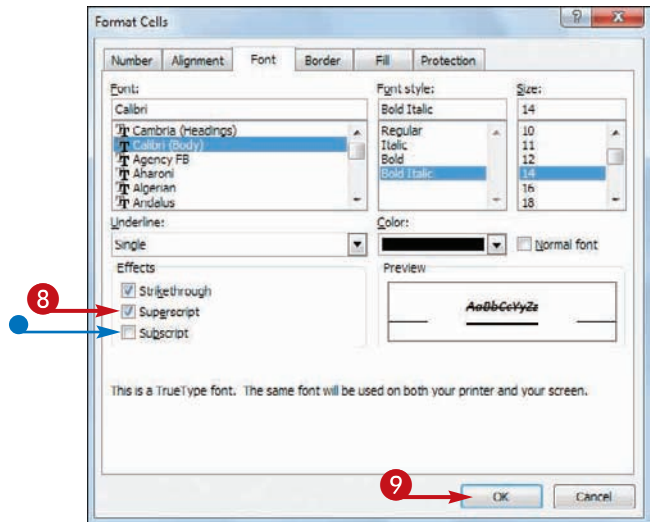
Are there any font-related keyboard shortcuts I can use?

Yes. Excel supports the following font shortcuts:

Press	To
Ctrl + B	Toggle the selected range as bold
Ctrl + I	Toggle the selected range as italic
Ctrl + U	Toggle the selected range as underline
Ctrl + 5	Toggle the selected range as strikethrough

Change the Font Color

When you work in an Excel worksheet, you can add visual interest by changing the font color.

You can change the font color by applying a color from the workbook's theme, from Excel's palette of standard colors, or from a custom color that you create yourself.

Change the Font Color

Select a Theme or Standard Color

1. Select the range you want to format.

2. Click the **Home** tab.

3. Click ⏷ in the **Font Color** list (**A**).
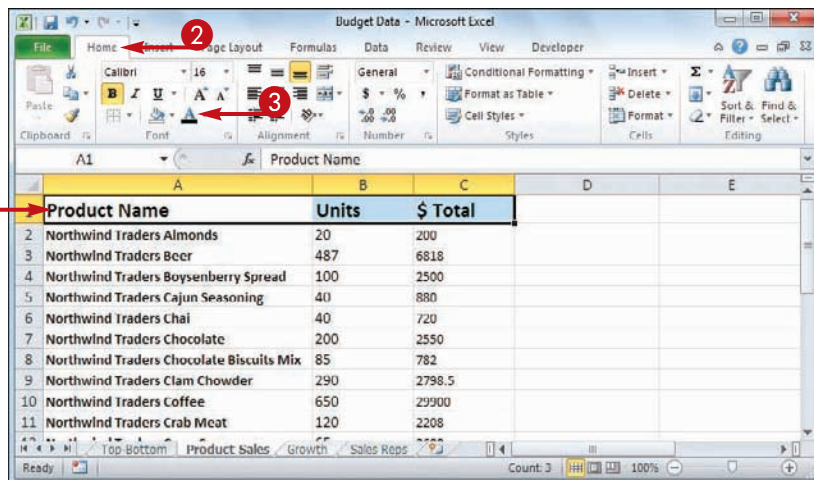
4. Click a theme color.

● Alternatively, click one of Excel's standard colors.

● Excel applies the color to the range text.

Select a Custom Color

1 Select the range you want to format.

2 Click the **Home** tab.

3 Click in the **Font Color** list (▲).

4 Click **More Colors**.
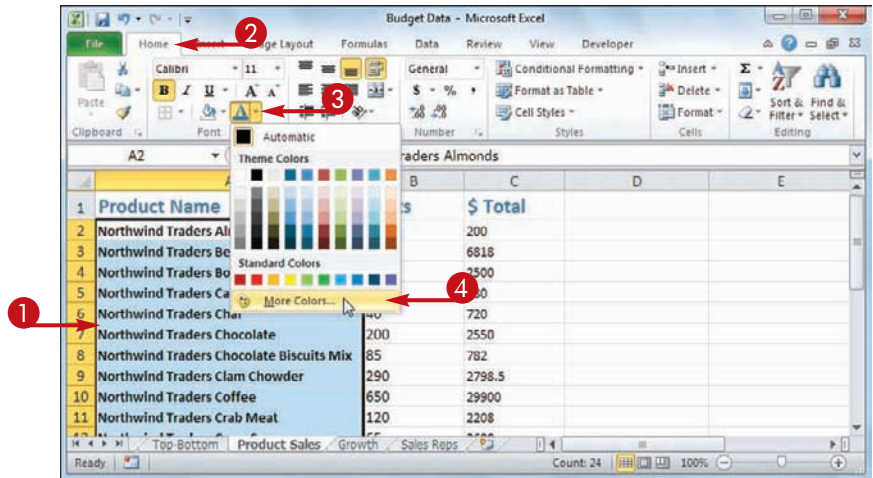
The Colors dialog box appears.

5 Click the color you want to use.

● You can also click the **Custom** tab and then either click the color you want or enter the values for the Red, Green, and Blue components of the color.

6 Click **OK**.
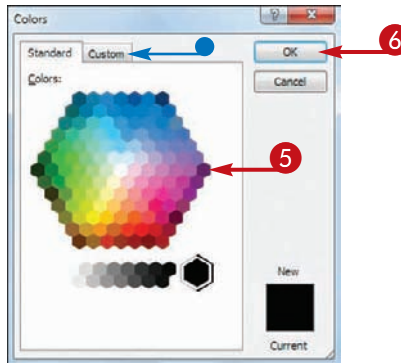
Excel applies the color to the selected range.

TIP

How can I make the best use of fonts in my documents?

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

● Avoid overly decorative typefaces because they are often difficult to read.

● Use bold only for document titles, subtitles, and headings.

● Use italics only to emphasize words and phrases, or for the titles of books and magazines.

● Use larger type sizes only for document titles, subtitles, and, possibly, the headings.

● If you change the text color, 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 it aligns 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 also align text with the top or middle.

Align Text Within a Cell

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 center of each cell.

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

Excel aligns the data horizontally within each selected cell.

● In this example, the data in the cells is centered.
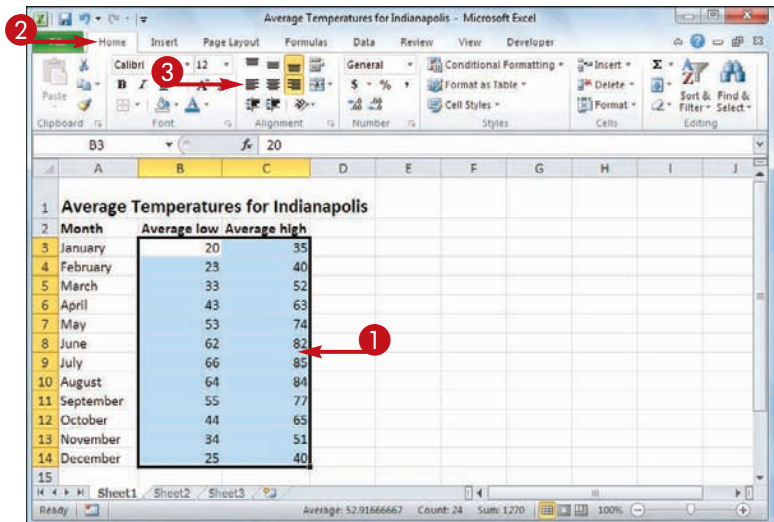
Align Text Vertically

1 Select the range you want to format.
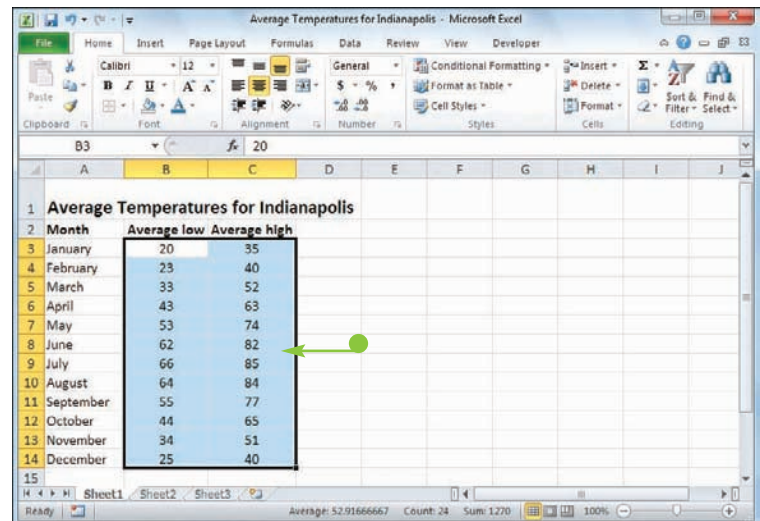
2 Click the **Home** tab.

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.

Excel aligns the data vertically within each selected cell.

● In this example, the text is aligned with the middle of the cell.
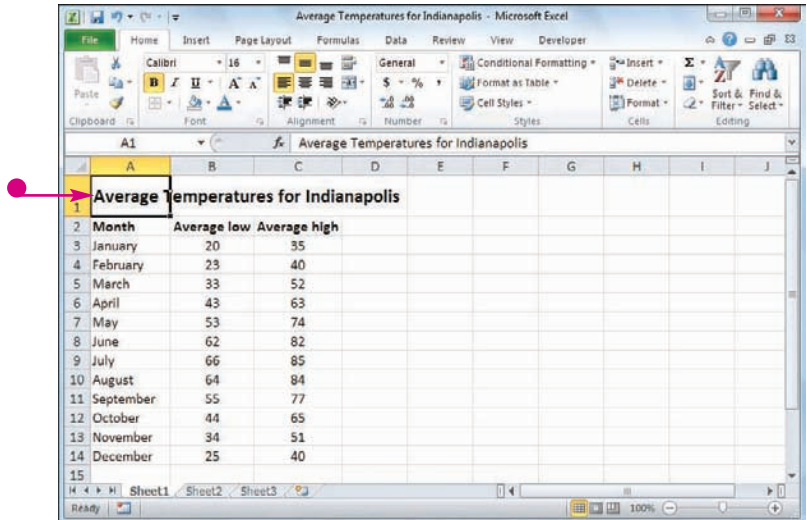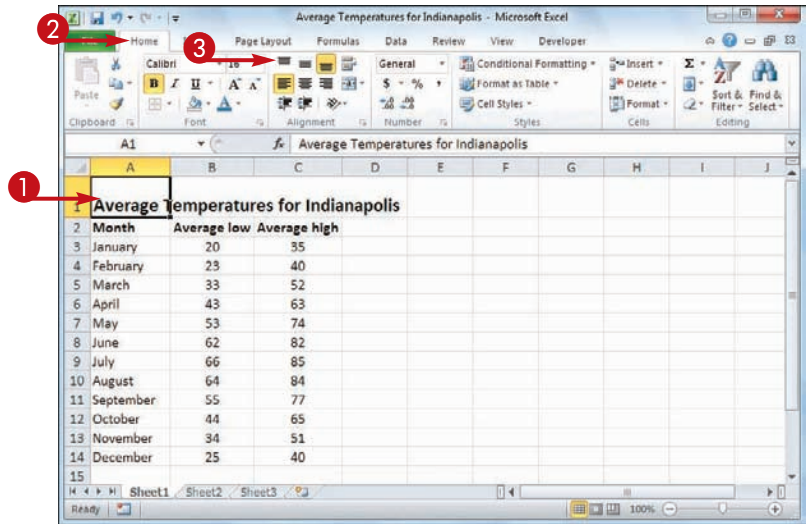
TIPS

How do I format text so that it aligns with both the left and right sides of the cell?

This is called *justified* text, and it is useful if you have a lot of text in one or more cells. Select the range, click the **Home** tab, and then click the dialog box launcher (☐) 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 justify the cells.

How do I indent cell text?

Select the range you want to indent, click the **Home** tab, and then click the Alignment group's dialog box launcher (☐). 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** (☐) button in the Home tab's Alignment group.

Center Text Across Multiple Columns

You can make a worksheet more visually appealing and easier to read by centering 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 centering the text across the range, it makes it easier to see that the label or title applies to the entire range.
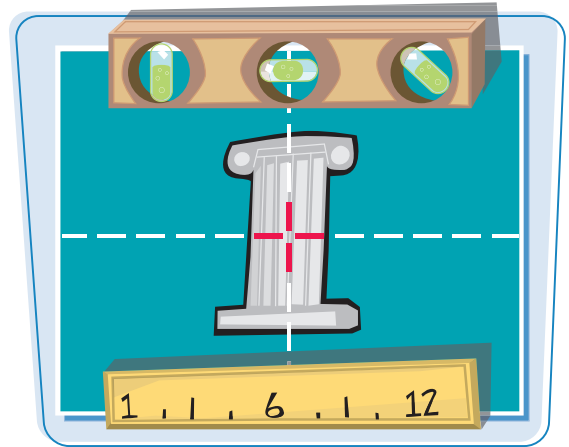
Center Text Across Multiple Columns

① Select a range that consists of the text you want to work with and the cells across which you want to center 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**.
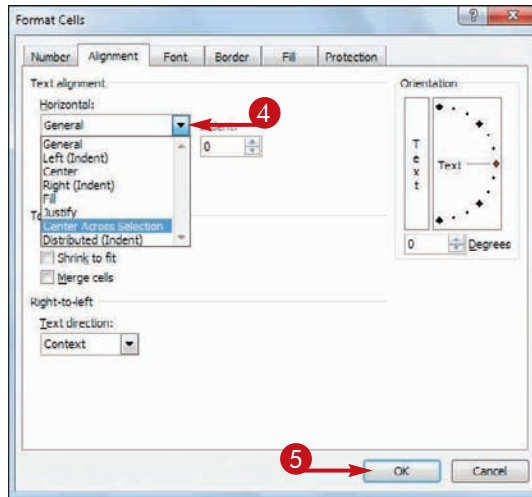
● Excel centers the text across the selected cells.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1					**Expenses By Month**									
2		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
3	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	
4	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	
5	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	
6	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	
7	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	
8	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	
9	Utilities	500	600	600	550	600	650	650	600	600	650	600	600	
10	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	
11														
12														
13														

TIP

Is there an easier way to center text across multiple columns?
Yes, although it does require you to merge the selected cells into a single cell. (See Chapter 3 to learn more about merging cells.) 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 centers the text within that cell.

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.

You can choose a predefined rotation, or you can make cell text angle upward or downward by specifying the degrees of rotation.
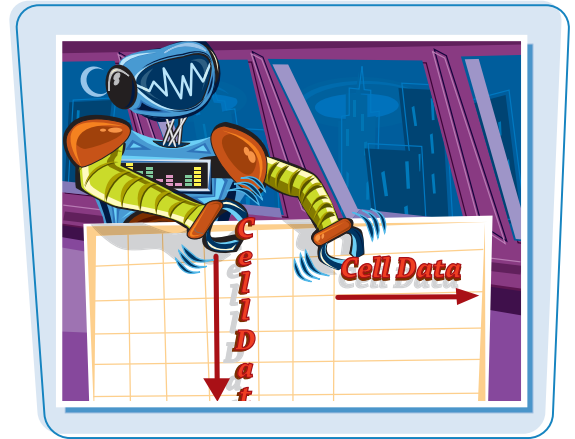
Rotate Text Within a Cell

1 Select the range containing the text you want to angle.

2 Click the **Home** tab.

3 Click **Orientation** (⬙).

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

4 Click **Format Cell Alignment**.

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

5 Click an orientation marker.

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

- 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.

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

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

Average Temperatures for Indianapolis

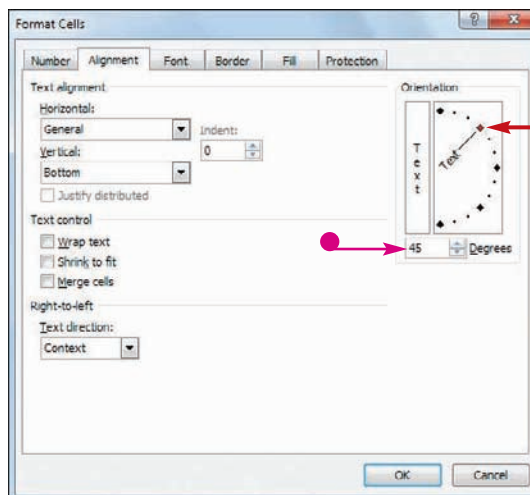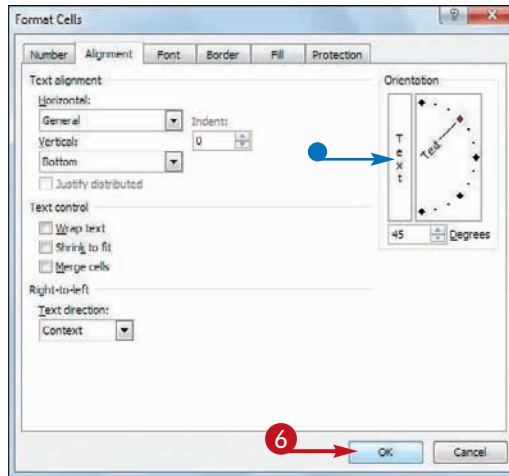|	January	February	March	April	May	June	July	August	September	October	November	December
Average low	20	23	33	43	53	62	66	64	55	44	34	25
Average high	35	40	52	63	74	82	85	84	77	65	51	40
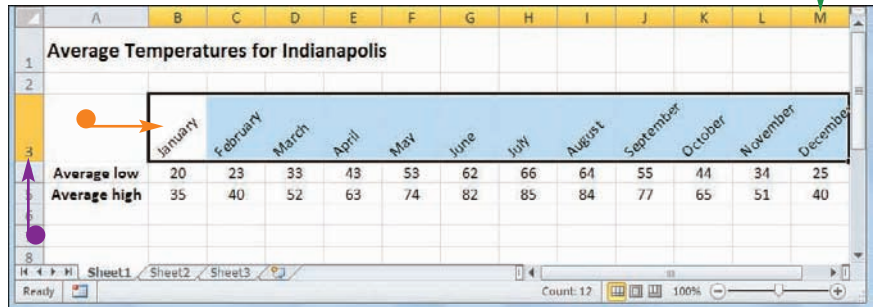
TIP

How does the Degrees spin box work?

If you use the Degrees spin box to set the text orientation, you can set the text orientation to a positive number, such as 25, and 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 (which is the same as clicking the Rotate Text Up command in the Orientation menu) to –90 degrees (which is the same as clicking the Rotate Text Down command).
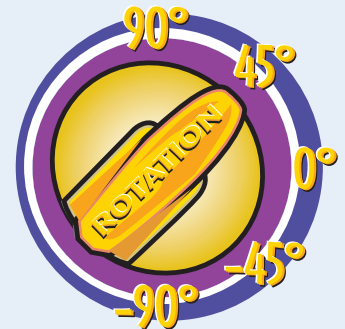
Add a Background Color to a Range

You can make a range stand out from the rest of the worksheet by applying a background color to the range.

You can change the background color by applying a color from the workbook's theme, from Excel's palette of standard colors, or from a custom color that you create yourself.
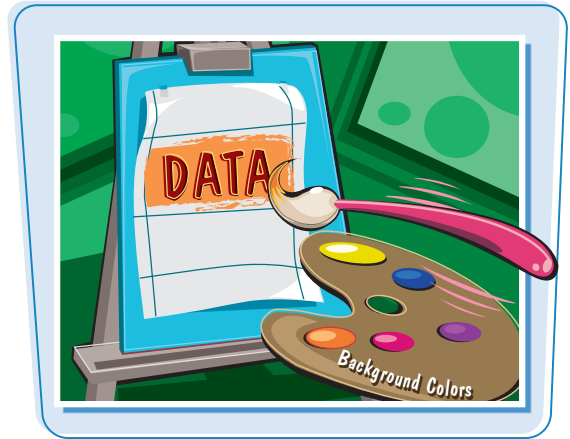
Background Colors

Add a Background Color to a Range

Select a Theme or Standard Color

1. Select the range you want to format.

2. Click the **Home** tab.

3. Click the arrow in the **Fill Color** list.

4. Click a theme color.

● Alternatively, click one of Excel's standard colors.

● Excel applies the color to the range text.

● To remove the background color from the range, click **No Fill**.

Select a Custom Color

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 color you want to use.

● You can also click the **Custom** tab and then either click the color you want or enter the values for the Red, Green, and Blue components of the color.

⑥ Click **OK**.
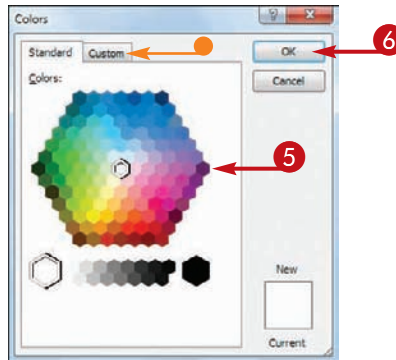
Excel applies the color to the selected range.

TIPS

Are there any pitfalls to watch out for when I apply background colors?
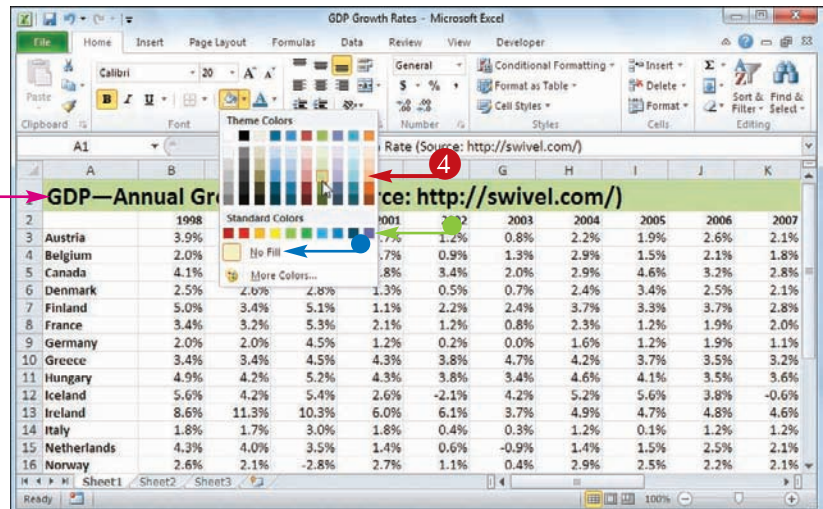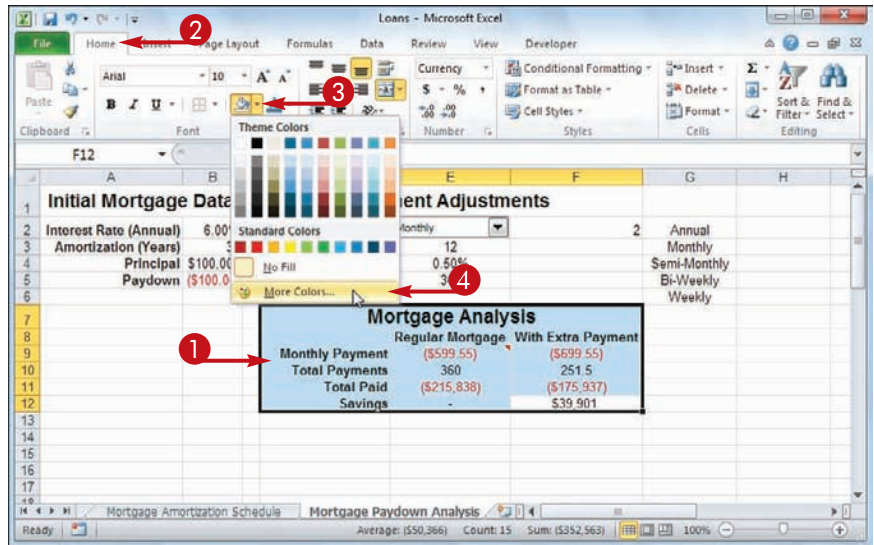
Yes. The biggest pitfall is applying a background color that clashes with the range text. For example, the default text color is black, so if you apply any dark background color, the text will be very difficult to read. Always use either a light background color with dark-colored text, or a dark background color with light-colored text.

Can I apply a background that fades from one color to another?

Yes. This 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 colors. 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 dollar 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 Number Format

1 Select the range you want to format.
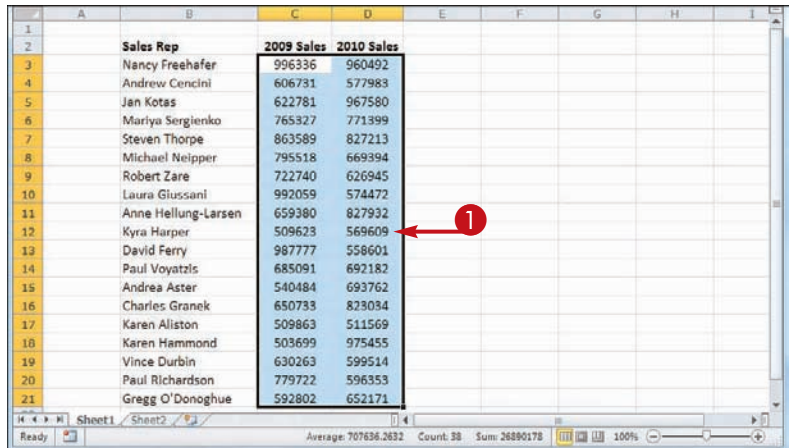
2 Click the **Home** tab.

3 Click the **Number Format** ⏷.

4 Click the number format you want to use.
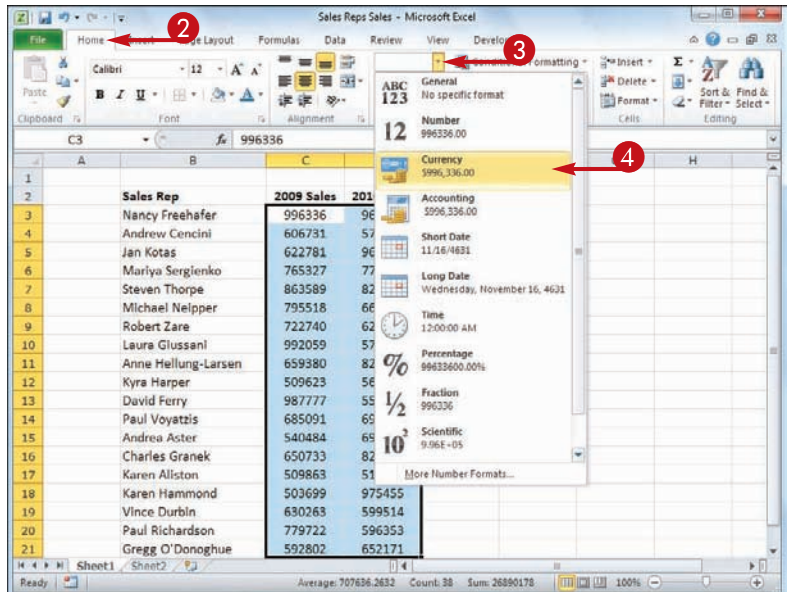
● Excel applies the number format to the selected range.

● For monetary values, you can also click **Accounting Number Format** ($).

● For percentages, you can also click **Percent Style** (%).
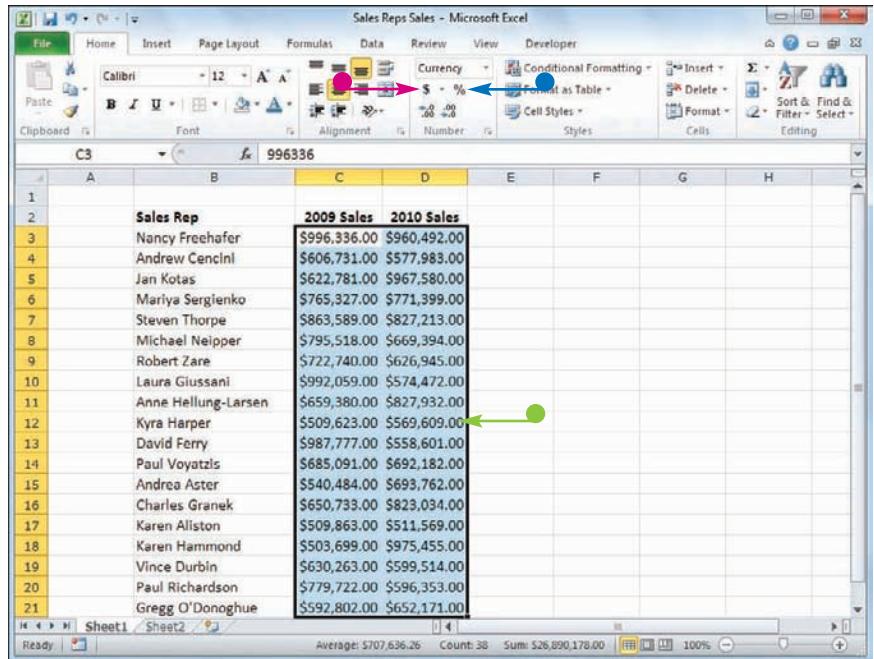
● For large numbers, you can also click **Comma Style** (,).
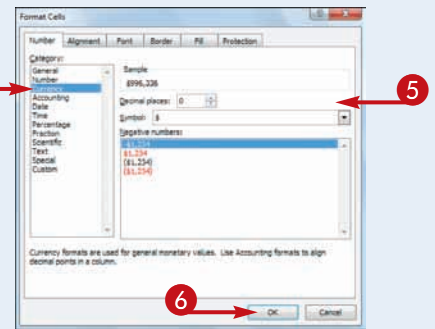
Change the Number of Decimal Places Displayed

You can make your numeric values easier to read and interpret by adjusting the number of decimal places that Excel displays. For example, you might want to ensure that all dollar-and-cent values show two decimal places, while dollar-only values show no decimal places.

You can either decrease or increase the number of decimal places that Excel displays.

Change the Number of Decimal Places Displayed

Decrease the Number of Decimal Places

1 Select the range you want to format.

2 Click the **Home** tab.

3 Click the **Decrease Decimal** button (🔢).
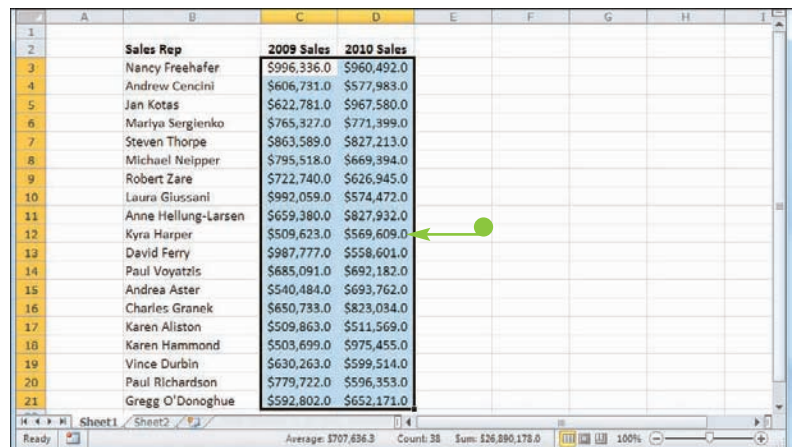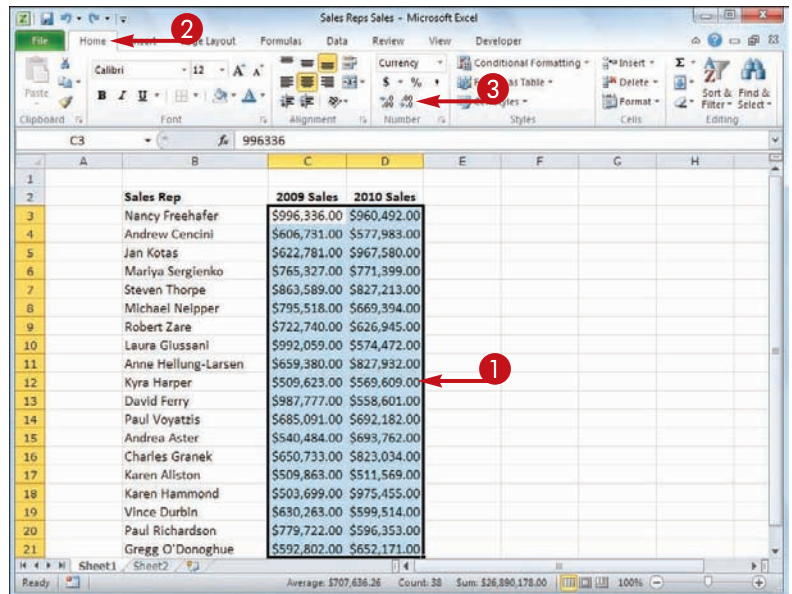
● Excel decreases the number of decimal places by one.

4 Repeat Step **3** until you get the number of decimal places you want.

Increase the Number of Decimal Places

1 Select the range you want to format.

2 Click the **Home** tab.

3 Click the **Increase Decimal** button (⟋).
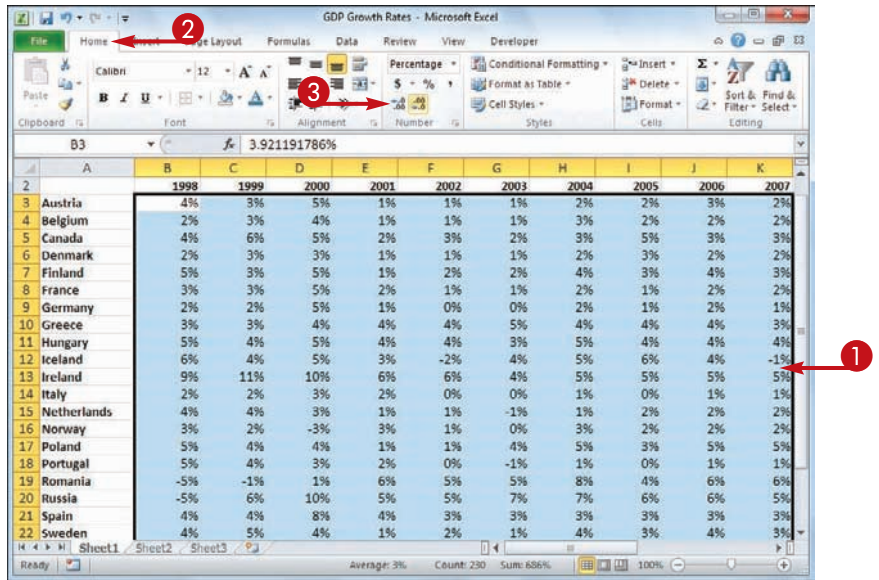
● Excel increases the number of decimal places by one.

4 Repeat Step **3** until you get the number of decimal places you want.

TIP
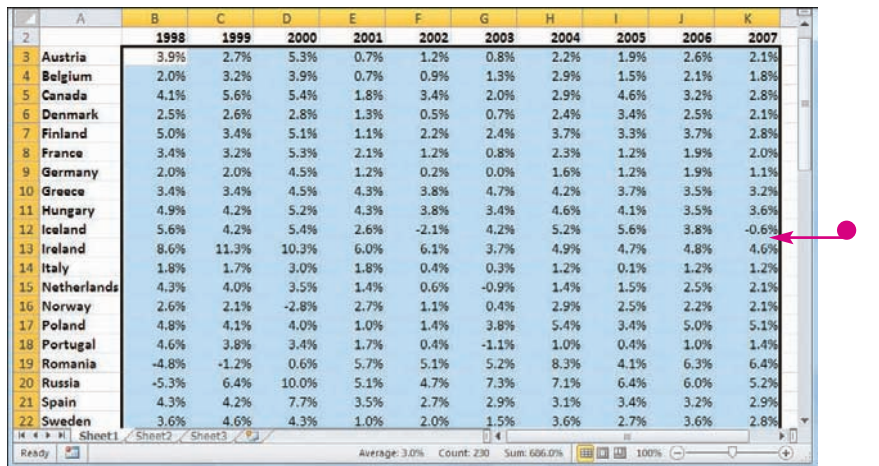
My range currently has values that display different numbers of decimal places. What happens when I change the number of decimal places?

In this situation, Excel uses the value that has the most displayed decimal places as the basis for formatting all the values. For example, if the selected range has values that display no, one, two, or four decimal places, Excel uses the value with four decimals as the basis. If you click **Decrease Decimal**, Excel displays every value with three decimal places; if you click **Increase Decimal**, Excel displays every value with five decimal places.
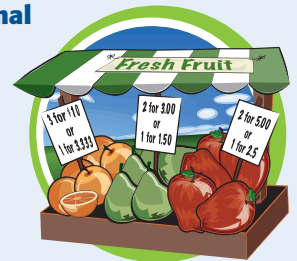
Apply an AutoFormat to a Range

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.

Apply an AutoFormat to a Range

1 Select the range you want to format.
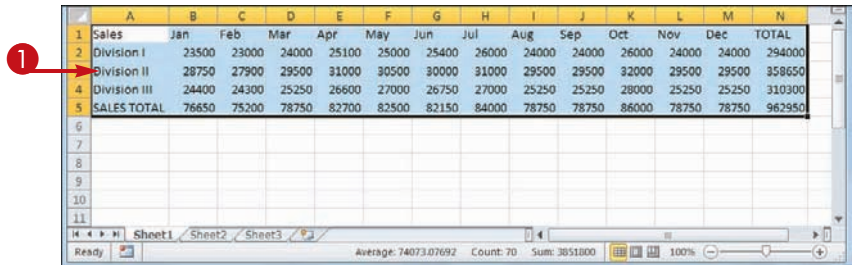
2 Click **AutoFormat** (🔲).

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.*
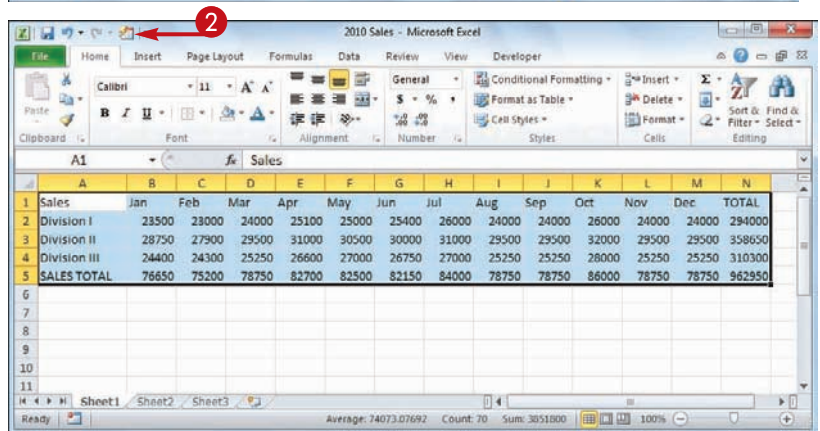
The AutoFormat dialog box appears.

③ In the Table format list, click the AutoFormat you want to use.

④ Click **OK**.
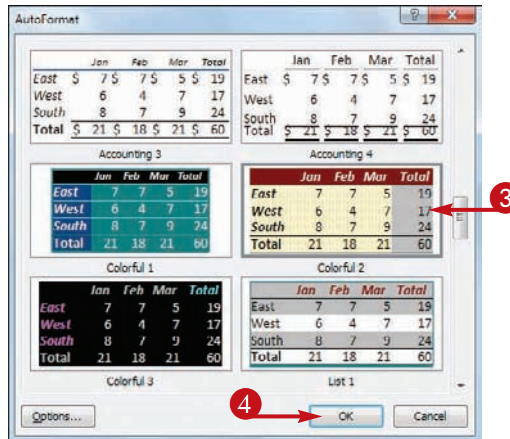
● Excel applies the AutoFormat to the selected range.
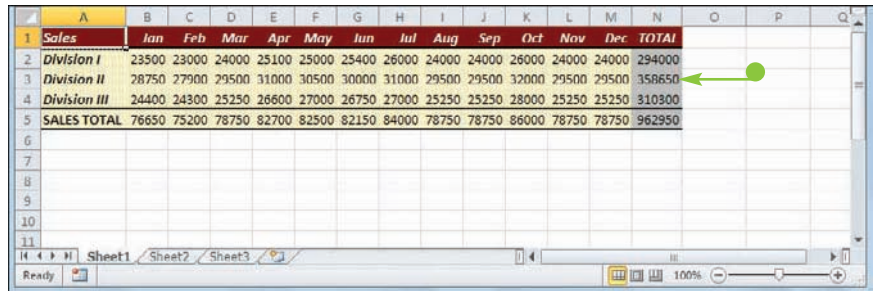
Is there a way to apply an AutoFormat without using some of its formatting?

Yes. Excel enables you to control all six formats that are part of each AutoFormat: Number, Font, Alignment, Border, Patterns, and Width/ Height. Follow Steps **1** to **3** to choose the AutoFormat you want to apply. Click **Options** to expand the dialog box 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**.

AutoFormat
- ✔ Number
- ✔ Font
- Alignment
- ✔ Border
- Patterns
- ✔ Width/Height
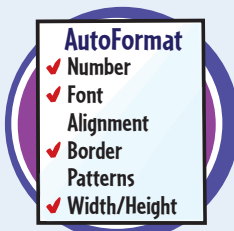
How do I remove an AutoFormat?

If you do not like or no longer need the AutoFormat you applied to the cells, you can 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.

AUTOFORMAT ON OFF

Apply a Conditional Format to a Range

You can make a worksheet easier to analyze 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.

Apply a Conditional Format to a 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.
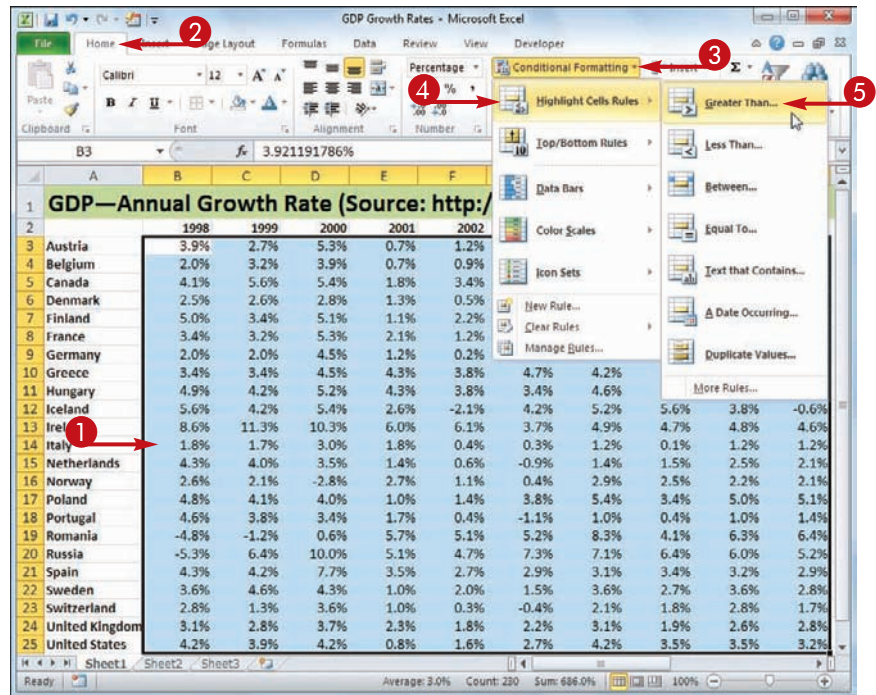
An operator dialog box appears, such as the Greater Than dialog box shown here.

6. Type the value you want to use for your condition.

● 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.

● To create your own format, click **Custom Format**.

8 Click **OK**.

Greater Than

Format cells that are GREATER THAN:

5.0%   with   Light Red Fill with Dark Red Text

8 → OK   Cancel

● Excel applies the formatting to cells that meet your condition.

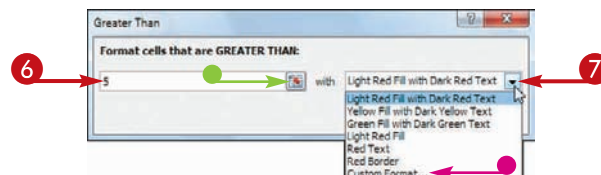|	A	B	C	D	E	F	G	H	I	J	K
1	GDP—Annual Growth Rate (Source: http://swivel.com/)										
2		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
3	Austria	3.9%	2.7%	5.3%	0.7%	1.2%	0.8%	2.2%	1.9%	2.6%	2.1%
4	Belgium	2.0%	3.2%	3.9%	0.7%	0.9%	1.3%	2.9%	1.5%	2.1%	1.8%
5	Canada	4.1%	5.6%	5.4%	1.8%	3.4%	2.0%	2.9%	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%	5.7%	5.1%	5.2%	8.3%	4.1%	6.3%	6.4%
20	Russia	-5.3%	6.4%	10.0%	5.1%	4.7%	7.3%	7.1%	6.4%	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%

Sheet1 Sheet2 Sheet3

Ready   100%

TIPS

Can I set up more than one condition for a single range?

Yes. 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 unique formats to each condition. Follow Steps **1** to **8** to configure the new condition.

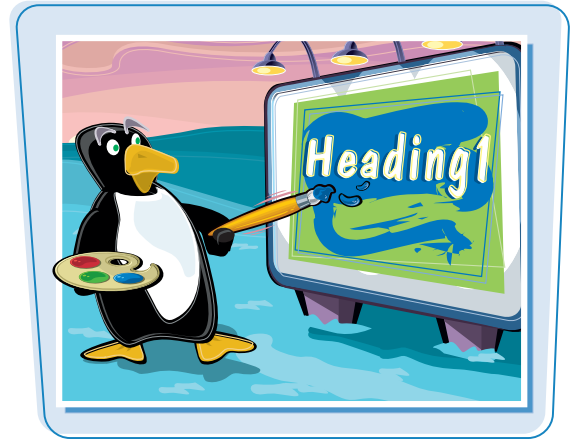**How do I remove a conditional format from a range?**

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**. Excel displays the Conditional Formatting Rules Manager dialog box. 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 color.

Apply a Style to a Range

1. Select the range you want to format.
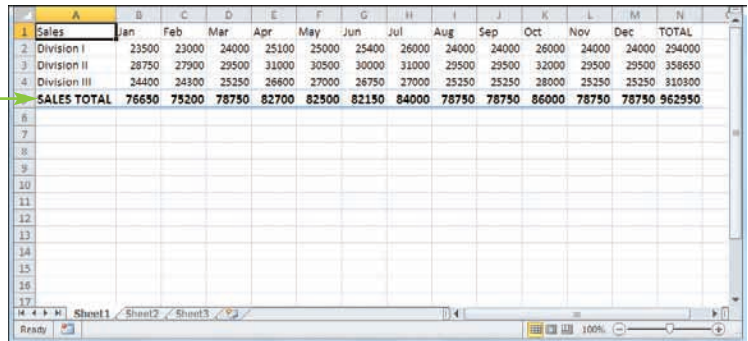

2. Click the **Home** tab.

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 customize the style.*
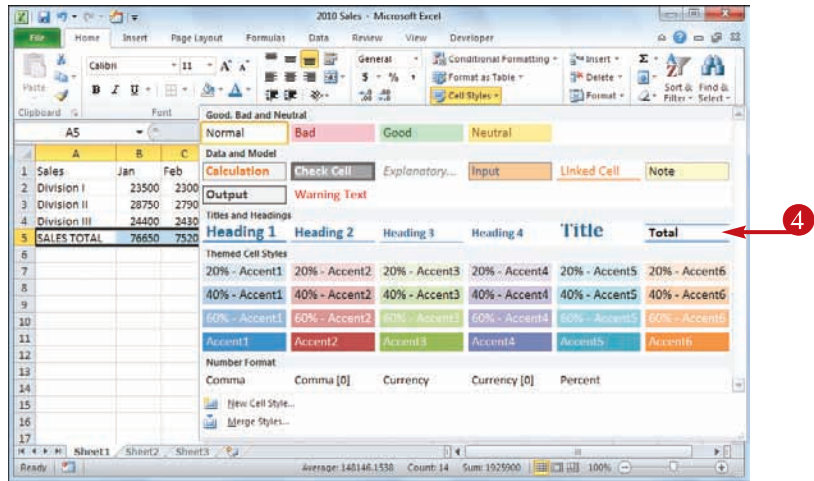
● Excel applies the style to the range.

Are there styles I can use to format tabular data?

Yes. 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.

Can I create my own style?

Yes. This is useful if you find yourself applying the same set of formatting options over and over. By saving those options as a custom style, you can apply it by following Steps **1** to **4**. 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 then click **OK**.
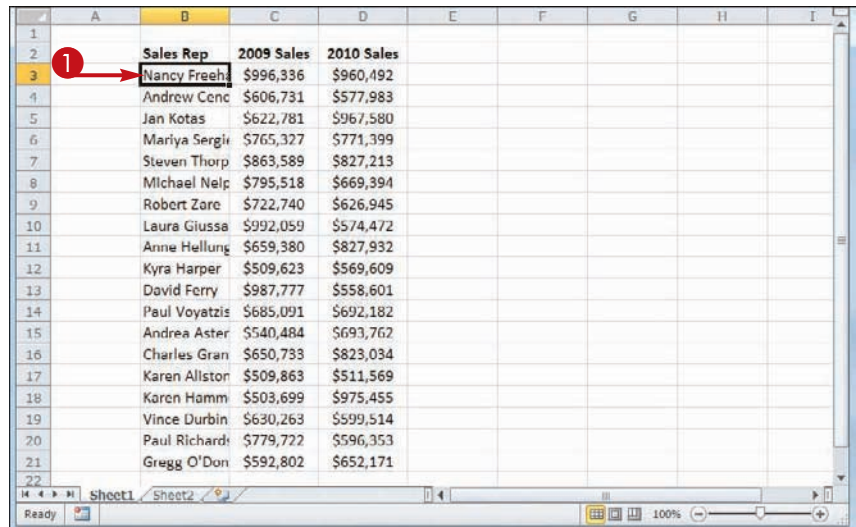
Change the Column Width

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.
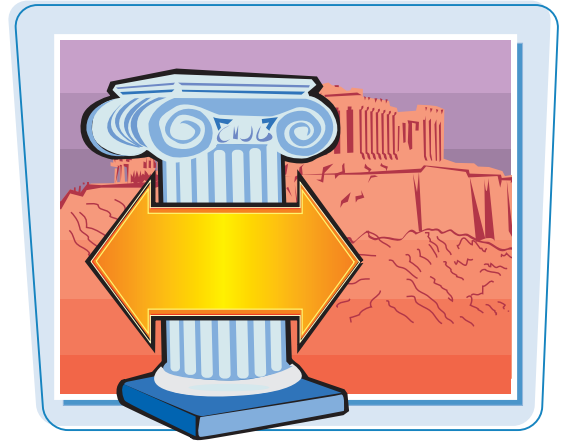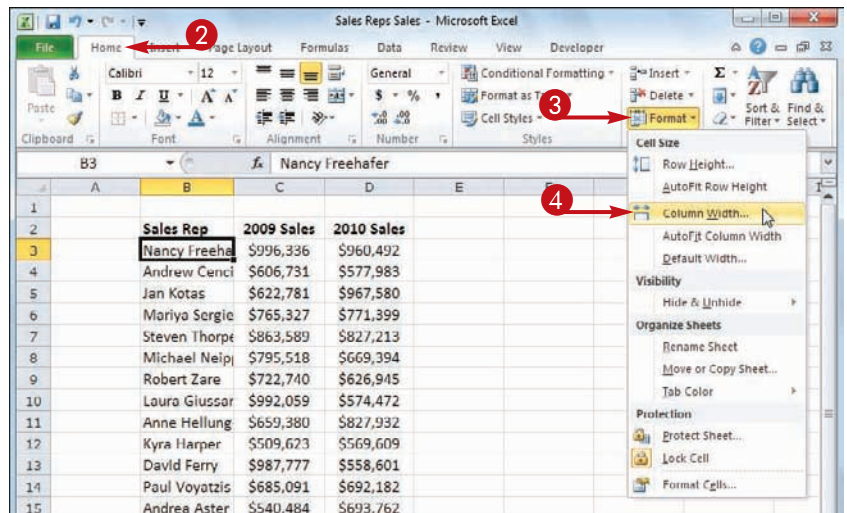
Change the Column Width

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

2 Click the **Home** tab.
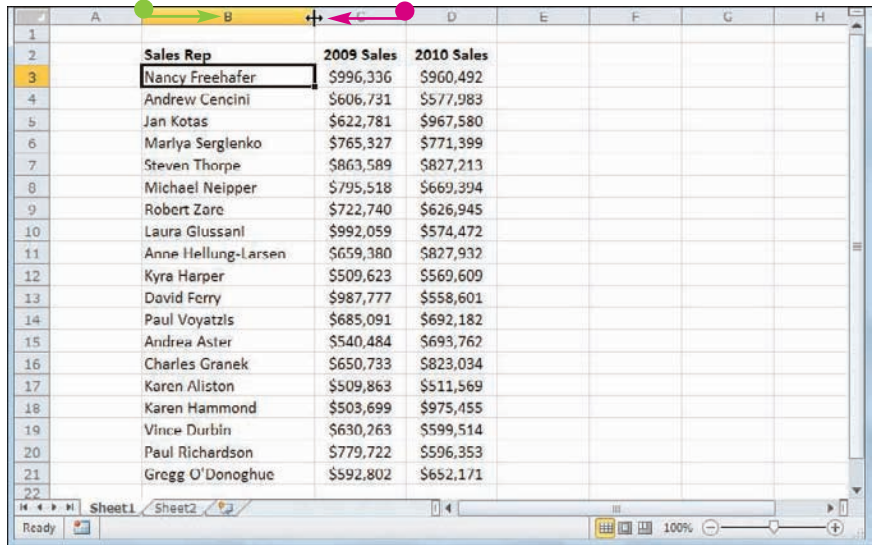
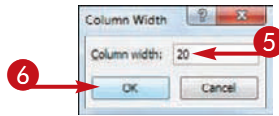3 Click **Format**.

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.

● 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.

|	Sales Rep	2009 Sales	2010 Sales
	Nancy Freehafer	$996,336	$960,492
	Andrew Cencini	$606,731	$577,983
	Jan 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 Aliston	$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

TIPS

Is there an easier way to adjust the column width to fit the contents of a column?

Yes. You can use Excel's AutoFit feature, which 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**. Alternatively, move ⊕ over the right edge of the column heading (⊕ changes to ↔) and then double-click.

AUTOFIT

**Is there a way to change all the column widths at once?**

Yes. Click ▣ (or press **Ctrl** + **A**) to select the entire worksheet, and then follow the steps in this section to set the width you prefer. 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. Type the new standard column width, and then click **OK**.

Standard Width

Standard column width: 10.38
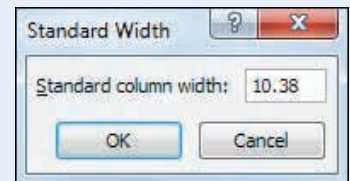
Change the Row Height

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.

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.
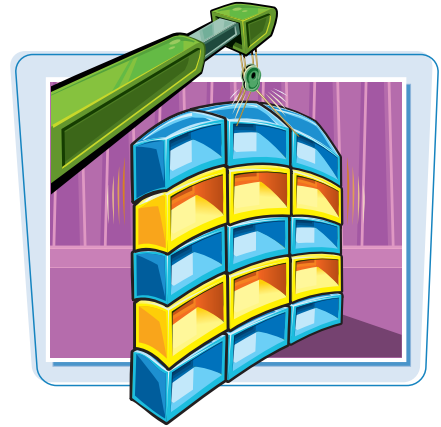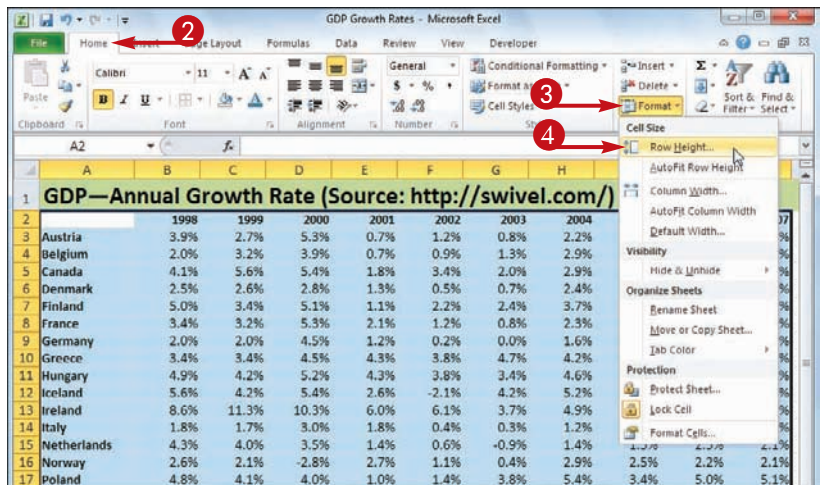
Change the Row Height

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

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.

● 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.

|	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%

Sheet1 / Sheet2 / Sheet3

Ready   100%

TIPS

Is there an easier way to adjust the row height to fit the contents of a row?

Yes. You can use Excel's AutoFit feature, which automatically adjusts 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.

Is there a way to change all the row heights at once?

Yes. Click ◢ (or press Ctrl + A) to select the entire worksheet. You can then either follow the steps in this section to set the height by hand, or you can move ⊕ over the bottom edge of any row heading (⊕ changes to ╪) and then click and drag the edge to set the height of all the rows.

	A	B	C
1			
2	Height: 24.00 (32 pixels)		
3			
4			
5			
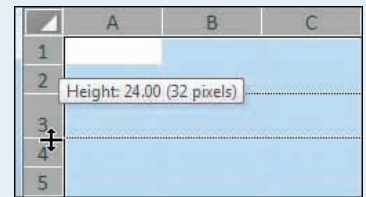
Wrap Text Within a Cell

If you type more text in a cell than can fit horizontally, Excel either displays the text over the next cell if it is empty or displays only part of the text if the next cell contains data. To prevent Excel from showing only truncated cell data, you can format the cell to wrap text within the cell.

Wrap Text Within a Cell
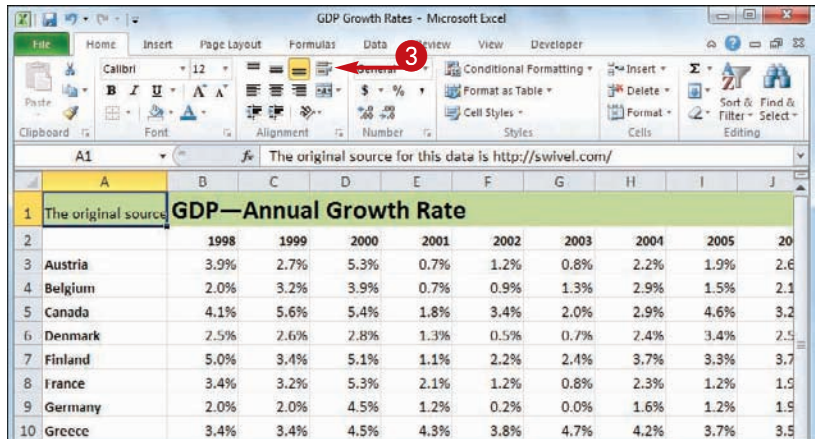
① Select the cell that you want to format.

② Click the **Home** tab.

❸ Click **Wrap Text** (⊞).

Excel turns on text wrapping for the selected cell.

● If the cell has more text than can fit horizontally, Excel wraps the text onto multiple lines and increases the row height to compensate.
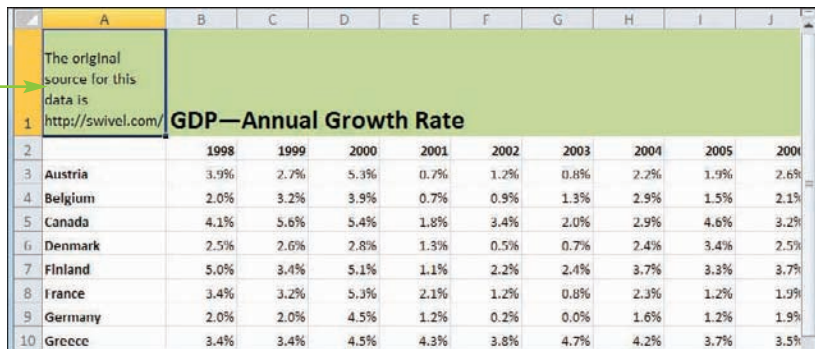
My text is only slightly bigger than the cell. Is there a way to view the entire text without turning on text wrapping?

Yes. There are several things you can try. For example, you can widen the column until you see all your text; see "Change the Column Width" earlier in this chapter.

Alternatively, you can try reducing 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. However, 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. Click the **Shrink to fit** check box (☐ changes to ☑) and then click **OK**.
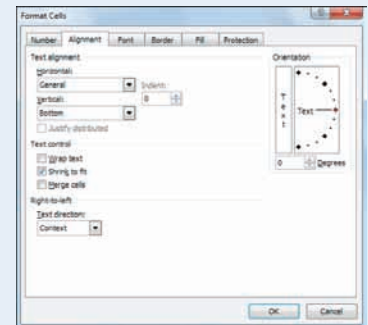
Add Borders to a Range

You can make a range stand out from the rest of your worksheet data by adding a border around the range. 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.
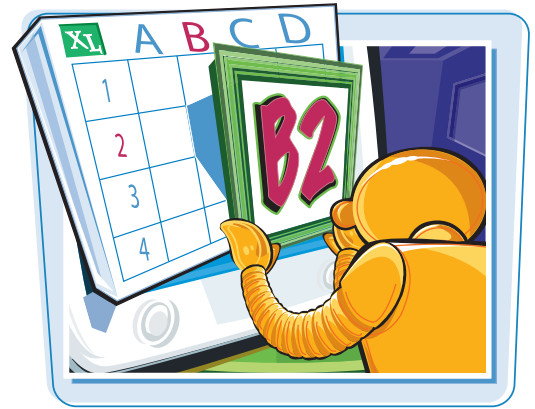
Add Borders to a Range

1 Select the range that you want to format.

2 Click the **Home** tab.

3 Click the **Borders** ⬚.

④ Click the type of border you want to use.
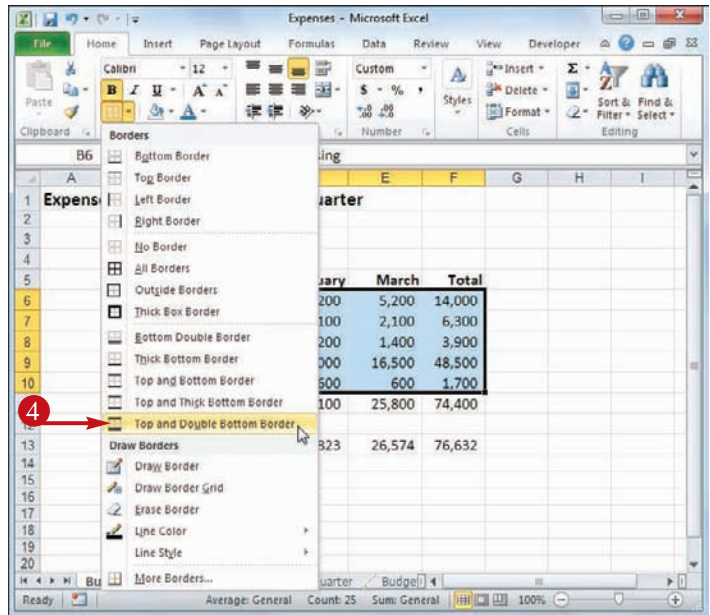
● Excel applies the border to the range.
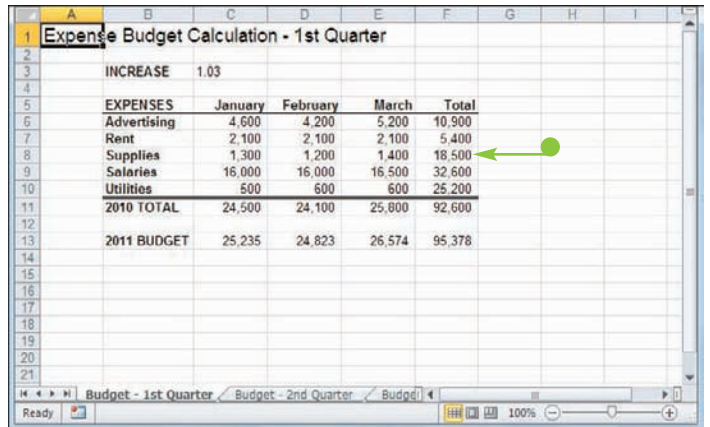
TIPS

How do I get my borders to stand out from the worksheet gridlines?

One way to make your borders stand out is to click the **Borders** ▾, click **Line Style**, and then click a thicker border style. You can also click **Line Color** and then click a color that is not a shade of gray. However, perhaps the most effective method is to turn off the worksheet gridlines. Click the **View** tab, and then in the Show group click the **Gridlines** check box (☑ changes to ☐).
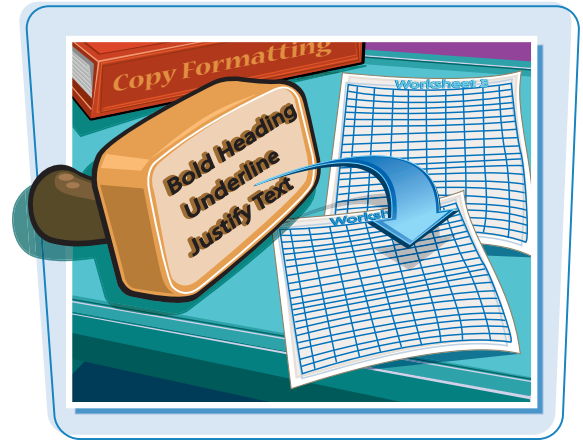
None of the border types is quite right for my worksheet. Can I create a custom border?

Yes. You can draw the 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.

Copy Formatting from One Cell to Another

You can save yourself a great deal of time by copying existing formatting to other areas of a worksheet. After you spend time formatting text or data, rather than spending time repeating the steps for other data, you can use the Format Painter tool to copy the formatting with a couple of mouse clicks.
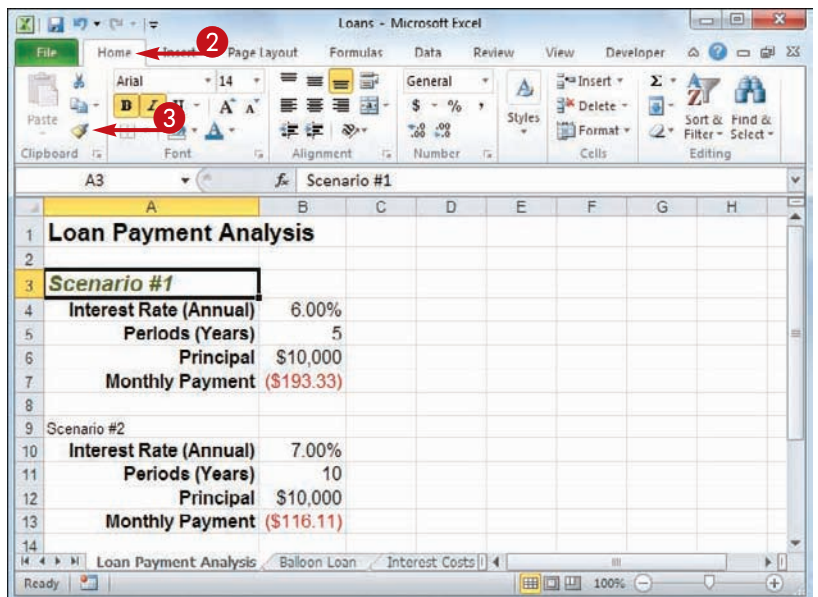
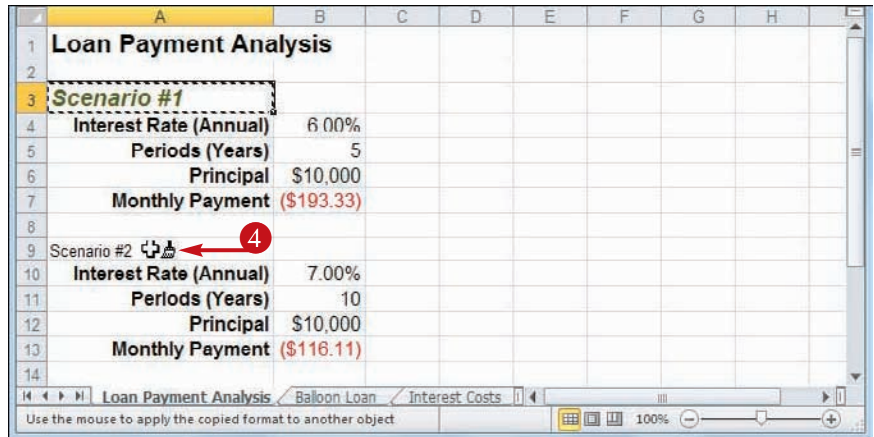1 Select the cell that has the formatting you want to copy.
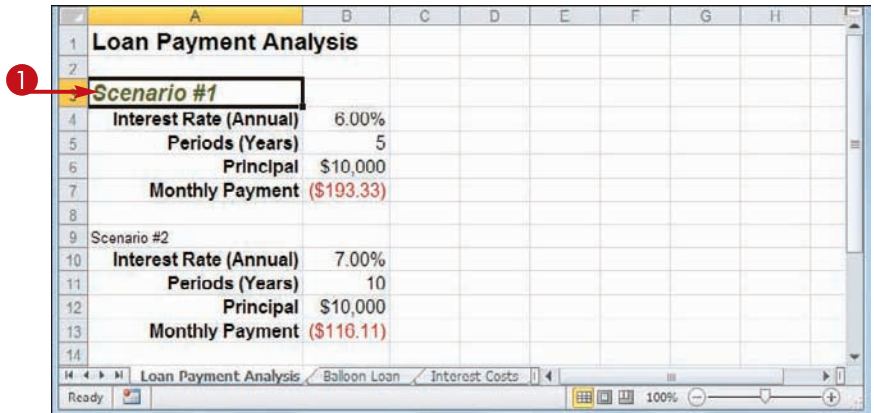
2 Click the **Home** tab.

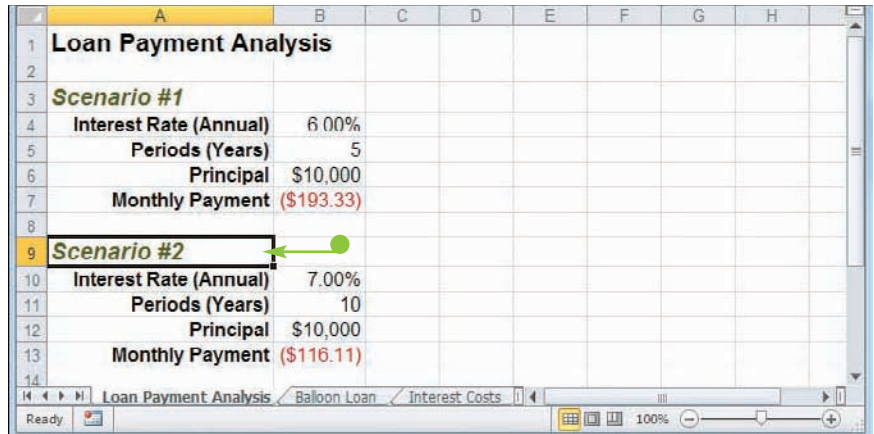3 Click **Format Painter** (🖌).

   ⬡ changes to ⬡🖌.

④ Click the cell to which you want to copy the formatting.

Note: If you want to apply the formatting to multiple cells, click and drag ⊞ over the cells.

● Excel copies the formatting to the cell.

Is there an easy way to copy formatting to multiple cells or ranges?

Yes. If the cells are together, you can click and drag over the cells to apply the copied formatting. If the cells or ranges are not together, Excel offers a shortcut that means you do not have to select the Format Painter multiple times to copy formatting to multiple ranges.

Click the cell that contains the formatting you want to copy, click the **Home** tab, and then double-click 🖌. Click each cell to which you want to copy the formatting, or click and drag over each range that you want to format. When you are done, click 🖌 to cancel the Format Painter command.

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.

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.
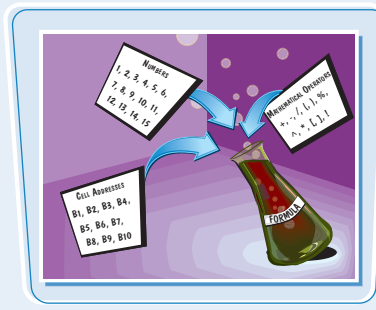
Formulas

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 equal sign (=) followed by one or more operands and operators. The equal 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 in the cell (13).

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.

The table at right lists the seven arithmetic operators that 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.

The table at right lists the six operators that 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. For example, 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). Therefore, a single formula can produce multiple answers, depending on the order in which you perform the calculations.

To solve this problem, Excel evaluates a formula according to a predefined order of precedence, which is determined by the formula operators, as shown in the table at right.

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 equal 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.
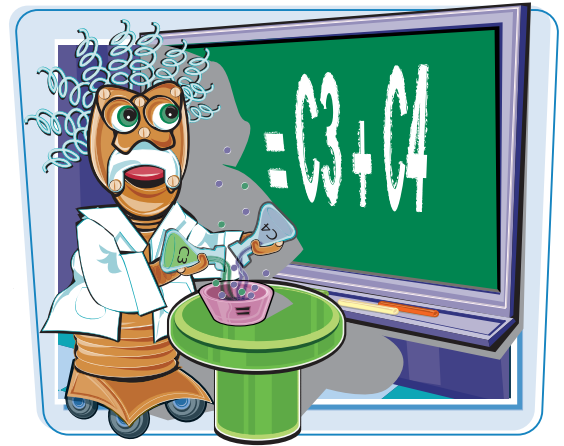
Build a Formula

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

2 Type **=**.

● 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.

● 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**.
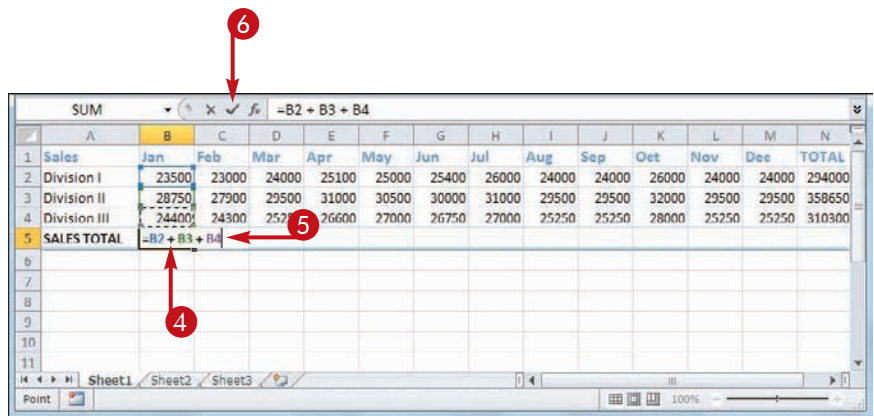
● Excel displays the formula result in the cell.
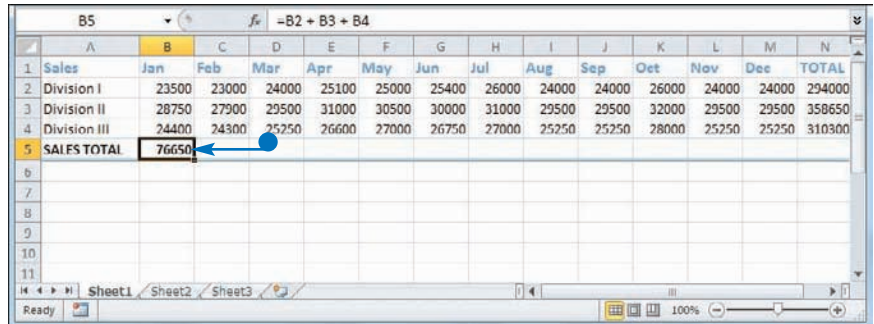
If Excel displays only the result of the formula, how do I make changes to the formula?

Excel displays the formula result in the cell, but it still 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. In both cases, press **Enter** when you finish editing the formula.
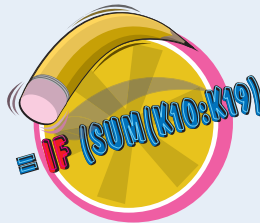
If I have many formulas, is there an easy way to view the formulas?

Yes. You can configure the worksheet to show the formulas instead of their results. Click **File** and then click **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 **Control** + **'**.

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.
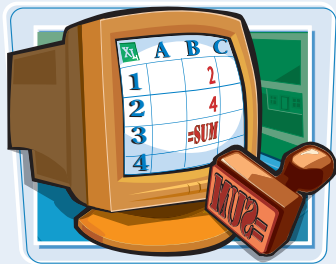
Function Advantages

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.
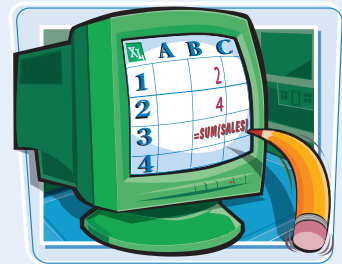
Mathematical Functions

The following table lists some common mathematical functions:

Function	Description
MOD(number,divisor)	Returns the remainder of number after dividing by divisor
PI( )	Returns the value Pi
PRODUCT(number1,number2,...)	Multiplies the specified numbers
RAND( )	Returns a random number between 0 and 1
RANDBETWEEN(number1,number2)	Returns a random number between the two numbers
ROUND(number,digits)	Rounds number to a specified number of digits
SQRT(number)	Returns the positive square root of number
SUM(number1,number2,...)	Adds the arguments

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.

To make it easy to choose the function you need and to add the appropriate arguments, Excel offers the Insert Function feature.
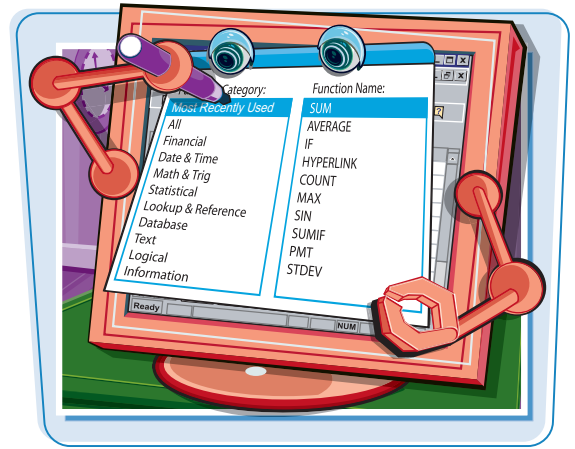
Add a Function to a Formula

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 (📈).
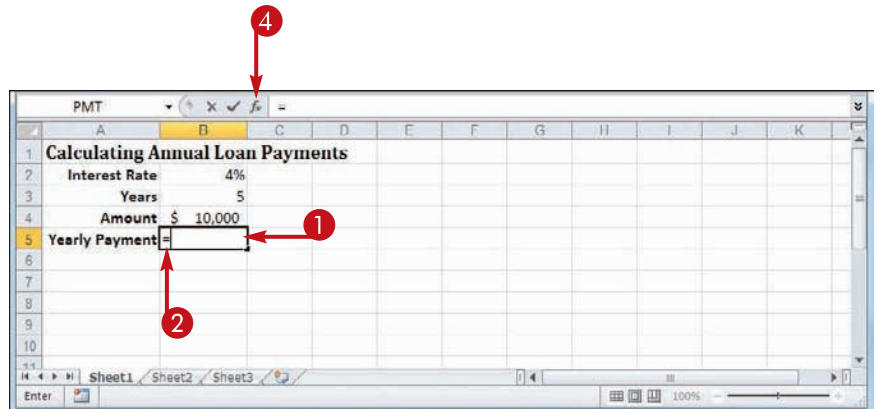
The Insert Function dialog box appears.

⑤ Click 🔽 and then click the category that contains the function you want to use.

⑥ Click the function.

⑦ Click **OK**.
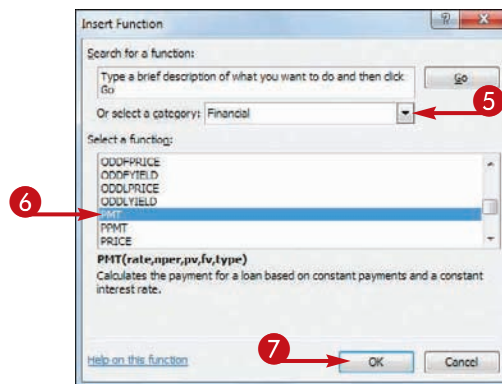
The Function Arguments dialog box appears.

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.

● The function result appears here.

11 Click **OK**.

● Excel adds the function to the formula.

● Excel displays the formula result.

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

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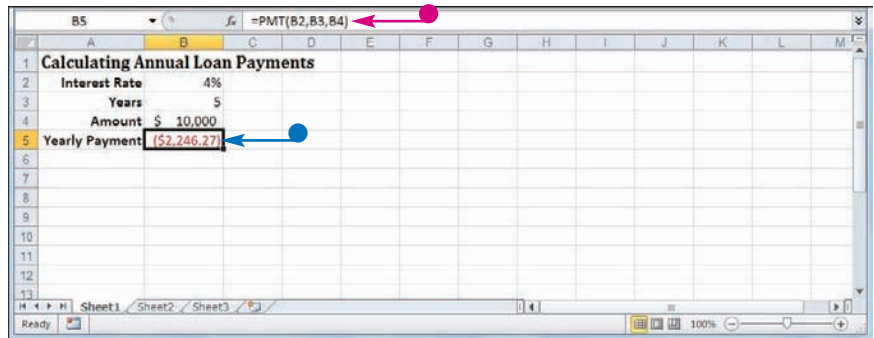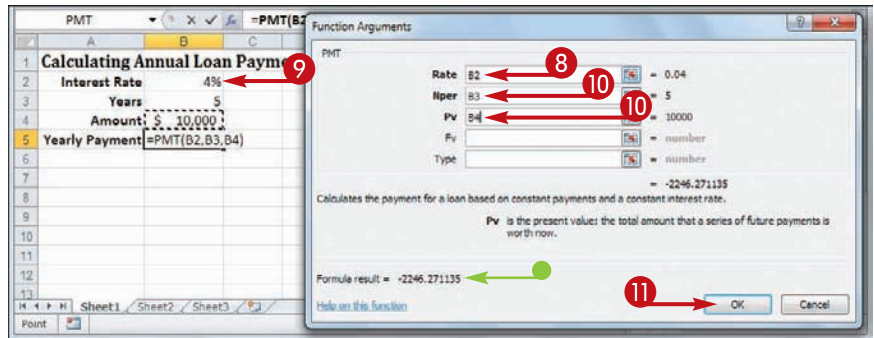
TIPS

Do I have to specify a value for every function argument?

Not necessarily. Some function arguments are required to obtain a result, but some are optional. 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 for the function, then you know you have entered all of the required arguments.

How do I calculate a monthly financial result if I only have yearly values?

This is a common problem. For example, if your loan payment worksheet contains an annual interest rate and a loan term in years, how do you calculate the monthly payment using the PMT function? You need to convert the rate and term to monthly values. That is, you divide the annual interest rate by 12, and you 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. When you use the SUM function in a formula, you can specify as the function's argument a reference to either a row or a column of numbers.
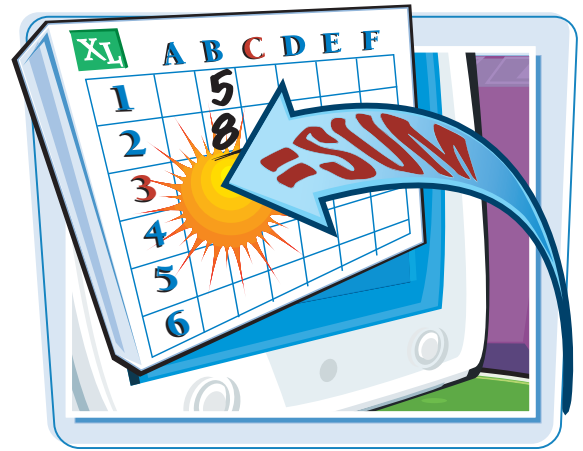
1 Click in the cell where you want the sum to appear.

2 Type **=sum(**.

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

Note: *In the function banner, bold arguments 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.

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

128

4 Type **)**.

5 Click ☑ or press **Enter**.

PMT	▼	× ✓ *fx*	=sum(C3:C21)					
	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	$540,484	$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				
22		TOTAL	=sum(C3:C21)					
23								

● Excel enters the formula.

● Excel displays the sum in the cell.

C22	▼	*fx*	=SUM(C3:C21)					
	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	$540,484	$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				
22		TOTAL	$13,414,518					
23								

TIPS

Can I use the SUM function to total rows and columns at the same time?

Yes, 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.

Can I use the SUM function to total only certain values in a row or column?

Yes. 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. This tool adds a SUM function formula to a cell and automatically adds the function arguments based on the structure of the worksheet data.
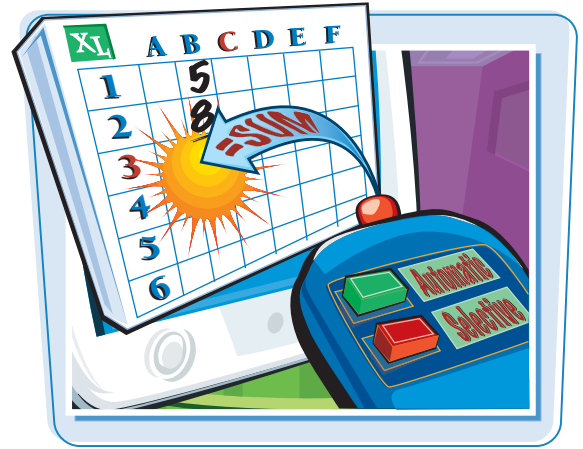
① Click in the cell where you want the sum to appear.

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 (∑).

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

● Excel adds a SUM function formula to the cell.

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

● 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**.

● Excel displays the sum.
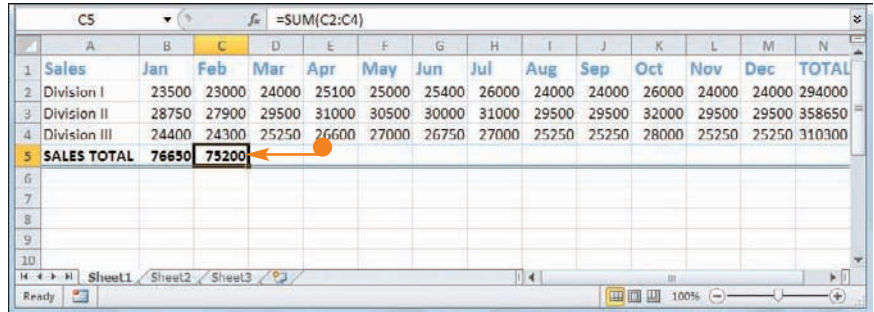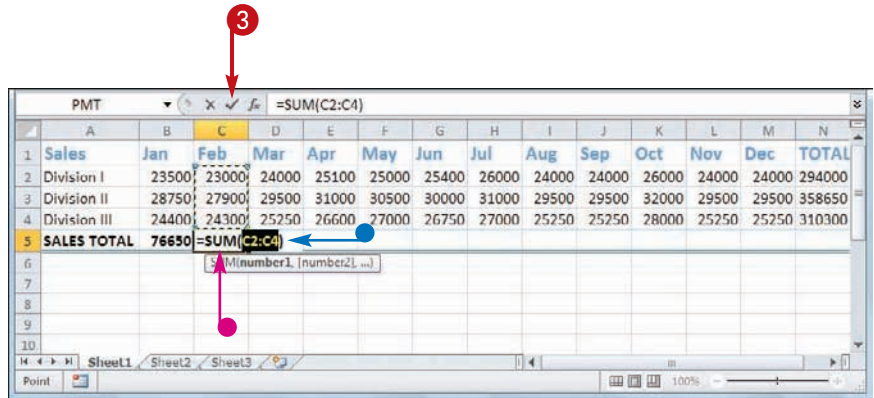
TIPS

Is there a way to see the sum of a range without adding an AutoSum formula?

Yes. You can use Excel's status bar to do this. 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.

Is there a faster way to add an AutoSum formula?

Yes. If you know the range you want to sum, and that range is either 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, but the formula =SUM(Expenses) is immediately obvious.

See Chapter 4 to learn how to define names for ranges in Excel.

Add a Range Name to a Formula

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.
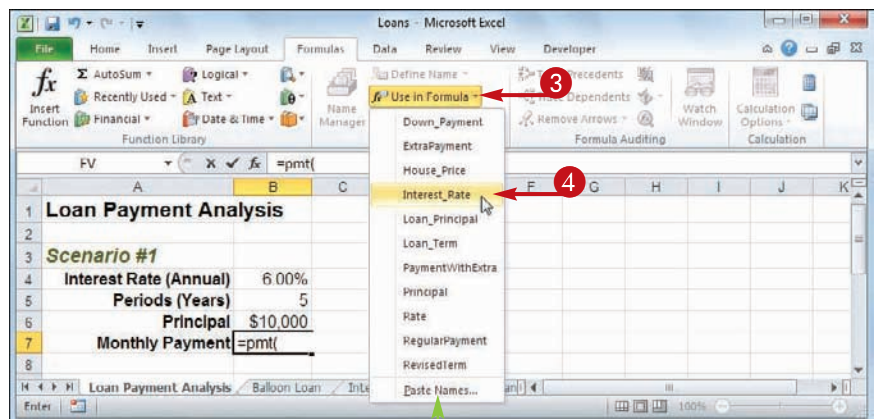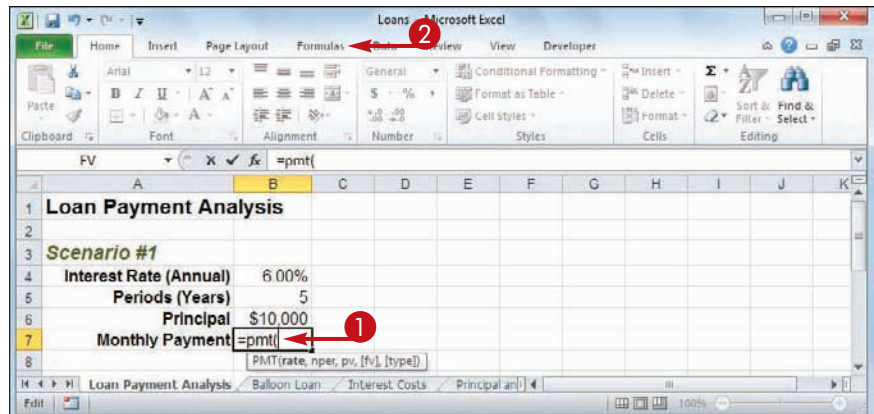
● Excel inserts the range name into the formula.

5 Type any operands and operators you need to complete your formula.
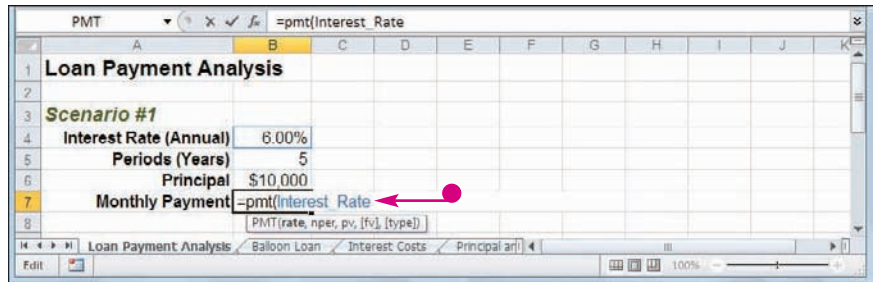
● If you need to insert other range names into your formula, repeat Steps **2** to **5** for each name.

6 Click ☑ or press **Enter**.

Excel calculates the formula result.
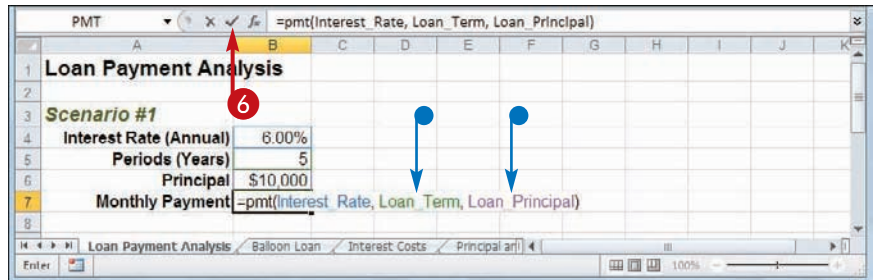
If I create a range name after I build my formula, is there an easy way to convert the range reference to the range name?

Yes. Excel offers an Apply Names feature that replaces range references with their associated range names throughout a worksheet. Click the **Formulas** tab, click the **Define Name** ▾, and then click **Apply Names** to open the Apply Names dialog box. In the Apply names list, 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.

Do I have to use the list of range names to insert range names into my formulas?

No. As you build your formula, you can type the range name by hand, if you know it. Alternatively, as you build your formula, click the cell or select the range that has the defined name, and Excel adds the name to your formula instead of the range address. If you want to work from a list of the defined range names, click an empty area of the worksheet, click **Formulas**, click **Use in Formula**, click **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.

Reference Another Worksheet Range in a Formula

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.

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

❸ Select the range you want to use.

❹ Press Ctrl + Page up until you return to the original worksheet.

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

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

❻ Click ✓ or press Enter.

Excel calculates the formula result.

TIPS

Can I reference a range in another worksheet by hand?

Yes. Rather than selecting the other worksheet range with your mouse, you can type the range reference directly into your formula. 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**.
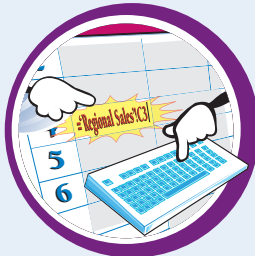
Can I reference a range in another workbook in my formula?

Yes. First make sure the workbook you want to reference is open. When you reach the point in your formula where you want 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 then select the range. Click 🗔 and then click the original workbook to switch back to it. Excel adds the other workbook range reference to your formula.
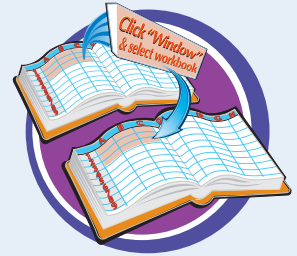
Move or Copy a Formula

You can restructure or reorganize 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.
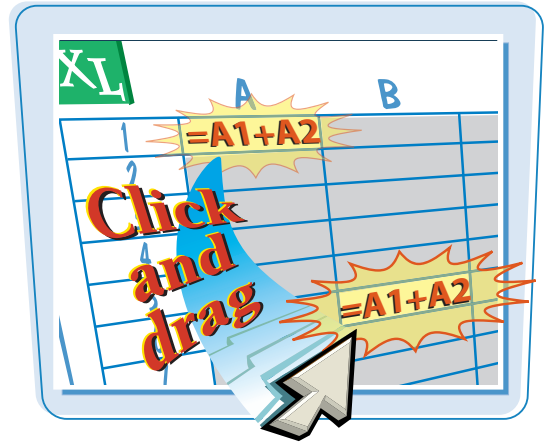
Move or Copy a Formula

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 ↘.

● Excel displays an outline of the cell.

● Excel displays the address of the new location.

4. Release the mouse button.

● Excel moves the formula to the new location.

● Excel does not change the formula's range references.
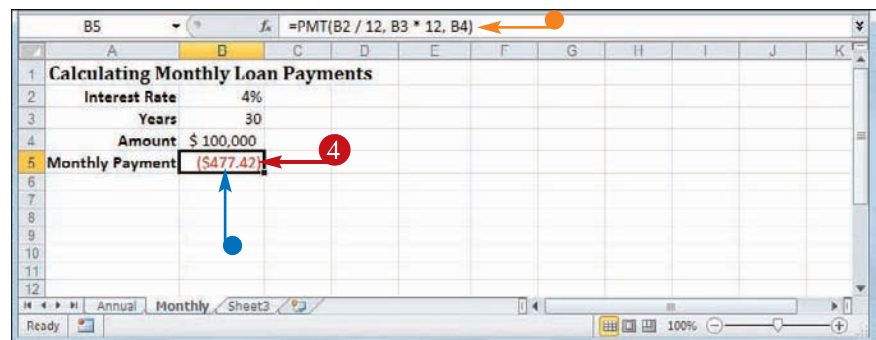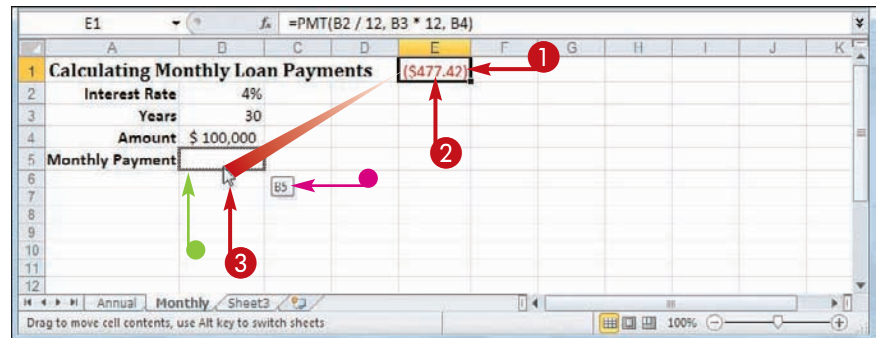
Copy a Formula

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.

● Excel displays an outline of the cell.

● Excel displays the address of the new location.

5 Release the mouse button.

6 Release **Ctrl**.

● Excel creates a copy of the formula in the new location.

● 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. See "Switch to Absolute Cell References" for an example.
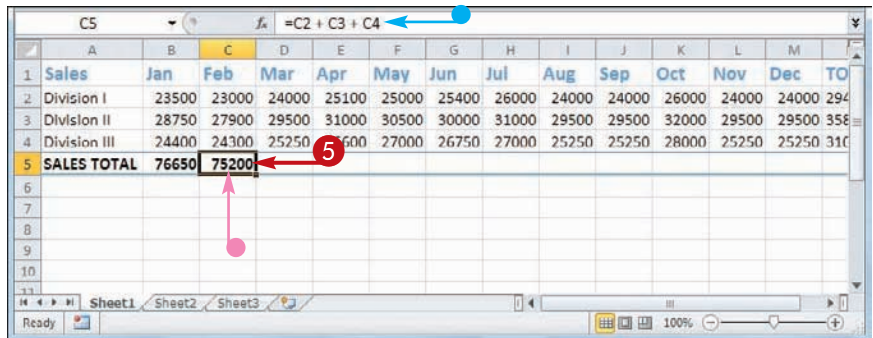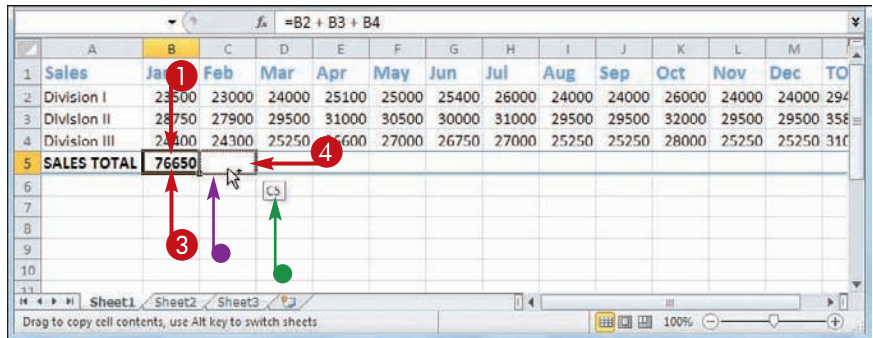
TIP

Why does Excel adjust the range references when I copy a formula?

When you make a copy of a formula, Excel assumes that you want that copy to reference different ranges than in the original formula. In particular, Excel assumes that the ranges you want to use in the new formula are positioned relative to the ranges used in the original formula, and that the relative difference is equal to the number of rows and columns you dragged the cell to create the copy.

For example, suppose your original formula references cell A1, and you make a copy of the formula in the cell one column to the right. In that case, Excel also adjusts the cell reference one column to the right, so it becomes B1 in the new formula. To learn how to control this behavior, see "Switch to Absolute Cell References."
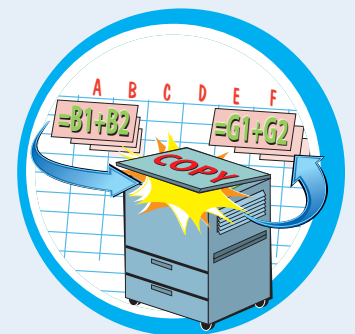
Switch to Absolute Cell References

You can make some formulas easier to copy by switching to absolute cell references. When you use a regular cell address — called a *relative cell reference* — such as A1 in a formula, Excel adjusts that reference when you copy the formula to another location. To prevent that reference from changing, you must change it to the *absolute cell reference* format: $A$1.

See the tip on the following page to learn more about the difference between relative and absolute cell references.

Switch to Absolute Cell References

1. Double-click the cell that contains the formula you want to edit.

2. Select the cell reference you want to change.

3. Press F4.
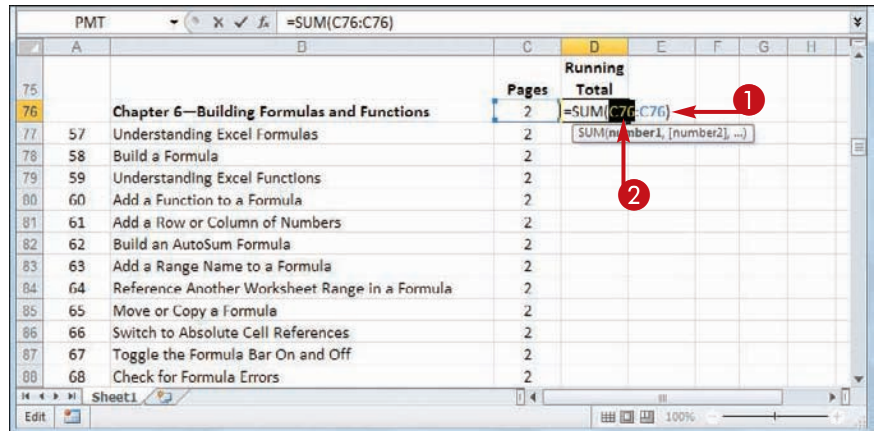
● Excel switches the address to an absolute cell reference.

4. Repeat Steps **2** and **3** to switch any other cell addresses that you require in the absolute reference format.

5. Click ✓ or press Enter.
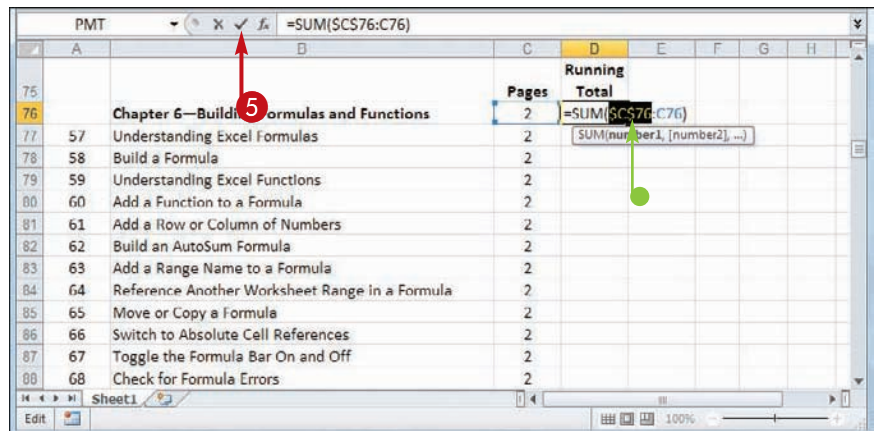
● Excel adjusts the formula.

❻ Copy the formula.

Note: See "Move or Copy a Formula," earlier in this chapter, to learn how to copy a formula.
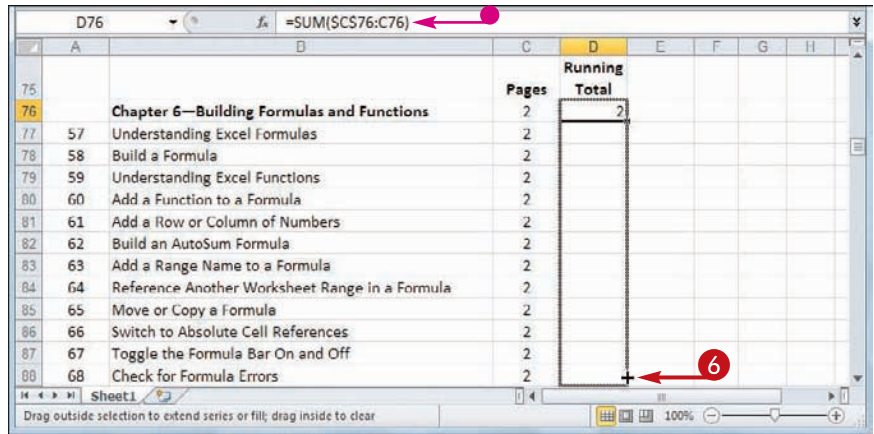
● Excel preserves the absolute cell references in the copied formulas.
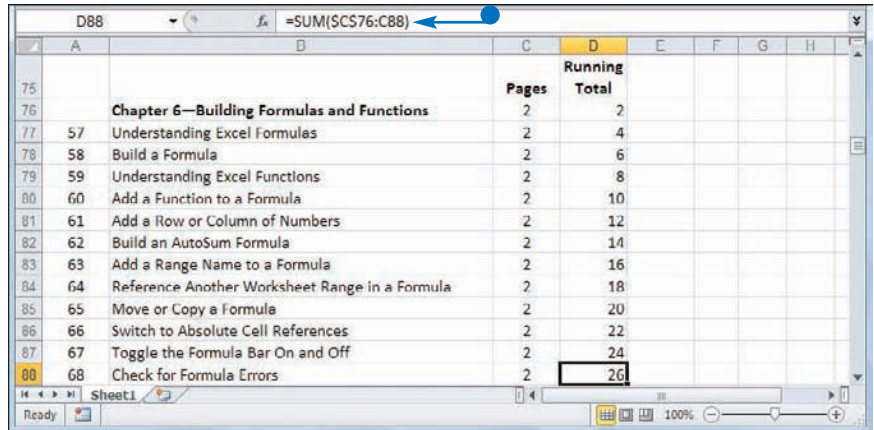
What is the difference between absolute cell references and relative cell references?

When you use a cell reference in a formula, Excel treats that reference as being relative to the formula's cell. For example, if the formula is in B5 and it references cell A1, Excel effectively treats A1 as the cell four rows up and one column to the left. If you copy the formula to cell D10, then the cell four rows up and one column to the left now refers to cell C6, so in the copied formula Excel changes A1 to C6. If the original formula instead refers to $A$1, then the copied formula in cell D10 also refers to $A$1.

How do I return a cell address back to a relative cell reference?

The F4 keyboard technique actually runs the address through four different reference formats. Press F4 once to switch to the absolute cell reference format, such as $A$1. Press F4 again to switch to a mixed reference format that uses a relative column and absolute row (A$1). Press F4 a third time to switch to a mixed reference format that uses an absolute column and relative row ($A1). Finally, press F4 a fourth time to return to the relative cell reference (A1).

Toggle the Formula Bar On and Off

You can give yourself a bit more room in the Excel window by hiding the Formula bar. This is a good idea if you never use the Formula bar to enter or edit cell data, and you never use Formula bar features such as the Name box and the Insert Function button.

After hiding the Formula bar, if you find that you need it, you can quickly restore it to the Excel window.
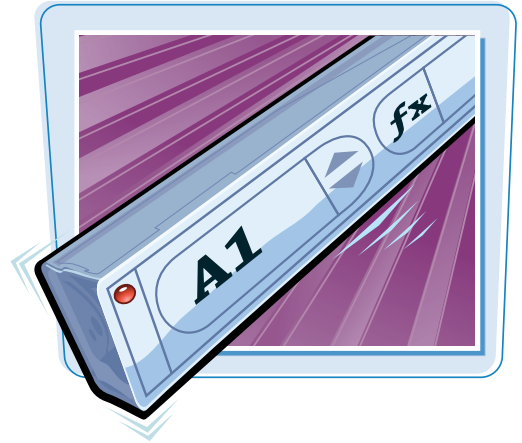
Toggle the Formula Bar On and Off

Hide the Formula Bar

1 Click the **View** tab.

2 Click **Show**.

Note: *If you have Excel maximized, you may not see the Show button, so skip to Step **3**.*

3 Click **Formula Bar** (☑ changes to ☐).
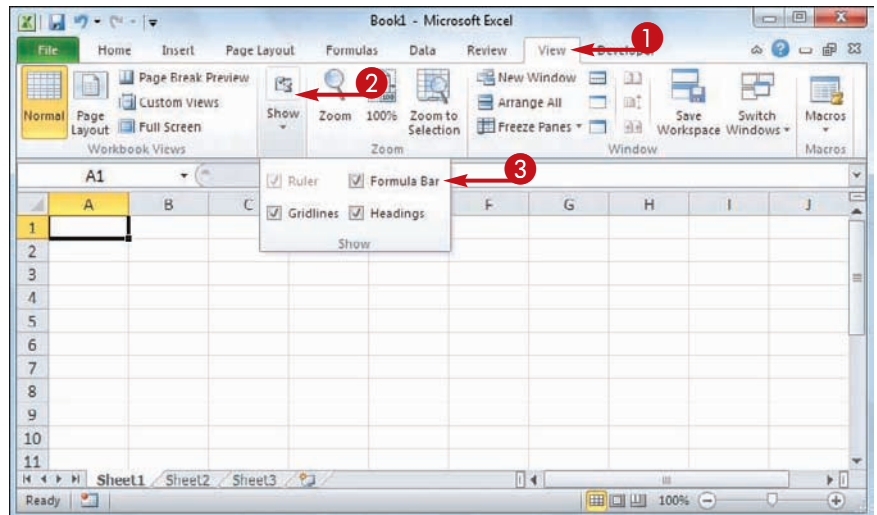
● Excel removes the Formula bar from the window.
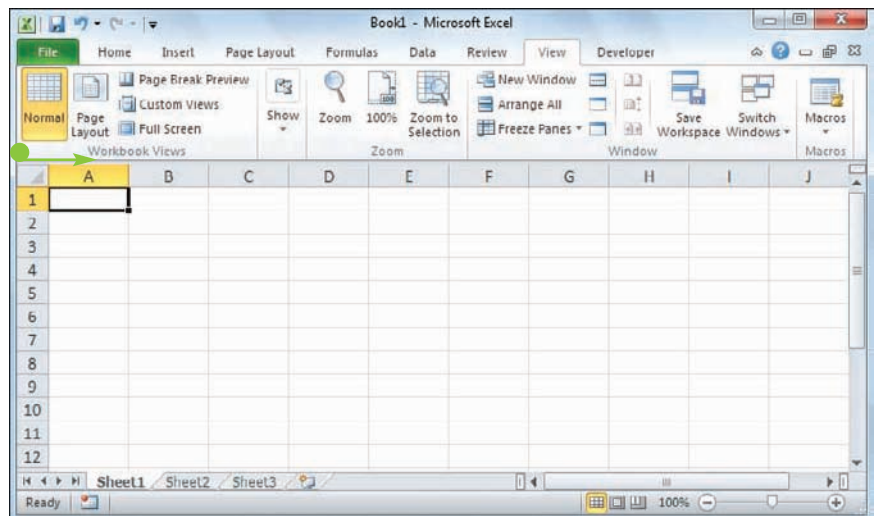
Display the Formula Bar

1. Click the **View** tab.

2. Click **Show**.

3. Click **Formula Bar** (☐ changes to ☑).
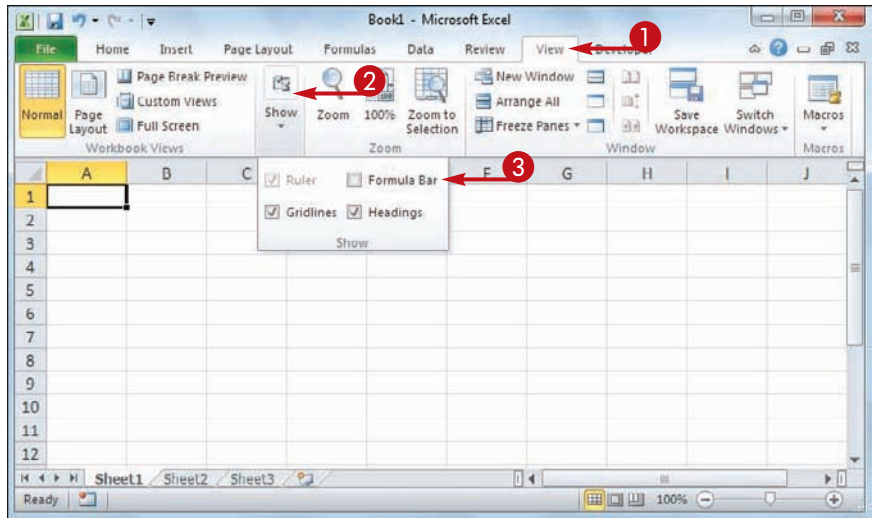
● Excel restores the Formula bar.
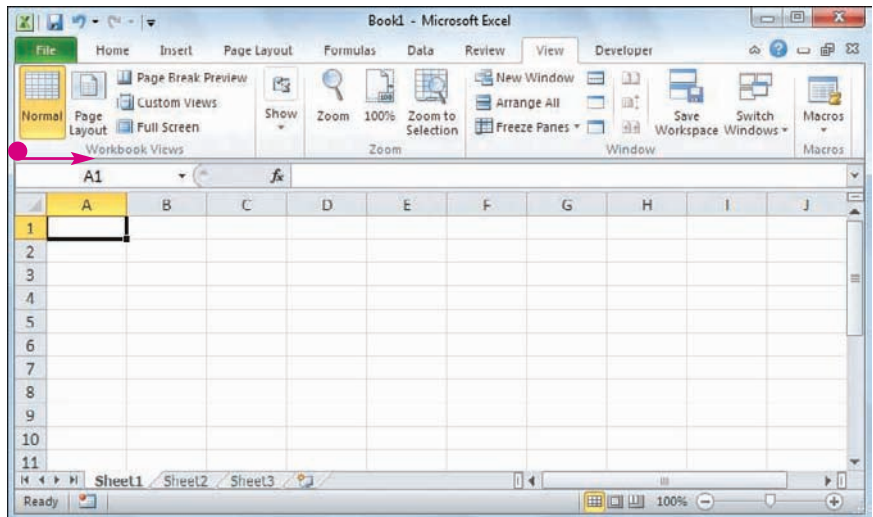
TIP

If I have a long entry in a cell, I only see part of the entry in the Formula bar. Can I fix that?

Yes, you can use Excel's Expand Formula Bar feature to expand the formula to show multiple lines of data instead of just a single line. On the right side of the Formula bar, click the **Expand Formula Bar** button (⊽) or press Ctrl + Shift + U to increase the size of the Formula bar as shown here. If you still cannot see the entire cell entry, either click and drag the bottom edge of the Formula bar to expand it even further, or click ⊡ and ⊡ to scroll through the entry.

When you are done, click **Collapse Formula Bar** (⊼) or press Ctrl + Shift + U to return the Formula bar to its normal state.
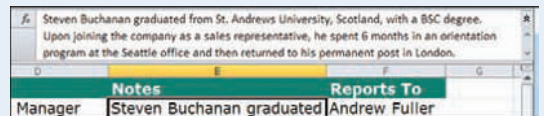
Troubleshoot Formula Errors

Despite your best efforts, a formula may return an inaccurate or erroneous result. To help you fix such problem formulas, there are a few troubleshooting techniques you can use, such as checking your references, function arguments, and parentheses. If Excel displays an error instead of a result, then you also need to understand these error messages so that you can correct the problem.
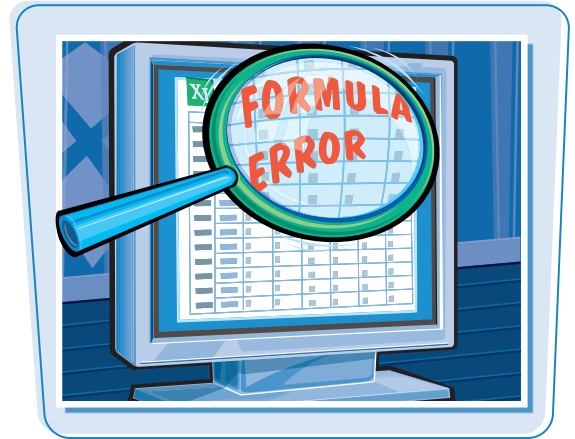
Confirm Range References

If your formula is returning an unexpected or inaccurate result, first check your range and cell references. For example, if your data is in the range A1:A10, but your formula uses A1:A9, then the result will be inaccurate. The easiest way to check the range and cell references is to double-click the cell containing the formula. Excel highlights the ranges referenced by the formula, so you can see at a glance which ranges your formula is using.

Confirm Range Data

If your formula is correct but it is still producing unexpected results, the problem might lie with the data instead of the formula. Double-check your range data to make sure that it is accurate and up to date.
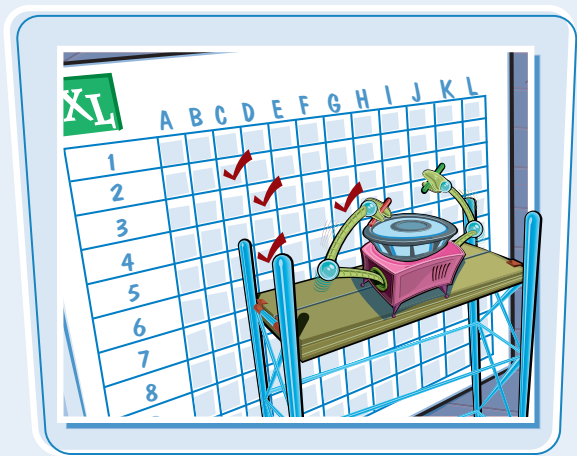
Confirm Punctuation

Many formulas produce inaccurate or erroneous results because of incorrect punctuation. Look for missing colons in range references; missing or misplaced quotation marks in string data or links to other worksheets or workbooks; and missing commas in function arguments. Also check parentheses to make sure you have one closing parenthesis for each opening parenthesis, and that your parentheses are in the correct locations within the formula.
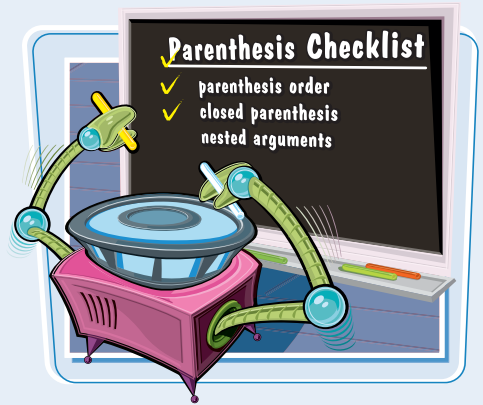
Confirm Operator Precedence

The order in which Excel calculates numeric formulas can make a big difference to the final result, particularly if you are mixing addition and subtraction with multiplication and division. Confirm the correct order of precedence that your formula requires; compare this with Excel's natural order of operator precedence, as described earlier in "Understanding Excel Formulas," and then use parentheses to force the correct order if necessary.
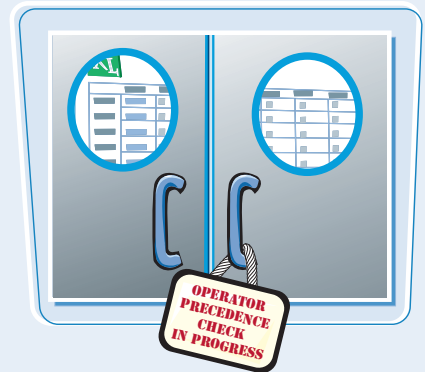
Understand Excel's Error Values

Excel may display an error value instead of a formula result. The following table lists the six main error types:

Error	Description
#DIV/0	Your formula is dividing by 0. Check the divisor input cells for values that are either 0 or blank.
#N/A	Your formula could not return a legitimate result. Check that your function arguments are appropriate for each function.
#NAME?	Your formula uses a name that Excel does not recognize. Check your range names and function names.
#NUM!	Your formula uses a number inappropriately. Check the arguments for your mathematical functions to make sure they use the correct types of numbers.
#REF#	Your formula contains an invalid cell reference. This usually occurs when you delete a cell referenced by a formula. Adjust the formula to use a different cell.
#VALUE!	Your formula uses an inappropriate value in a function argument. Check your function arguments to make sure they use the correct data type.

Manipulating Excel Worksheets
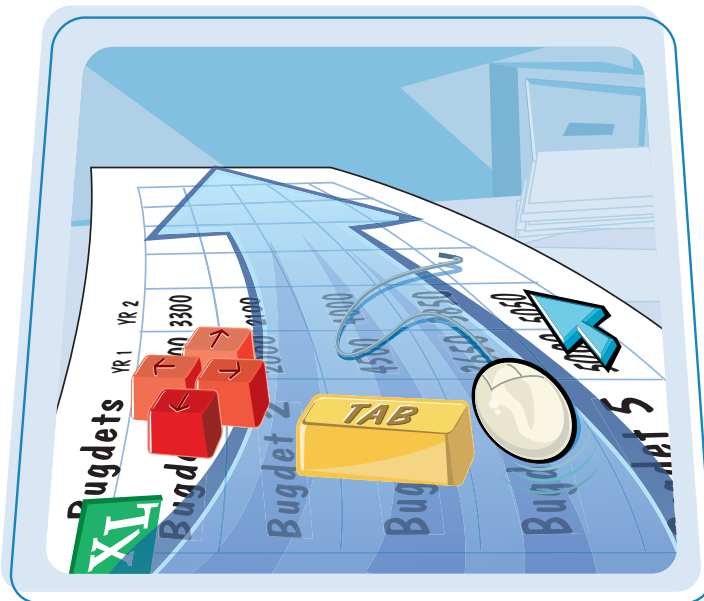
An Excel worksheet is where you enter your headings and data and build your formulas. You will spend most of your time in Excel operating within a worksheet, so you need to know how to navigate and perform worksheet tasks such as renaming, moving, copying, and deleting.

Navigate a Worksheet

You can use a few keyboard techniques that make it easier to navigate data after it is entered in a worksheet.

It is usually easiest to use your mouse to click in the next cell you want to work with. However, if you are entering data, then using the keyboard to navigate to the next cell is often faster.
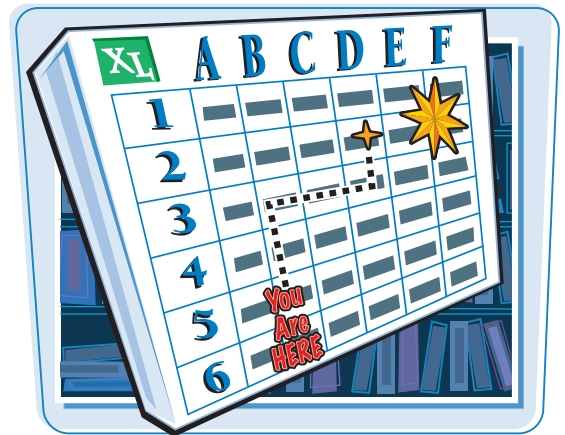
Keyboard Techniques for Navigating a Worksheet	
Press	**To Move**
←	Left one cell
→	Right one cell
↑	Up one cell
↓	Down one cell
Home	To the beginning of the current row
Page down	Down one screen
Page up	Up one screen
Alt + Page down	One screen to the right
Alt + Page up	One screen to the left
Ctrl + Home	To the beginning of the worksheet
Ctrl + End	To the bottom right corner of the used portion of the worksheet
Ctrl + arrow keys	In the direction of the arrow to the next nonblank cell if the current cell is blank, or to the last nonblank cell if the current cell is not blank

Rename a Worksheet

You can make your Excel workbooks easier to understand and navigate by providing each worksheet with a name that reflects the contents of the sheet.

Excel provides worksheets with generic names such as Sheet1 and Sheet2, but you can change these to more descriptive names such as Sales 2010, Amortization, or Budget Data.
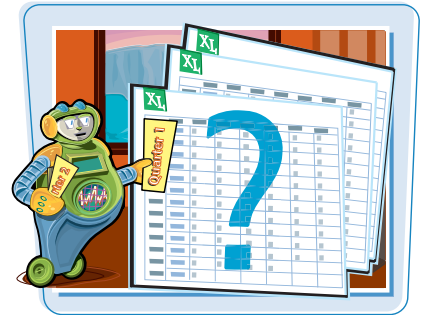
Rename a Worksheet

1 Display the worksheet you want to rename.

2 Click the **Home** tab.

3 Click **Format**.

4 Click **Rename Sheet**.

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

● Excel opens the worksheet name for editing and selects the text.
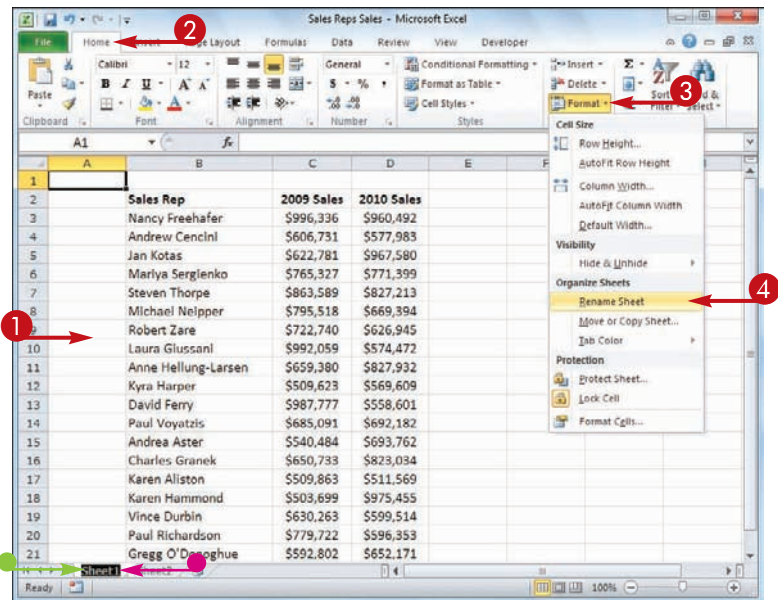
5 If you want to edit the existing name, press either ← or → to deselect the text.

6 Type the new worksheet name.

7 Press **Enter**.

Excel assigns the new name to the worksheet.
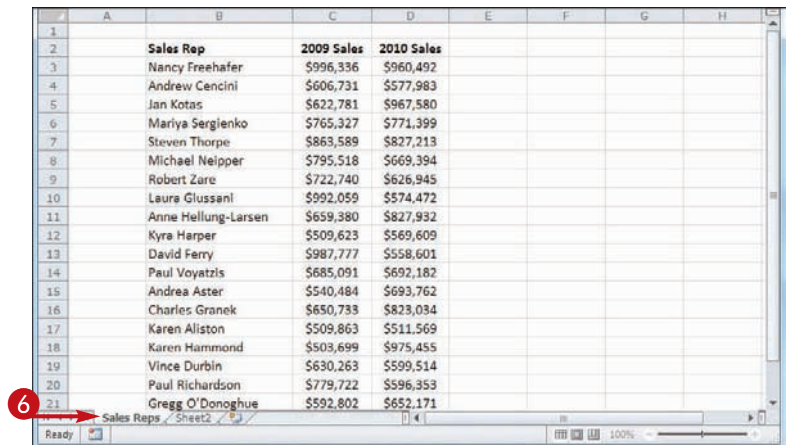
Create a New Worksheet

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

In most cases, you will add a blank worksheet, but Excel also comes with several predefined worksheet templates that you can use.

Create a New Worksheet

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** ⏷.

4 Click **Insert Sheet**.
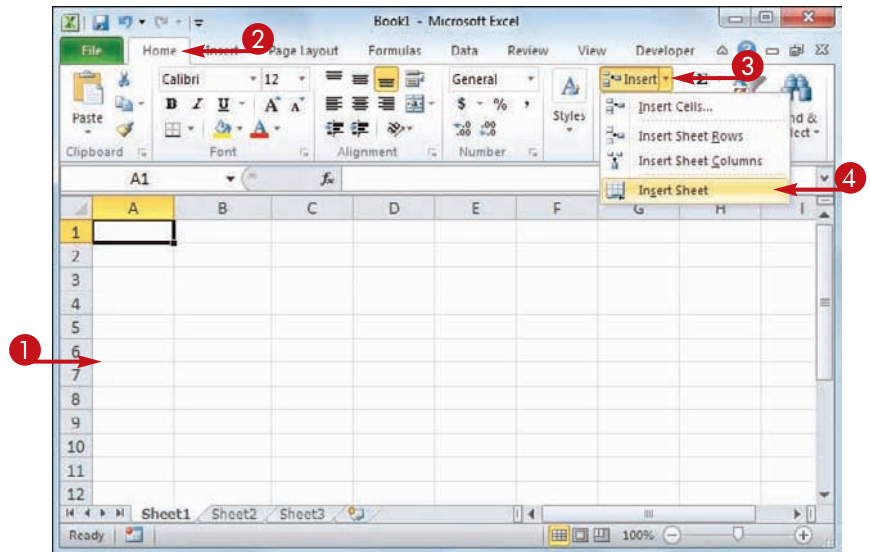
● Excel inserts the worksheet.

Note: *You can also insert a blank worksheet by pressing* Shift + F11 .
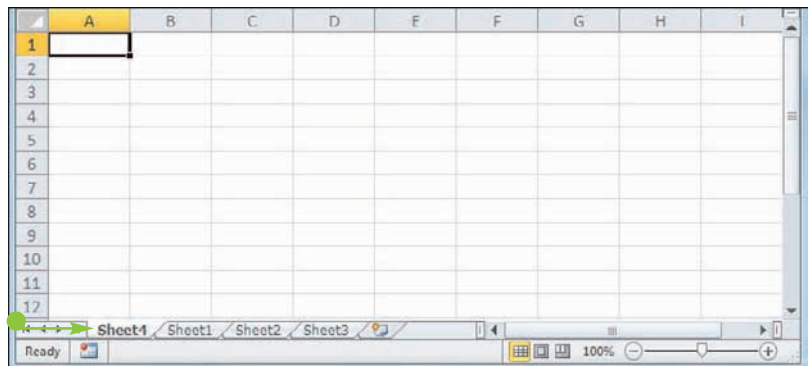
Insert a Worksheet from a Template

1 Open the workbook to which you want to add the worksheet.

2 Right-click a worksheet tab.

3 Click **Insert**.
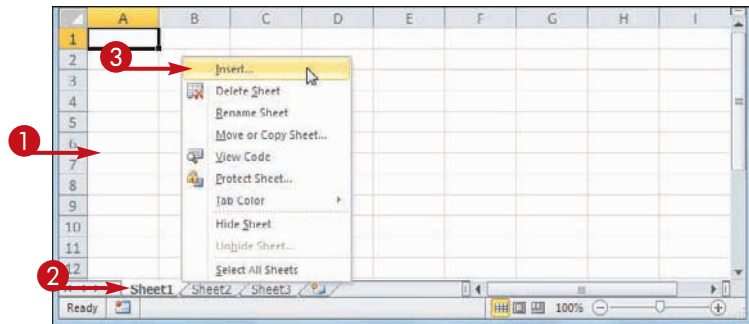
The Insert dialog box appears.

4 Click the **Spreadsheet Solutions** tab.

5 Click the type of worksheet you want to add.

● You can also click **Templates on Office Online** to download worksheet templates from the Web.

6 Click **OK**.
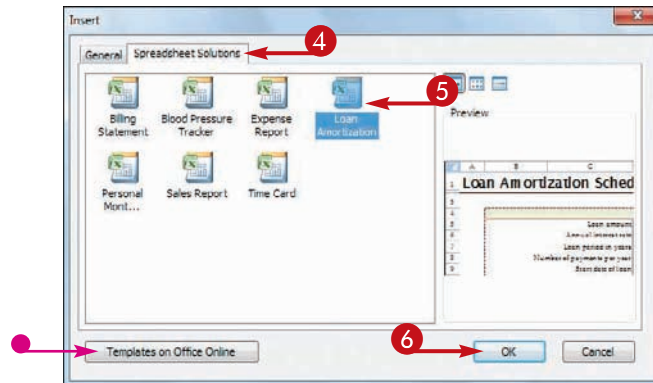
● Excel inserts the worksheet.
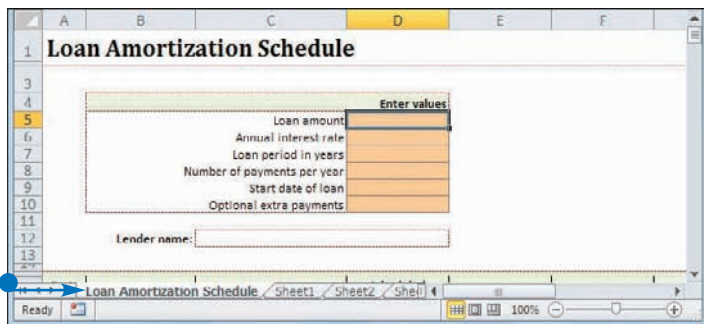
Is there an easier way to add a blank worksheet?

Yes. Open the workbook to which you want to add the worksheet, and then click the **Insert Worksheet** button (📄).

● Click 📄.
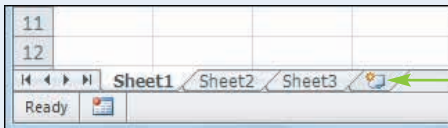
How do I navigate from one worksheet to another?

Click the tab of the worksheet you want to use. 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:

⏮	Move to the first worksheet.
◀	Move to the previous worksheet.
▶	Move to the next worksheet.
⏭	Move to the last worksheet.

Move a Worksheet

You can organize an Excel workbook and make it easier to navigate by moving your worksheets to different positions within the workbook. You can also move a worksheet to another workbook.
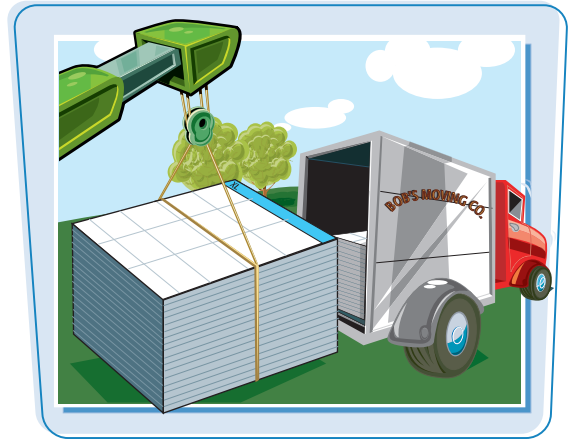
Move a Worksheet

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**.

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

The Move or Copy dialog box appears.

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.

When Excel moves the worksheet, it will appear to the left of the sheet you selected in Step **7**.

8 Click **OK**.

● Excel moves the worksheet.
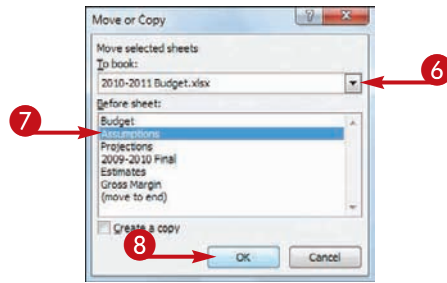
	A	B	C	D	E	F	G	H	I
1		Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter
2	*Sales*								
3	Division I	21,620	21,160	22,080	64,860	23,092	23,000	23,368	69,460
4	Division II	26,450	25,576	27,140	79,166	28,520	28,060	27,600	84,180
5	Division III	22,448	22,080	23,230	67,758	24,472	24,840	24,610	73,922
6	SALES 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

Budget / 2009-2010 Final / Assumptions / Projections / Estimates / G

Ready   100%

TIP

Is there an easier way to move a worksheet within the same workbook?

Yes. It is usually much easier to use your mouse to 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 ⯆.

● 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.

21	
22	

Budget / Projections / 2009-2010 Final / Estimates

Ready
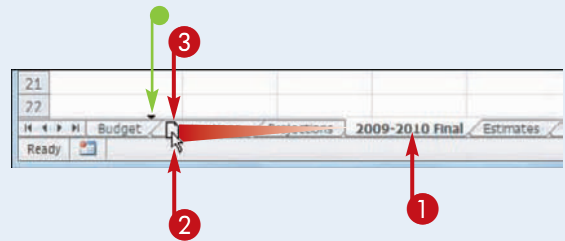
Excel enables you to make a copy of a
worksheet, which is a useful technique if you
require a new worksheet that is similar to an
existing worksheet. You can copy the sheet to
the same workbook or to another workbook.
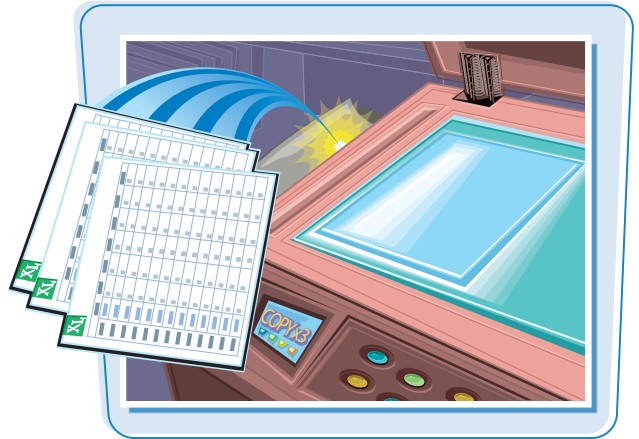
Copy a Worksheet

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**.

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

The Move or Copy dialog box
appears.
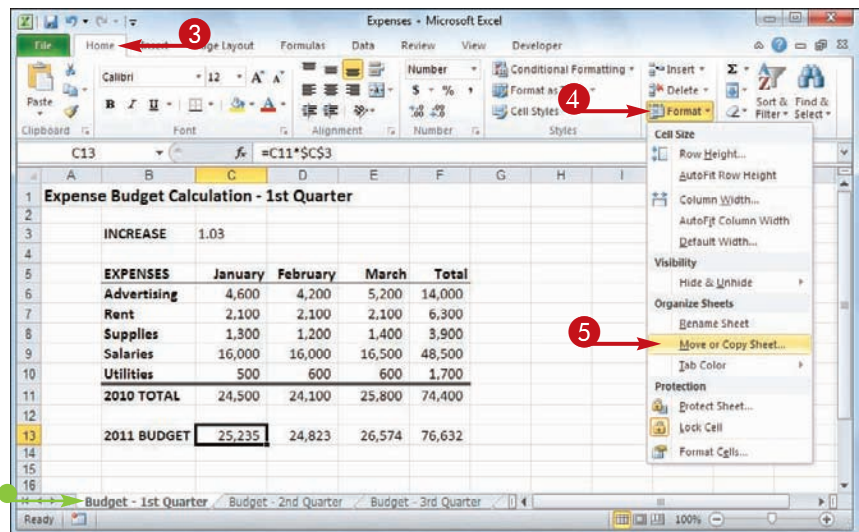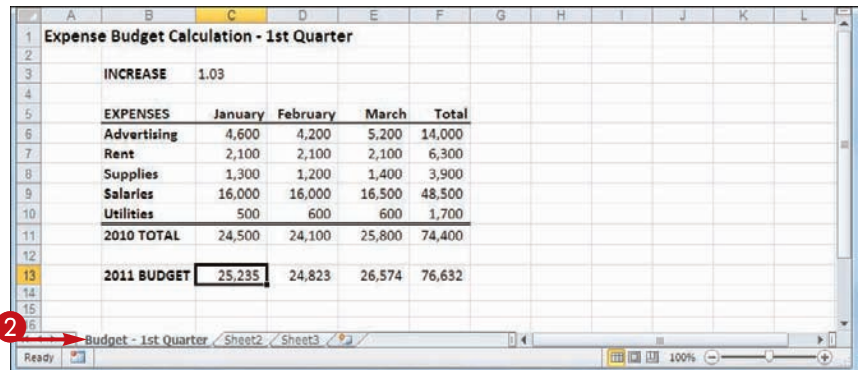
6 If you want to copy the sheet to another workbook, click the **To book** ⏷ and then click the workbook.

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

When Excel copies the worksheet, the copy will appear to the left of the sheet you selected in Step **7.**

8 Click the **Create a copy** check box (☐ changes to ☑).

9 Click **OK**.

● Excel copies the worksheet.

● Excel gives the new worksheet the same name as the original, but with (2) appended.
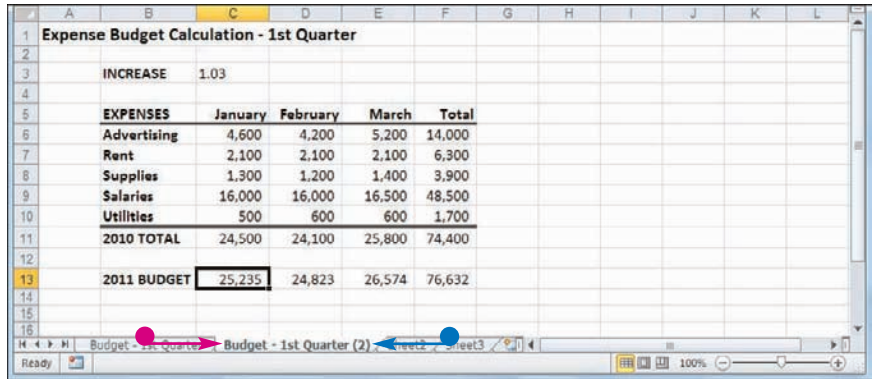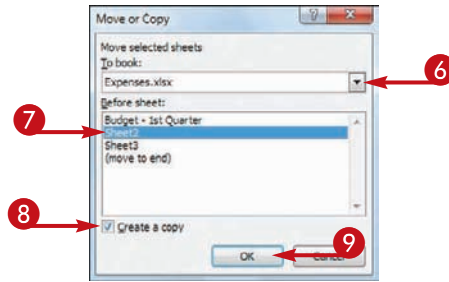
Note: See "Rename a Worksheet" earlier in this chapter to learn how to edit the name of the copied worksheet.

TIP

Is there an easier way to copy a worksheet within the same workbook?
Yes. It is usually much easier to use your mouse to copy a worksheet within the same workbook:

1 Move ↳ over the tab of the worksheet you want to copy.

2 Hold down **Ctrl**.

3 Click and drag the worksheet tab left or right.

   ↳ changes to ↳.

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

4 When you have the worksheet positioned where you want it, drop the worksheet tab.
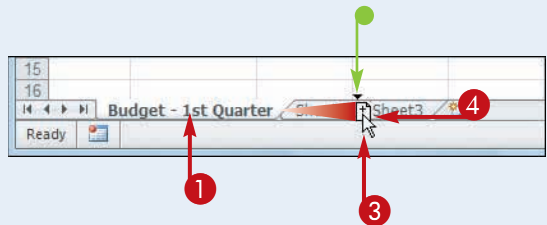
   Excel copies the worksheet.

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

You cannot undo a worksheet deletion, so check the worksheet contents carefully before proceeding with the deletion.

Delete a Worksheet

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

② Click the **Home** tab.

③ Click the **Delete** ▾.

④ Click **Delete Sheet**.

● 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.

Microsoft Office Excel

⚠ Data may exist in the sheet(s) selected for deletion. To permanently delete the data, press Delete.

5 → Delete   Cancel

	A	B	C	D	E	F	G	H	I	J
1	**Gross Margin Calculation**									
2										
3	Sales	892,050								
4	Expenses	558,014								
5	Gross Margin	37%								

Assumptions / Projections / 2009-2010 Final / **Gross Margin**

Ready   100%

TIP
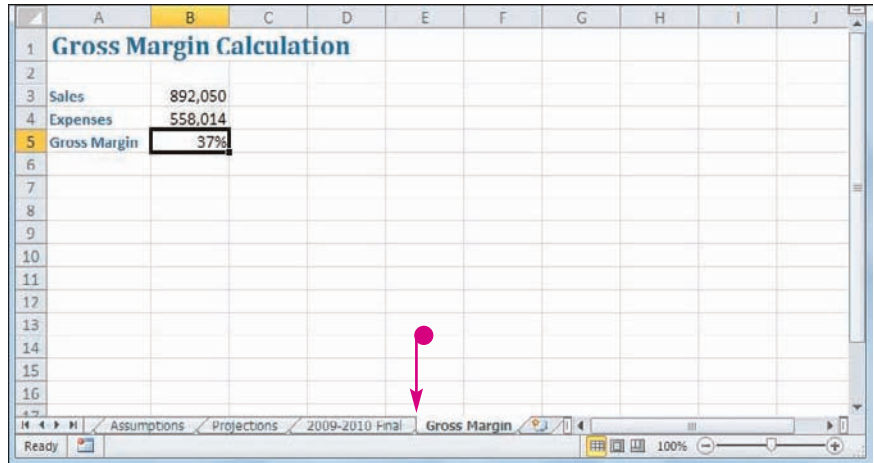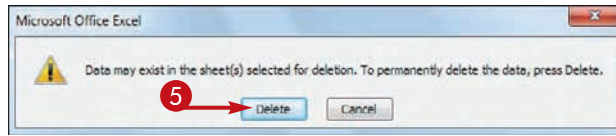
I have several worksheets I need to delete. Do I have to delete them individually?

No. You can select all the sheets you want to remove and then run the deletion. To select multiple worksheets, click the tab of one of the worksheets, hold down **Ctrl**, and then click the tabs of the other worksheets.

If your workbook has many worksheets and you want to delete most of them, an easy way to select the sheets is to right-click any worksheet tab and then click **Select All Sheets**. Hold down **Ctrl**, and then click the tabs of the worksheets that you do not want to delete.

After you have selected your worksheets, follow Steps **3** to **5** to delete all the selected worksheets at once.

Change the Gridline Color

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

Changing the gridline color 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.
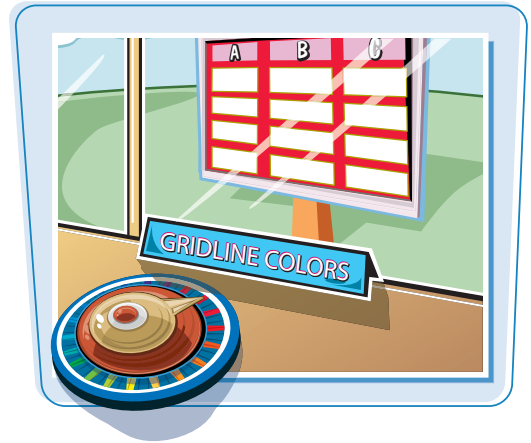
GRIDLINE COLORS

Change the Gridline Color

1 Click the tab of the worksheet you want to customize.

2 Click the **File** tab.
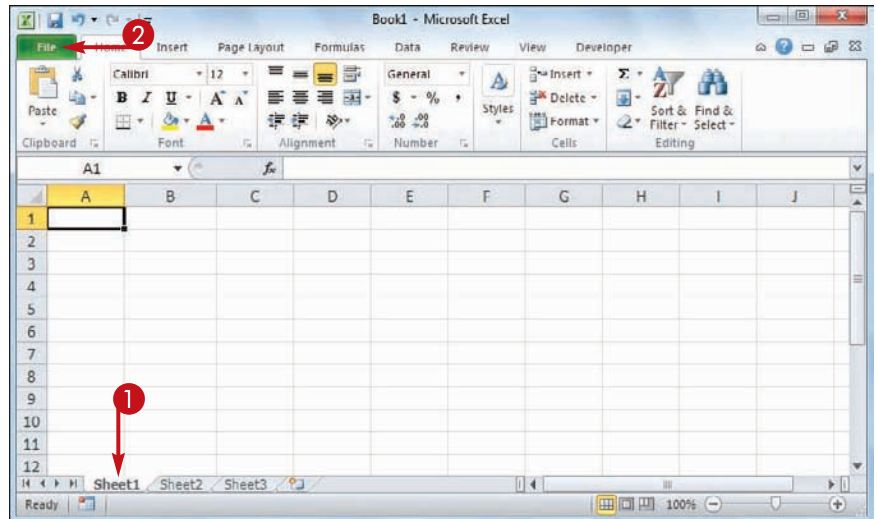
3 Click **Options**.
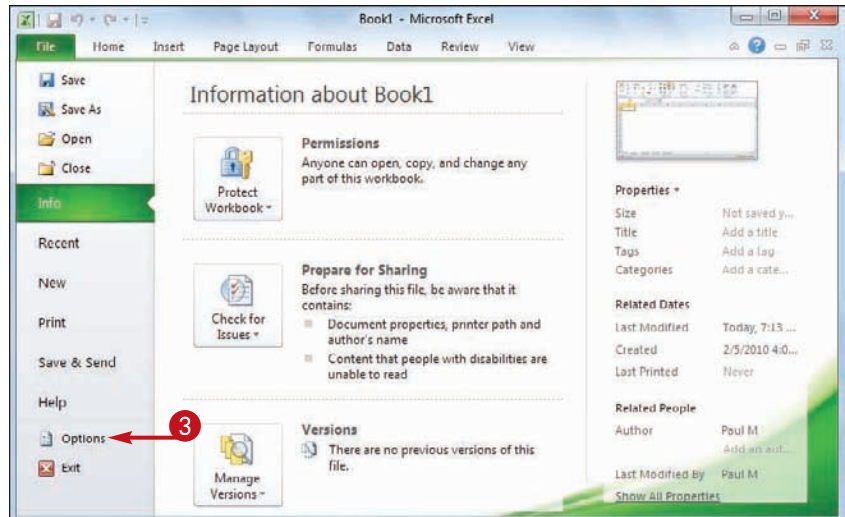
The Excel Options dialog box appears.

④ Click **Advanced**.

⑤ Scroll down to the Display options for this worksheet section.

⑥ Click the **Gridline color** ⊡.

⑦ Click the color you want to use.

⑧ Click **OK**.
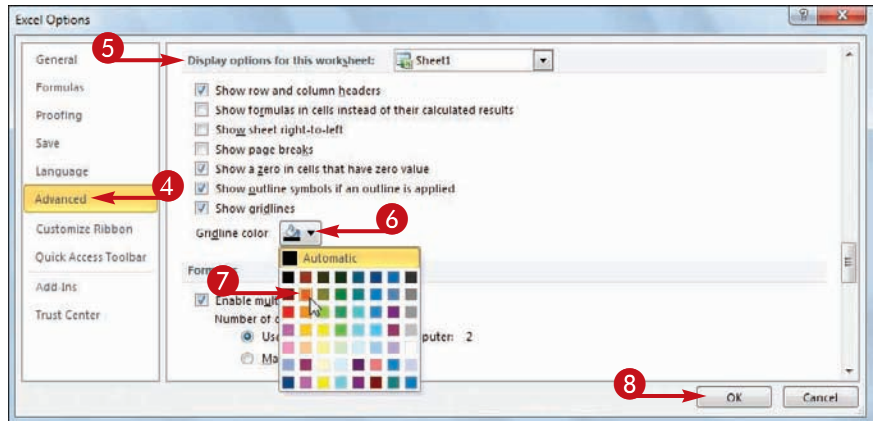
● Excel displays the gridlines using the color you selected.
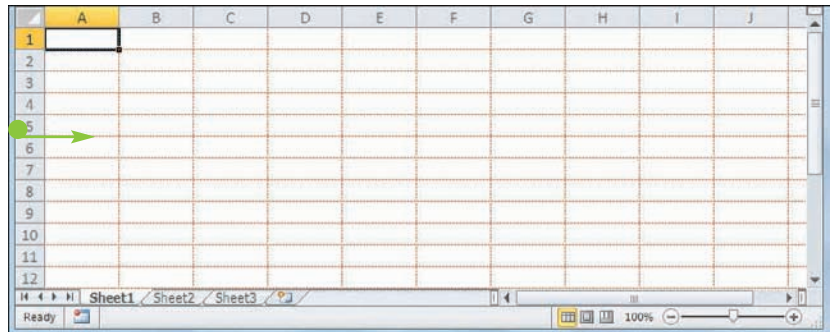
TIP

Can I change the gridline color for all the sheets in my workbook?

Yes. One method would be to follow the steps in this section for each worksheet in your workbook. However, an easier method is to first select all the sheets in the workbook. To do this, right-click any worksheet tab and then click **Select All Sheets**.

You can now follow Steps **2** to **8** to apply the new gridline color to all your worksheets. Once you have done that, right-click any worksheet tab and then click **Ungroup Sheets** to collapse the grouping.

Toggle Worksheet Gridlines On and Off

You can make your worksheet look cleaner and make the worksheet text easier to read by turning off the sheet gridlines. When you do this, Excel displays the worksheet with a plain white background, which often makes the worksheet easier to read.

If you find you have trouble selecting ranges with the gridlines turned off, you can easily turn them back on again.
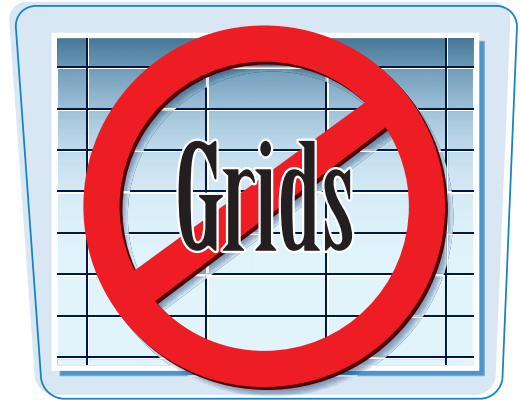
Toggle Worksheet Gridlines On and Off

Turn Gridlines Off

1 Click the tab of the worksheet you want to work with.

2 Click the **View** tab.

3 Click **Gridlines** (☑ changes to ☐).
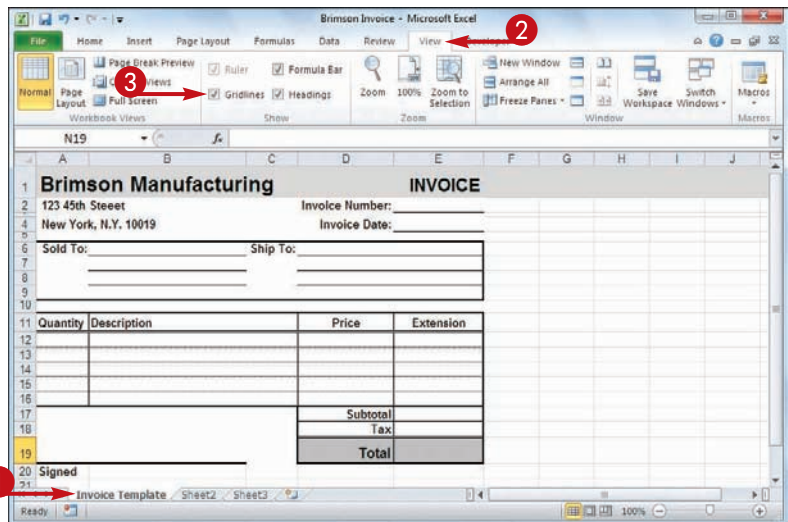
● Excel turns off the gridline display.

Turn Gridlines On

● To turn the gridlines back on, click **Gridlines** (☐ changes to ☑).
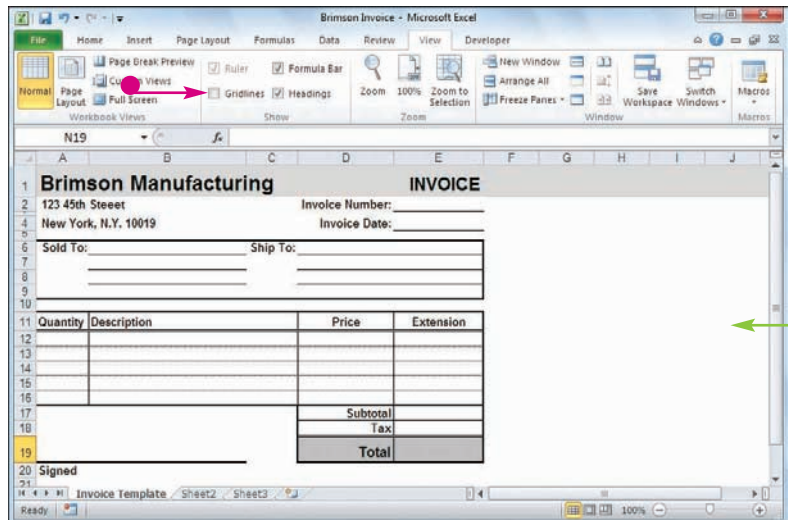
Toggle Worksheet Headings On and Off

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.
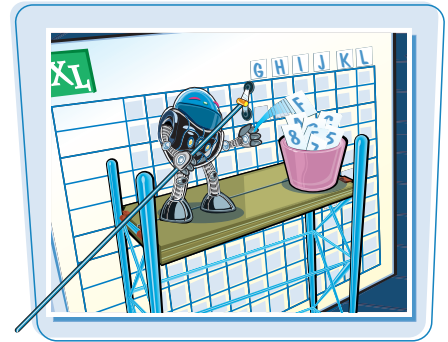
Toggle Worksheet Headings On and Off

Turn Headings Off

① Click the tab of the worksheet you want to work with.

② Click the **View** tab.

③ Click **Headings** (☑ changes to ☐).
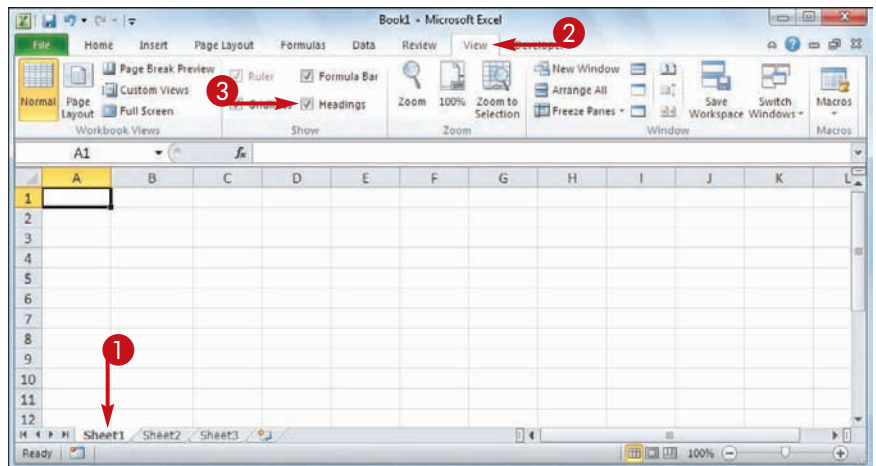
● Excel turns off the headings.

Turn Headings On

● To turn the headings back on, click **Headings** (☐ changes to ☑).
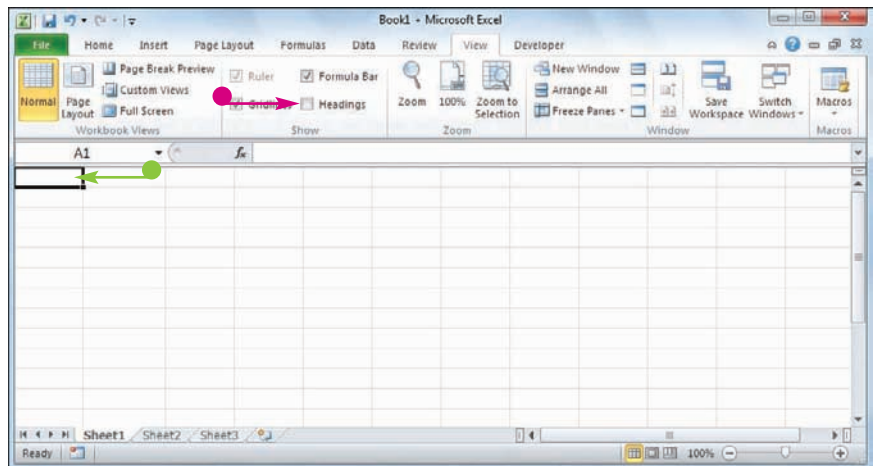
Set the Worksheet Tab Color

You can make a workbook easier to navigate by color-coding the worksheet tabs. For example, if you have a workbook with sheets associated with several projects, you could apply a different tab color for each project. Similarly, you could format the tabs of incomplete worksheets with one color, and completed worksheets with another color.

Excel offers 10 standard colors as well as 60 colors associated with the current workbook theme.

Set the Worksheet Tab Color

① Click the tab of the worksheet you want to format.

② Click the **Home** tab.

③ Click **Format**.

④ Click **Tab Color**.

Excel displays the Tab Color palette.

⑤ Click the color you want to use for the current tab.

[Screenshot showing Excel spreadsheet with Format menu open displaying Tab Color palette with Theme Colors, Standard Colors, No Color, and More Colors options]

	A	B	C	D	E	F	G	H	K
1		Jan	Feb	Mar	1st Quarter	Apr	May	Jun	Aug
2	*Sales*								
3	Division I	23,500	23,000	24,000	70,500	25,100	25,000	25,400	24,00
4	Division II	28,750	27,800	29,500	86,050	31,000	30,500	30,000	29,50
5	Division III	24,400	24,000	25,250	73,650	26,600	27,000	26,750	25,25
6	SALES TOTAL	76,650	74,800	78,750	230,200	82,700	82,500	82,150	78,75
7	*Expenses*								
8	Cost of Goods	6,132	5,984	6,300	18,416	6,616	6,600	6,572	6,30
9	Advertising	4,600	4,200	5,200	14,000	5,0			5,20
10	Rent	2,100	2,100	2,100	6,300	2,1			2,10
11	Supplies	1,300	1,200	1,400	3,9	1,3			1,40
12	Salaries	16,000	16,000	16,500	48,50	16			17,00
13	Shipping	14,250	13,750	14,500	42,500	15,0			14,50
14	Utilities	500	600	600	1,700	55			600
15	EXPENSES TOTAL	44,882	43,834	46,600	135,316	47,0		141,838	48,270	47,10
16	GROSS PROFIT	31,768	30,966	32,150	94,884	35,6		105,512	35,730	31,6!

● Excel applies the color to the tab.

*Note: You can also right-click the tab, click **Tab Color**, and then click the color you want to apply.*

	A	B	C	D	E	F	G	H	I	J	K
1		Jan	Feb	Mar	1st Quarter	Apr	May	Jun	2nd Quarter	Jul	Aug
2	*Sales*										
3	Division I	23,500	23,000	24,000	70,500	25,100	25,000	25,400	75,500	26,000	24,00
4	Division II	28,750	27,800	29,500	86,050	31,000	30,500	30,000	91,500	31,000	29,50
5	Division III	24,400	24,000	25,250	73,650	26,600	27,000	26,750	80,350	27,000	25,25
6	SALES TOTAL	76,650	74,800	78,750	230,200	82,700	82,500	82,150	247,350	84,000	78,75
7	*Expenses*										
8	Cost of Goods	6,132	5,984	6,300	18,416	6,616	6,600	6,572	19,788	6,720	6,30
9	Advertising	4,600	4,200	5,200	14,000	5,000	5,500	5,250	15,750	5,500	5,20
10	Rent	2,100	2,100	2,100	6,300	2,100	2,100	2,100	6,300	2,100	2,10
11	Supplies	1,300	1,200	1,400	3,900	1,300	1,250	1,400	3,950	1,300	1,40
12	Salaries	16,000	16,000	16,500	48,500	16,500	16,500	17,000	50,000	17,000	17,00
13	Shipping	14,250	13,750	14,500	42,500	15,000	14,500	14,750	44,250	15,000	14,50
14	Utilities	500	600	600	1,700	550	600	650	1,800	650	600
15	EXPENSES TOTAL	44,882	43,834	46,600	135,316	47,066	47,050	47,722	141,838	48,270	47,10
16	GROSS PROFIT	31,768	30,966	32,150	94,884	35,634	35,450	34,428	105,512	35,730	31,6!

TIPS

If I want to apply the same color to several worksheets, do I have to format them individually?

No. You can select all the sheets you want to format and then apply the tab color. To select multiple worksheets, click the tab of one of the worksheets, hold down Ctrl, and then click the tabs of the other worksheets. After you have selected your worksheets, follow Steps **2** to **5** to apply the tab color to all the selected worksheets at once.

How do I remove a tab color?

If you no longer require a worksheet to have a colored tab, you can remove the color. Follow Steps **1** to **4** to select the worksheet and display the Tab Color palette, and then click **No Color**. Excel removes the color from the worksheet's tab.

Set the Worksheet Background

You can add visual interest to a worksheet by replacing the standard white sheet background with a photo, drawing, or other image.

When choosing the image you want to use as the background, be sure to select a picture that will not make the worksheet text difficult to read. If your sheet text is a dark color, choose a light-colored image as the background.

① Click the tab of the worksheet you want to customize.
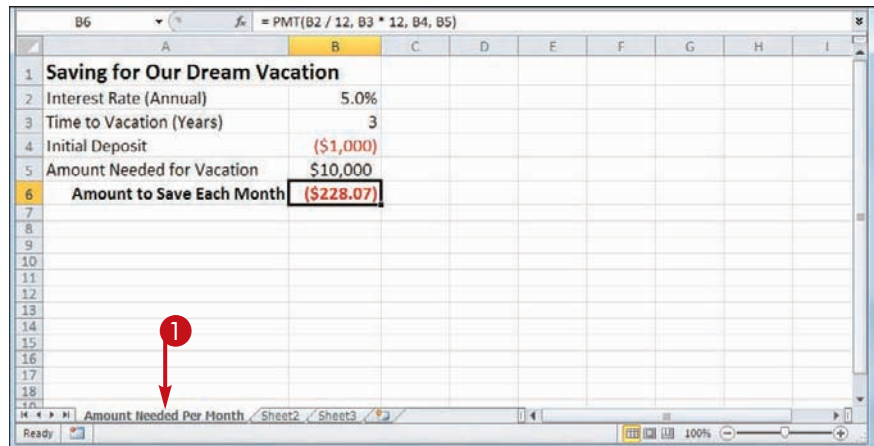
② Click the **Page Layout** tab.

③ Click **Background** (⬜).
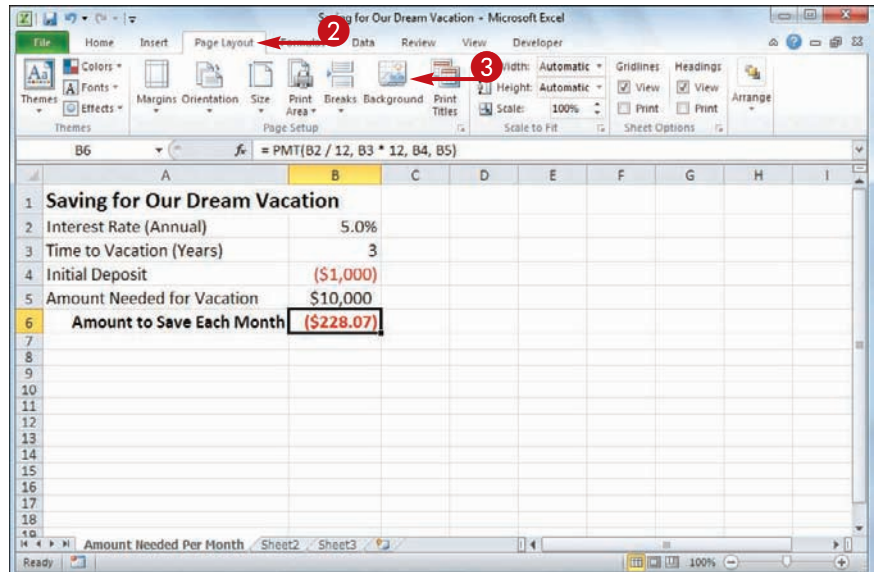
The Sheet Background dialog box appears.

4 Select the location of the image you want to use.

5 Click the image.

6 Click **Insert**.
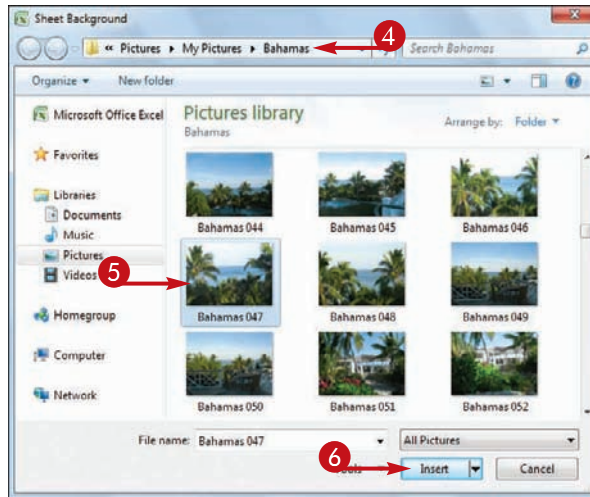
● Excel formats the worksheet background with the image you selected.
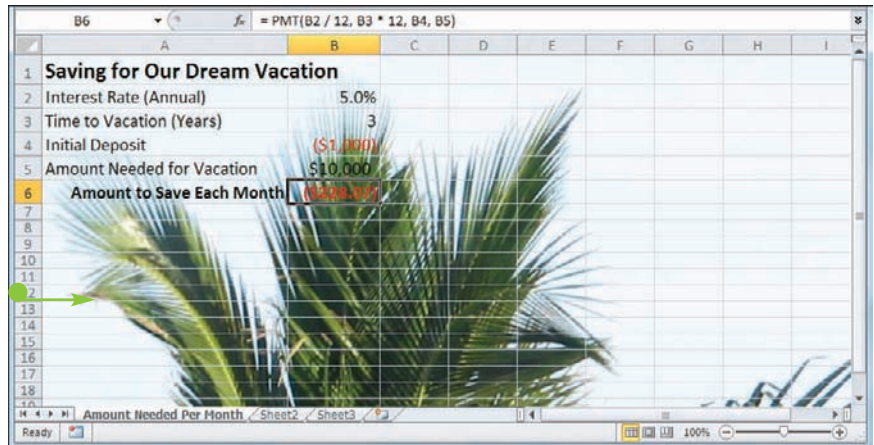
How do I apply a background color instead of a background image?

Excel does not have a command that changes the background color of the entire worksheet. Instead, you must first select all the cells in the worksheet by clicking ▦. Click the **Home** tab, click the **Fill Color** ▾, and then click the color you want to use. Excel applies the color to the background of every cell.

How do I remove the background image from the worksheet?

If you find that having the background image makes it difficult to read the worksheet text, then you should remove the background. Click the tab of the worksheet, click **Page Layout**, and then click **Delete Background** (▦). Excel removes the background image from the worksheet.

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Zoom In On or Out of a Worksheet

You can get a closer look at a portion of a worksheet by zooming in on that range. When you zoom in on a range, Excel magnifies the range, which makes it easier to see.

If you want to get a sense of the overall structure of a worksheet, you can also zoom out. When you zoom out, Excel decreases the magnification, so you see more of the worksheet.
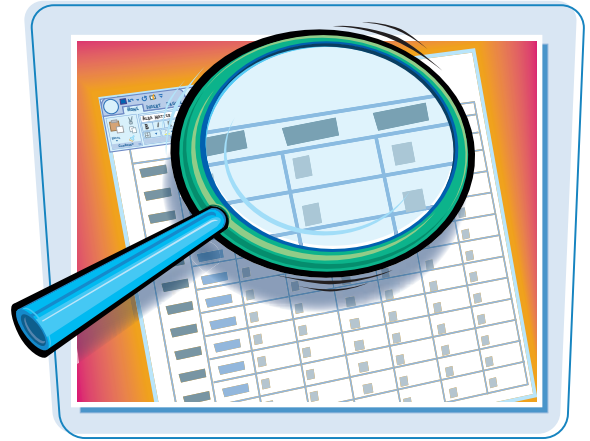
Zoom In On or Out of a Worksheet

① Click the tab of the worksheet you want to zoom.
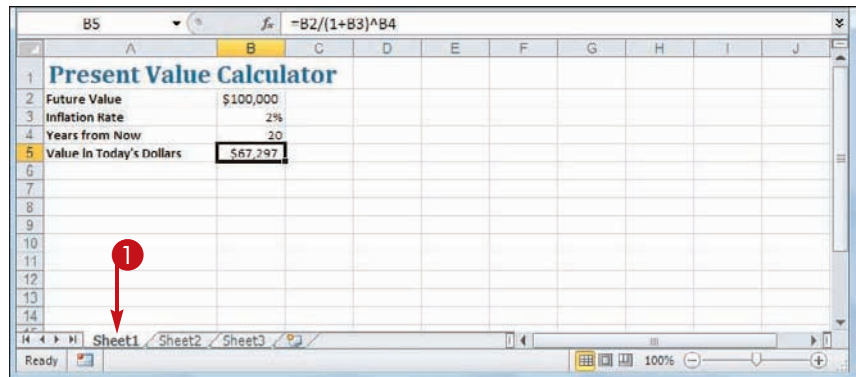
② Click the **View** tab.

③ Click **Zoom** (🔍).

● You can also run the Zoom command by clicking the zoom level in the status bar.
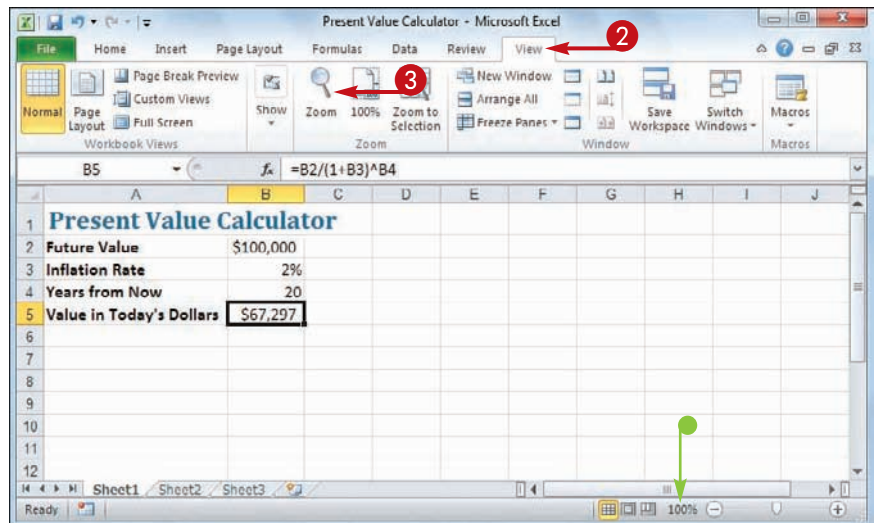
The Zoom dialog box appears.

4 Click the magnification level you want to use (◎ changes to ◉).

● You can also click **Custom** (◎ changes to ◉) and then type a magnification level in the text box.
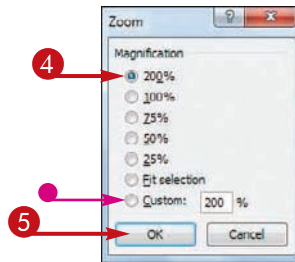
Note: Select a magnification level above 100% to zoom in on the worksheet; select a level under 100% to zoom out of the worksheet.

5 Click **OK**.

Excel changes the magnification level and redisplays the worksheet.

● You can click **100%** (🔲) to return to the normal zoom level.

Present Value Calculator

	A	B	C	D
1	**Present Value Calculator**			
2	**Future Value**	$100,000		
3	**Inflation Rate**	2%		
4	**Years from Now**	20		
5	**Value in Today's Dollars**	$67,297		
6				

B5 =B2/(1+B3)^B4
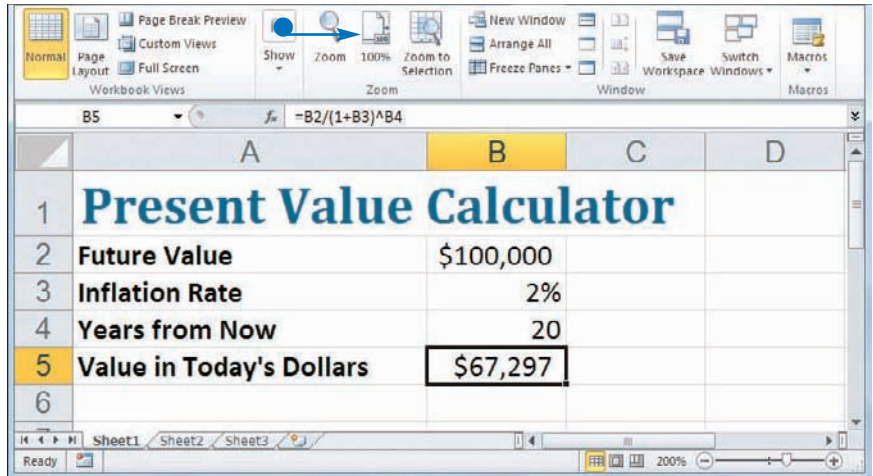
TIPS

How can I zoom in on a particular range?

Excel offers the Zoom to Selection feature that enables you to quickly and easily zoom in on a range. First, select the range that you want to magnify. Click the **View** tab and then click **Zoom to Selection** (🔲). Excel magnifies the selected range to fill the entire Excel window.
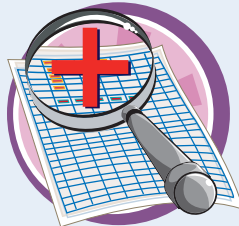
Is there an easier way to zoom in and out of a worksheet?

Yes, you can use the Zoom slider, which appears on the far right side of the Excel status bar. Drag the slider 🔲 to the right to zoom in on the worksheet, or drag 🔲 to the left to zoom out. You can also click the **Zoom In** (⊕) or **Zoom Out** (⊖) button to change the magnification.
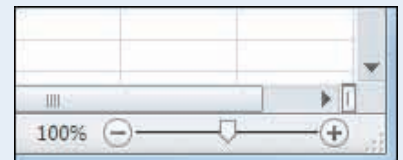
Split a Worksheet into Two Panes

You can make it easier to examine your worksheet data by splitting the worksheet into two scrollable panes that each show different parts of the worksheet. This is useful if you have cell headings at the top of the worksheet that you want to keep in view as you scroll down the worksheet.

Splitting a worksheet into two panes is also useful if you want to keep some data or a formula result in view while you scroll to another part of the worksheet.
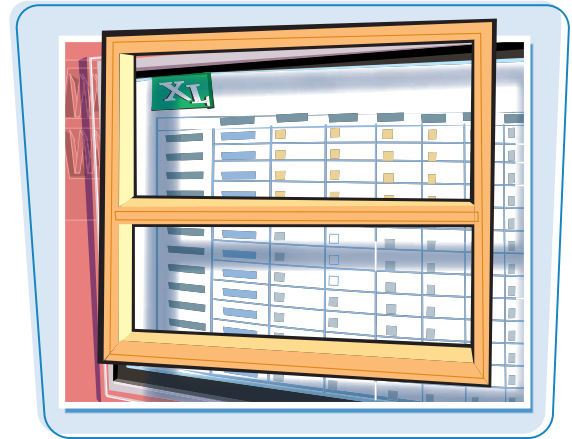
Split a Worksheet into Two Panes

1 Click the tab of the worksheet you want to split.

2 Select a cell in column A that is below the point where you want the split to occur.

For example, if you want to place the first six rows in the top pane, select cell A7.

3 Click the **View** tab.

4 Click **Split** (⊟).
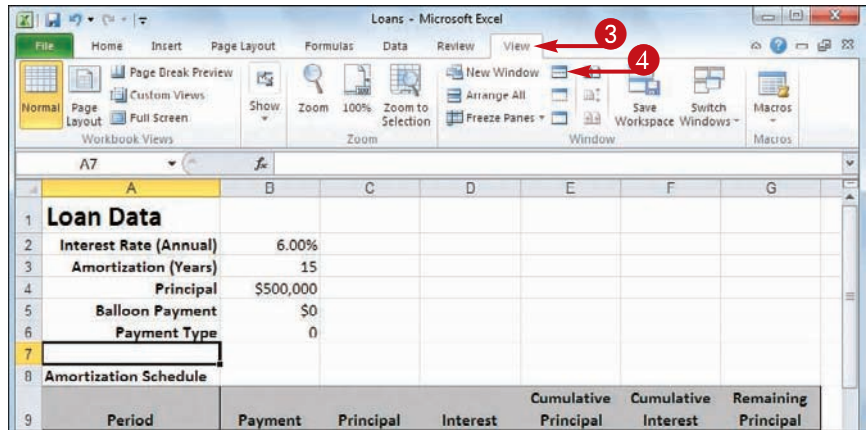
- Excel splits the worksheet into two horizontal panes at the selected cell.

- You can adjust the size of the panes by clicking and dragging the split bar up or down.

  To remove the split, either click ⊟ again, or double-click the split bar.
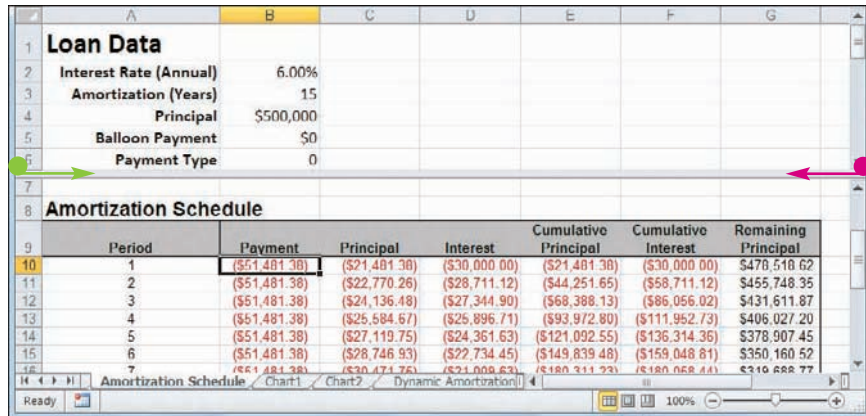
TIPS

Can I split a worksheet into two vertical panes?

Yes. To do this, you must first select a cell in the top row of the worksheet. In particular, select the top cell in the column to the right of where you want the split to occur. For example, if you want to show only column A in the left pane, select cell B1. When you click ⊟, Excel splits the worksheet into two vertical panes.
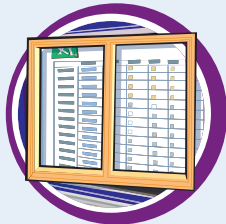
Can I split a worksheet into four panes?

Yes. This is useful if you have three or four worksheet areas that you want to examine separately. To perform a four-way split, first select the cell where you want the split to occur. Note that this cell must not be in either row 1 or column A. When you click ⊟, Excel splits the worksheet into four panes. The cell you selected becomes the upper-left cell in the bottom-right pane.
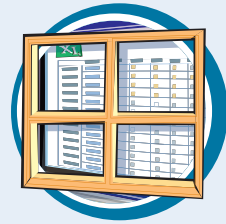
Hide and Unhide a Worksheet

You can hide a worksheet so that it no longer appears in the workbook. This is useful if you need to show the workbook to other people, but the workbook contains a worksheet with sensitive data that you do not want others to see.

To learn how to protect a workbook so that other people cannot unhide a worksheet, see Chapter 15.

Hide and Unhide a Worksheet

Hide a Worksheet

1. Click the tab of the worksheet you want to hide.

2. Click the **Home** tab.

3. Click **Format**.

4. Click **Hide & Unhide**.

5. Click **Hide Sheet**.

● You can also right-click the worksheet tab and then click **Hide Sheet**.
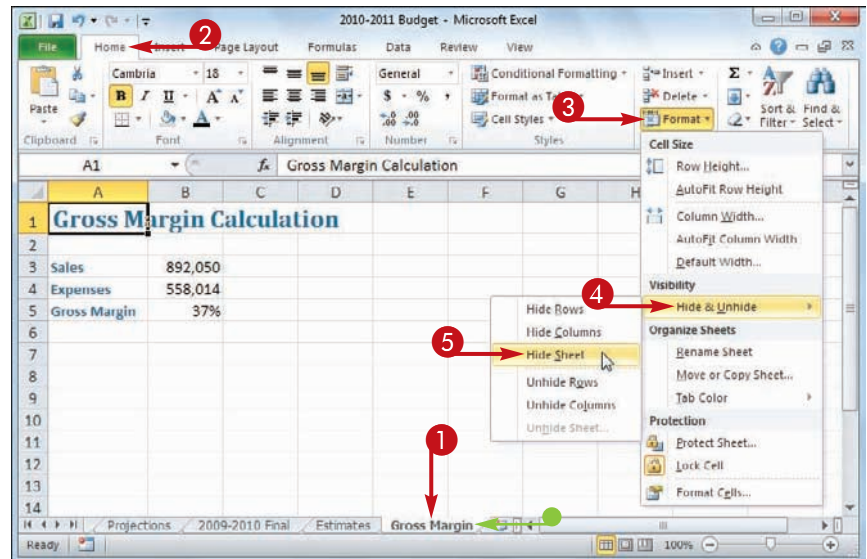
● Excel temporarily removes the worksheet from the workbook.
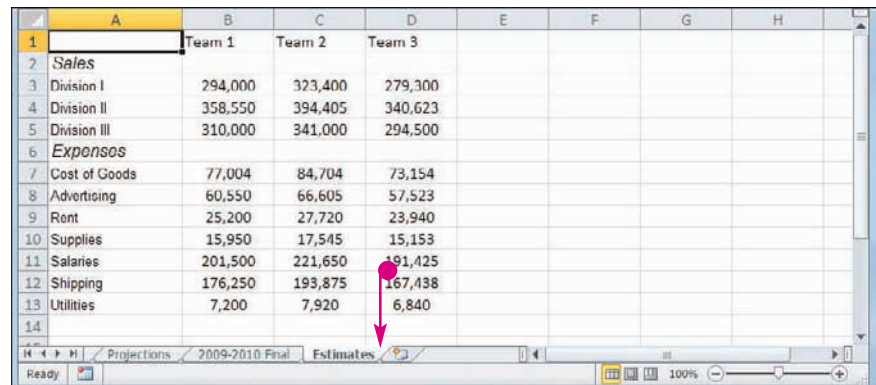
Unhide a Worksheet

1 Click the **Home** tab.

2 Click **Format**.

3 Click **Hide & Unhide**.

4 Click **Unhide Sheet**.

● You can also right-click any worksheet tab and then click **Unhide Sheet**.
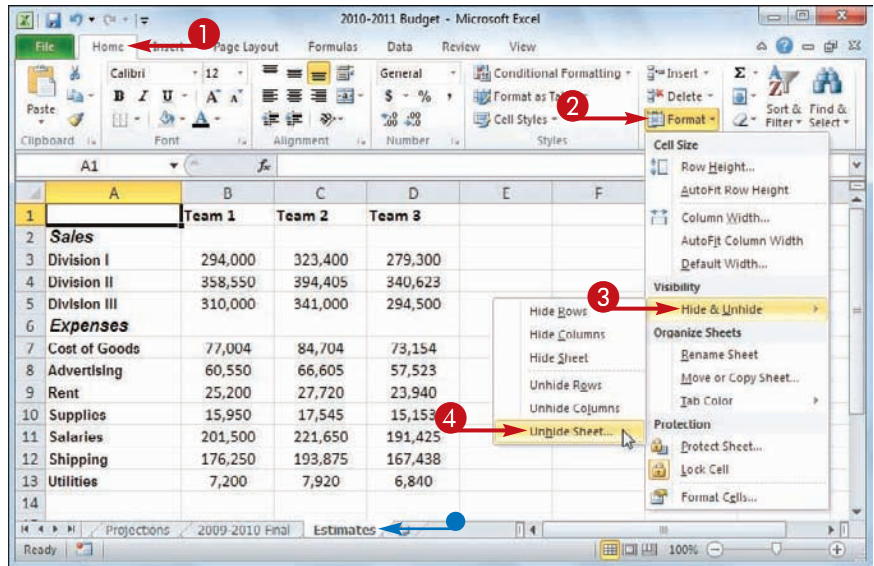
The Unhide dialog box appears.

5 Click the worksheet you want to restore.

6 Click **OK**.
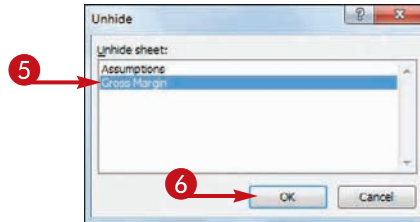
● Excel returns the worksheet to the workbook.

TIP

I have several worksheets I need to hide. Do I have to hide them individually?

No. You can select all the sheets you want to work with and then hide them. To select multiple worksheets, click the tab of one of the worksheets, hold down Ctrl, and then click the tabs of the other worksheets.

If your workbook has many worksheets and you want to hide most of them, an easy way to select the sheets is to right-click any worksheet tab and then click **Select All Sheets**. Hold down Ctrl, and then click the tabs of the worksheets that you do not want to hide.

After you have selected your worksheets, follow Steps **3** to **5** to hide all the selected worksheets at once.

Dealing with Excel Workbooks

Everything you do in Excel takes place within a *workbook*, which is the standard Excel file. This chapter shows you how to get more out of workbooks by creating new files; saving, opening, and closing files; checking spelling; and more.

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."
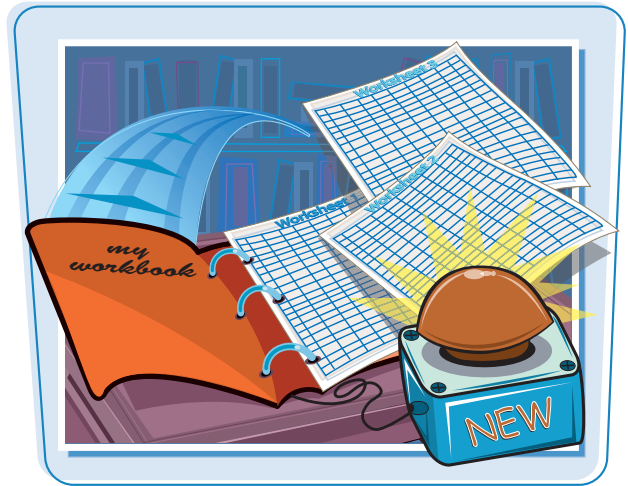
Create a New Blank Workbook

1 Click the **File** tab.
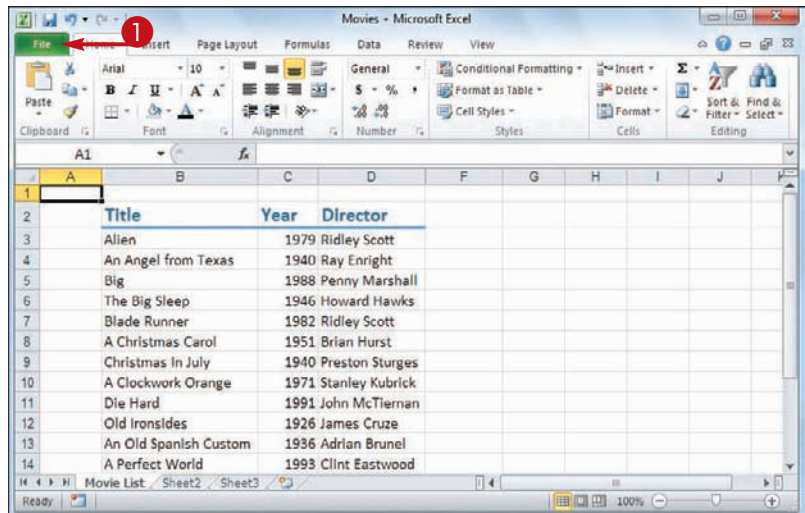
2 Click **New**.
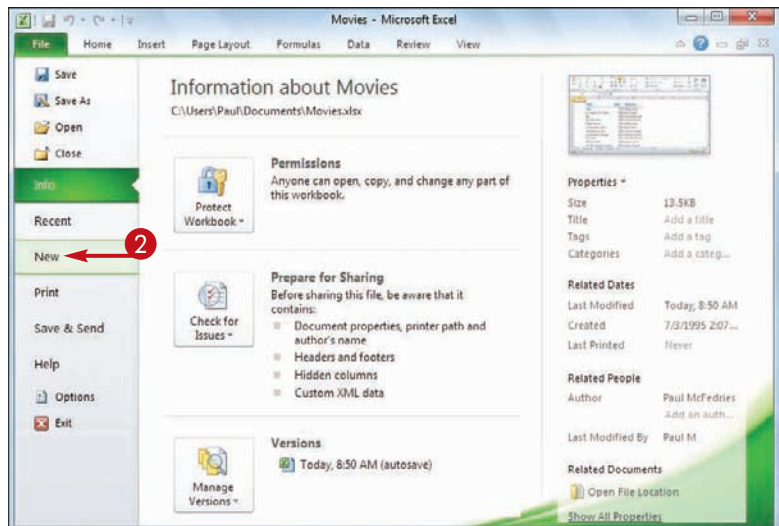
❸ Click **Blank Workbook**.

❹ Click **Create**.
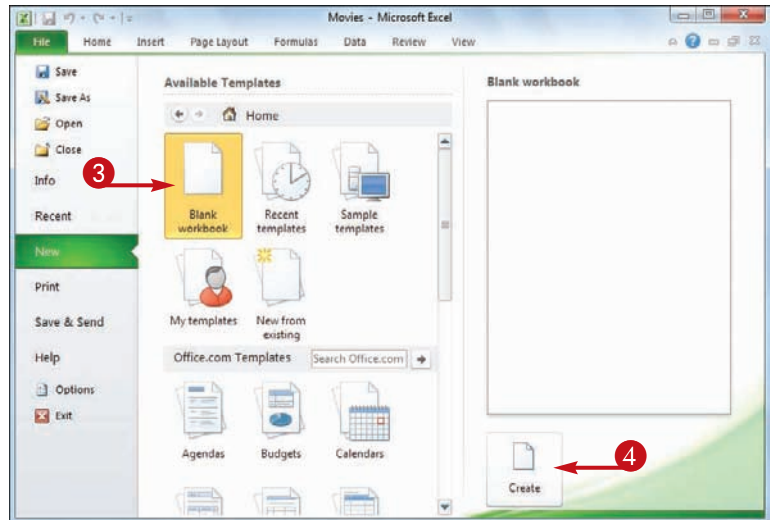
● Excel creates the blank workbook and displays it in the Excel window.
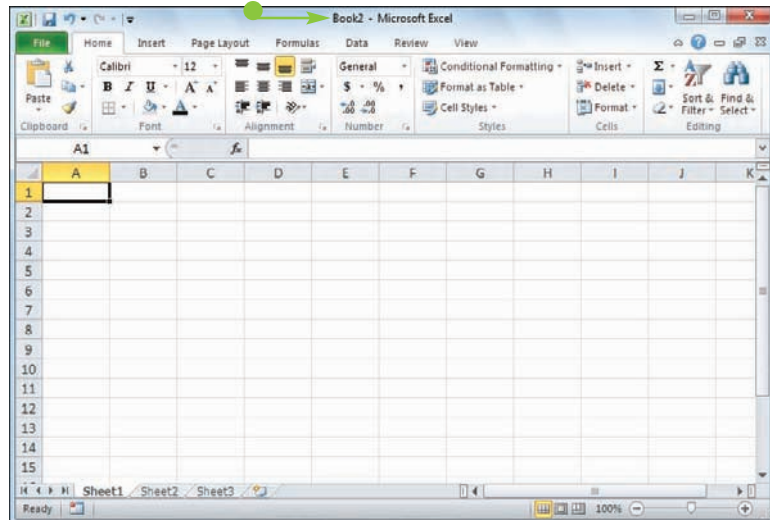
TIPS

Is there a faster method I can use to create a new workbook?

Yes. Excel offers a keyboard shortcut for faster workbook creation. From the keyboard, press `Ctrl` + `N`.

When I start Excel and then open an existing workbook, Excel often removes the new, blank workbook that it opened automatically. How can I prevent this?

Excel assumes that you want to use a fresh workbook when you start the program, so it opens a blank workbook for you automatically. However, if you do not make any changes to the blank workbook and then open an existing file, Excel assumes you do not want to use the new workbook, so it 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 colors, fonts, styles, and more.

Excel 2010 offers seven templates, and many more are available through Microsoft Office Online.
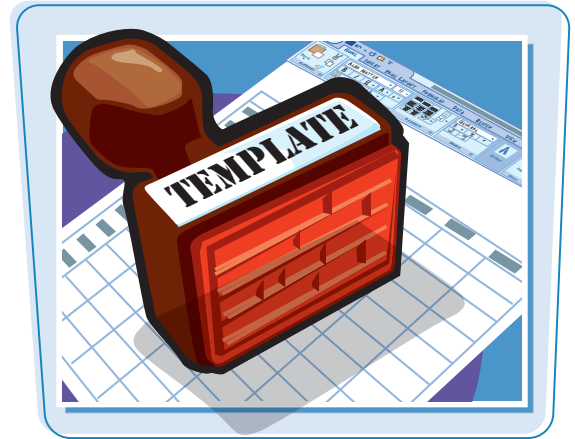
Create a New Workbook from a Template

1 Click the **File** tab.
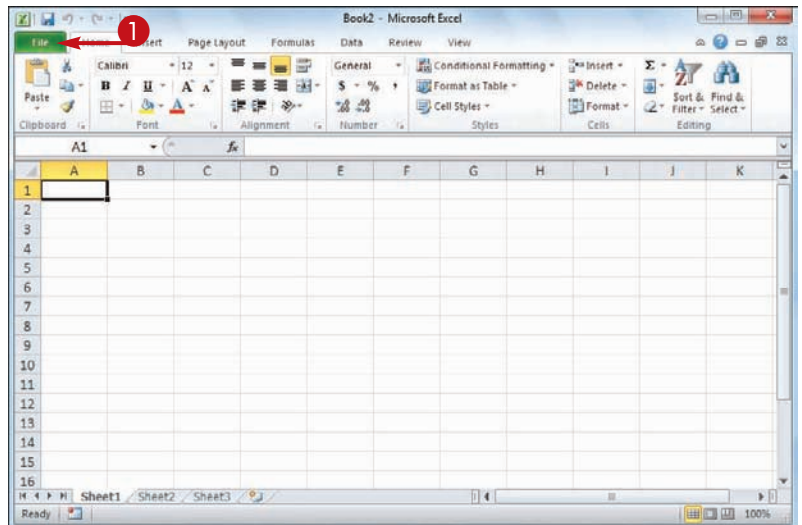
2 Click **New**.

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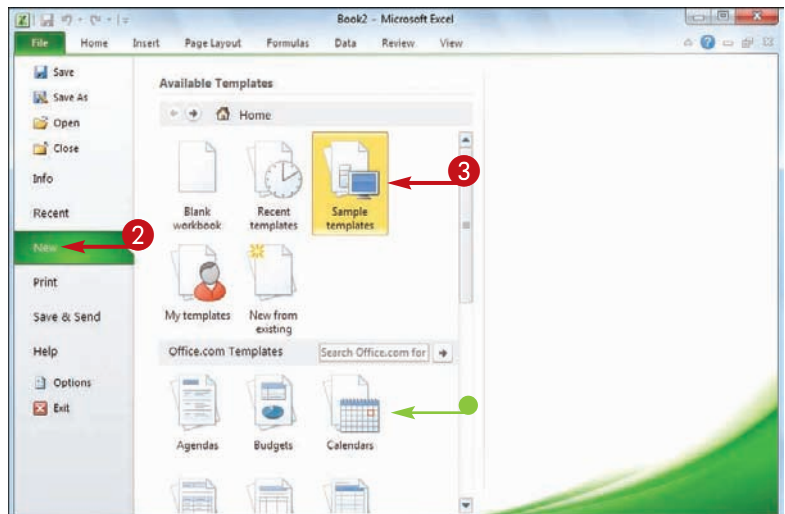
● To use an Office Online template, click a category in the Office.com Templates section. Click the template you want to use, and then click **Download**.

④ Click the template you want to use.

● A preview of the template appears here.

⑤ Click **Create**.
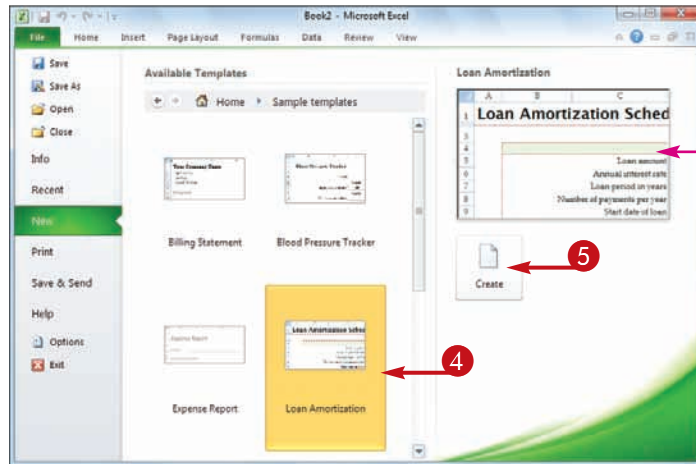
● Excel creates the new workbook and displays it in the Excel window.
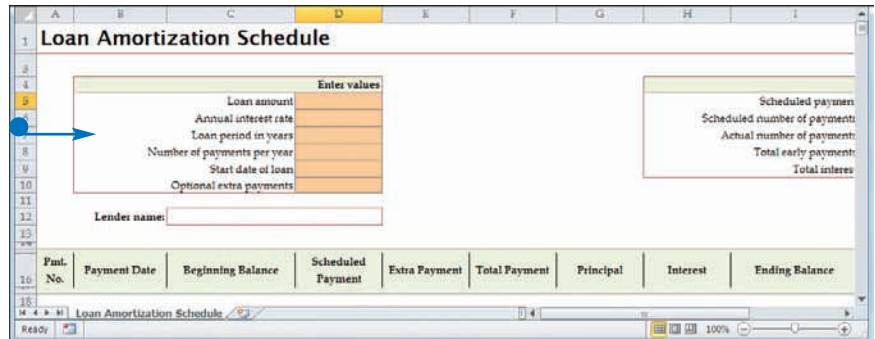
TIPS

Can I create my own template?

Yes. If you have a specific workbook structure that you use frequently, you should save it as a template so that you do not have to re-create the same structure from scratch each time. 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**.

Can I create a new workbook based on an existing workbook?

Yes. This is useful if you want to create a new workbook that is the same or similar to an existing file. 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.

Save a Workbook

1. Click the **File** tab.

2. Click **Save** (📄).

   You can also click 📄 in the Quick Access Toolbar, or you can press **Ctrl** + **S**.

   If you have saved the document previously, your changes are now preserved, and you do not need to follow the rest of the steps in this section.
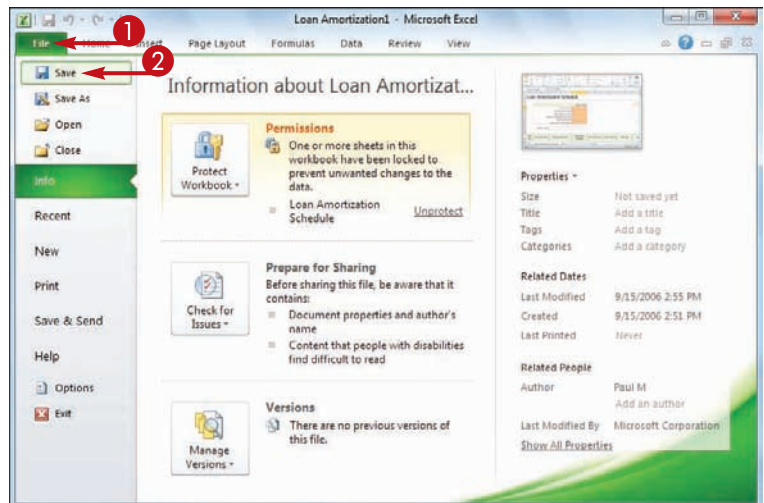
   The Save As dialog box appears.

   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 15.
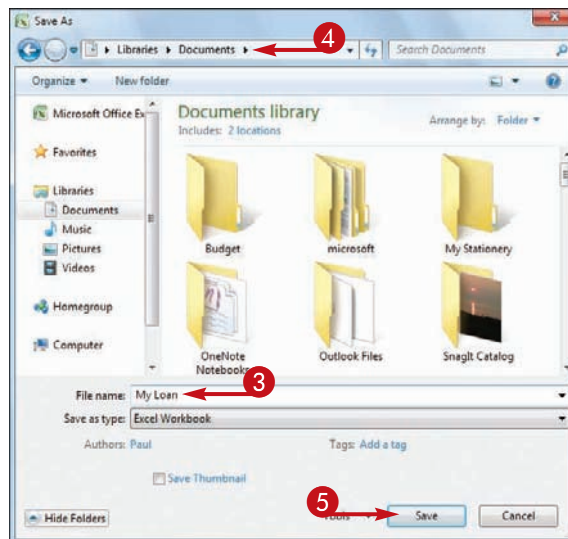
To view or make changes to an Excel workbook that you have saved in the past, you can open it in Excel.

If you have used the workbook recently, you can save time by opening the workbook from Excel's Recent menu.

Open a Workbook

① Click the **File** tab.

● 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** (📂).

You can also press `Ctrl` + `O`.
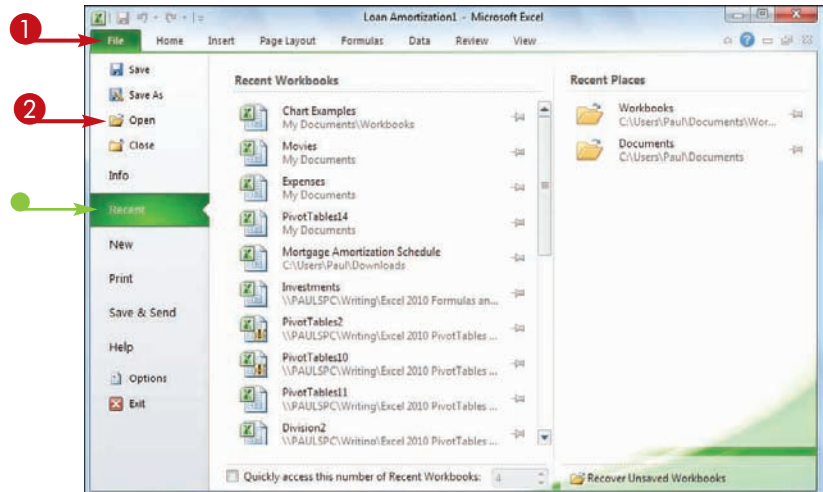
The Open dialog box appears.

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.
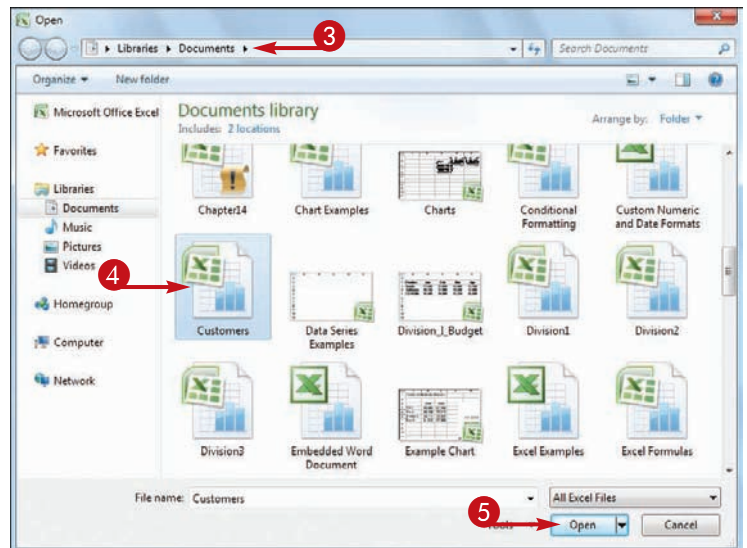
Arrange Workbook Windows

You can view two or more workbooks at once by arranging the workbook windows within the main Excel window.

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

Arrange Workbook Windows

① Open the workbooks you want to view.

② Click the **View** tab.
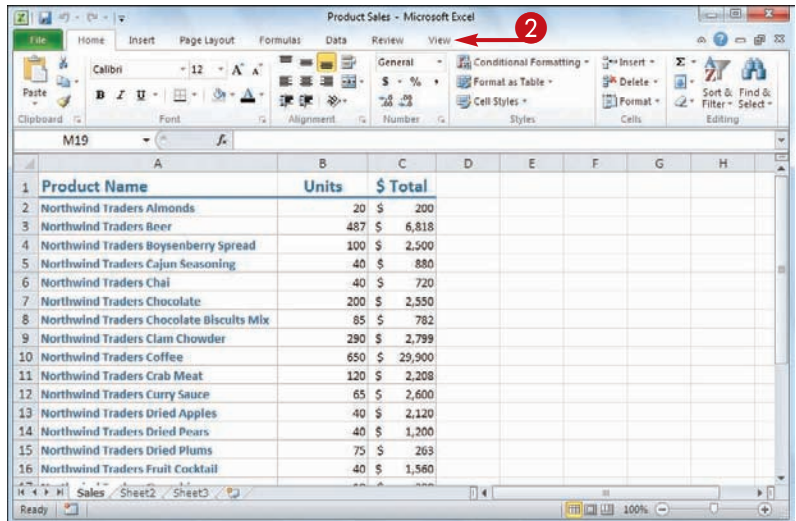
③ Click **Arrange All** ( ).

The Arrange Windows dialog box appears.
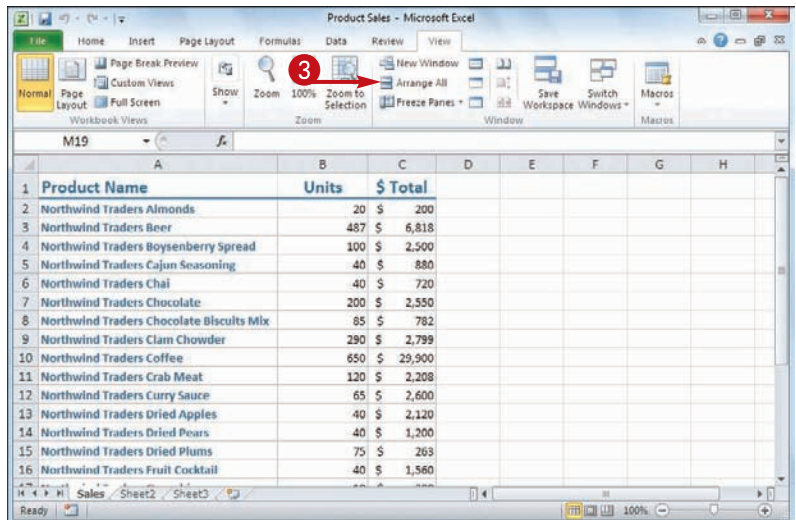
④ Click a view mode (◎ changes to ◉).

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 cascade pattern.

⑤ Click **OK**.

● Excel arranges the workbook windows.

This example shows two workbooks arranged with the Horizontal view mode.
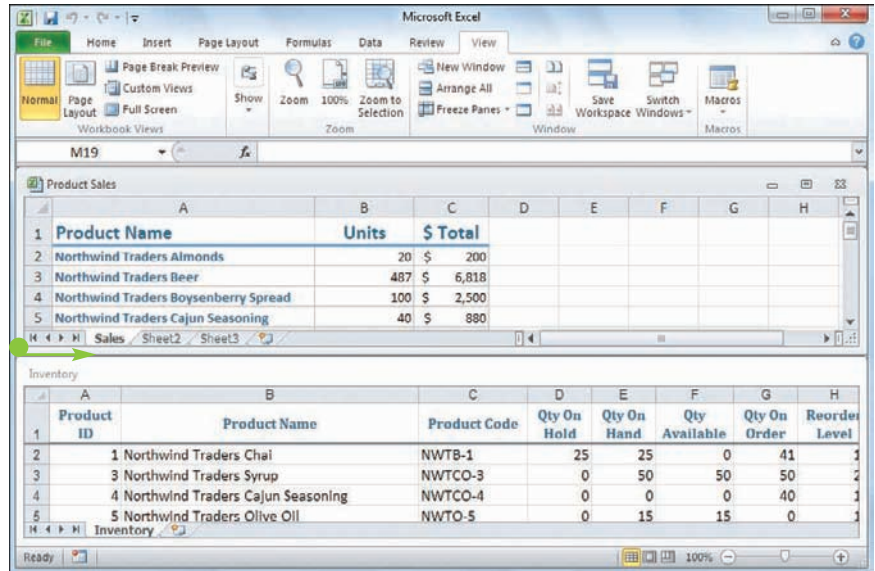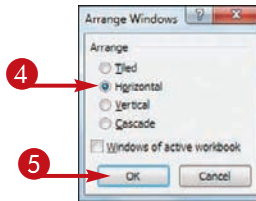
How do I return to viewing one workbook at a time?

Click the workbook you want to use, and then click the workbook window's **Maximize** button (□). This maximizes the workbook within the Excel window, so you only see that workbook. Excel also maximizes the other open workbooks, but you only see them if you switch to them.

Is it possible to view two different sections of a single workbook at the same time?

Yes. Excel enables you to create a second window for a workbook, and you can then arrange the two windows as described in this section. To create the second window, 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**.
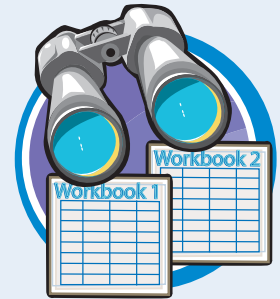
Find Text in a Workbook

In large workbooks with multiple sheets, when you need to find specific text, you can save a lot of time by using Excel's Find feature, which searches the entire workbook in the blink of an eye.

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`.
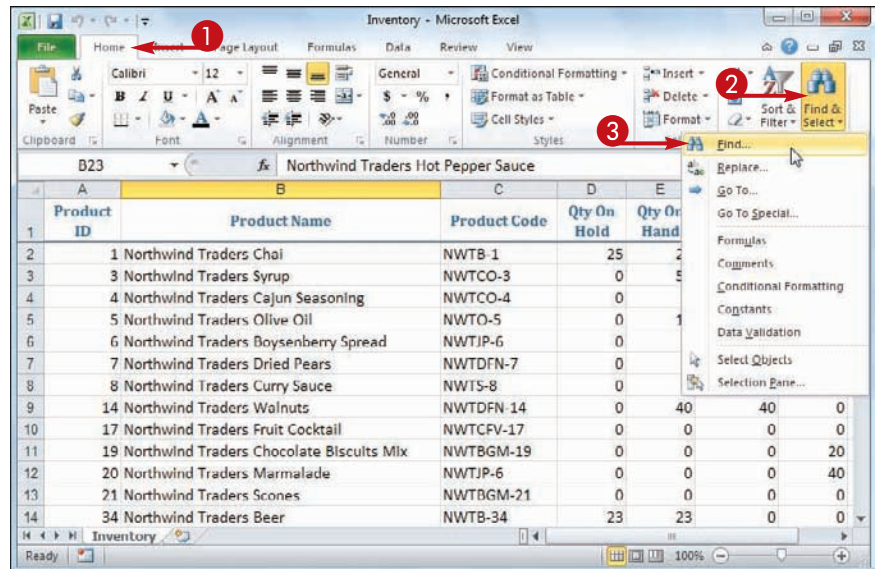
The Find and Replace dialog box appears.

4. Click in the **Find what** text box and type the text you want to find.
5. Click **Find Next**.
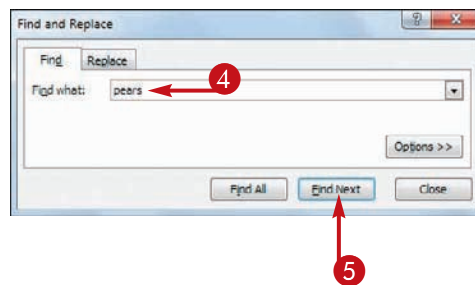
● Excel selects the next cell that contains an instance of the search text.

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.

TIPS

When I search for a particular term, Excel only looks in the current worksheet. How can I get Excel to search the entire workbook?

In Excel's Find and Replace dialog box, click **Options** to expand the dialog box. Click the **Within** and then click **Workbook**. This option tells Excel to examine the entire workbook for your search text.

When I search for a name such as Bill, Excel also matches the non-name bill. Is there a way to fix this?

In Excel's Find and Replace dialog box, click **Options** to expand the dialog box. Select the **Match case** check box (changes to). This option tells Excel to match the search text only if it has the same mix of uppercase and lowercase letters that you specify in the Find what text box. If you type **Bill**, for example, the program matches only *Bill* and not *bill*.

Replace Text in a Workbook

Do you need to replace a word or part of a word with some other text? If you have several instances to replace, you can save time and do a more accurate job if you let Excel's Replace feature replace the text for you.
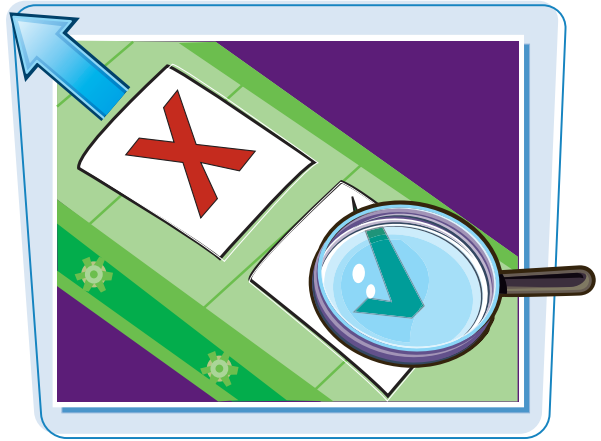
Replace Text in a Workbook

1. Click the **Home** tab.

2. Click **Find & Select**.

3. Click **Replace**.

Note: You can also run the Replace command by pressing **Ctrl** + **H** .
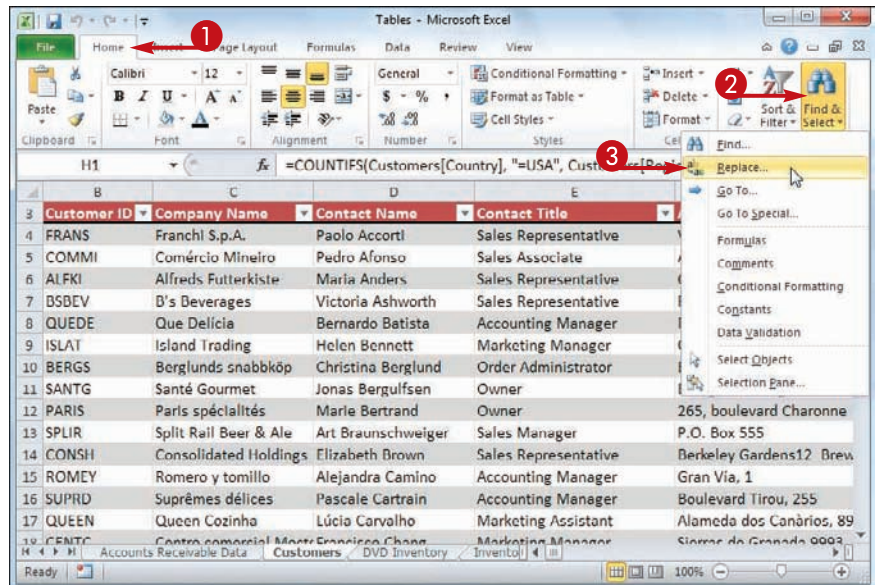
The Find and Replace dialog box appears.

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**.
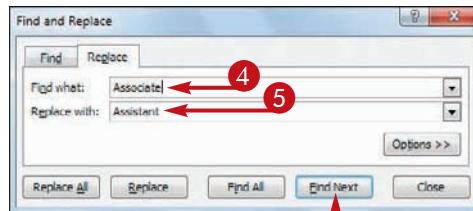
● Excel selects the cell that contains the next instance of the search text.

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

⑦ If the selected instance is not the one you want, click **Find Next** until Excel finds the correct instance.

⑧ Click **Replace**.

● Excel replaces the selected text with the replacement text.

● Excel selects the next instance of the search text.

⑨ Repeat Steps **7** and **8** until you have replaced all of the instances you want to replace.

⑩ Click **Close** to close the Find and Replace dialog box.
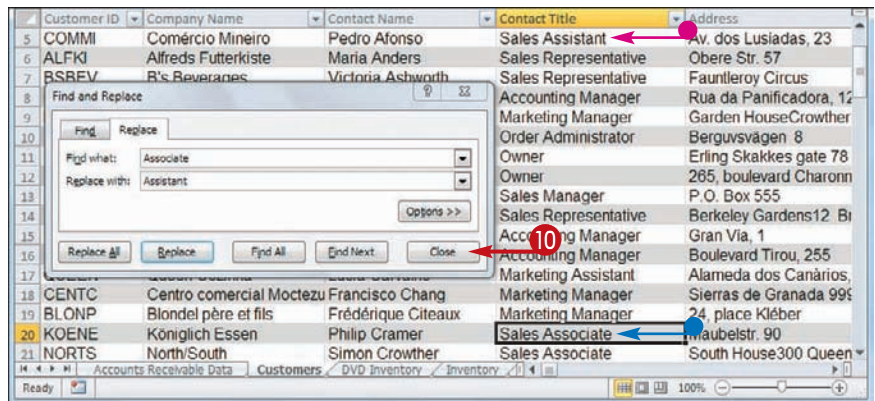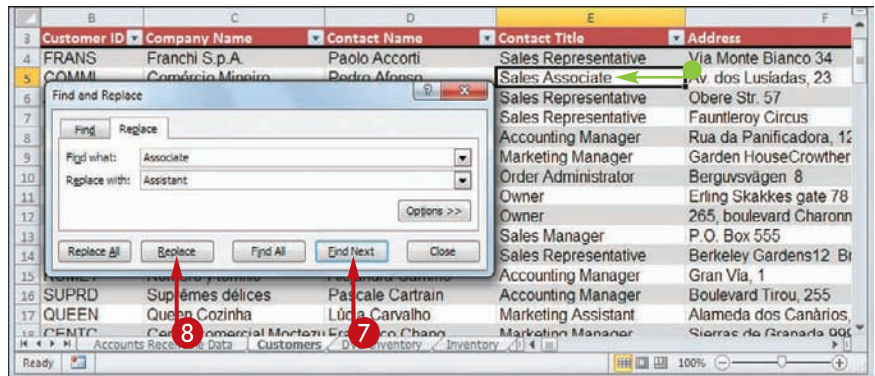
Is there a faster way to replace every instance of the search text with the replacement text?

Yes. In the Find and Replace dialog box, click **Replace All**. This tells Excel to replace every instance of the search text with the replacement text. However, you should exercise some caution with this feature because it may make some replacements that you did not intend. Click **Find Next** a few times to make sure the matches are correct. Also, consider clicking **Options** and then selecting the **Match case** check box (☐ changes to ☑), as described in "Find Text in a Workbook."

Check Spelling and Grammar

You can reduce the number of errors in your Excel workbooks by taking advantage of the spell-checker, which identifies potentially misspelled words and suggests corrections.

When the spell-checker flags a word as misspelled, you can correct the word, tell the spell-checker to ignore it, or you can add it to the spell-checker's dictionary.

Missspleled
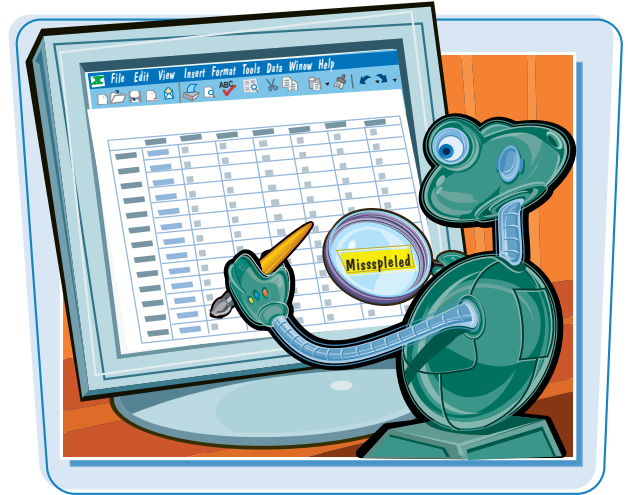
Check Spelling and Grammar

1 Click the **Review** tab.

2 Click **Spelling** (ABC ✓).

Note: You can also press F7 .
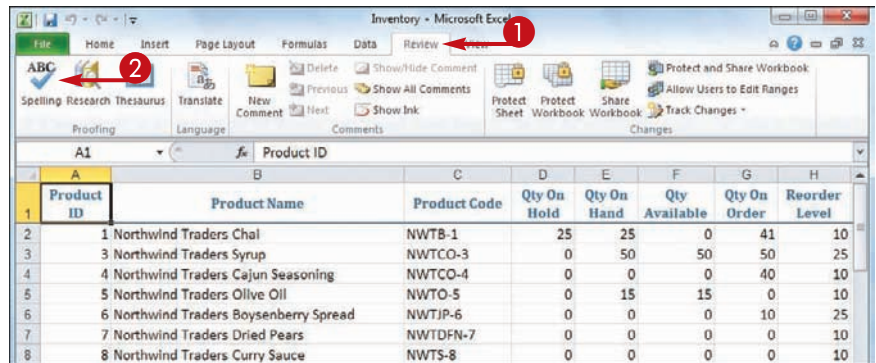
● The Spelling dialog box appears and selects the cell that contains the first error.

3 Click the correction you want to use.

4 Click **Change**.

● Click **Change All** to correct every instance of the error.
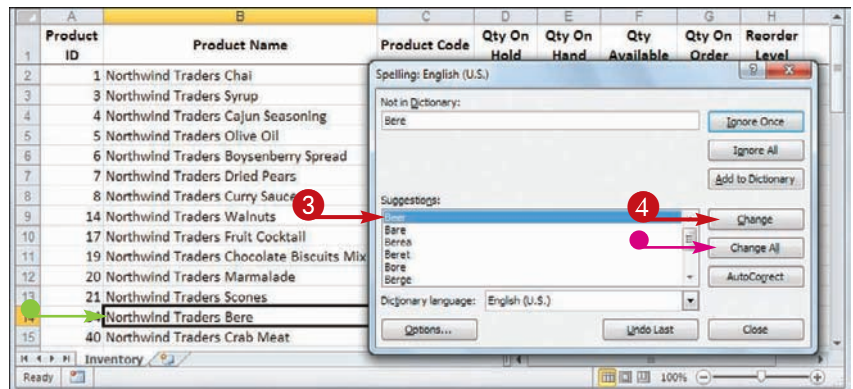
● The spell-checker displays the next error.

5 If you want to correct the word, repeat Step **4**.

● If you do not want to correct the word, click one of the following buttons:

Click **Ignore Once** to skip this instance of the error.

Click **Ignore All** to skip all instances of the error.

Click **Add to Dictionary** to include the word in the spell-checker's dictionary.

6 When the check is complete, click **OK**.
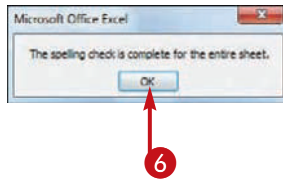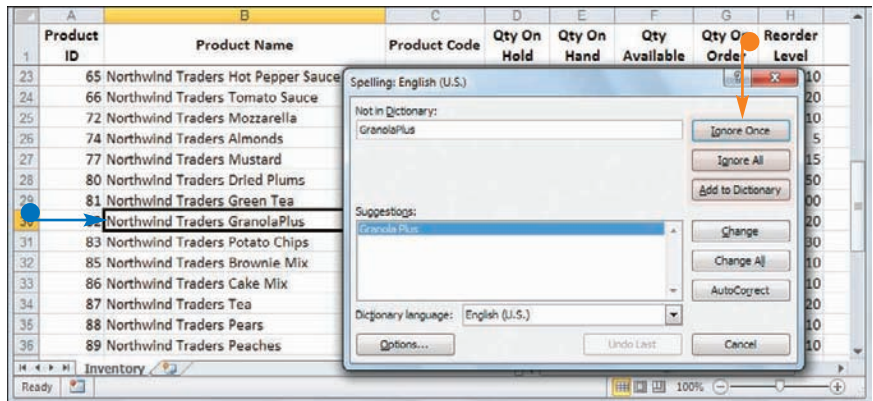
TIP

Can I remove a word that I added to the spell-checker's dictionary?

Yes. Follow these steps:

1 Click **File**.

2 Click **Options**.

3 Click **Proofing**.

4 Click **Custom Dictionaries**.

5 Click **Edit Word List**.

6 Click the term you want to remove.

7 Click **Delete**.

8 Click **OK**.
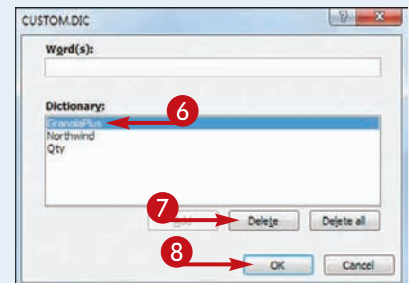
Close a Workbook

When you finish adding and editing text in an Excel workbook, you should close the workbook to reduce desktop clutter. If the workbook is very large or contains many images, closing the file also frees up memory and other system resources.

1️⃣ Display the workbook you want to close.

2️⃣ Click the **File** tab.

3 Click **Close**.

If you have unsaved changes in the workbook, Excel asks if you want to save your work.

4 Click **Save**.

● If you do not want to preserve your changes, click **Don't Save**.

● If you decide to keep the document open, click **Cancel**.

The program saves your work and then closes the document.
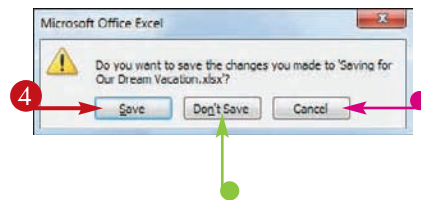
Are there faster methods I can use to close a document?
Yes. You can also close a document using a keyboard shortcut or with a mouse click. From your keyboard, press **Ctrl** + **W** to close the current document; with your mouse, click the **Close** button (⬇) in the upper left corner of the document window.

Formatting Excel Workbooks
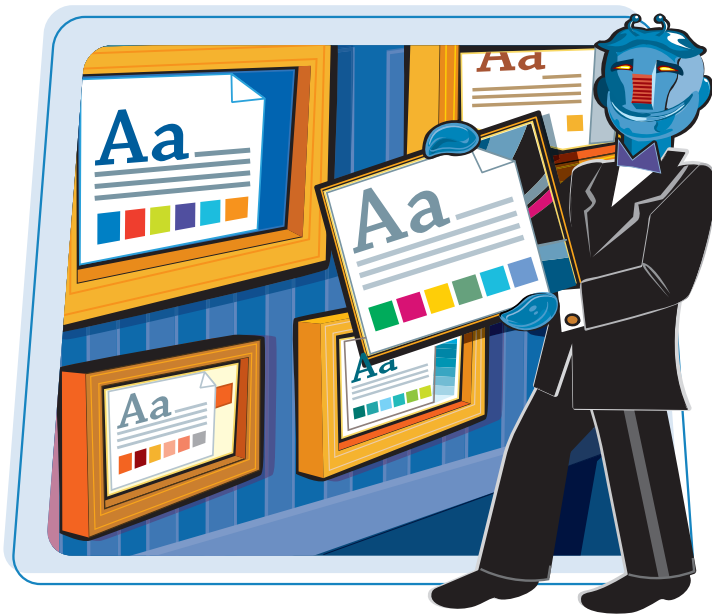
Excel offers several settings that enable you to control the look of a workbook, including the workbook colors, fonts, and special effects. You can also apply a workbook theme, and add a header and footer to a workbook.

Modify the Workbook Colors

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

To get the most out of Excel's color schemes, you must apply styles to your ranges, as described in Chapter 5.
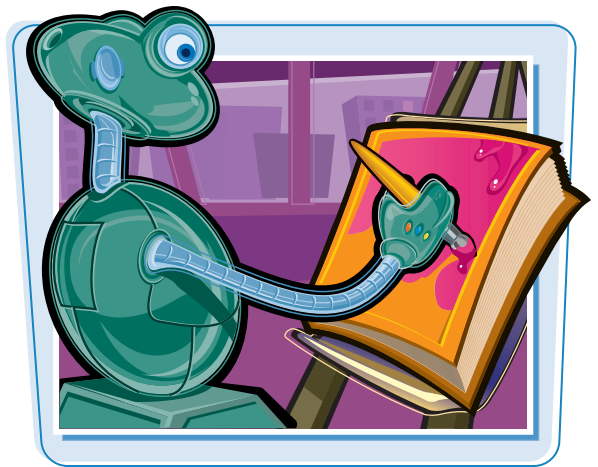
Modify the Workbook Colors

① Open or switch to the workbook you want to format.

② Click the **Page Layout** tab.
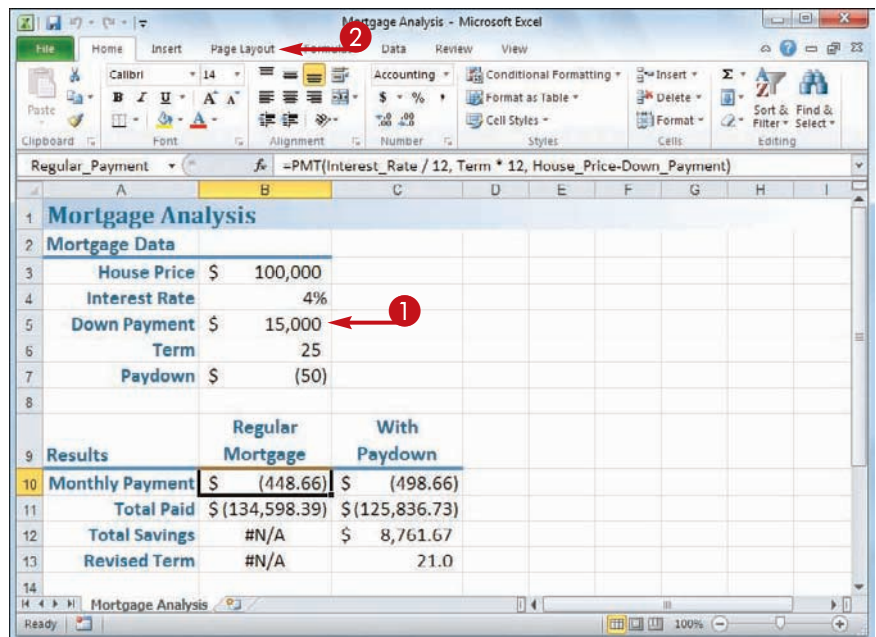
③ Click **Colors** (■).
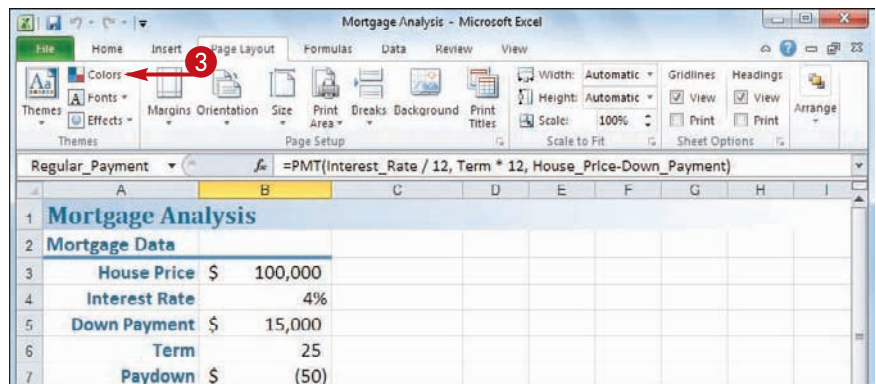
④ Click the color scheme you want
to apply.
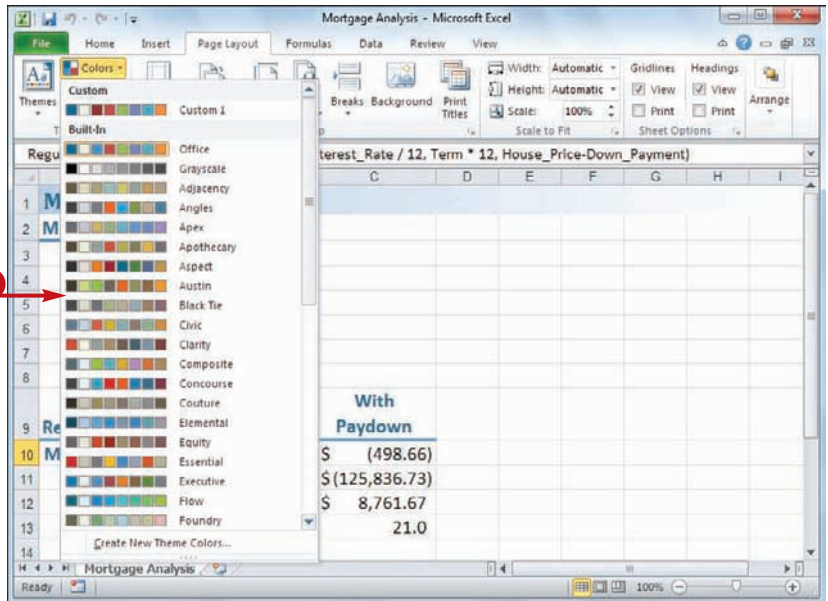
● Excel applies the color scheme to
the workbook.

TIP

Can I create my own color scheme?
Yes, by following these steps:

❶ Click the **Page Layout** tab.

❷ Click 🎨.

❸ Click **Create New Theme Colors**.

The Create New Theme Colors dialog box appears.

❹ For each theme color, click 🔽 and then click the color you want to use.

● The Sample area shows what your theme colors look like.

❺ Type a name for the custom color scheme.

❻ Click **Save**.
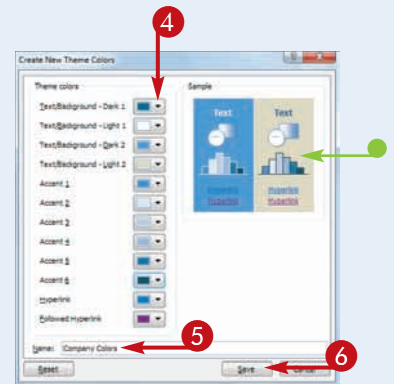
Set the Workbook Fonts

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 5.
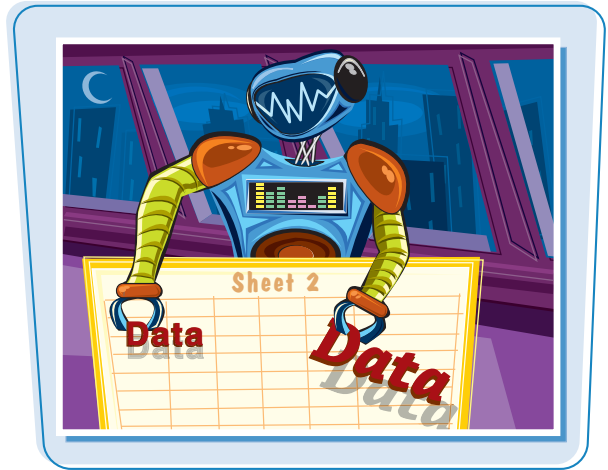
Set the Workbook Fonts

① Open or switch to the workbook you want to format.

② Click the **Page Layout** tab.
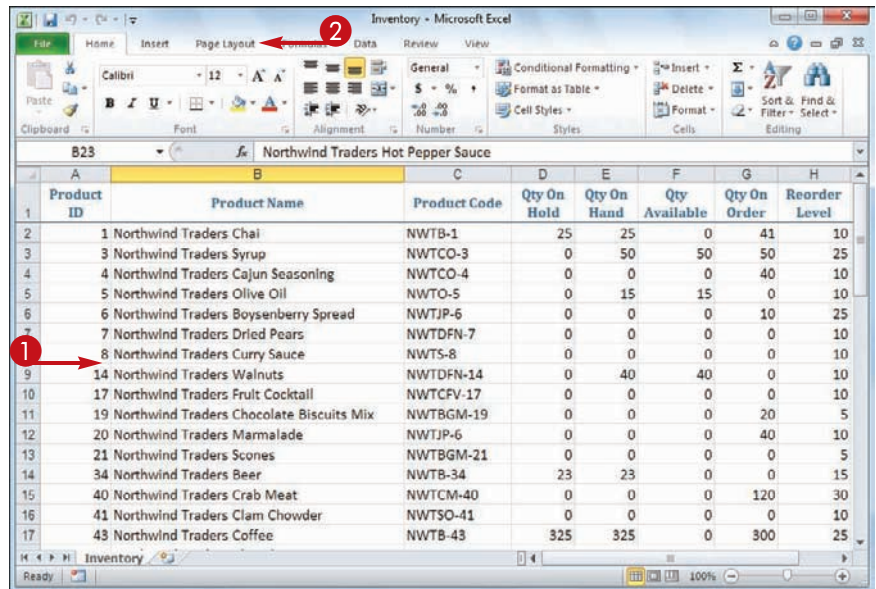
③ Click **Fonts** (A).
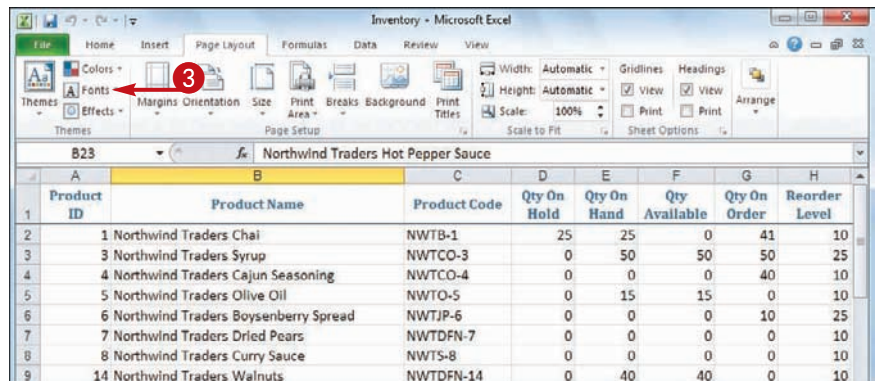
④ Click the font scheme you want to apply.
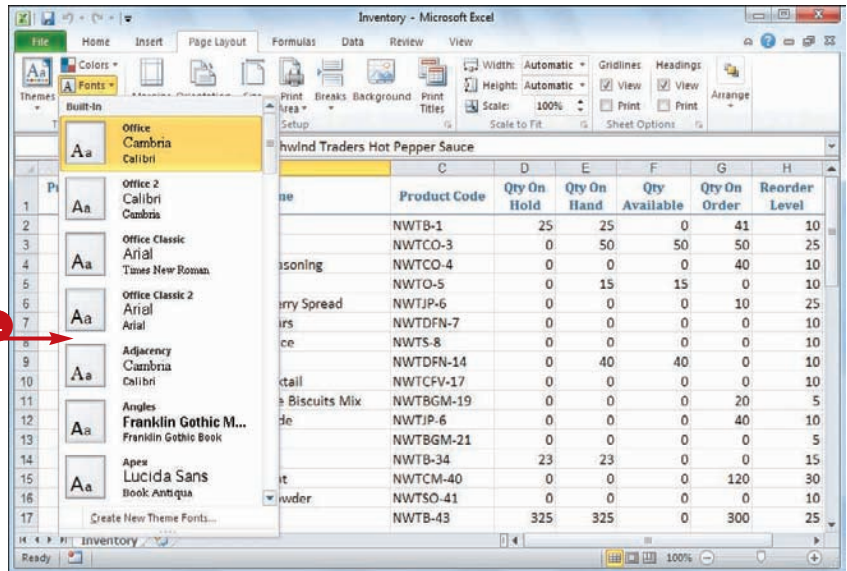
● Excel applies the heading font to the workbook's headings.

● Excel applies the body font to the workbook's regular text.

TIP
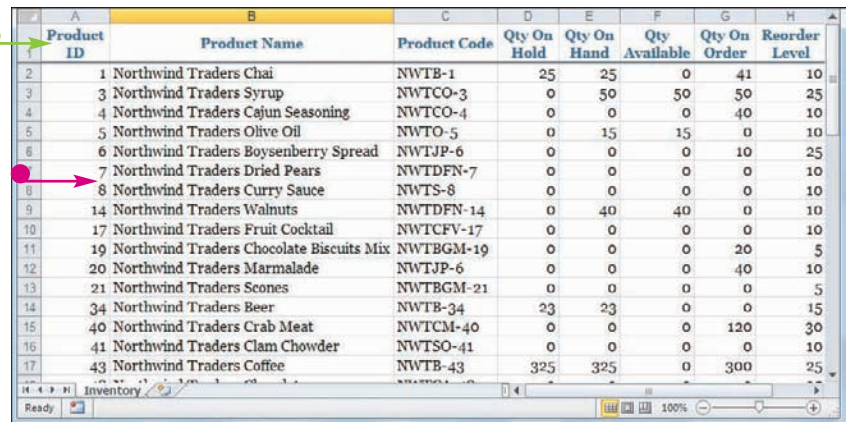
Can I create my own font scheme?

Yes, by following these steps:

① Click the **Page Layout** tab.

② Click [A].

③ Click **Create New Theme Fonts**.

The Create New Theme Fonts dialog box appears.

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 sheet text.
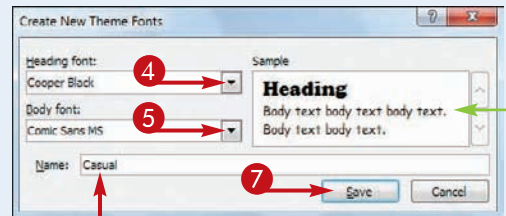
● The Sample area shows what your theme fonts look like.

⑥ Type a name for the custom font scheme.

⑦ Click **Save**.

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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 effect 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 a style to your chart, as described in Chapter 13; or to your graphic object, as described in Chapter 14.
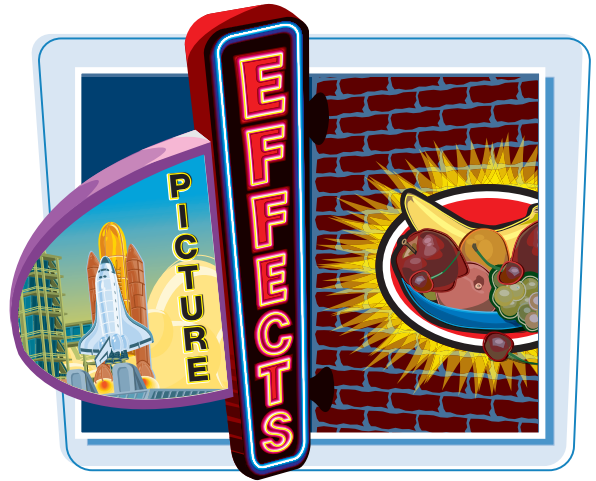
Choose Workbook Effects

1 Open or switch to the workbook you want to format.

2 Click the **Page Layout** tab.
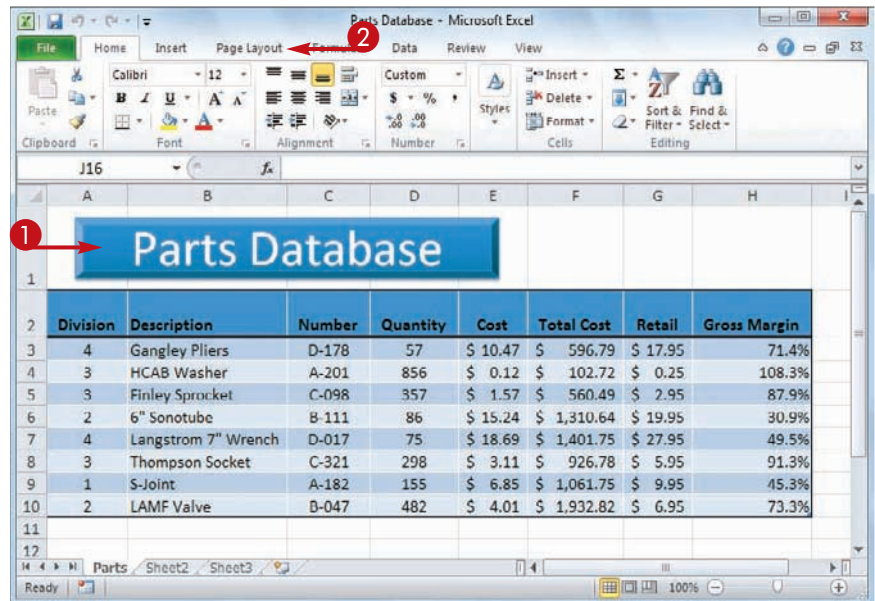
3 Click **Effects** (□).
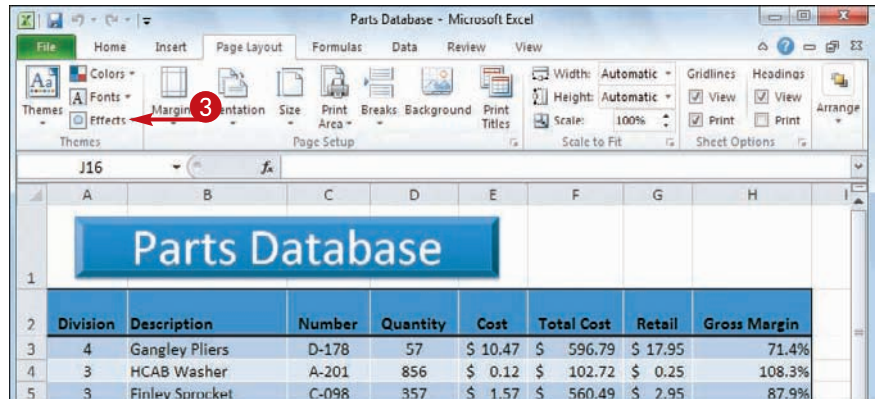
④ Click the effect scheme you want to apply.
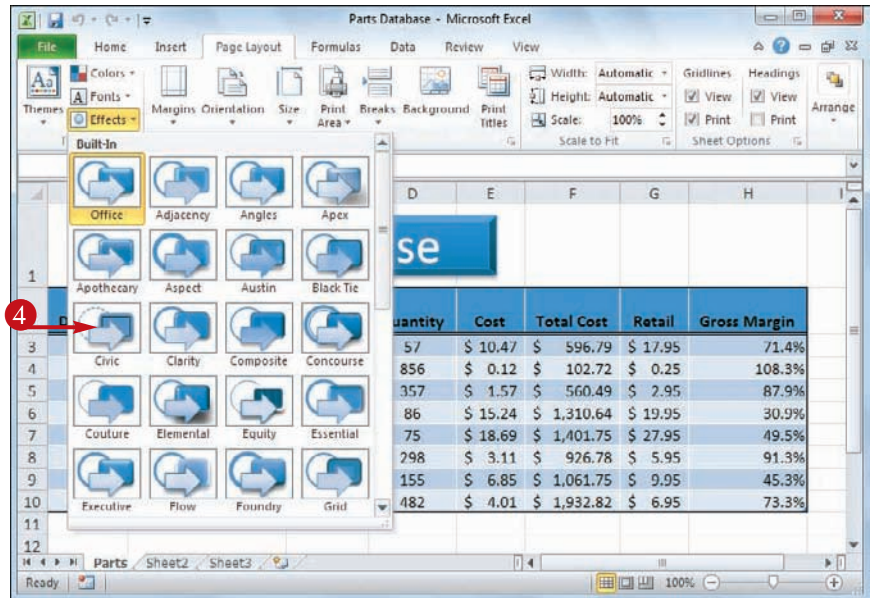
● Excel applies the effect scheme to the workbook's charts and graphics.
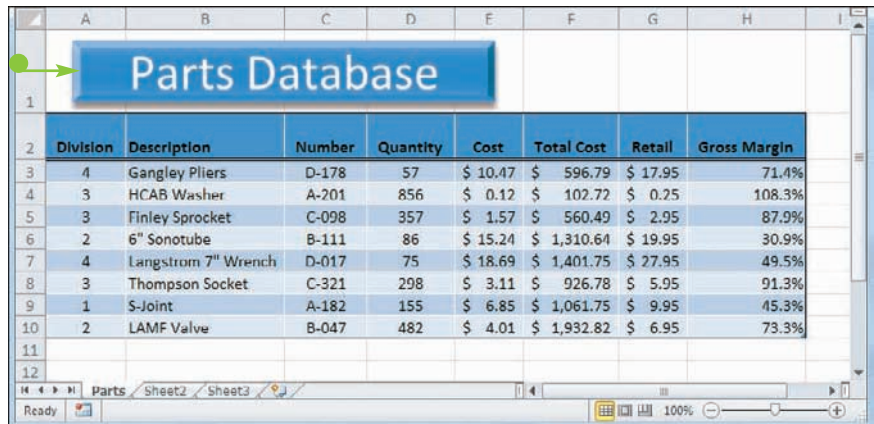
Can I create a custom effect scheme?

No. Unlike with the color schemes and font schemes described earlier in this chapter, Excel does not have a feature that enables you to create your own effect scheme.

Why are all the effect schemes the same color?

The color you see in the effect schemes depends on the color scheme you have applied to your workbook. If you apply a different color scheme, as described in "Modify the Workbook Colors," you will see a different color in the effect schemes. If you want to use a custom effect color, create a custom color scheme and change the Accent 1 color to the color you want.

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 colors, 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 5; to your charts, as described in Chapter 13; and to your graphic objects, as described in Chapter 14.
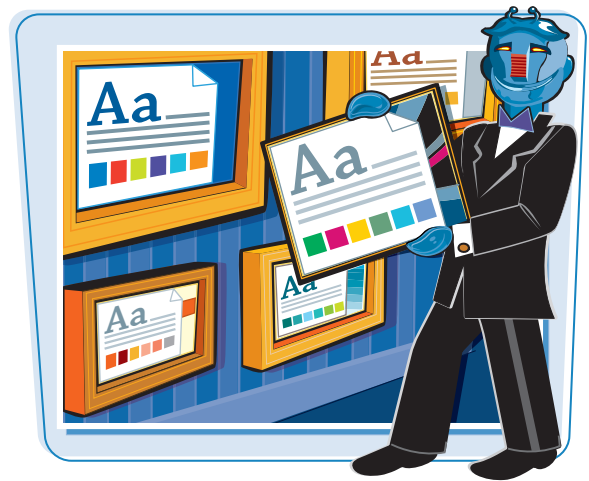
Apply a Workbook Theme

1 Open or switch to the workbook you want to format.

2 Click the **Page Layout** tab.
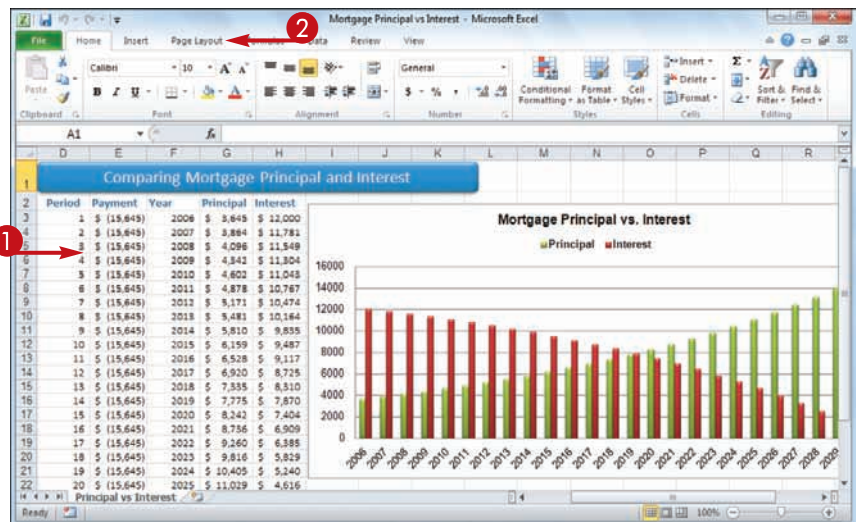
3 Click **Themes** (Aa).
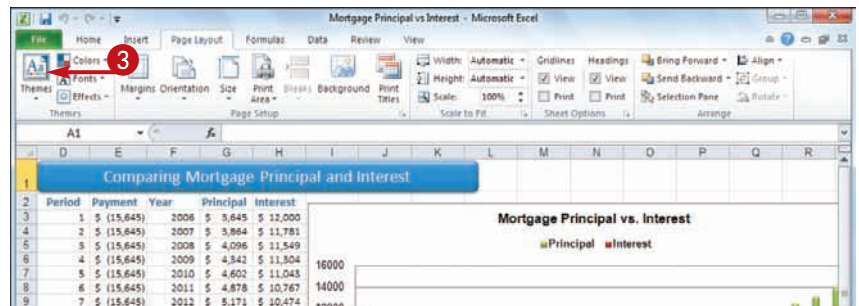
④ Click the workbook theme you want to apply.
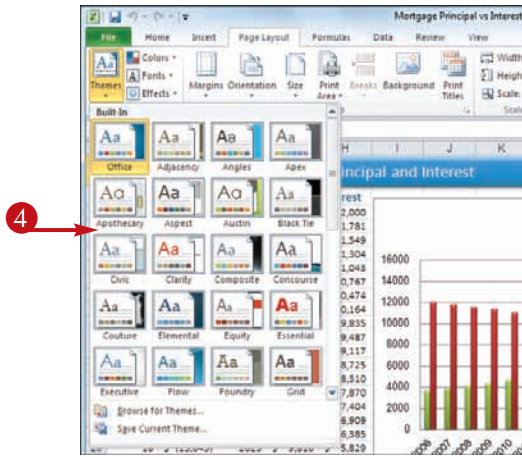
● Excel applies the theme to the workbook.
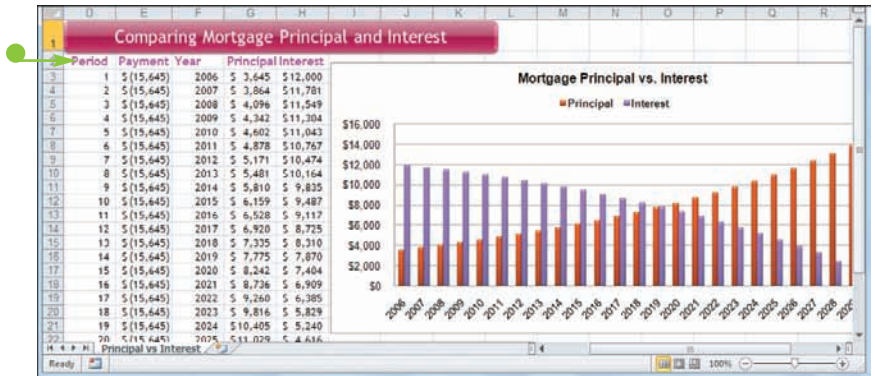
Can I create my own workbook theme?

Yes, by following these steps:

❶ Format the workbook with a color scheme, font scheme, and effect scheme, as described in the previous three sections.

❷ Click the **Page Layout** tab.

❸ Click 🔳.

❹ Click **Save Current Theme**.

The Save Current Theme dialog box appears.
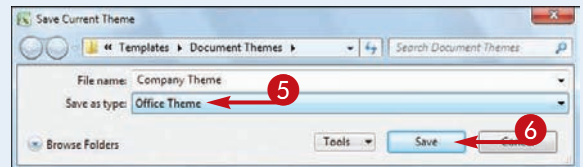
❺ Type a name for the custom theme.

❻ Click **Save**.

Add a Workbook Header

If you will be printing a workbook, you can enhance the printout by building a custom header that includes information such as the page number, date, file name, or even a picture.

The *header* is an area on the printed page between the top of the page text and the top margin. Excel offers a number of tools that make it easy to build a custom header.

Add a Workbook Header

1 Click the **View** tab.

2 Click **Page Layout** (⊡).

Excel switches to Page Layout view.

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

3 Click the **Click to add header** text.
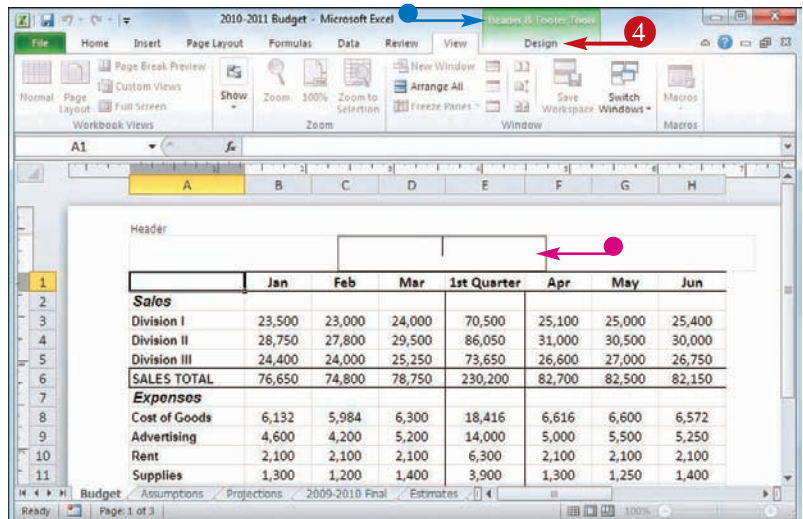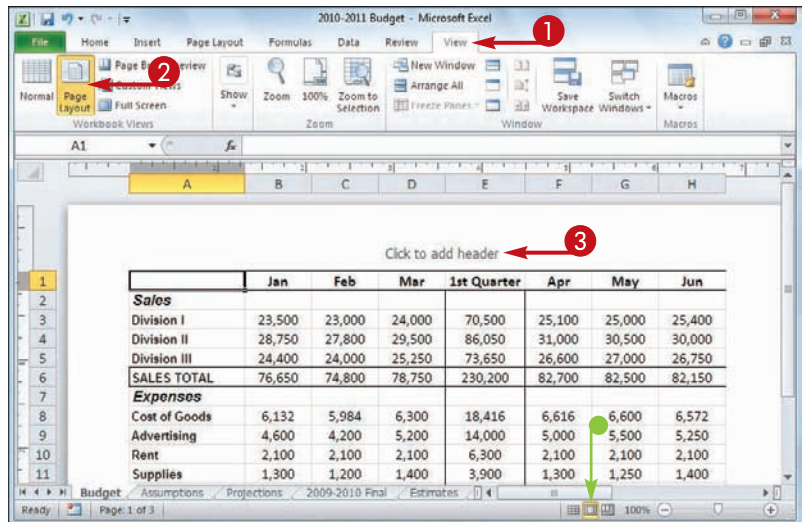
● Excel opens the header area for editing.

● Excel adds the Header & Footer Tools tab.

4 Click the **Design** tab.

5 Type any text you want to in the header.

6 If you want to include a predefined header item, click **Header** and then click the item.
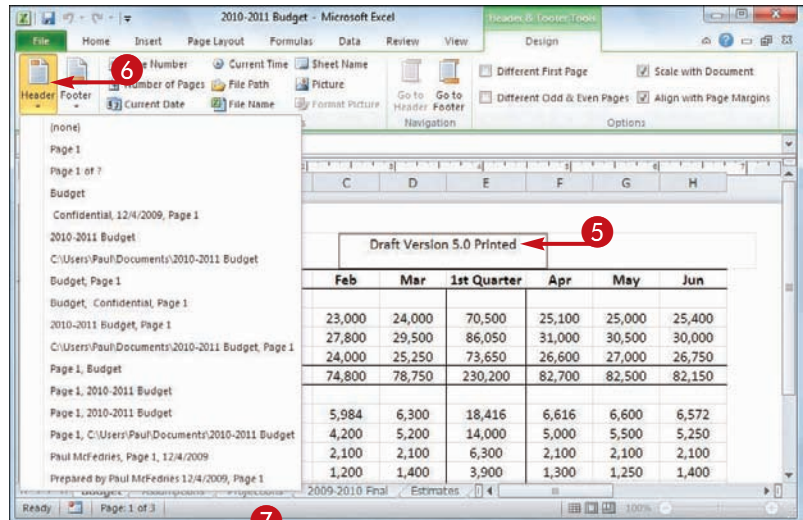
7 Click a button in the Header & Footer Elements group to add that element to the header.

● Excel inserts a code into the header, such as &[Date] for the Current Date element, as shown here.

8 Repeat Steps **5** to **7** to build the header.

9 Click outside the header area.

TIP
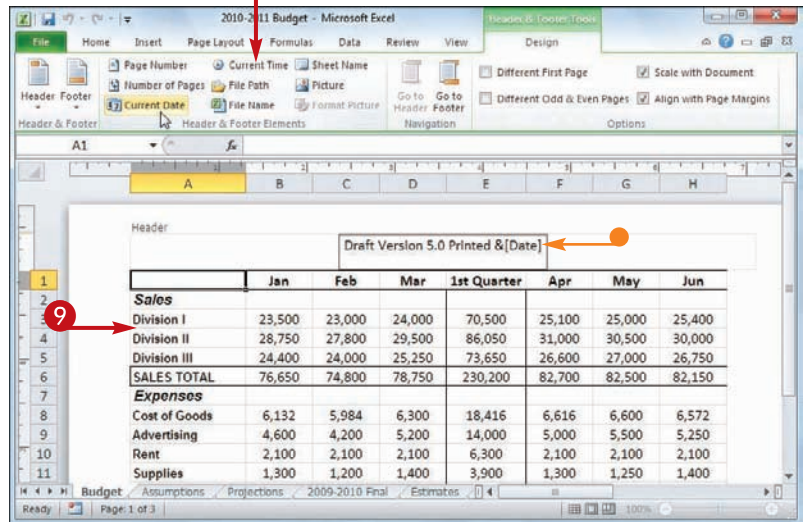
Can I have multiple headers in a workbook?

Yes. You can have a different header and footer on the first page, which is useful if you want to add a title or explanatory text to the first page. In the Design tab, click the **Different First Page** check box (☐ changes to ☑).

You can also have different headers and footers on the even and odd pages of the printout, such as showing the file name on the even pages and the page numbers on the odd pages. In the Design tab, click the **Different Odd & Even Pages** check box (☐ changes to ☑).

Add a Workbook Footer

If you will be printing a workbook, you can enhance the printout by building a custom footer that includes information such as the current page number, the total number of pages, the worksheet name, and more.

The *footer* is an area on the printed page between the bottom of the page text and the bottom margin. Excel offers a number of tools that make it easy to build a custom footer.

Add a Workbook Footer

1 Click the **View** tab.

2 Click **Page Layout** (📄).

Excel switches to Page Layout view.

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

3 Click the **Click to add header** text.

Note: You can also scroll down the bottom of the page and click the Click to add footer text. If you do this, you can skip Step 5.
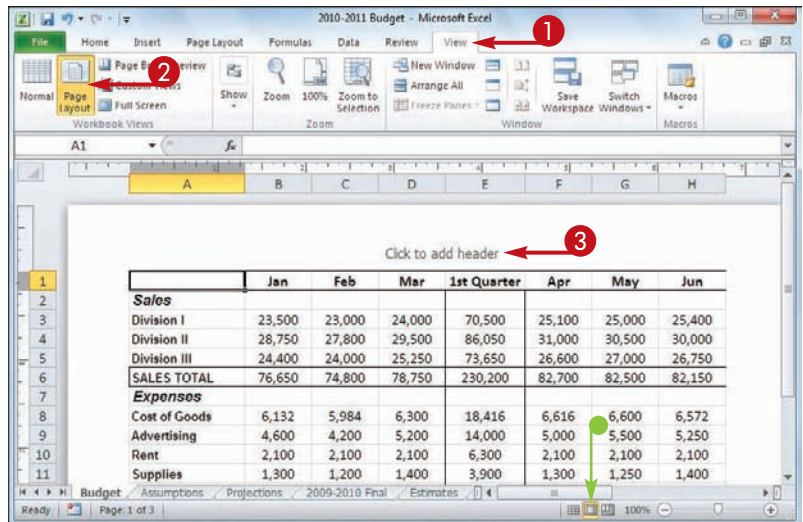
● Excel adds the Header & Footer Tools tab.

4 Click the **Design** tab.

5 Click **Go to Footer** (📄).

● Excel opens the footer area for editing.
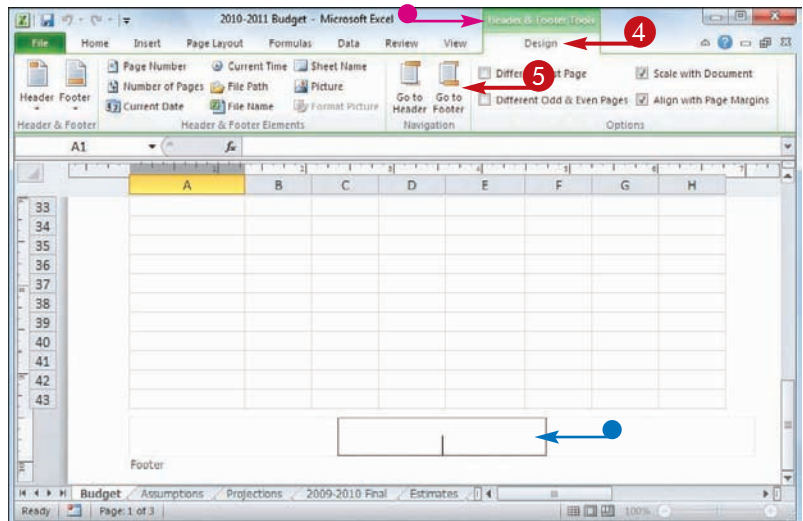
6 Type any text you want to in the footer.

7 If you want to include a predefined footer item, click **Footer** and then click the item.
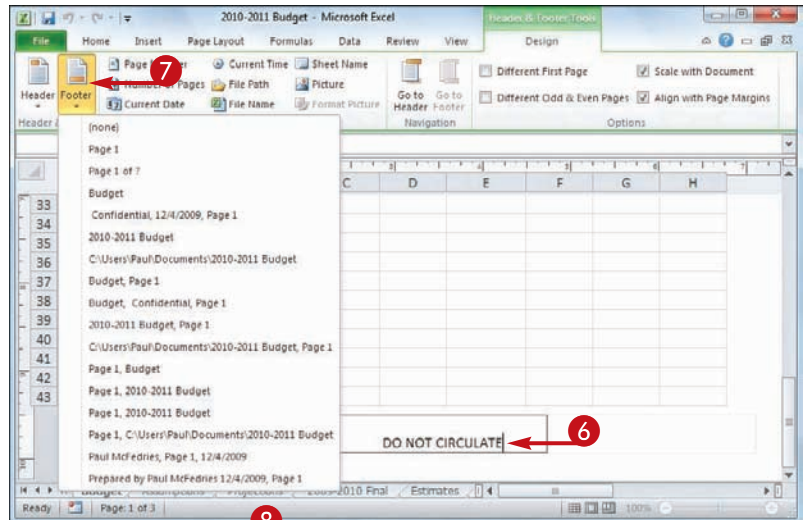
8 Click a button in the Header & Footer Elements group to add that element to the footer.

● Excel inserts a code into the footer, such as &[Pages] for the Number of Pages element, as shown here.

9 Repeat Steps **6** to **8** to build the footer.

10 Click outside the footer area.

TIP
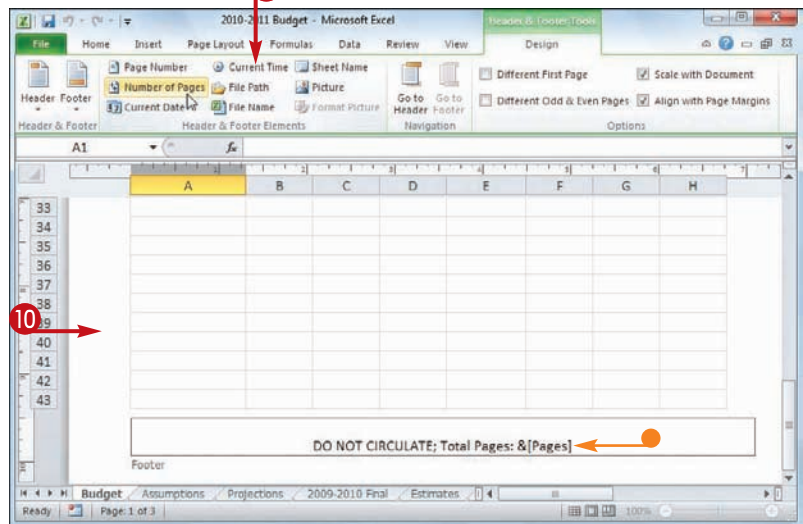
Can I view my headers and footers before I print the workbook?

Yes. Follow these steps:

1 Click the **File** tab.

2 Click **Print**.

● The right side of the tab shows you a preview of the workbook printout.

● Click the arrows to scroll through the pages.
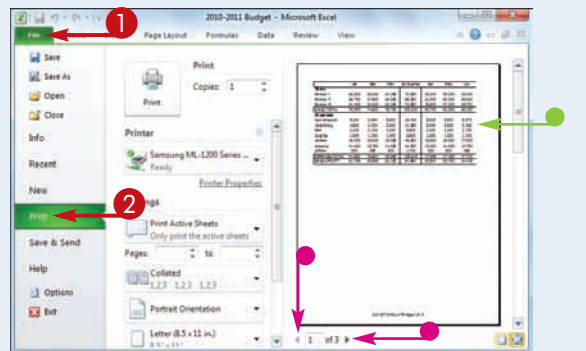
Printing Excel Workbooks

If you want to distribute hard copies of one or more worksheets or an entire workbook, you can use Excel's Print feature. Before you print, you can adjust print-related options such as the margins, page orientation, and paper size.

Adjust the Workbook Margins

You can get more room on the printed page to display your worksheet data by using narrow page margins. The *margins* are the blank areas that surround the printed data.

If you or another person will be writing notes on the printouts, consider using wider margins to allow more room for the notes.
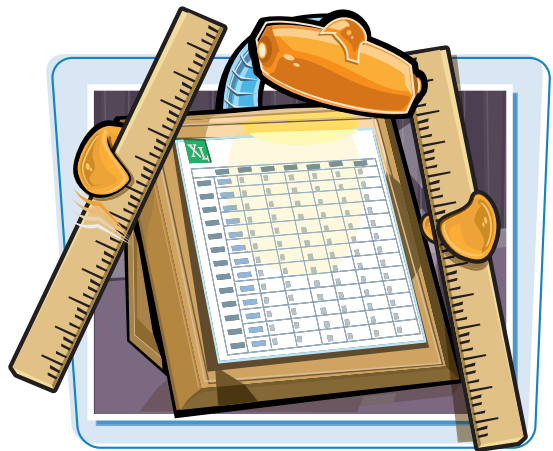
Adjust Margins Using the Ribbon

1 Open the workbook you want to print.

2 Click the **Page Layout** tab.

3 Click **Margins** ().

● If you see a margin setting you want to use, click the setting and skip the rest of these steps.

4 Click **Custom Margins**.

The Page Setup dialog box appears with the Margins tab selected.

5 Use the spin boxes to specify the margin sizes in inches.

Note: Do not make the margins too small or your document may not print properly. Most printers cannot handle margins smaller than about 0.25 inch, although you should consult your printer manual to confirm this. In particular, see if your printer offers a "borderless" printing option.

6 Click **OK**.

Excel adjusts the margin sizes.
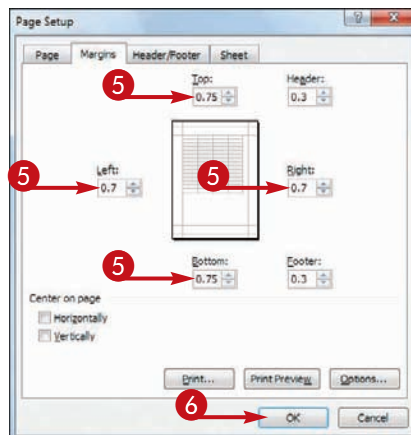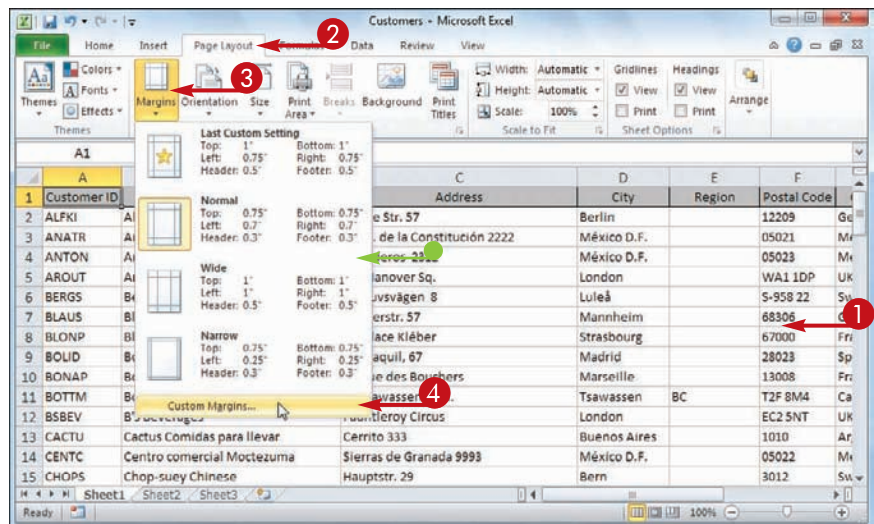
Adjust Margins Using the Ruler

① Open the workbook you want to print.

② Click **Page Layout** (▢).

③ Move the ↖ over the right edge of the ruler's left margin area (↖ changes to ↔).

④ Click and drag the edge of the margin to set the left margin width.

⑤ Click and drag the left edge of the right margin area to set the right margin width.

⑥ Move the ↖ over the bottom edge of the ruler's top margin area (↖ changes to ↕).

⑦ Click and drag the edge of the margin to set the top margin width.

⑧ Click and drag the top edge of the bottom margin area (not shown) to set the bottom margin width.
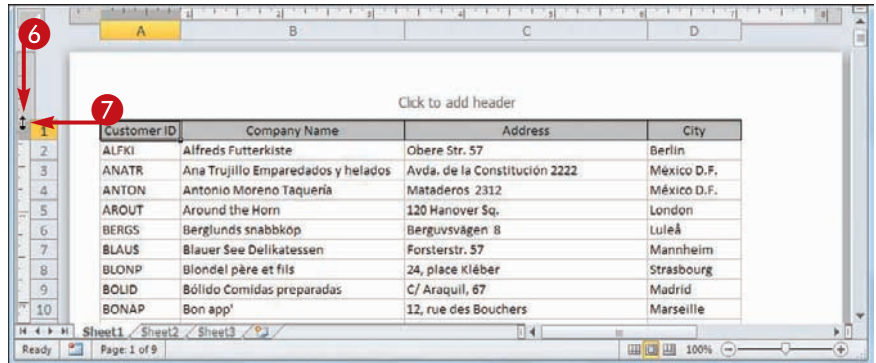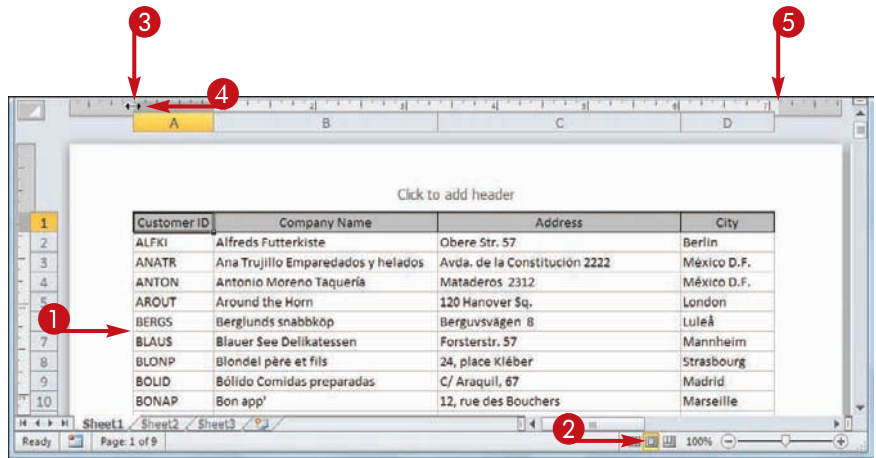
Note: You need to scroll down to the bottom of the page to see the bottom margin.

Excel adjusts the margin sizes.

TIPS

I increased my margin sizes to get more room around the text. Is there a way to center the text on the page?

Yes. This is a good idea if you want to ensure that you have the same amount of whitespace above and below the text, and to the left and right of the text. Follow Steps **1** to **4** on the previous page to open the Page Setup dialog box with the Margins tab selected. Click **Horizontally** (▢ changes to ☑), click **Vertically** (▢ changes to ☑), and then click **OK**.

What are the header and footer margins?

The header margin is the space between the workbook header and the top of the page, and the footer margin is the space between the workbook footer and the bottom of the page. (See Chapter 9 to learn how to add a header and footer to your workbook.) In the Margins tab of the Page Setup dialog box, use the Header and Footer spin boxes to set these margins.
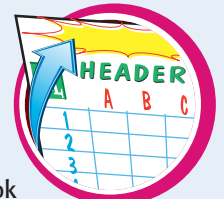
Change the Page Orientation

You can improve the look of your printout by changing the page orientation for your data. The page orientation determines whether Excel prints more rows or columns. Portrait orientation is taller, so it prints more rows; landscape orientation prints more columns.

Choose the orientation based on your worksheet data. If your worksheet has many rows, choose portrait; if your worksheet has many columns but just a few rows, choose landscape.
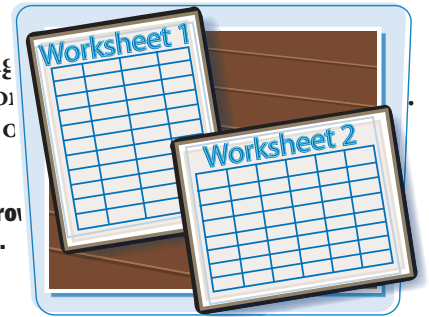
Change the Page Orientation

1 Open the workbook you want to print.

2 Click the **Page Layout** tab.

3 Click **Orientation** (▣).
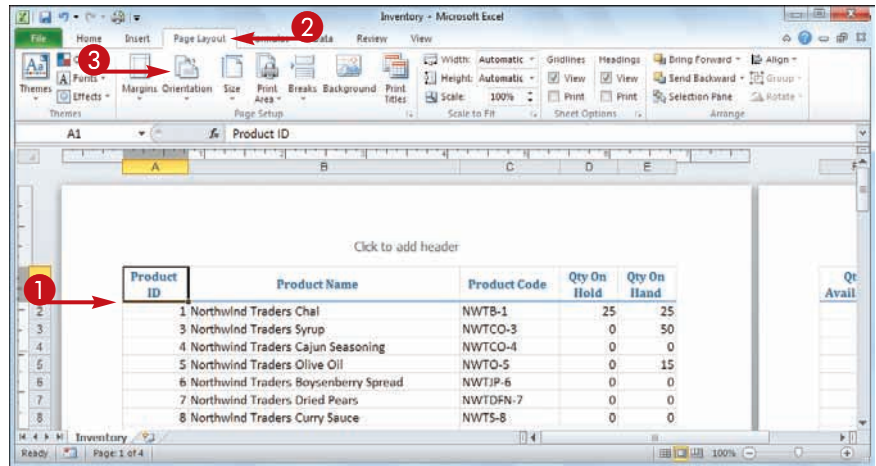
4 Click the orientation you want to use.

● Excel adjusts the orientation.

● Click ▣ to see the orientation.
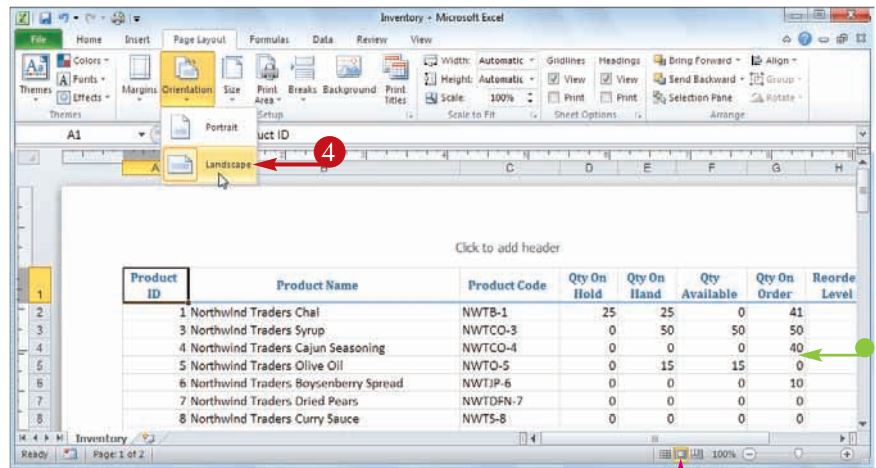
You can control what data appears on each printed page by inserting a page break in your worksheet. A *page break* is a location within a worksheet where Excel begins a new printed page. Excel normally inserts its own page breaks based on the number of rows in the sheet, the number and width of the sheet columns, the margin widths, and the page orientation.

A vertical page break starts a new page at a particular column; a horizontal page break starts a new page at a particular row.

Insert a Page Break

1. Open the workbook you want to print.

2. Select the cell to the right of and below where you want the vertical and horizontal page breaks to appear.

Note: Select a cell in row 1 to create just a vertical page break; select a cell in column A to create just a horizontal page break.

3. Click the **Page Layout** tab.

4. Click **Breaks** (🔲).

5. Click **Insert Page Break**.

● Excel inserts the page breaks and indicates the breaks with dashed lines.
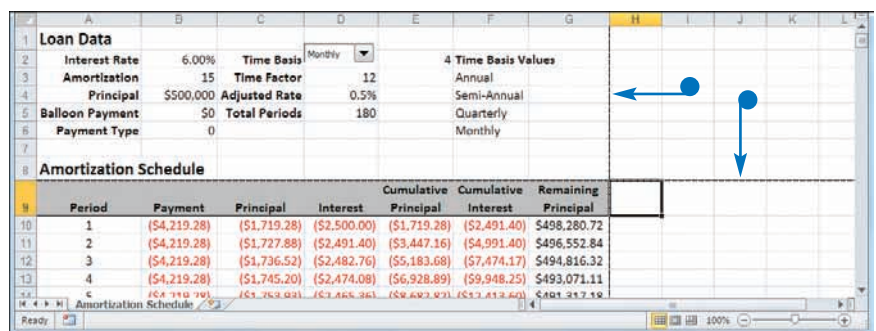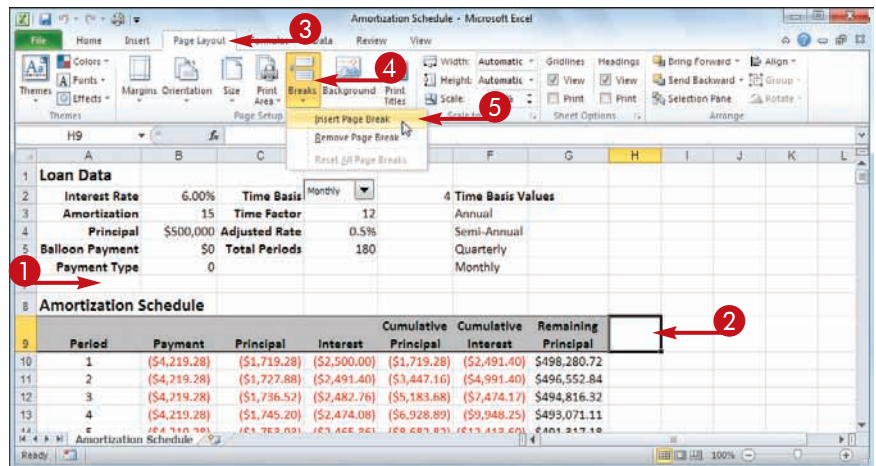
Choose a Paper Size

You can customize your print job by choosing a paper size that is appropriate for your printout. For example, if your worksheet has many rows, you might prefer to print it on a longer sheet of paper, such as a legal-size page (8½ inches wide by 14 inches long).

Check your printer manual to make sure your printer can handle the paper size you select.
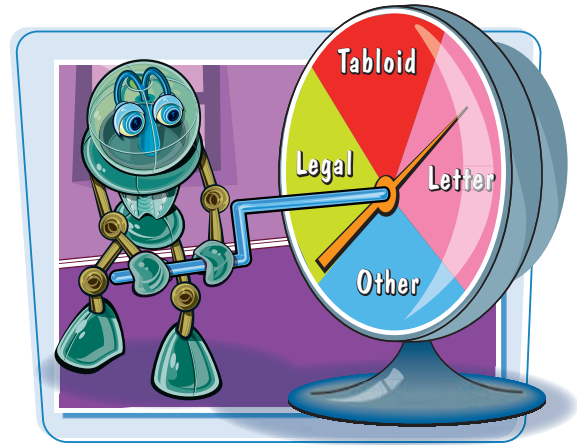
Choose a Paper Size

1 Open the workbook you want to print.

2 Click the **Page Layout** tab.

3 Click **Size** ( ).

● If you see a page size you want to use, click the size and skip the rest of these steps.

4 Click **More Paper Sizes**.
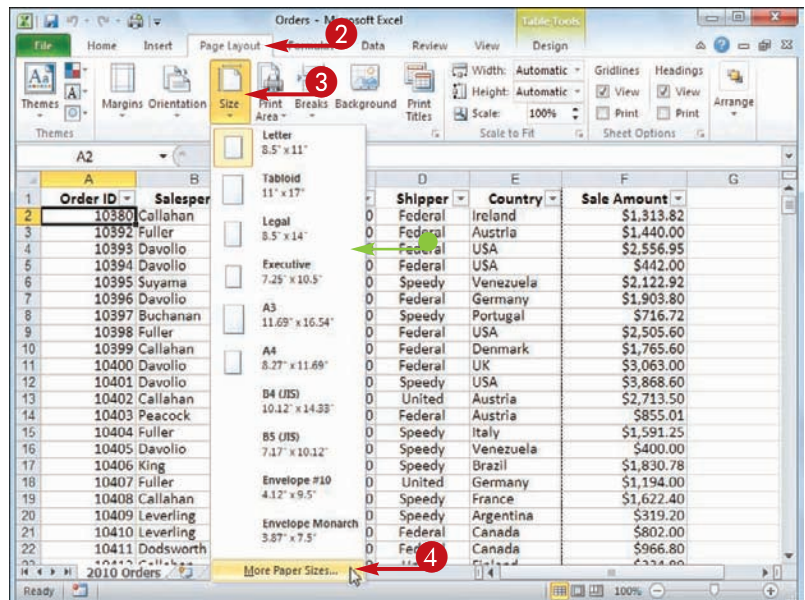
The Page Setup dialog box appears with the Page tab selected.

5 Click the **Paper size** 🔽 and then click the size you want to use.
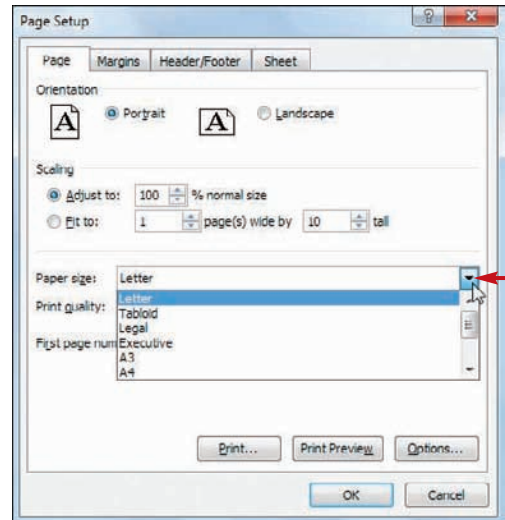
6 Click **OK**.

Excel uses the new paper size option when you print the workbook.
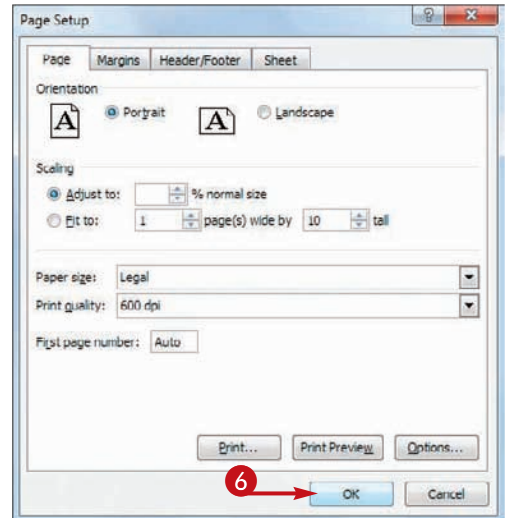
Is there a way to ensure that all my worksheet columns fit onto a single page?

Yes. First, try selecting a wider page size as described in this section. If that does not help, you can also try reducing the left and right margins, as described earlier in "Adjust the Workbook Margins." Alternatively, switch to the landscape orientation, as described earlier in "Change the Page Orientation."

If you still cannot get all of your columns to fit onto a single page, follow Steps **1** to **4** to display the Page Setup dialog box with the Page tab selected. Click **Fit to** (◎ changes to ◉), and set the page(s) wide spin box to **1**. Set the tall spin box to a number large enough that all of your printed rows will fit on a single page. (If you are not sure about the correct number, you can click **Print Preview** to check.) Click **OK**.

Set the Print Area

You can control the cells that Excel includes in the printout by setting the print area for the worksheet. The print area is a range of cells that you select. When Excel prints the workbook, it prints only the cells within the print area.

You normally define a single range of cells as the print area, but it is possible to set up two or more ranges as the print area. See the first Tip at the bottom of the next page.
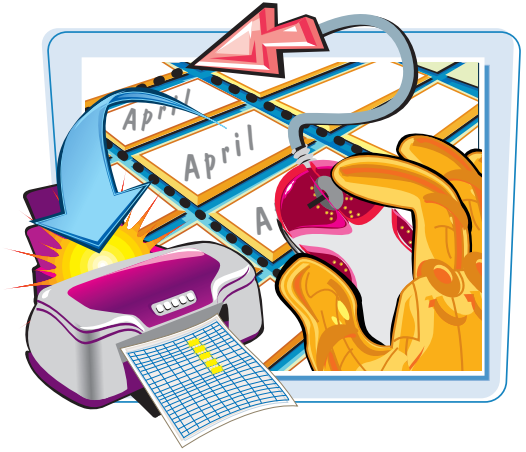
Set the Print Area

① Open the workbook you want to print.

② Select the range that you want to print.

3 Click the **Page Layout** tab.

4 Click **Print Area** (◨).

5 Click **Set Print Area**.
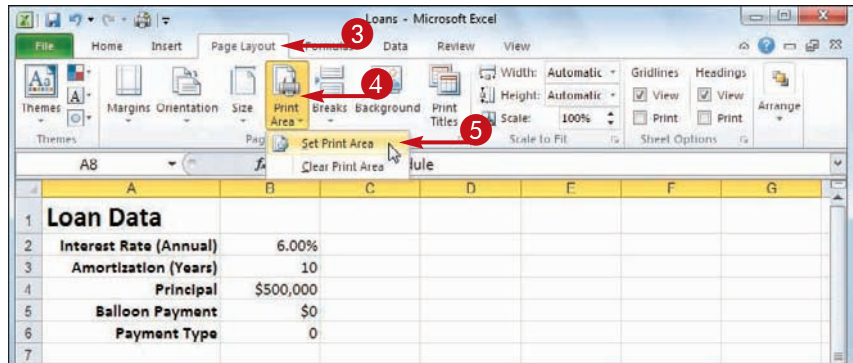
● Excel displays a dashed line around the print area.

When you print the worksheet, Excel prints only the cells within the print area.
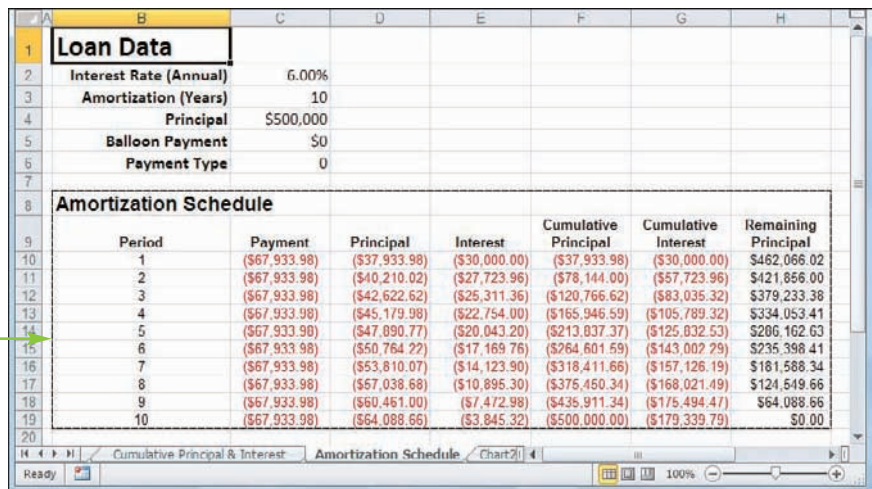
TIPS

Can I define two different ranges as the print area?

Yes. The easiest way to do this is to follow the steps in this section to set the first range as the print area. Next, select the second range, click the **Page Layout** tab, click ◨, and then click **Add to Print Area**. You can repeat this procedure to add as many ranges as you require to the print area.

How do I remove an existing print area?

First, note that if you just want to set a new print area, you do not need to remove the existing print area first. Instead, select the range you want to use and then follow Steps **3** to **5**. Excel replaces the original print area with the new one. If you no longer want a print area defined, click the **Page Layout** tab, click ◨, and then click **Clear Print Area**.

Configure Titles to Print on Each Page

You can make your printout easier to read by configuring the worksheet to print the range titles on each page of the printout. For example, if your data has a row of headings at the top, you can configure the worksheet to display those headings at the top of each printout page.

Similarly, if your data has a column of headings at the left, you can configure the worksheet to display those headings on the left side of each printout page.

Configure Titles to Print on Each Page

1 Open the workbook you want to print.

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

3 Click the **Page Layout** tab.

4 Click **Print Titles** (icon).

Excel opens the Page Setup dialog box with the Sheet tab displayed.
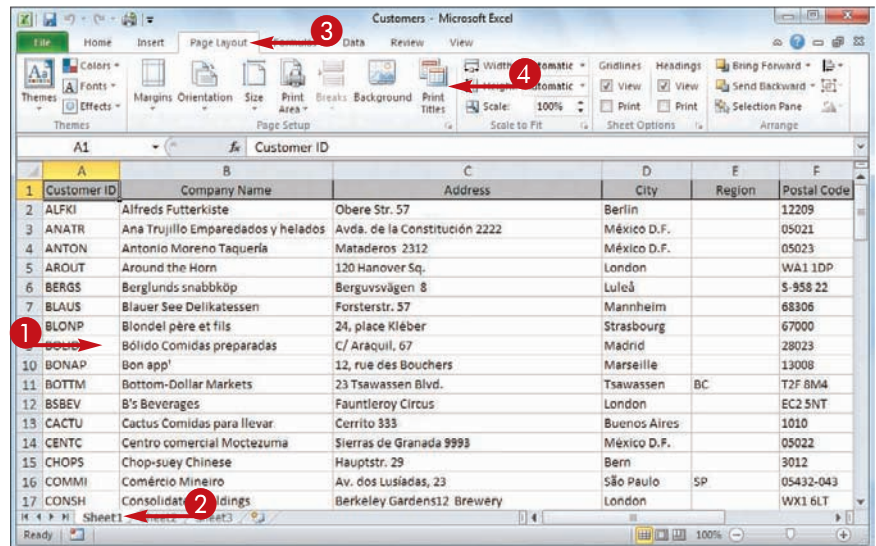
5 Click inside the **Rows to repeat at top** range box.

6 Click the **Collapse Dialog** button (icon).
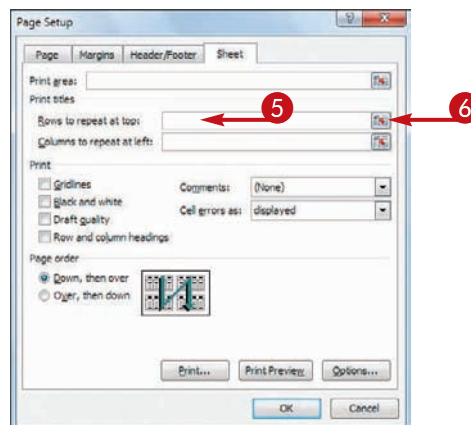
● Excel collapses the Page Setup dialog box.

The mouse pointer changes from ⬚ to ➡.

7 Use the mouse ➡ to click the row that you want to appear at the top of each printed page.

If you want more than one row to repeat at the top of each page, use the mouse ➡ to click the last row that you want to repeat.

8 Click the **Restore Dialog** button (⬛).

● The address of the row appears in the **Rows to repeat at top** box.

9 Click **OK**.
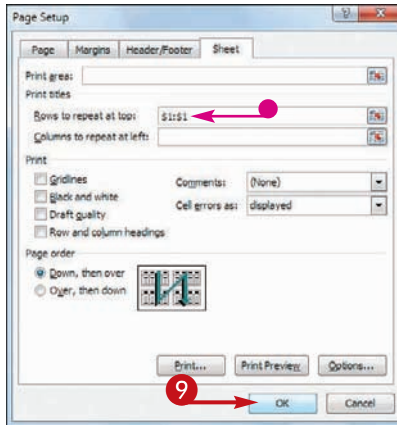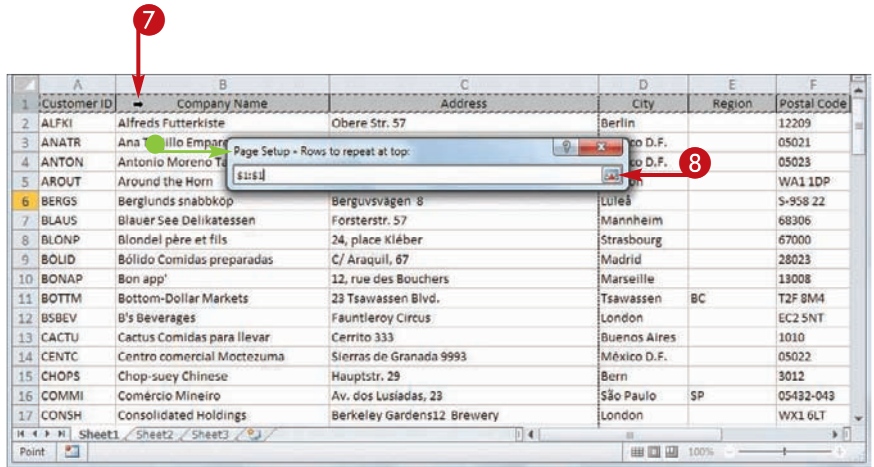
How do I configure my worksheet to print a column of headings on each page?

If your headings appear in a column rather than a row, you can still configure the sheet to print them on each page. Follow these steps:

1 Follow Steps **1** to **4** to open the Page Setup dialog box with the Sheet tab displayed.

2 Click inside the **Columns to repeat at left** range box.

3 Click ⬛.

4 Use the mouse ⬇ to click the column that you want to appear on the left of each printed page.

5 Click ⬛.

6 Click **OK**.
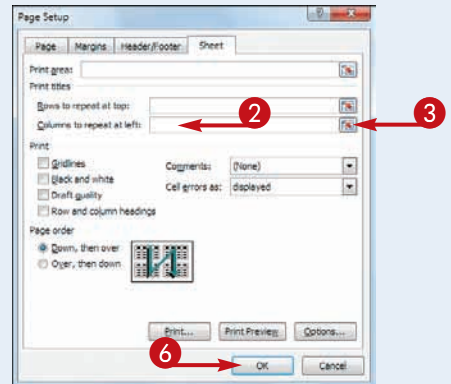
Preview the Printout

You can save time and paper by using the Print Preview feature to examine your printout on-screen before you send it to the printer. You can use Print Preview to make sure settings such as margins, page orientation, page breaks, print areas, and sheet titles all result in the printout you want.

If you see a problem in the preview, you can use the Print Preview screen to make adjustments to some printout options.

Preview the Printout

① Open the workbook you want to print.

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

③ Click the **File** tab.
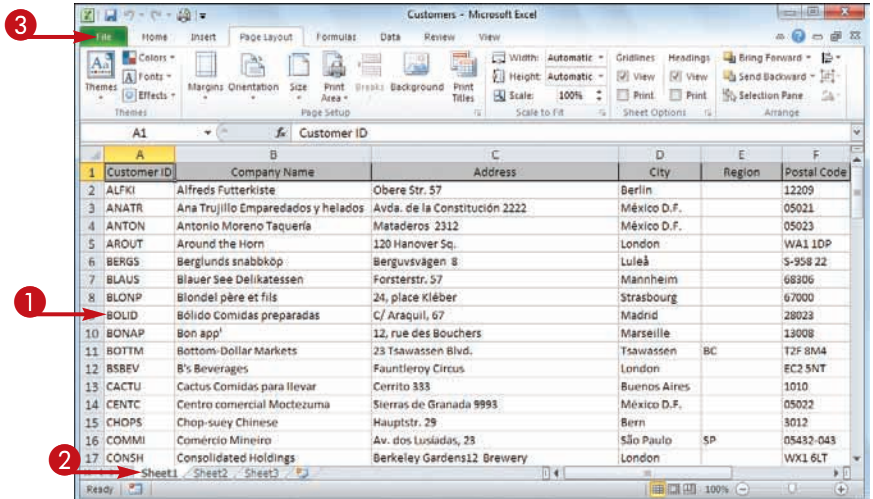
④ Click **Print**.

The Print Settings window appears.

● Excel displays a preview of the printout.

*Note: If you do not see the preview, click **Show Print Preview**.*

⑤ Click **Print Preview Next Page** (▶) to scroll through the printout pages.
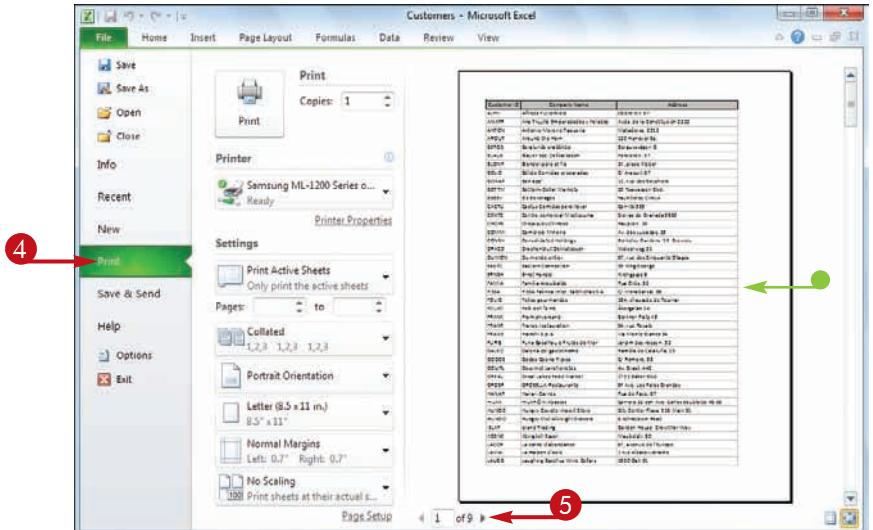
6 Click **Print Preview Previous Page** (◄) to return to a printout page.

● You can click the **Portrait Orientation** ▼ to change the page orientation.

● You can click the **Letter** ▼ to change the page size.

● You can click the **Normal Margins** ▼ to change the margins.
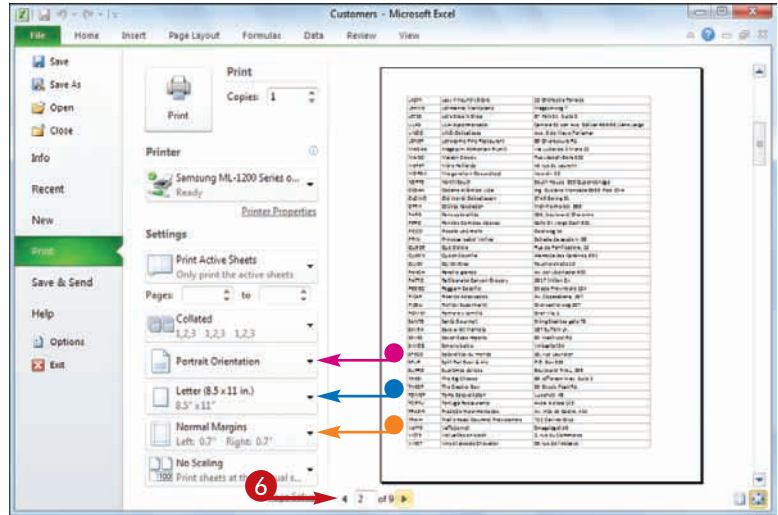
7 When you are done, click a Ribbon tab to return to the workbook.
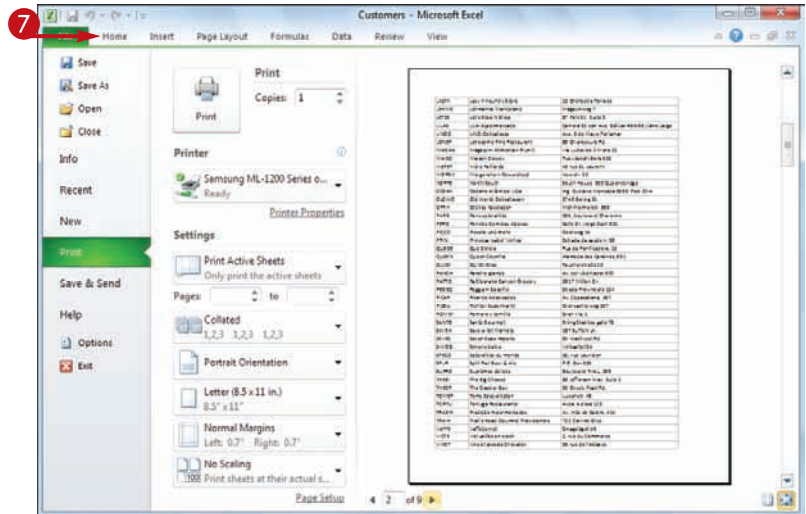
TIP

Can I fine-tune the margins in Print Preview?

Yes. The Margins list only offers a few predefined margin sets. To define custom margins in Print Preview, follow these steps:

1 Click **Show Margins** (▦).

● Print Preview augments the preview with lines that indicate the margins.

2 Click and drag a line to adjust that margin.
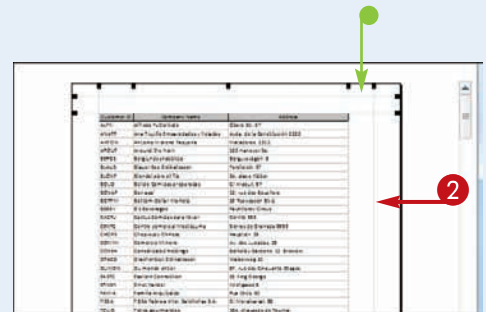
Print a Workbook

When you need a hard copy of your document, either for your files or to distribute to someone else, you can send the document to your printer.

This section assumes that you have a printer connected to your computer and that the printer is turned on.
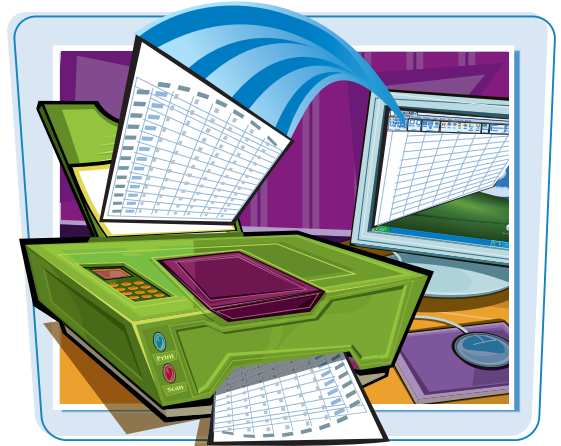
Print a Workbook

1. Open the workbook you want to print.

2. If you only want to print a single worksheet, click the tab of that worksheet.

Note: *To print multiple worksheets, hold down* **Ctrl** *and click the top of each sheet you want to print.*

3. Click the **File** tab.

4. Click **Print**.

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

The Print Settings window appears.

5 Type the number of copies to print in the Copies text box.

● If you have more than one printer, click the **Printer** and then click the printer that you want to use.

● By default, Print Active Sheets appears in the Print What list, which tells Excel to print only the selected sheets. If you want to print all the sheets in the workbook, click the **Print What** and then click **Print Entire workbook**.

6 Click **Print**.

Windows prints the document.

● The printer icon ( ) appears in the taskbar's notification area while the document prints.
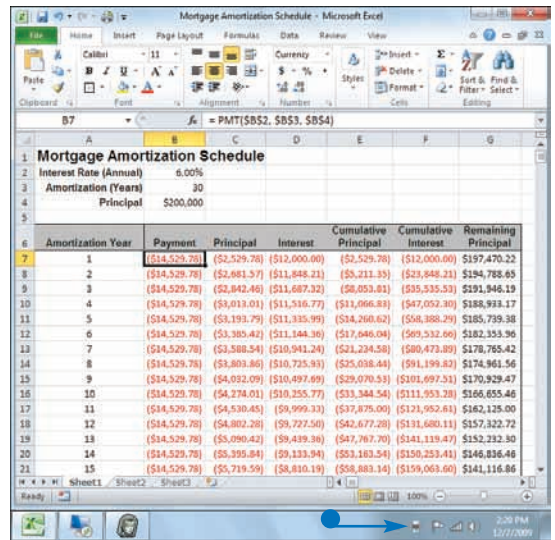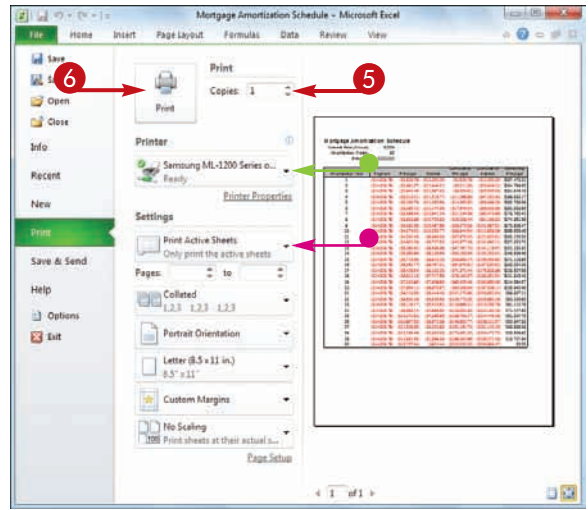
TIPS

Is there a faster way to print?

Yes. If you only want to print a single copy of the selected worksheet, you can use Excel's Quick Print command to send the worksheet directly to your default printer. Click in the Quick Access Toolbar, and then click **Quick Print** to add this command to the toolbar. You can then click **Quick Print** ( ) to print the current worksheet without having to go through the Print Settings window.

Can I print just part of a worksheet?

Yes, you can tell Excel to print just a range. Begin by selecting the range or ranges you want to print. (See Chapter 3 to learn how to select a range.) Follow Steps **3** to **5** to open the Print Settings window and choose the number of copies. Click the **Print What** and then click **Print Selection**. Click **Print**.
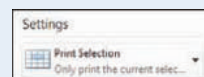
Analyzing Excel Data

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

Sort a Range

You can make a range easier to read and easier to analyze 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.
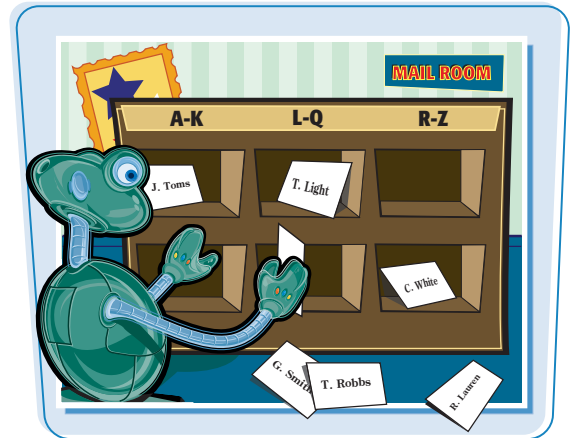
Sort a Range

1. Click any cell in the range you want to sort.

2. Click the **Data** tab.

3. Click **Sort** (🗒).
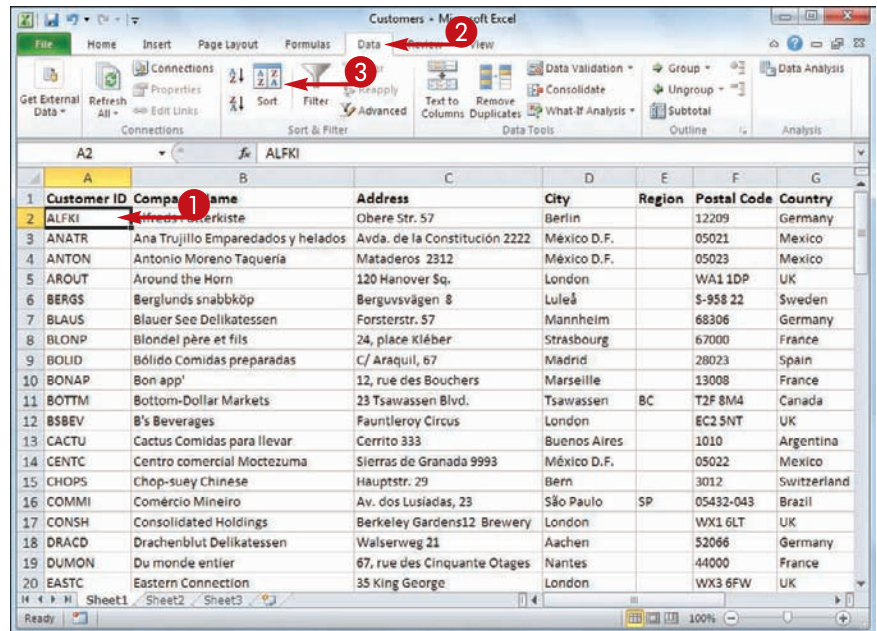
The Sort dialog box appears.

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**.
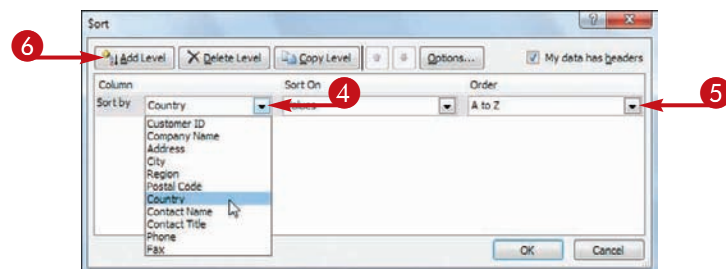
● Excel adds another sort level.

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.
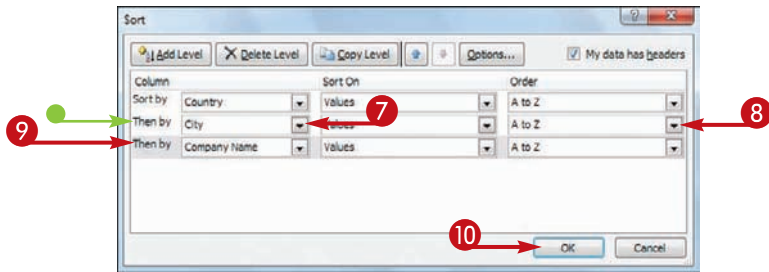
1	Customer ID	Company Name	Address	City	Region	Postal Code	Country
2	CACTU	Cactus Comidas para llevar	Cerrito 333	Buenos Aires		1010	Argentina
3	OCEAN	Océano Atlántico Ltda.	Ing. Gustavo Moncada 8585Piso 2	Buenos Aires		1010	Argentina
4	RANCH	Rancho grande	Av. del Libertador 900	Buenos Aires		1010	Argentina
5	ERNSH	Ernst Handel	Kirchgasse 6	Graz		8010	Austria
6	PICCO	Piccolo und mehr	Geislweg 14	Salzburg		5020	Austria
7	MAISD	Maison Dewey	Rue Joseph-Bens 532	Bruxelles		B-1180	Belgium
8	SUPRD	Suprêmes délices	Boulevard Tirou, 255	Charleroi		B-6000	Belgium
9	GOURL	Gourmet Lanchonetes	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 Paço, 67	Rio de Janeiro	RJ	05454-876	Brazil
12	QUEDE	Que Delícia	Rua da Panificadora, 12	Rio de Janeiro	RJ	02389-673	Brazil
13	RICAR	Ricardo Adocicados	Av. Copacabana, 267	Rio de Janeiro	RJ	02389-890	Brazil
14	COMMI	Comércio Mineiro	Av. dos Lusíadas, 23	São Paulo	SP	05432-043	Brazil
15	FAMIA	Família Arquibaldo	Rua Orós, 92	São Paulo	SP	05442-030	Brazil
16	QUEEN	Queen Cozinha	Alameda dos Canários, 891	São Paulo	SP	05487-020	Brazil
17	TRADH	Tradição Hipermercados	Av. Inês de Castro, 414	São Paulo	SP	05634-030	Brazil
18	MEREP	Mère Paillarde	43 rue St. Laurent	Montréal	Québec	H1J 1C3	Canada
19	BOTTM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada
20	LAUGB	Laughing Bacchus Wine Cellars	1900 Oak St.	Vancouver	BC	V3F 2K1	Canada

TIPS

Is there a faster way to sort a range?

Yes, as long as you only need to sort your range on a single column. First, click in any cell inside the column you want to use for the sort. Click the **Data** tab and then click one of the following buttons in the Sort & Filter group:

⬛	Click for an ascending sort.
⬛	Click for a descending sort.
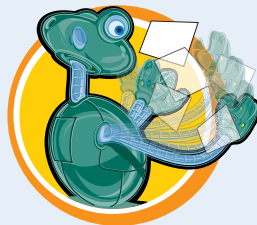
How do I sort a range using the values in a row instead of a column?

Excel normally sorts a range from top to bottom based on the values in one or more columns. However, you can tell Excel to sort the 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** to display the Sort Options dialog box, select the **Sort left to right** option (◉ changes to ◉), and then click **OK**.

SORT DATA

Filter a Range

You can analyze table data much faster by filtering the data 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.
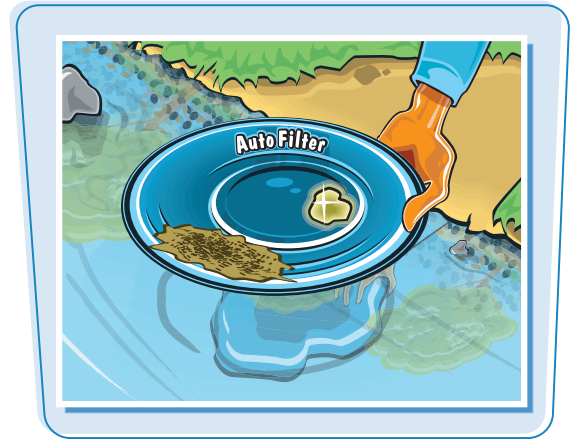
Filter a Range

1 Click inside the table.

2 Click the **Data** tab.

3 Click **Filter** ( ).
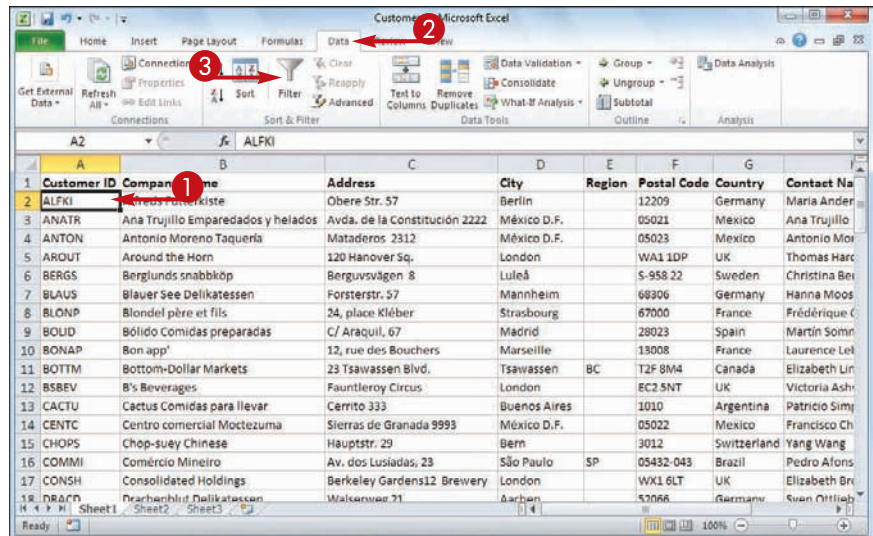
● Excel adds to each field.

4 Click for the field you want to use as the filter.
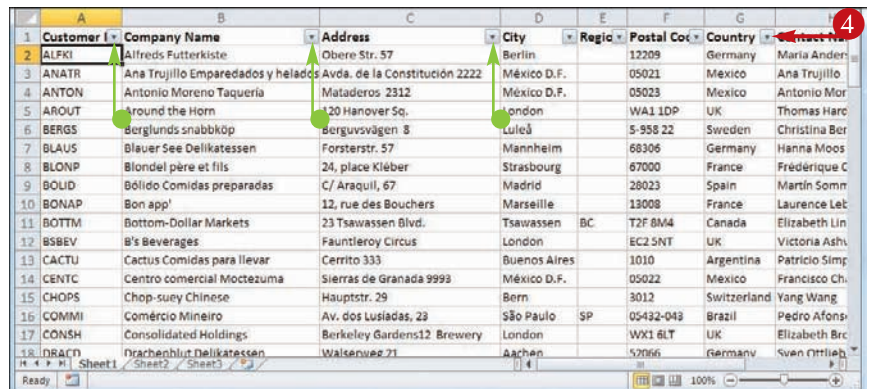
- Excel displays a list of the unique values in the field.

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

⑥ Click **OK**.
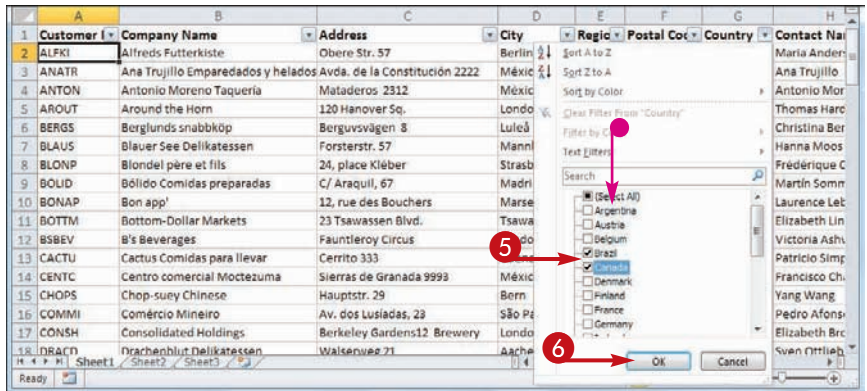
- Excel filters the table to show only those records that have the field values you selected.

- Excel displays the number of records found.

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

⑦ To remove the filter, click **Clear** (⟱).
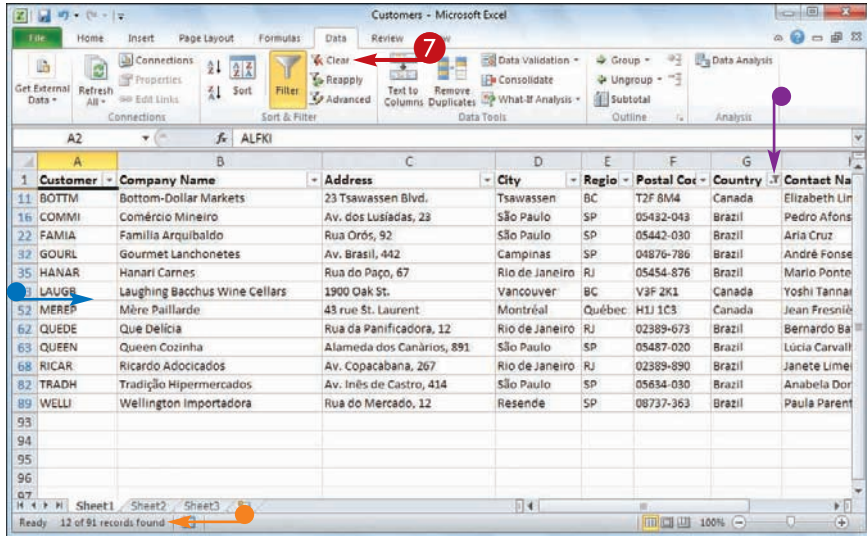
TIP

Can I create more sophisticated filters?

Yes, by using a second technique called *quick filters*, which enables you to specify criteria for a field:

① Follow Steps **1** to **4** to display the filter list for the field you want to use.

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.

Note: Some quick filters do not require extra input, so you can skip the next two steps.

④ Enter the value you want to use.

⑤ Click **OK**.

Excel filters the table.
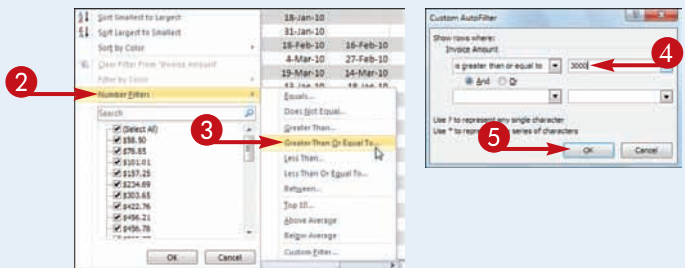
Set Data Validation Rules

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.

Numbers Only!
Club Calculator
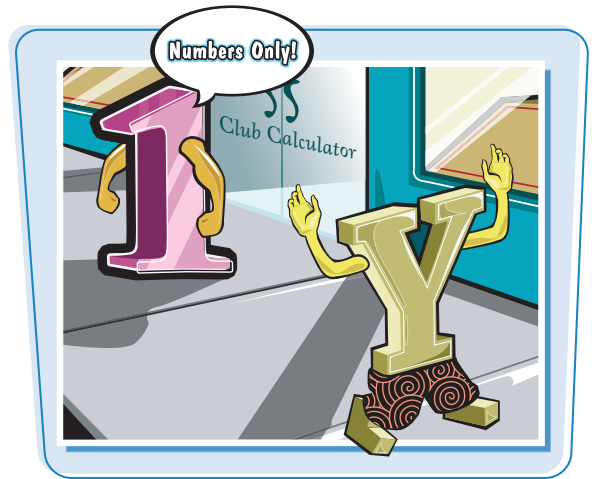
Set Data Validation Rules

1 Click the cell you want to restrict.

2 Click the **Data** tab.

3 Click **Data Validation** ().
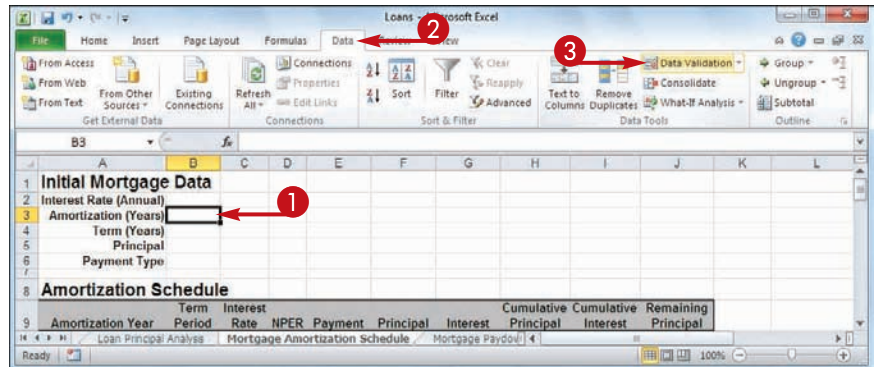
The Data Validation dialog box appears.

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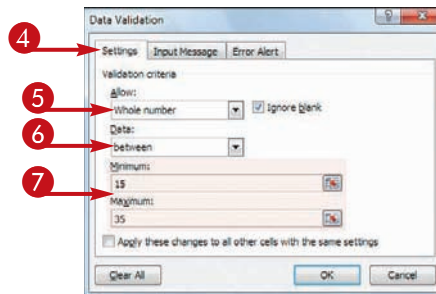
Note: The criteria boxes you see depend on the operator you chose in Step 6.

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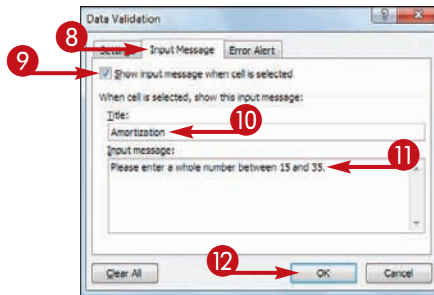
Excel configures the cell to accept only values that meet your criteria.

● When the user selects the cell, the input message appears.
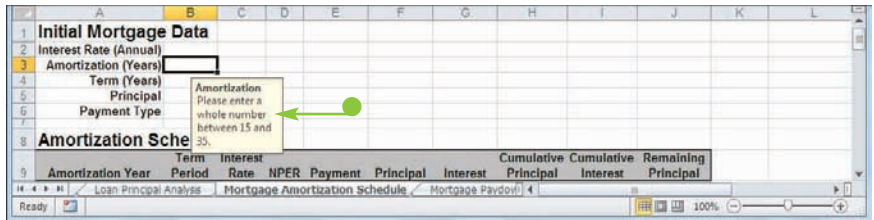
TIPS

Can I configure the cell to display a message if the user tries to enter an invalid value?

Yes. 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**.

How do I remove data validation from a cell?

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**.
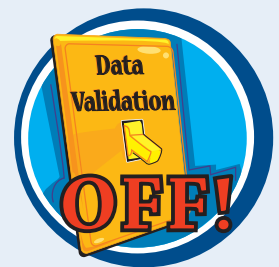
Convert a Range to a Table

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 organizational structure that makes it easy to add, edit, and sort data.

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

Convert a Range to a Table

1 Click a cell within the range that you want to convert to a table.
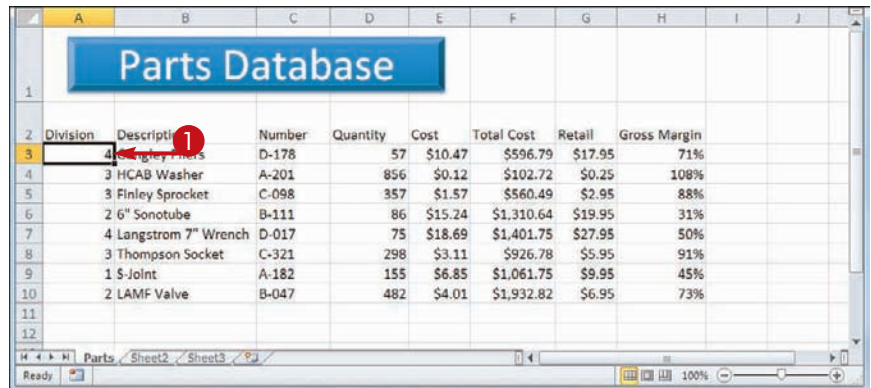
2 Click the **Insert** tab.

3 Click **Table** (⊞).

Note: You can also choose the Table command by pressing `Ctrl` + `T`.
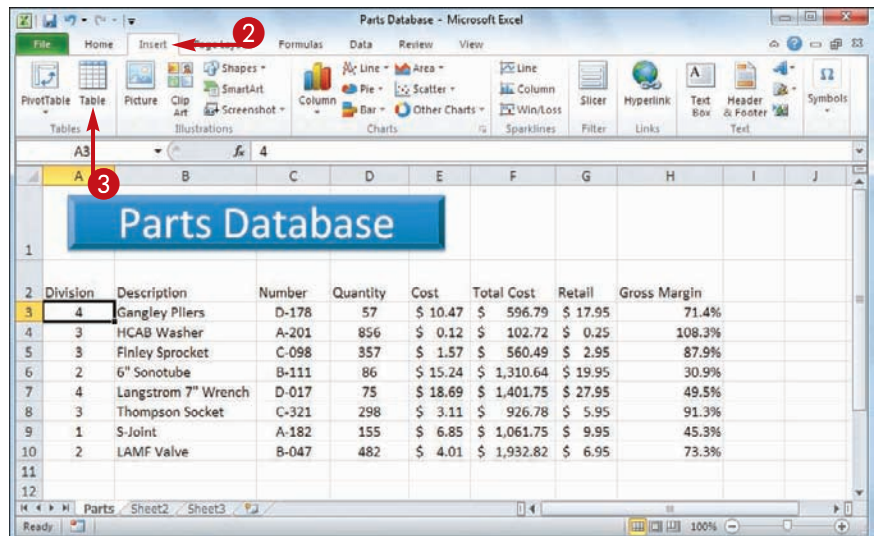
The Create Table dialog box appears.

● Excel selects the range that it will convert to a table.

● If you want to change the range, click [icon], drag the mouse ⟨⊹⟩ over the new range, and then click [icon].

④ Click **OK**.
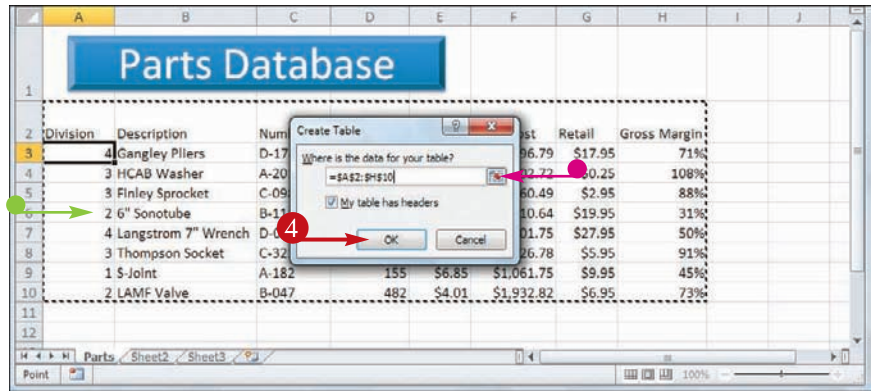
Excel converts the range to a table.

● Excel applies a table format to the range.

● The Table Tools contextual tab appears.

● AutoFilter drop-down lists appear in each field heading.

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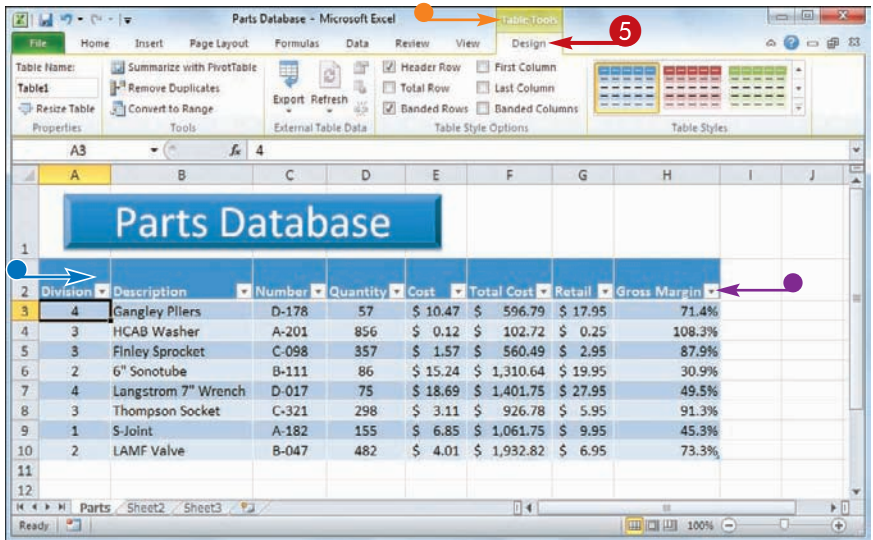
TIPS

How do I add records to the table?

To add a record to the end of the 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**.

How do I convert a table back into a range?

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** ([icon]). When Excel asks you to confirm, click **Yes**. Excel removes the AutoFilter drop-down lists and hides the Table Tools contextual tab.
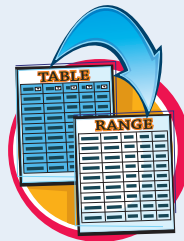
Create a Data Table

If you are interested in studying the effect a range of values has on the 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.

Create a Data Table

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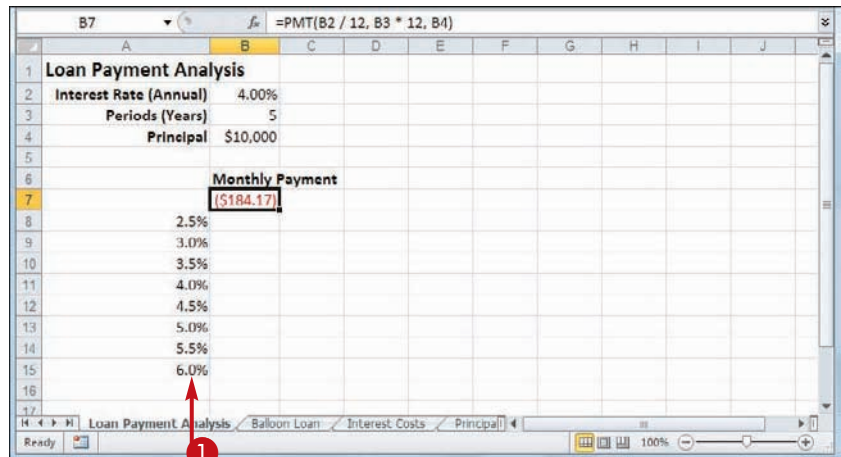
② Select the range that includes the input values and the formula.

③ Click the **Data** tab.

④ Click **What-If Analysis** (📊).

⑤ Click **Data Table**.
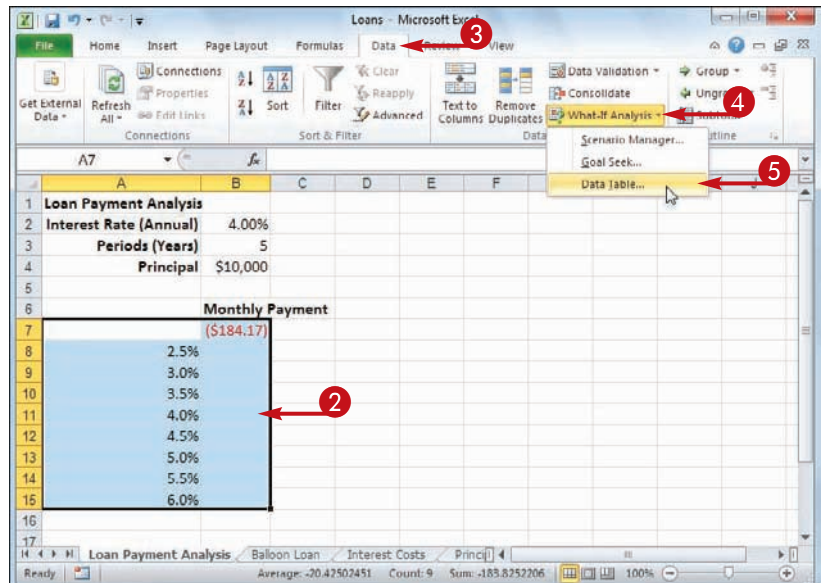
The Data Table dialog box appears.

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.
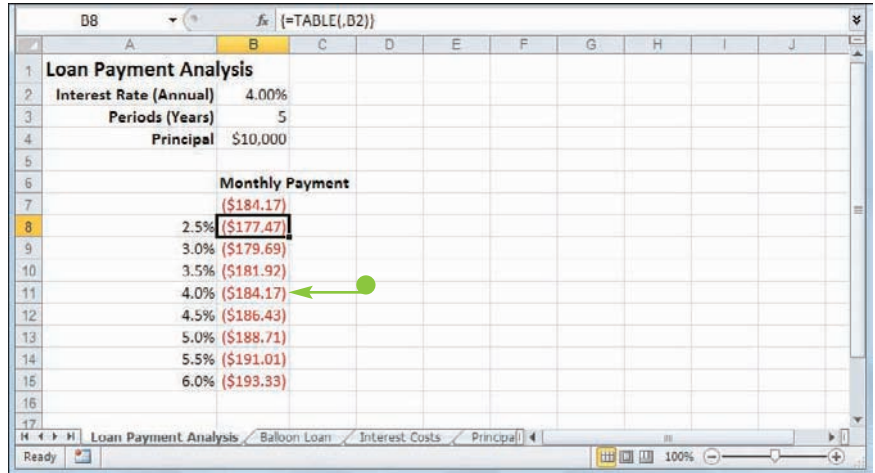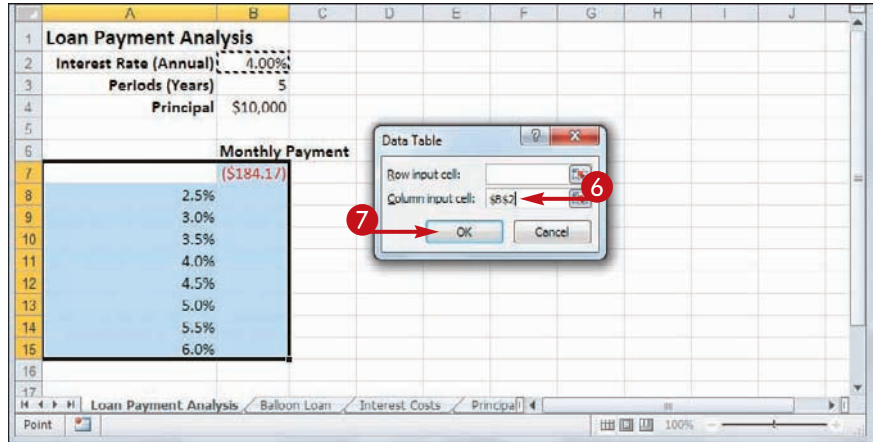
TIPS

What is what-if analysis?

The technique called *what-if analysis* is perhaps the most basic method for analyzing 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.

When I try to delete part of the data table, I get an error. Why?

The 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.

Summarize Data with Subtotals

Although you can use formulas and worksheet functions to summarize 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.
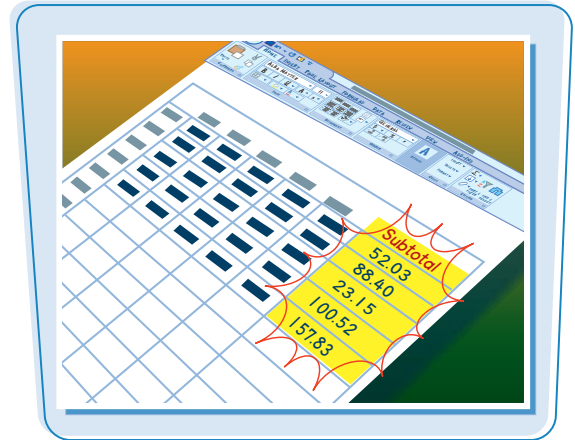
Summarize Data with Subtotals

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

2. Click the **Data** tab.
3. Click **Subtotal** (⊞).

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 summarize (☐ changes to ☑).

⑥ Click **OK**.
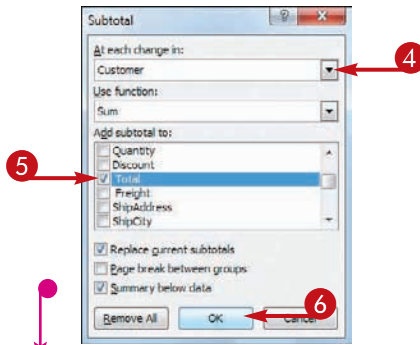
● Excel calculates the subtotals and adds them into the range.

● Excel adds outline symbols to the range.

Note: See "Group Related Data" to learn more about outlining in Excel.

TIPS

Do I need to prepare my worksheet to use subtotals?

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.

Can I only calculate totals?

No. The word "subtotal" here is a bit misleading because you can summarize 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.
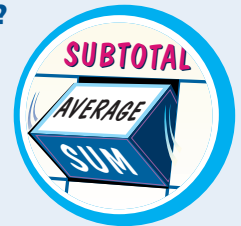
Group Related Data

You can control a worksheet range display by grouping the data based on the worksheet formulas and data.

Grouping the data creates a worksheet outline, which you can use to "collapse" sections of the sheet to display only summary cells, or "expand" hidden sections to show the underlying detail.
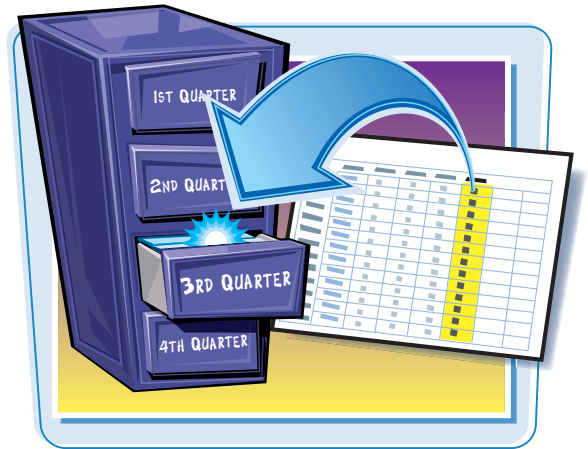
Group Related Data

Create the Outline

1 Display the worksheet you want to outline.

2 Click the **Data** tab.

3 Click the **Group** ▾.

4 Click **Auto Outline**.
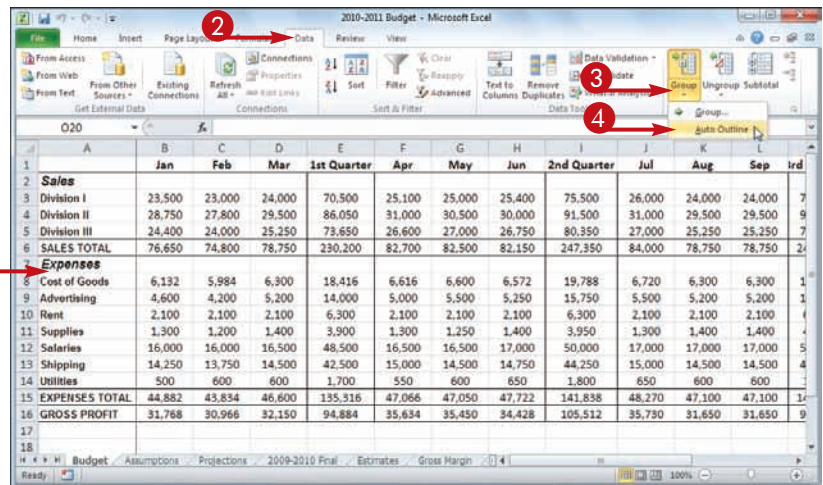
● Excel outlines the worksheet data.

● Excel uses level bars to indicate the grouped ranges.

● Excel displays level symbols to indicate the various levels of the detail that are available in the outline.
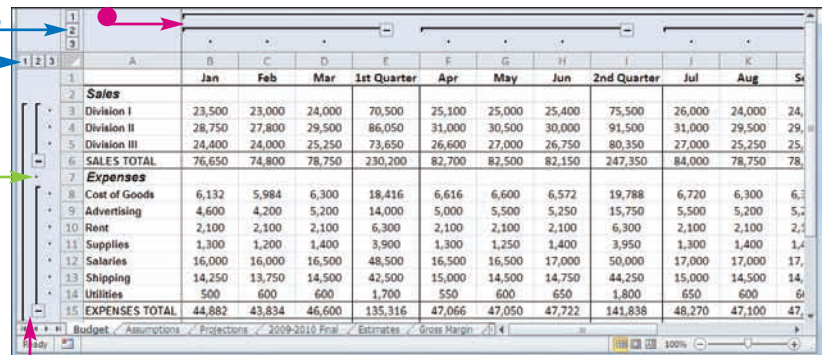
Use the Outline to Control the Range Display

1 Click a **Collapse** symbol (−) to hide the range indicated by the level bar.

● You can also collapse multiple ranges that are on the same outline level by clicking the appropriate level symbol.

● Excel collapses the range.

2 Click the **Expand** symbol (+) to view the range again.

● You can also show multiple ranges that are on the same outline level by clicking the appropriate level symbol.

TIP
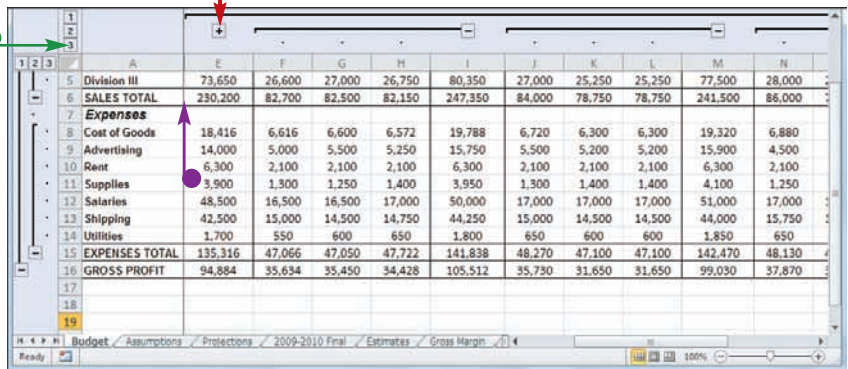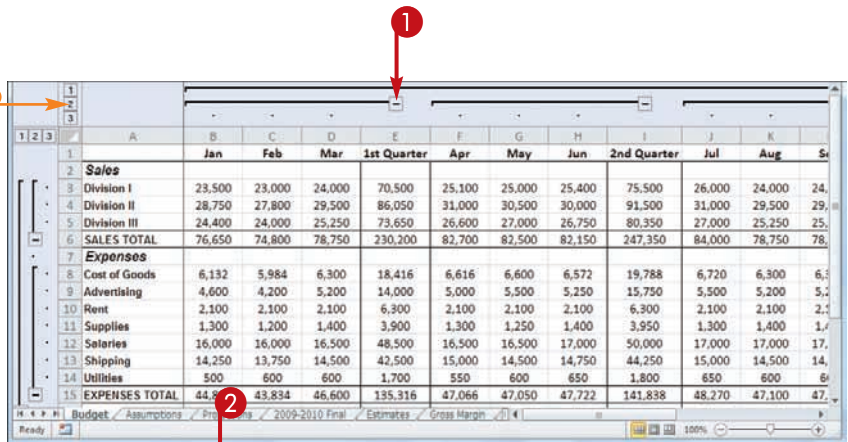
Do I have to prepare my worksheet before I can group the data?

Yes. Not all worksheets can be grouped, so you need to make sure your worksheet is a candidate for outlining. First, the worksheet must contain formulas that reference cells or ranges directly adjacent to the formula cell. Worksheets with SUM( ) functions that subtotal cells above or to the left are particularly good candidates for outlining.

Second, there must be a consistent pattern to the direction of the formula references. For example, a worksheet with formulas that always reference cells above or to the left can be outlined. Excel won't outline a worksheet with, say, SUM( ) functions that reference ranges above and below a formula cell.

Grouping Checklist
Formulas ✓
Consistent Pattern ✓

Analyze Data with Goal Seek

If you already know the formula result you want, but you must find an input value that produces that result, you can use Excel's Goal Seek tool to solve the problem. You tell Goal Seek the final value you need and which variable to change, and it finds a solution for you.

For example, you might know that you want to have $50,000 saved to purchase new equipment five years from now, so you need to calculate how much to invest each year.

New Car Goal

At this rate, you will have a new car by . . .

		Year	Savings
Jan.	15	08	
Feb.	01	08	$430
May	15	08	$485
July	30	08	$590
	01	08	$670
Jan.	30	08	$815
Feb.	01	09	$1300
April	30	09	$1355
		09	$2500
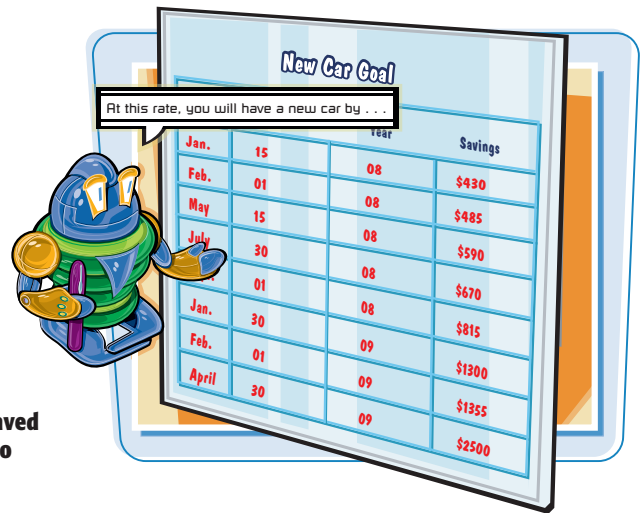
Analyze Data with Goal Seek

1 Set up your worksheet model.

Note: See the first Tip on the next page to learn more about setting up a worksheet for Goal Seek.
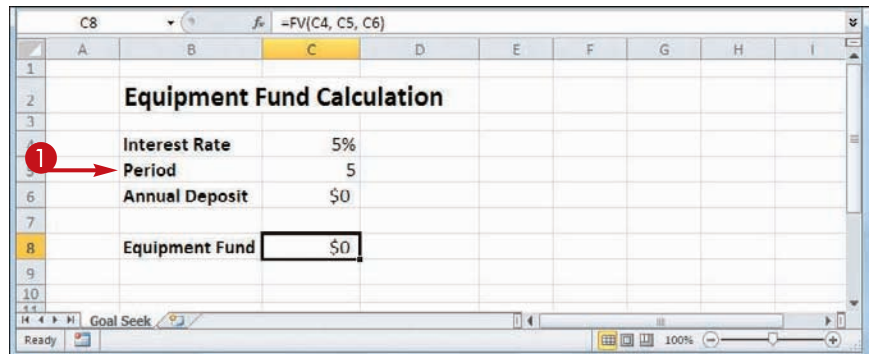
2 Click the **Data** tab.

3 Click **What-If Analysis** (▦).

4 Click **Goal Seek**.

The Goal Seek dialog box appears.
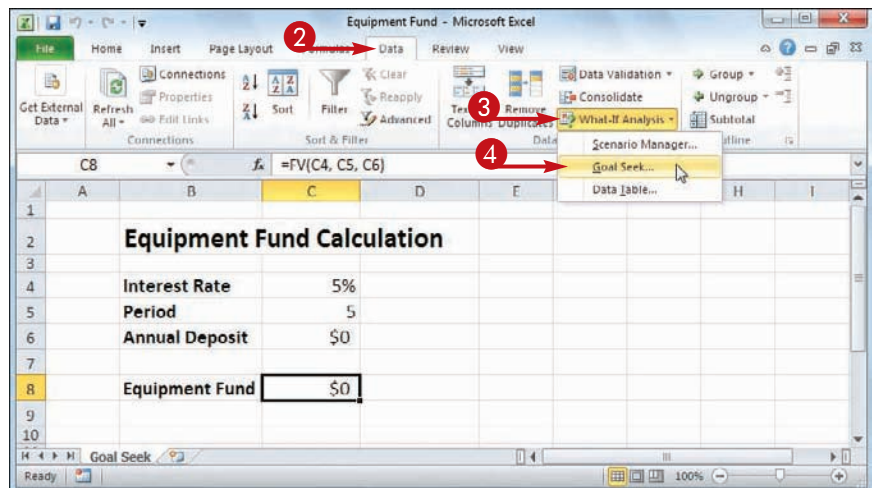
5 Click inside the **Set cell** box.

6 Click the cell that contains the formula you want Goal Seek to work with.

7 Use the To value text box to type the value that you want Goal Seek to find.

8 Click inside the **By changing cell** box.

9 Click the cell that you want Goal Seek to modify.

10 Click **OK**.

● Goal Seek adjusts the changing cell value until it reaches a solution.

● The formula now shows the value you entered in Step **7**.

11 Click **OK**.
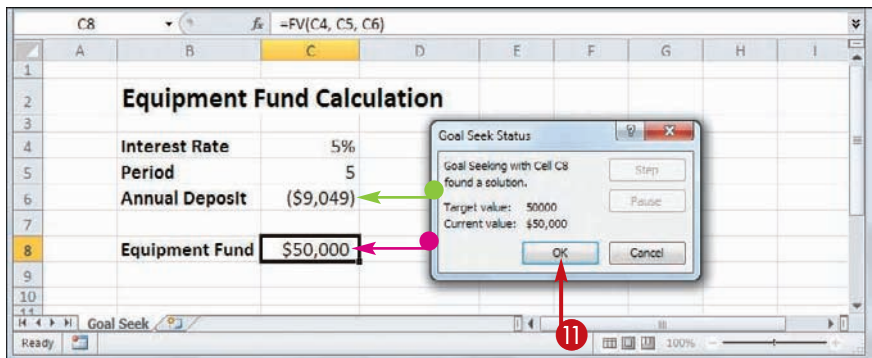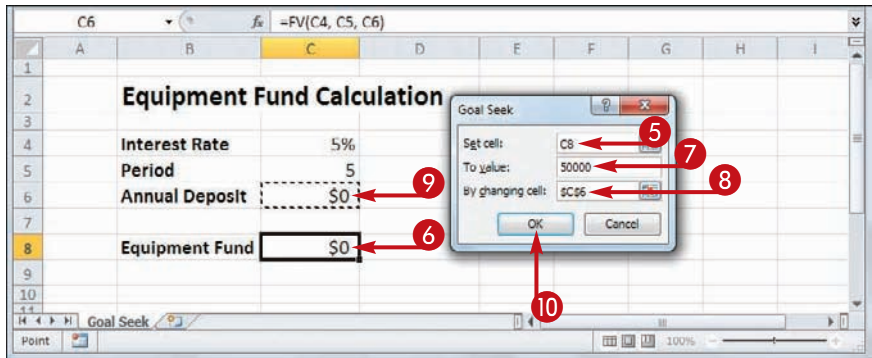
TIPS

How do I set up my worksheet to use Goal Seek?

Setting up your worksheet model for Goal Seek means doing three things. First, set up one cell as the *changing cell*, which is the value that Goal Seek will manipulate to reach the goal. Enter an initial value (such as 0) into the cell. Second, set up the other input values for the formula and give them proper initial values. Third, create a formula for Goal Seek to use to reach the goal.
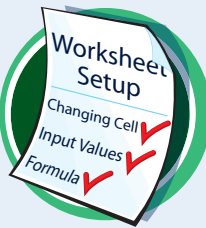
What other types of problems can Goal Seek solve?

One common problem is called a *break-even analysis*, where you determine the number of units you have to sell of a product so that your total profits are 0. In this case, the changing cell is the number of units sold, and the formula is the profit calculation. You can also use Goal Seek to determine which price (the changing cell) is required to return a particular profit margin (the formula).

Analyze Data with Scenarios

You can analyze the result of a formula by creating sets of values that plug multiple input values into the formula.

For example, one set of values might represent a best-case approach, while another might represent a worst-case approach. In Excel, each of these coherent sets of input values — known as *changing cells* — is called a *scenario*.

The Scenario Manager dialog box appears.

5 Click **Add**.

⑤

The Add Scenario dialog box appears.

6 Type a name for the scenario.

7 Click inside the **Changing cells** box.

8 Select the cells you want to change in the scenario.

9 Type a description for the scenario.

10 Click **OK**.
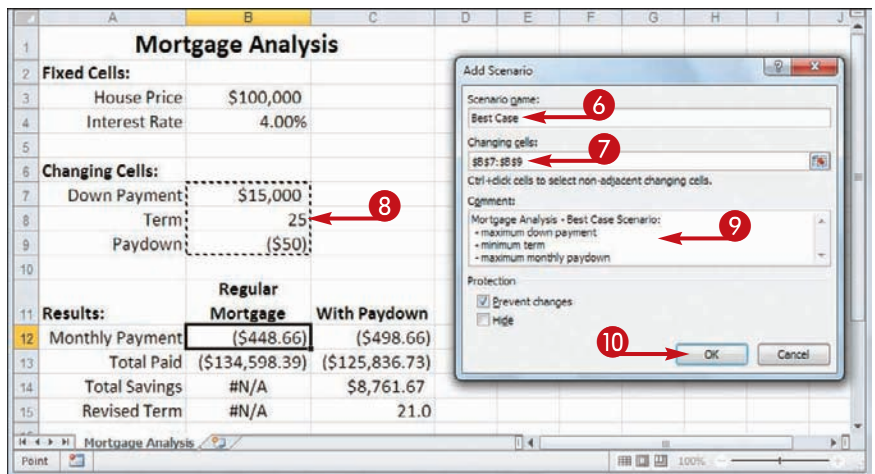
TIPS

Are there any restrictions on the changing cells?

When you are building a worksheet model for use with scenarios, make sure that each changing cell is a constant value. If you use a formula for a changing cell, Excel replaces that formula with a constant value defined in the scenario, so you lose your formula.

Do I need to add a description to each scenario?

As you see on the next page, once you have one or more scenarios defined, they appear in the Scenario Manager, and for each scenario you see its changing cells and its description. The description is often very useful, particularly if you have several scenarios defined, so be sure to write a detailed description in Step **9** to help you differentiate your scenarios later on.

237

Excel stores your scenarios in the Scenario
Manager, and you can use that tool to apply
your scenarios to the worksheet, and to make
changes to your scenarios.
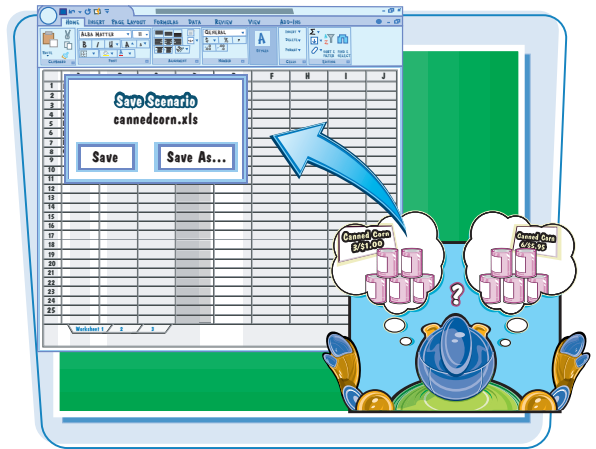
Analyze Data with Scenarios *(continued)*

The Scenario Values dialog box
appears.

⓫ Use the text boxes to specify a
value for each changing cell.

● To add more scenarios, click **Add**
and then repeat Steps **6** to **11**.

⓬ Click **OK**.

⓭ Click **Close**.
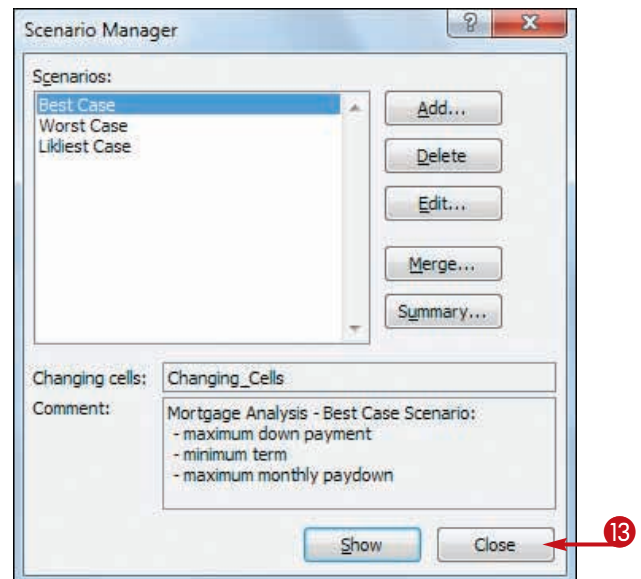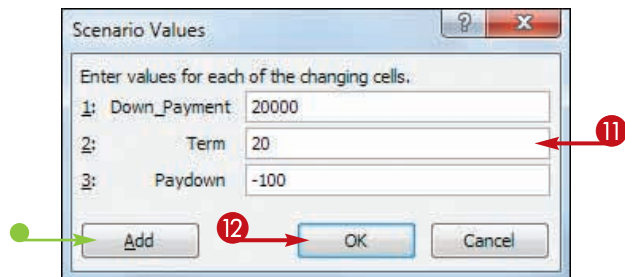
Display Scenarios

1. Click the **Data** tab.

2. Click 🗐.

3. Click **Scenario Manager**.
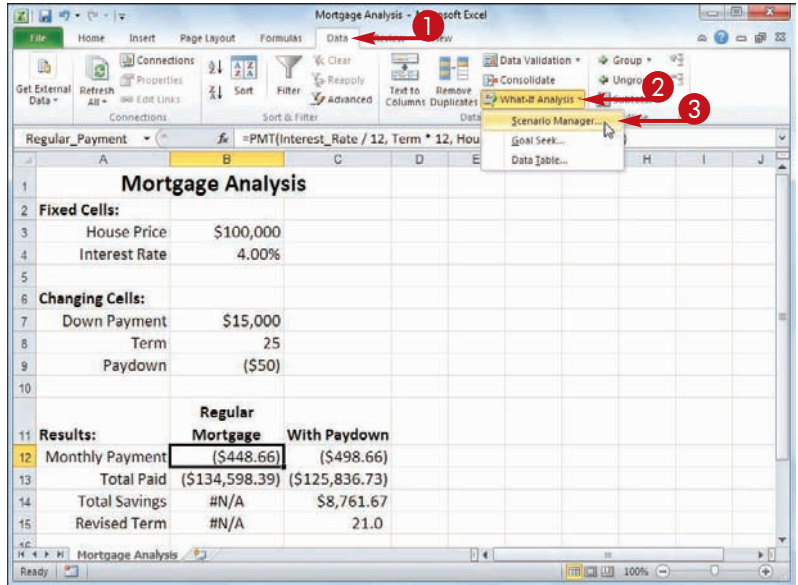
The Scenario Manager dialog box appears.

4. Click the scenario you want to display.

5. Click **Show**.

● Excel enters the scenario values into the changing cells and displays the formula result.

6. Repeat Steps **4** and **5** to display other scenarios.

7. Click **Close**.
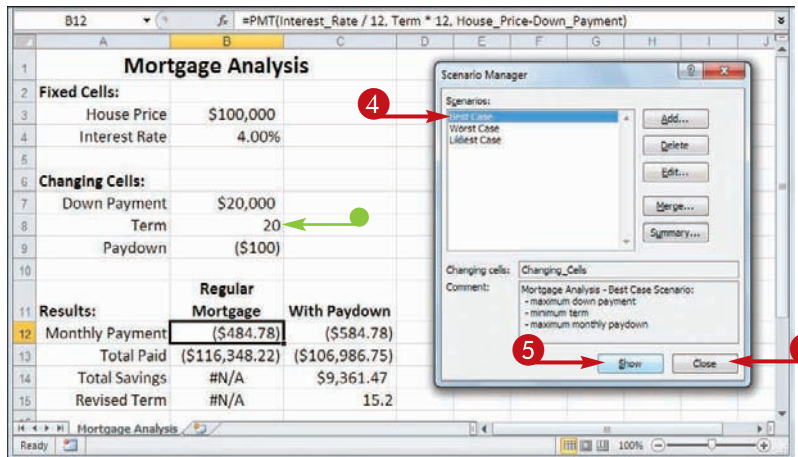
TIPS

How do I edit a scenario?
If you need to make changes to a scenario, you can edit the name, the changing cells, the description, and the scenario's input values. Click the **Data** tab, click 🗐, and then click **Scenario Manager**. In the Scenario Manager dialog box, click the scenario you want to modify, and then click **Edit**.

How do I remove a scenario?
If you have a scenario that you no longer need, you should delete it to reduce clutter in the Scenario Manager. Click the **Data** tab, click 🗐, and then click **Scenario Manager**. Click the scenario you want to delete. Note that Excel does not ask you to confirm the deletion, so double-check that you have selected the correct scenario. Click **Delete** and then click **Close**.

Create a PivotTable

You can more easily analyze a large amount of data by creating a PivotTable from that data. A PivotTable is a powerful data analysis tool because it automatically groups large amounts of data into smaller, more manageable categories, and it displays summary calculations for each group.

You can also manipulate the layout of — or *pivot* — the PivotTable to see different views of your data. For best results, convert your range to a table before creating the PivotTable (see "Convert a Range to a Table").
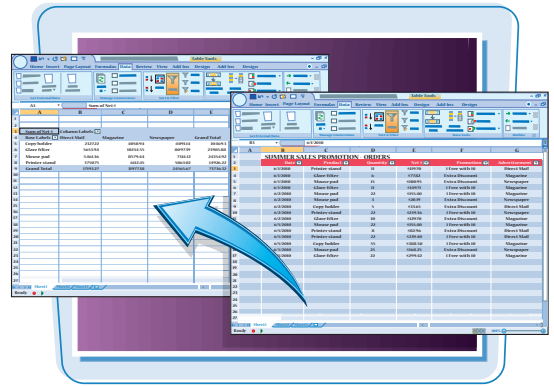
Create a PivotTable

1. Click a cell within the table that you want to use as the source data.

2. Click the **Design** tab.

3. Click **Summarize with PivotTable** (📊).
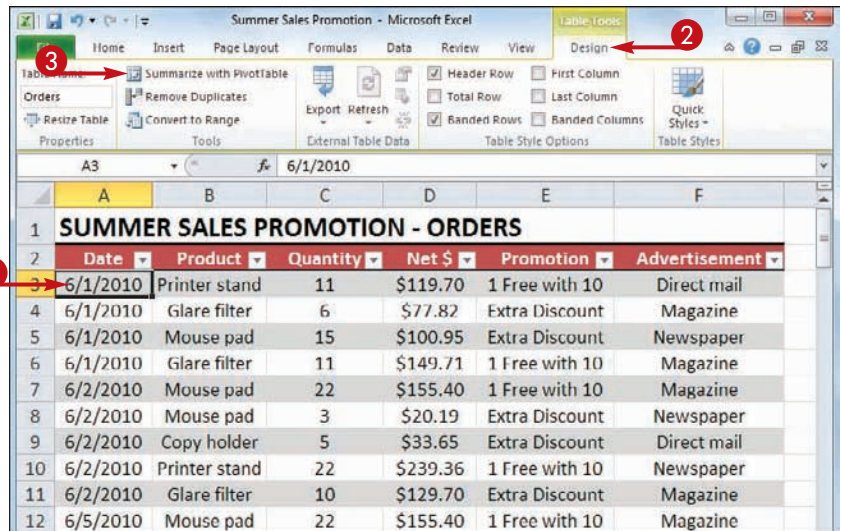
The Create PivotTable dialog box appears.

4. Click **New Worksheet** (◉ changes to ◉).

● If you want to place the PivotTable in an existing location, click **Existing Worksheet** (◉ changes to ◉) and then use the **Location** range box to select the worksheet and cell where you want the PivotTable to appear.

5. Click **OK**.
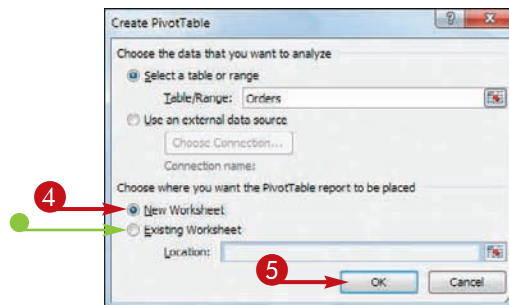
- Excel creates a blank PivotTable.

- Excel displays the PivotTable Field List.

6 Click and drag a field and drop it inside the Row Labels area.
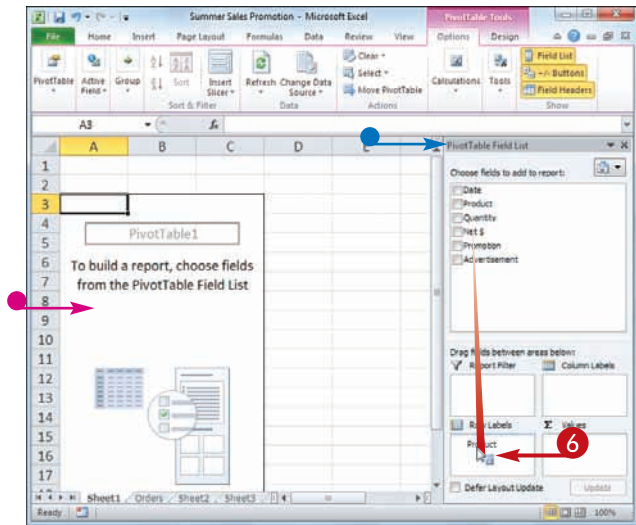
- Excel adds the field's unique values to the PivotTable's row area.

7 Click and drag a numeric field and drop it inside the Values area.

- Excel sums the numeric values based on the row values.

8 If desired, click and drag fields and drop them in the Column Labels area and the Report Filter area.
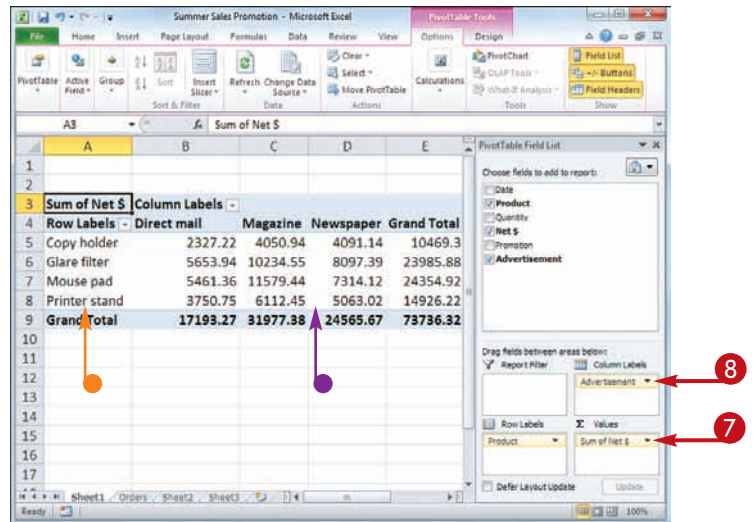
Each time you drop a field in an area, Excel updates the PivotTable to include the new data.

TIPS

Are there faster ways to build a PivotTable?

Yes. In the PivotTable Field List, if you click a check box for a text or date field (☐ changes to ☑), Excel adds the field to the Row Labels area; if you click a check box for a numeric field (◉ changes to ◉), Excel adds the field to the Values area. You can also right-click a field and then click the area you want to use.

Can I add multiple fields to each area?

Yes. You can add as many fields as you like to each area. You can also move a PivotTable's fields from one area of the PivotTable to another. This enables you to view your data from different perspectives, which can greatly enhance the analysis of the data. Moving a field within a PivotTable is called *pivoting* the data. To move a field, use the PivotTable Field List to click and drag a field from one area and drop it on another.

Load Excel's Analysis ToolPak

You can get access to a number of powerful statistical analysis tools by loading the Analysis ToolPak add-in. The Analysis ToolPak consists of 19 statistical tools that calculate statistical measures such as correlation, regression, and moving averages.

You can also use the analysis tools to generate descriptive statistics (such as median, mode, and standard deviation), random numbers, and histograms.

The **Data Analysis Tools**

Featuring:

- *Random number generation*
- *Sampling*
- *Regression analysis*
- *and more . . .*
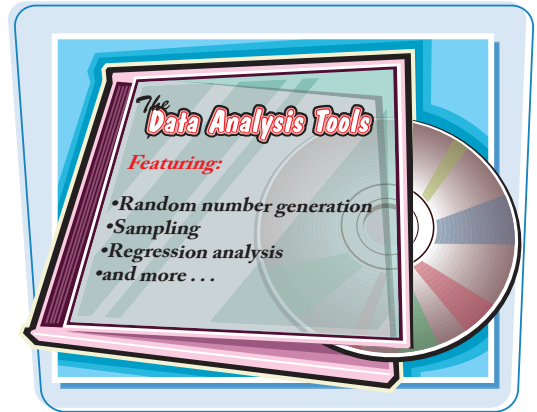
Load Excel's Analysis ToolPak

① Click the **File** tab.
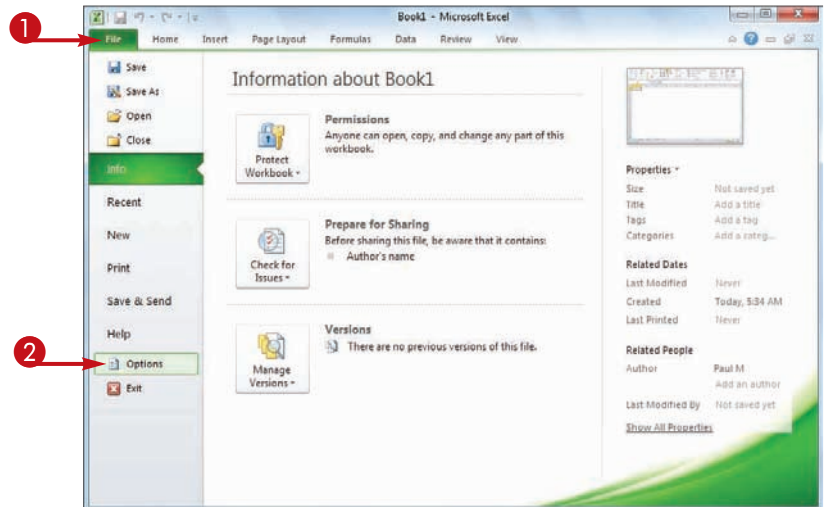
② Click **Options**.

The Excel Options dialog box appears.

③ Click **Add-Ins**.

④ In the Manage list, click **Excel Add-ins**.

⑤ Click **Go**.
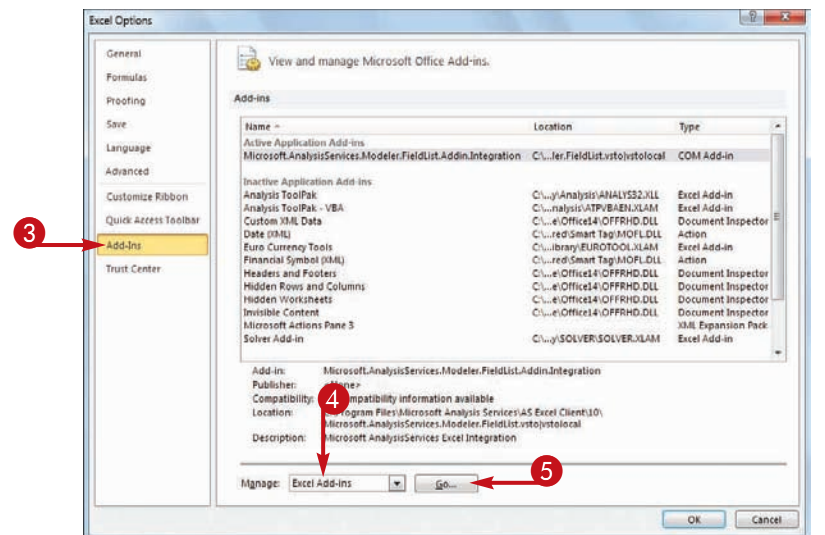
The Add-Ins dialog box appears.

6 Click the **Analysis ToolPak** check box (☐ changes to ☑).

7 Click **OK**.
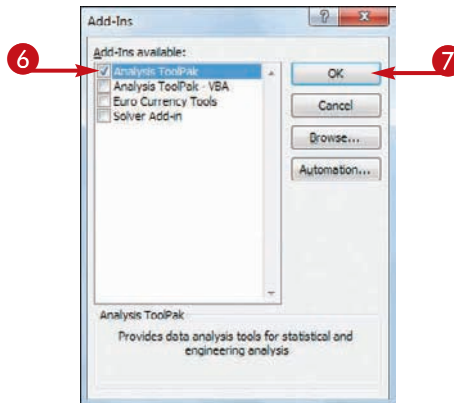
Excel loads the Analysis ToolPak add-in.

8 Click the **Data** tab.

9 Click **Data Analysis** (📊) to access the Analysis ToolPak tools.
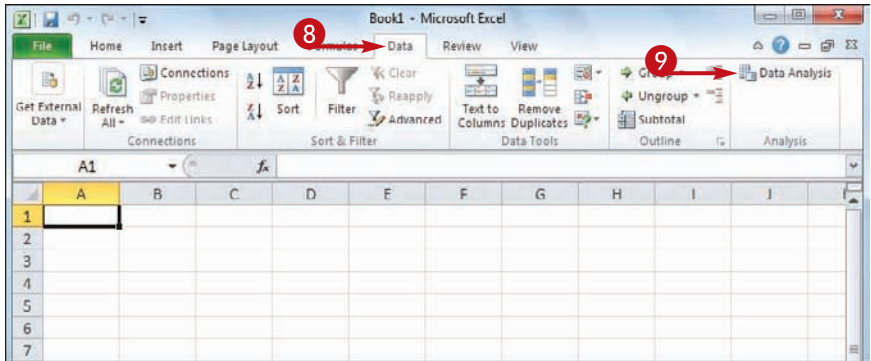
TIP

How do I use the statistical tools?

The specific steps you follow vary from tool to tool, but you can follow these general steps to use any of the Analysis ToolPak's statistical tools:

1 Click the **Data** tab.

2 Click 📊.

The Data Analysis dialog box appears.

3 Click the tool you want to use.

4 Click **OK**.

Excel displays a dialog box for the tool.

5 Fill in the dialog box (the controls vary from tool to tool).

6 Click **OK**.
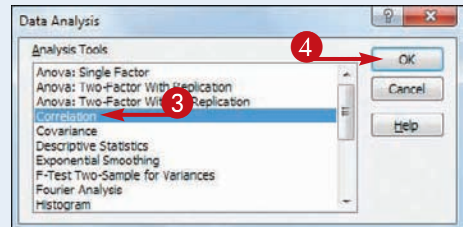
Visualizing Data with Excel Charts

You can take a worksheet that is full of numbers and display them as a chart. Visualizing your data in this way makes the data easier to understand and easier to analyze. To help you see your data exactly the way you want, Excel offers a wide variety of chart types and a large number of chart options.

Examining Chart Elements

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. To get the most out of charts, you need to familiarize yourself with the basic chart elements.

Category Axis

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

Chart Title

The title of the chart.

Data Marker

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

Data Series

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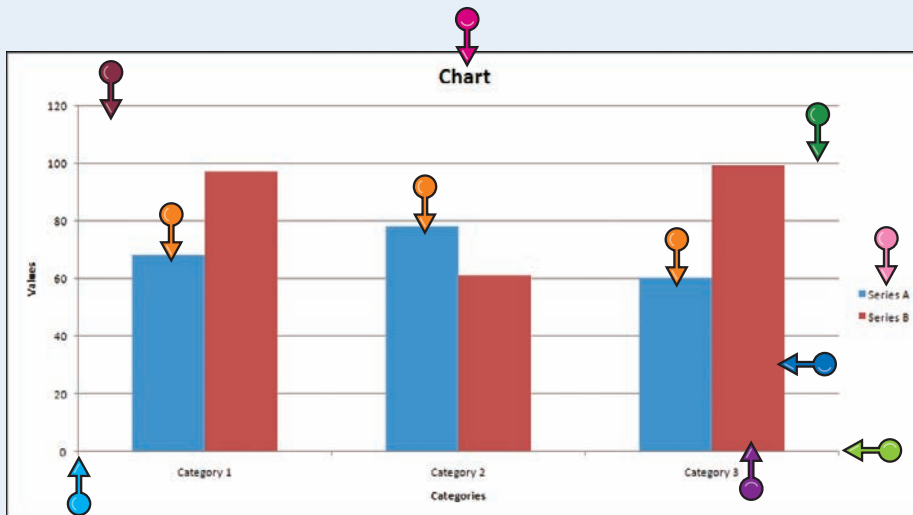
Data Value

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

Gridlines

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

Legend

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

Plot Area

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

Value Axis

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

Excel offers 11 different types of charts, 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.

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 that is similar to an XY chart, except that there are three data series, and in the third series the individual plot points are displayed as bubbles (the larger the value, the larger the bubble).
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 center point. Each category is shown with a value axis extending from the center 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 analyzes 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. (Also called a *scatter* chart.)

Create a Chart

You can create a chart from your Excel worksheet data with just a few mouse clicks. Excel offers more than 70 default chart configurations, so there should always be a type that best visualizes your data.

Regardless of the chart type you choose originally, you can change to a different chart type at any time. See "Select a Different Chart Type."
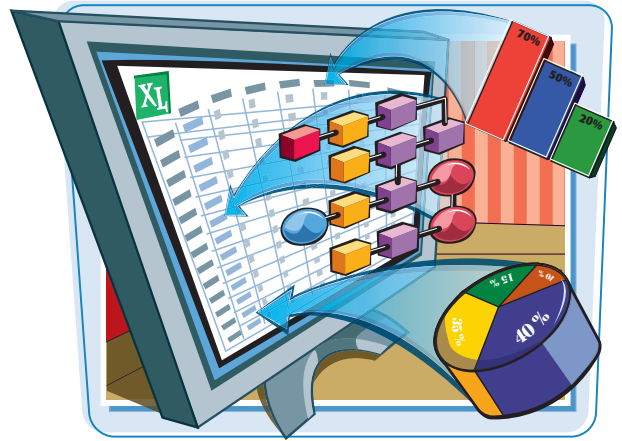
Create a Chart

1. Select the data that you want to visualize in a chart.

● 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.
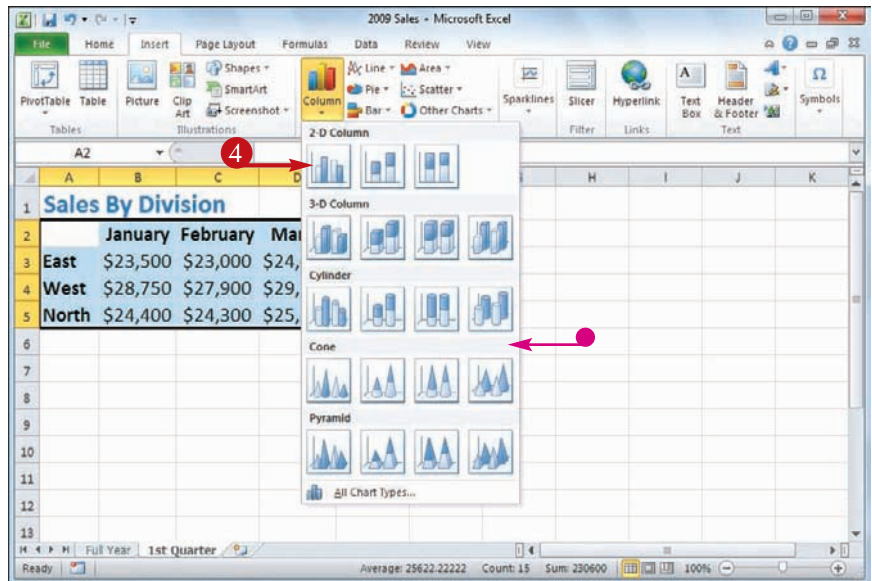
● Excel inserts the chart.

The tasks in the rest of this chapter show you how to configure, format, and move the chart.
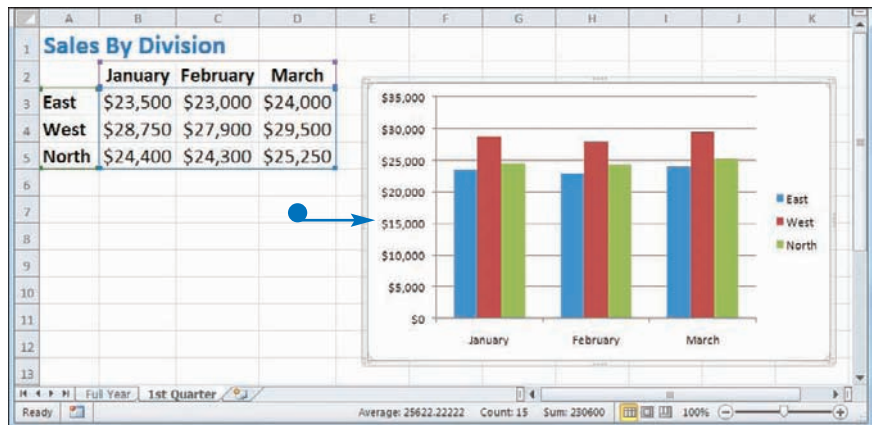
TIP

Is there a way to create a chart on a separate sheet?

Yes. You can use a special workbook sheet called a *chart sheet*. If you have not yet created your chart, 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.

If you have already created your chart, you can move it to a separate chart sheet. See the tip in "Move or Resize a Chart."

Add Chart Titles

You can make your chart easier to understand by adding chart titles. You can add an overall chart title, which appears at the top of the chart, and you can add titles to the horizontal and vertical axes.
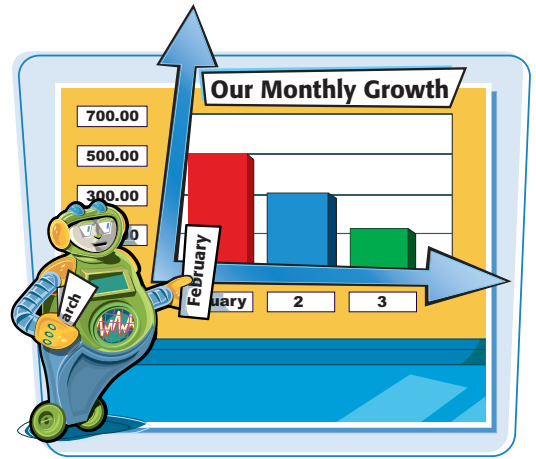
Add Chart Titles

1 Click the chart.

2 Click the **Layout** tab.

3 Click **Chart Title** (◻).

4 Click **Above Chart**.

● Excel adds the title.

5 Type the title.
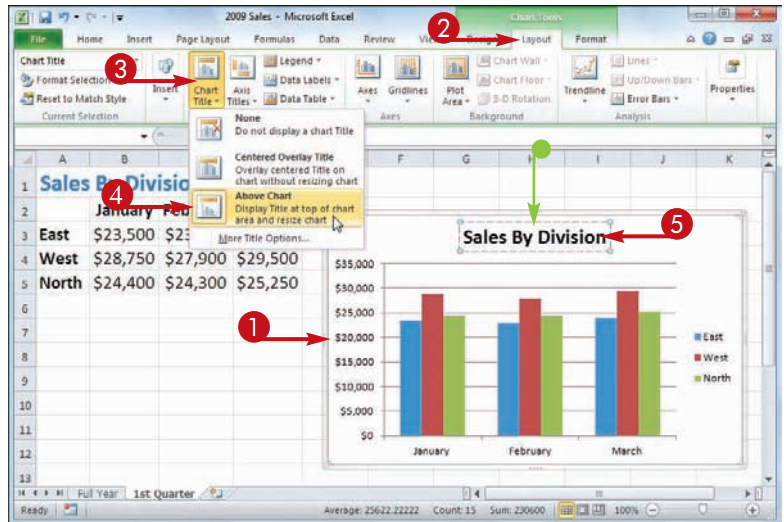
6 Click **Axis Titles** (◻).

7 Click **Primary Horizontal Axis Title**.

8 Click **Title Below Axis**.

● Excel adds the title.

9 Type the title.

10 Click ◻.

11 Click **Primary Vertical Axis Title**.

12 Click **Rotated Title** (not shown).

● Excel adds the title.

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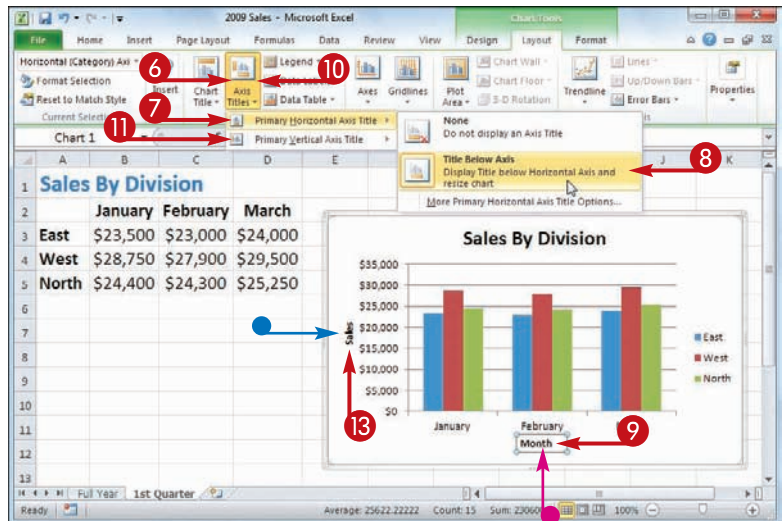
You can make your chart easier to read by adding data labels. A *data label* is a small text box that appears in or near a data marker and displays the value of that data point.

Excel offers several position options for the data labels, and these options depend on the chart type. 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 or right, or above or below, the data marker.

$300,000 $287,000 $275,000
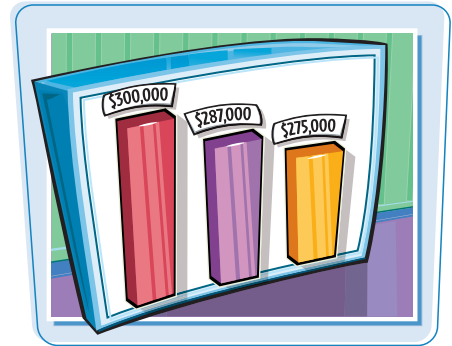
Add Data Labels

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.
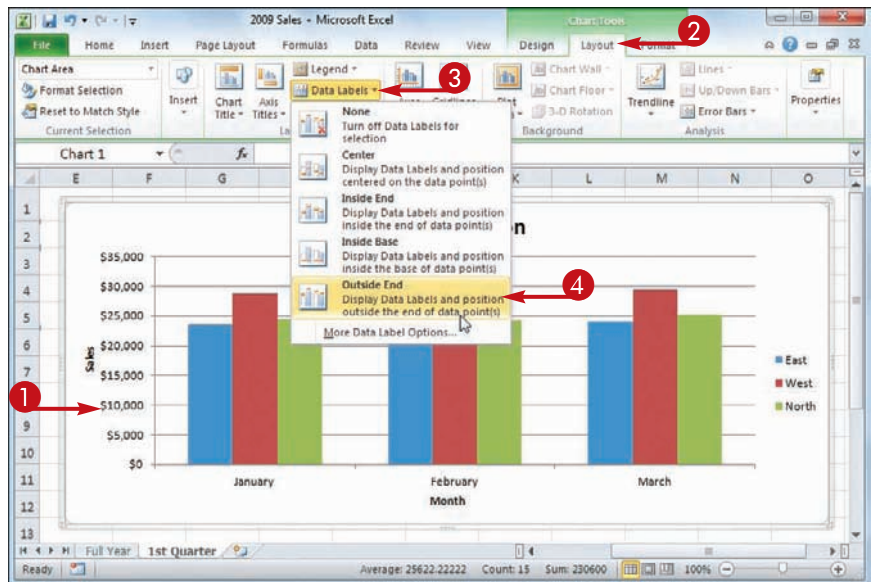
● Excel adds the labels to the chart.
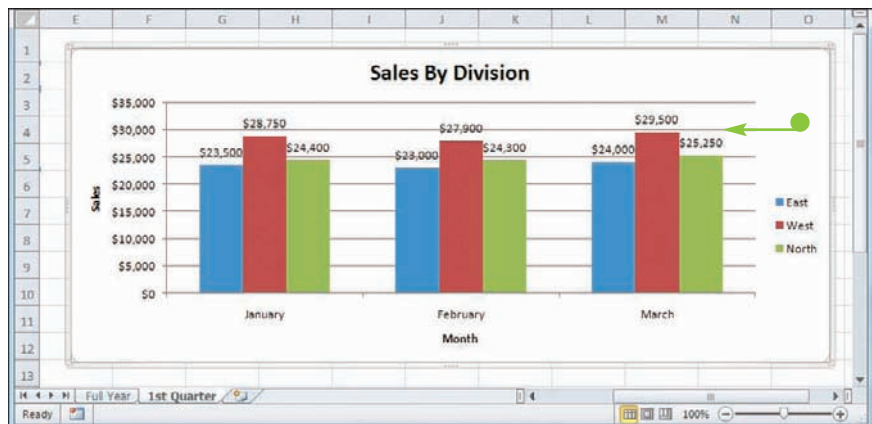
Position the Chart Legend

You can change the position of the chart *legend*, which identifies the colors associated with each data series in the chart. 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.
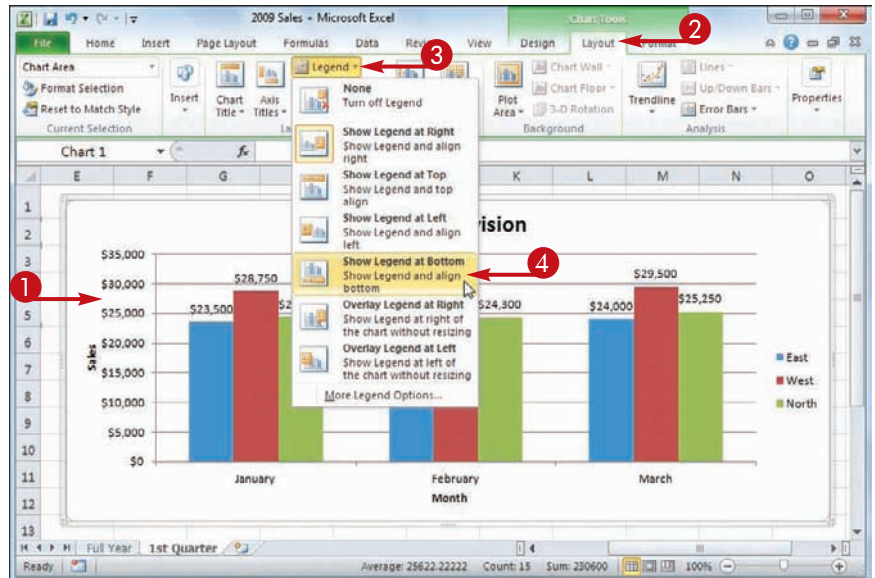
● Excel moves the legend.
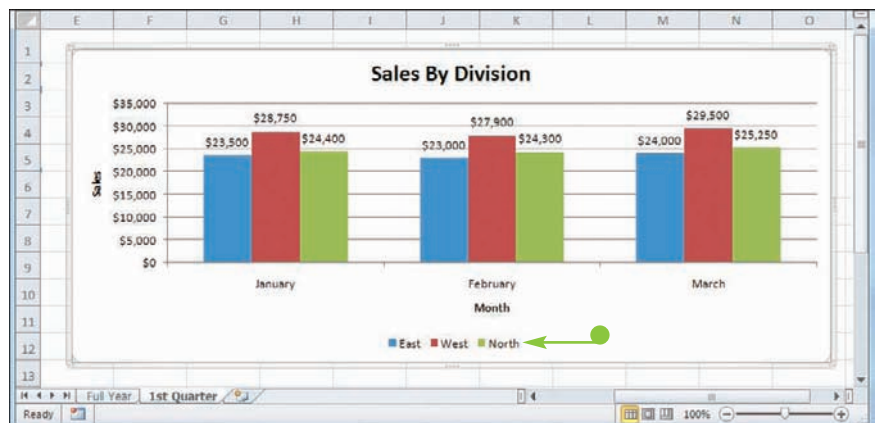
You can make your chart easier to read and easier to analyze by adding gridlines. Horizontal gridlines extend from the vertical (value) axis and are useful with area, bubble, and column charts. Vertical gridlines extend from the horizontal (category) axis and are useful with bar and line charts.

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.
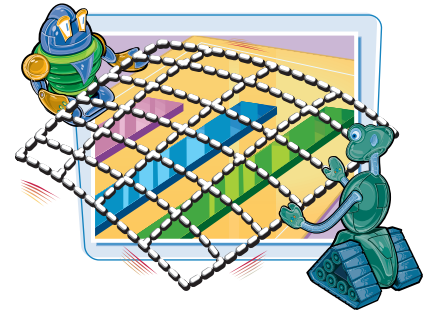
Display Chart Gridlines

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.

● Excel displays the horizontal gridlines.

6 Click 🔳.

7 Click **Primary Vertical Gridlines**.

8 Click the vertical gridline option you prefer.

● 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.
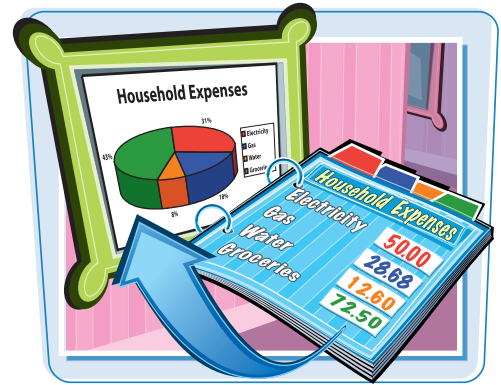
Display a Data Table

1 Click the chart.

2 Click the **Layout** tab.

3 Click **Data Table** (⬛).

4 Click **Show Data Table with Legend Keys**.

● If you prefer not to display the legend keys, click **Show Data Table**.
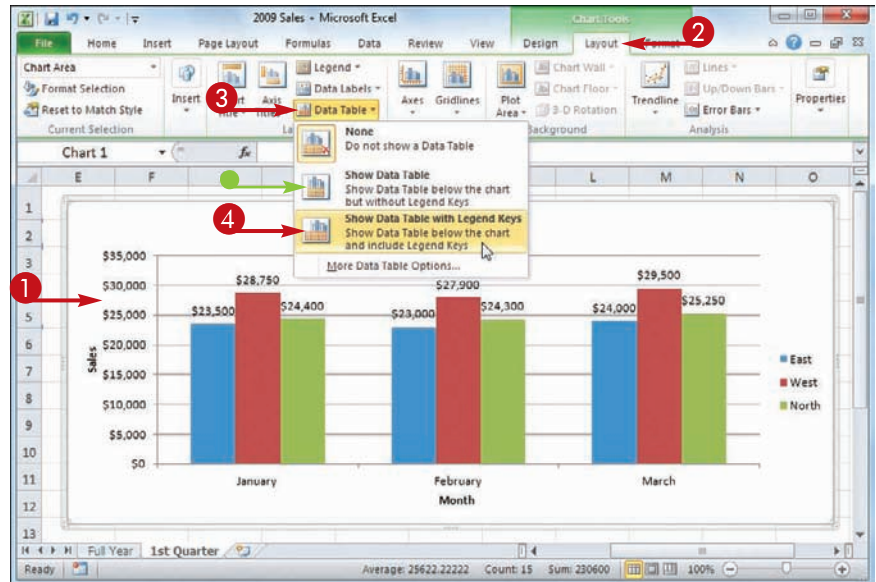
● Excel adds the data table below the chart.
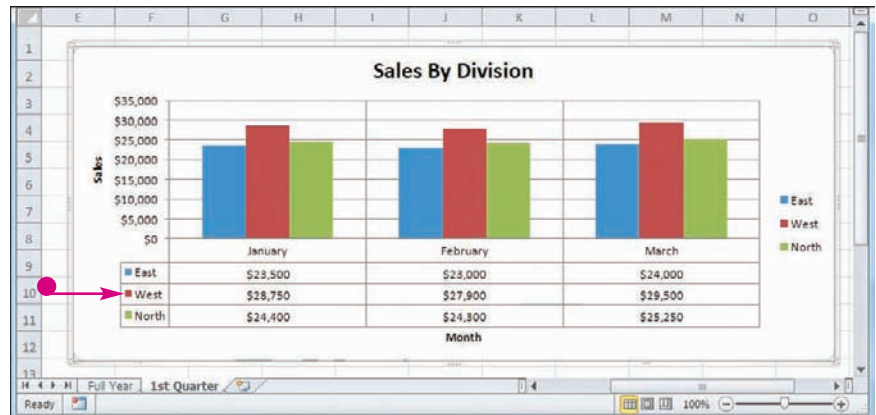
Change the Chart Layout and Style

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 colors used by the chart data markers and background.

Change the Chart Layout and Style

1 Click the chart.

2 Click the **Design** tab.

3 Click **Quick Layout** (icon).

4 Click the layout you want to use.

Excel applies the layout.

5 Click the **Chart Styles** (icon).
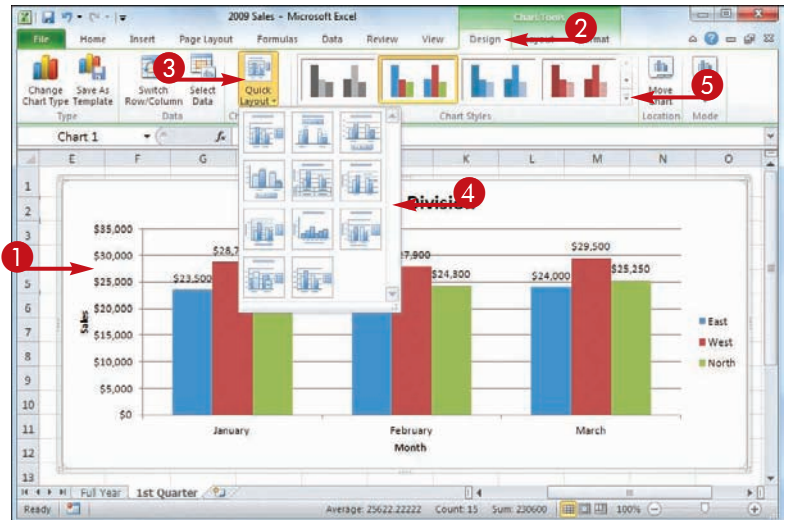
6 Click the chart style you want to use.

● Excel applies the style to the chart.

Select a Different Chart Type

If you feel that the current chart type is not showing your data in the best way, you can change the chart type with just a few mouse clicks. For example, you might want to change a bar chart to a pie chart or a line chart to a stock chart.
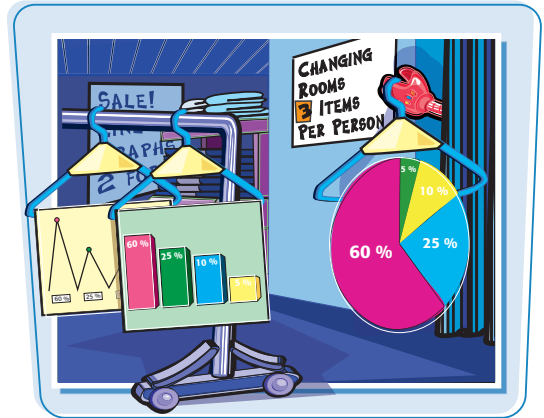
Select a Different Chart Type

1. Click the chart.
2. Click the **Design** tab.
3. Click **Change Chart Type** (📊).
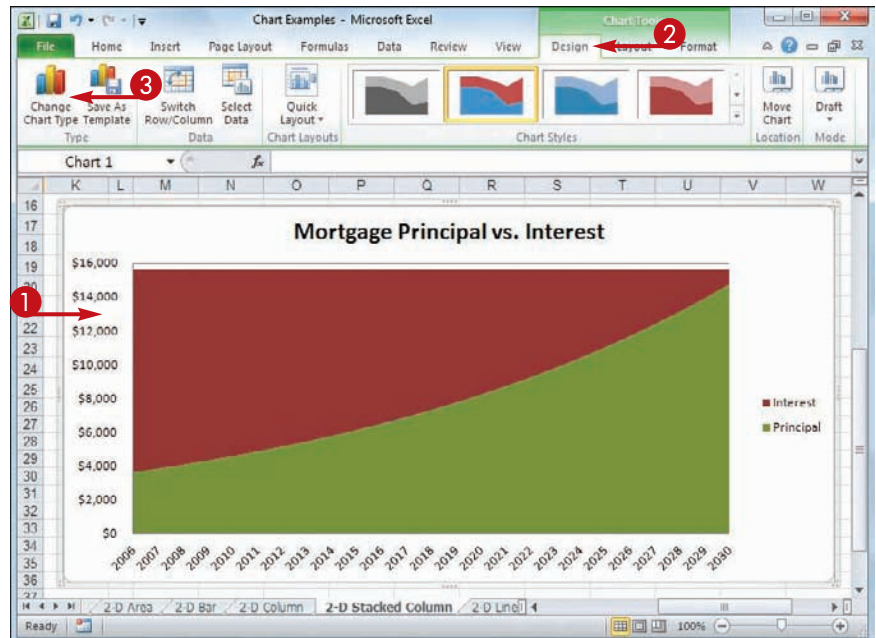
The Change Chart Type dialog box appears.

4. Click the chart type you want to use.
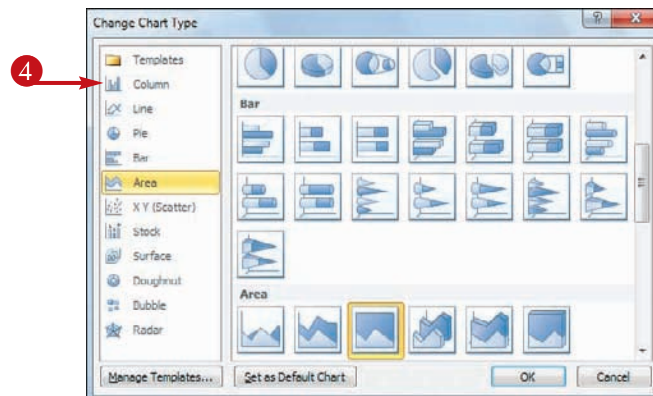
Excel displays the chart type configurations.

5 Click the configuration you want to use.

6 Click **OK**.
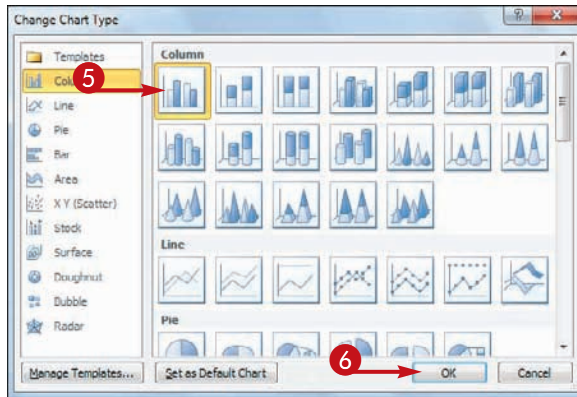
● Excel applies the new chart type.

Mortgage Principal vs. Interest
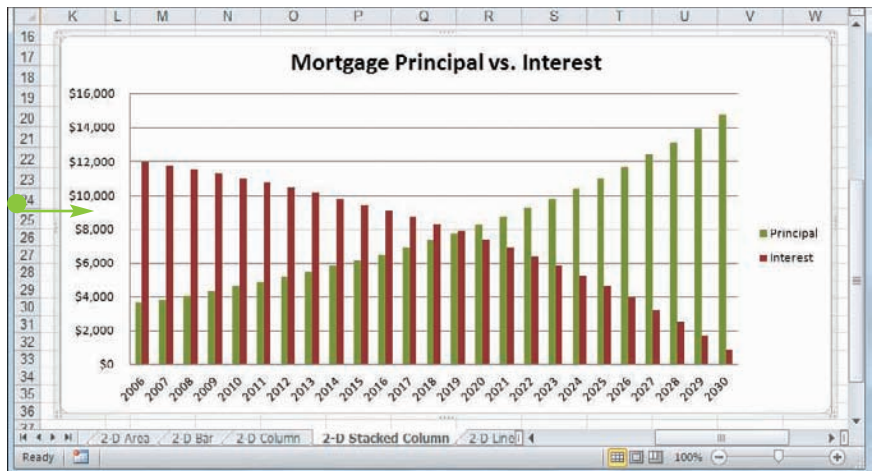
Can I tell Excel to always use a particular chart type each time I create a new chart?

Yes, you can configure that chart type as the default type for new charts. Follow Steps **1** to **5** to open the Change Chart Type dialog box and select a chart type and configuration. Click the **Set as Default Chart** button, and then click **OK**.

Can I save the chart type and formatting so that I can reuse it later on a different chart?

Yes. You do this by saving your work as a chart template. Follow the steps in this section and in the previous few sections of this chapter to set the chart type, titles, labels, legend position, gridlines, layout, and style. Click the **Design** tab, click **Save as Template** (🖼️), type a name for the template, and then click **Save**. To reuse the template, follow Steps **1** to **3**, click **Templates**, click your template, and then click **OK**.

Change the Chart Source Data

You can keep your chart up to date and accurate by adjusting the chart when its source data changes. For example, if the source range adds a row or column, you can adjust the chart to include the new data.

Change the Chart Source Data

① Click the chart to select it.
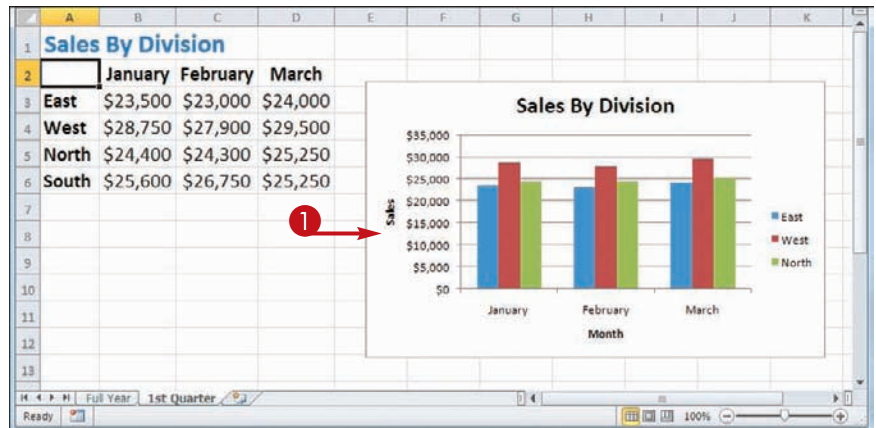
● Excel selects the chart's source data.

② Move the mouse ⬚ over the lower right corner of the range.

⬚ changes to ↔.
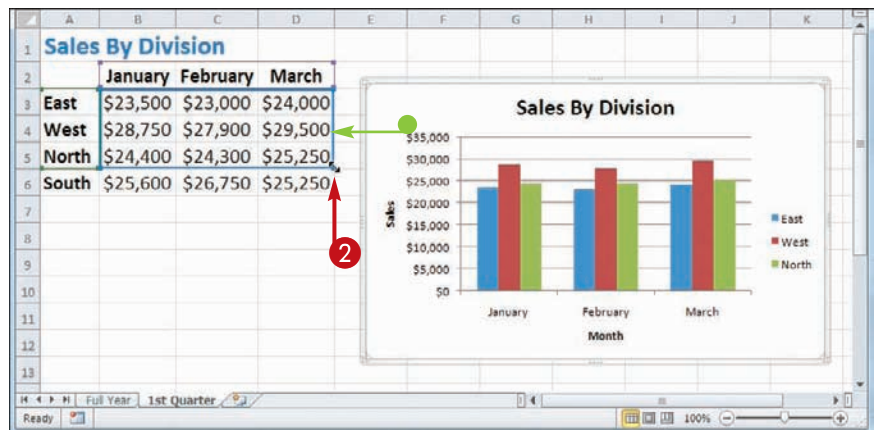
③ Click and drag ↔ until the selection includes all the data you want to include in the chart.

● Excel displays a blue outline to show you the new selection.
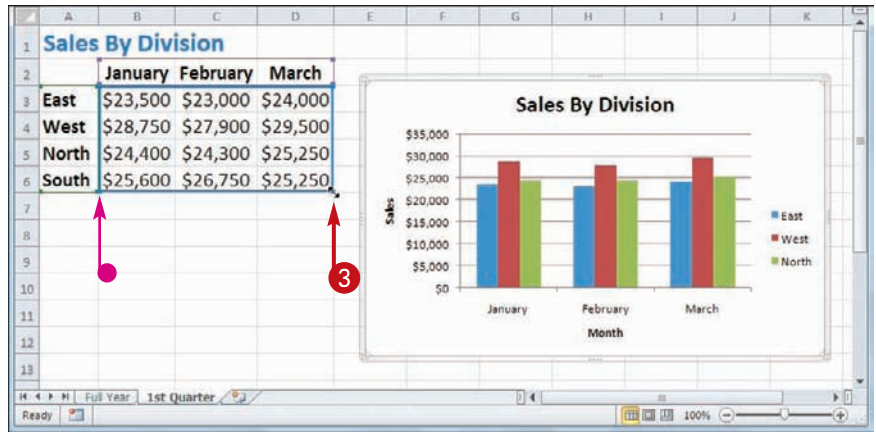
④ Release the mouse button.

● Excel redraws the chart to include the new data.
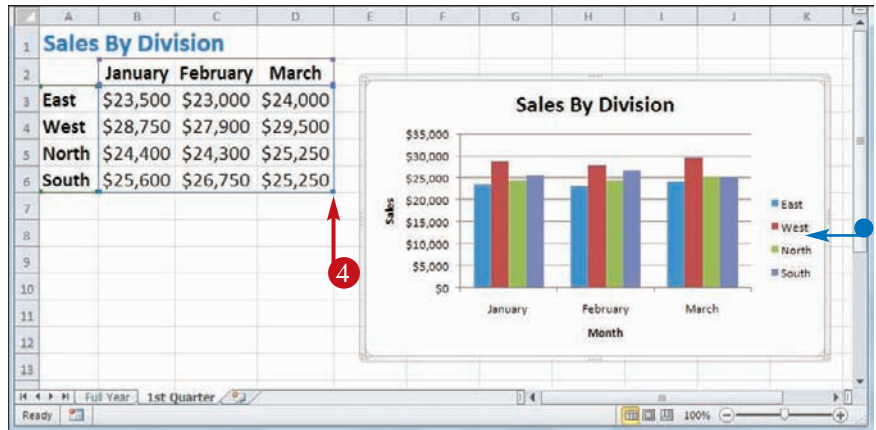
Is there a way to swap the chart series with the chart categories without modifying the source data?

Yes. Excel has a feature that enables you to switch the row and column data, which swaps the series and categories without affecting the source data. First click the chart to select it, and then click the **Design** tab. Click **Switch Row/Column** (⊞). Excel swaps the series and categories. Click ⊞ again to return to the original layout.

Is there a way to remove a series from a chart without deleting the data from the source range?

Yes. You can use Excel's Select Data Source dialog box to remove individual series. Click the chart to select it, and then click the **Design** tab. Click **Select Data** (⊞) to open the Select Data Source. In the Legend Entries (Series) list, click the series you want to get rid of, and then click **Remove**. Click **OK**.
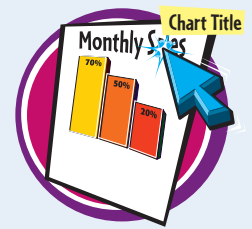
Move or Resize a Chart

You can move a chart to another part of the worksheet. This is useful if the chart is blocking the worksheet data or if you want the chart to appear in a particular part of the worksheet.

You can also resize a chart. For example, if you find that the chart is difficult to read, making the chart bigger often solves the problem. Similarly, if the chart takes up too much room on the worksheet, you can make it smaller.
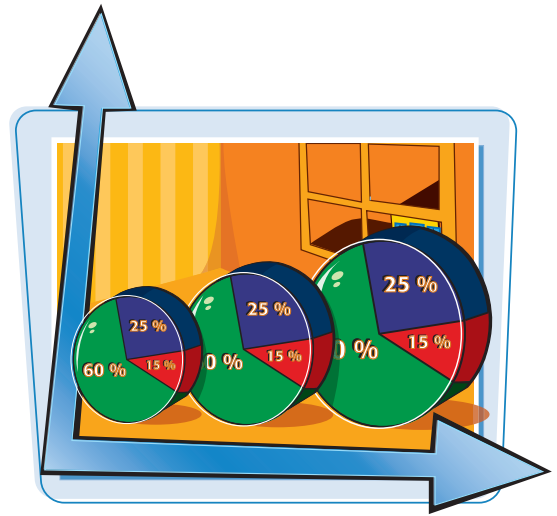
Move or Resize a Chart

Move a Chart

1 Click the chart.

● Excel displays a border around the chart.

2 Move ⬚ over the chart border.

⬚ changes to ✛.

Note: Do not position the mouse pointer over a corner or over the middle of any side of the border.

3 Click and drag the chart border to the location you want.

● Excel displays a gray outline of the new chart position.

4 Release the mouse button.

● Excel moves the chart.
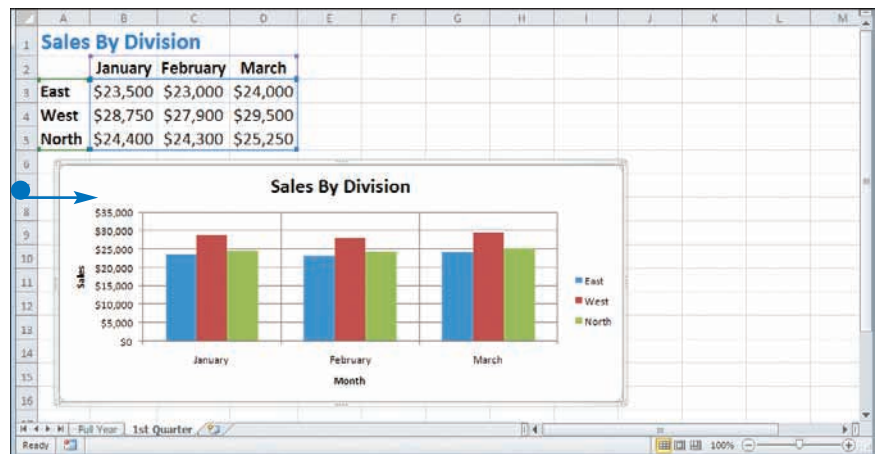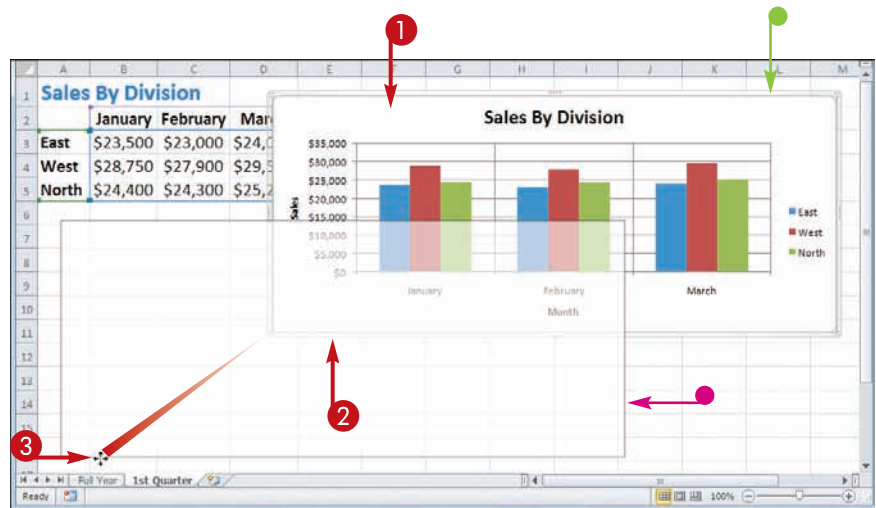
Resize a Chart

1 Click the chart.

● Excel displays a border around the chart.

● The border includes sizing handles on the corners and sides.

2 Move ⌖ over a sizing handle.

⌖ changes to ⇔ (left or right); ⇕ (top or bottom); or ⤢ (corner).

3 Click and drag the handle.

● Excel displays a gray outline of the new chart size.

4 Release the mouse button.

● Excel resizes the chart.
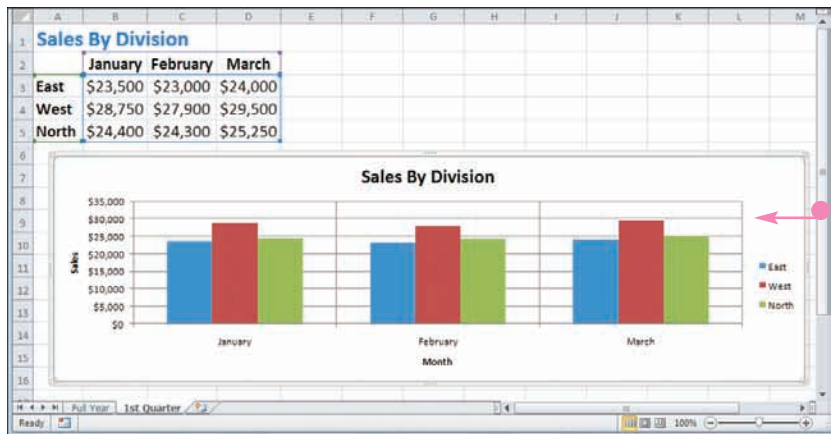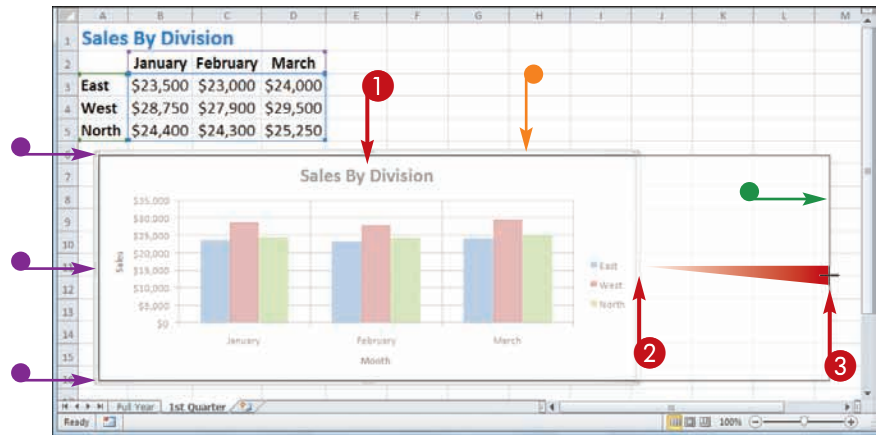
Can I move a chart to a separate sheet?

Yes. In "Create a Chart" you learned how to create a new chart in a separate sheet. If your chart already exists in a worksheet, you can move it to a new sheet. Click the chart, click the **Design** tab, and then click **Move Chart** to open the Move Chart dialog box. Select the **New sheet** option (◎ changes to ◉). In the New sheet text box, type a name for the new sheet, and then click **OK**.

How do I delete a chart?

How you delete a chart depends on whether your chart exists as an object in a worksheet or in its own sheet. If the chart is in a worksheet, click the chart and then press Delete . If the chart exists on a separate sheet, right-click the sheet tab, click **Delete Sheet**, and then click **Delete**.

Add a Sparkline to a Cell

If you want a quick visualization of your data without having a chart take up a large amount of worksheet space, you can add a sparkline to a single cell. A *sparkline* is a small chart that visualizes a row or column of data and fits inside a single cell.

Excel offers three types of sparklines: Line (similar to a line chart), Column (similar to a column chart), and Win/Loss (for data that includes positive and negative values).

Add a Sparkline to a Cell

① Select the row or column of data you want to visualize.

② Click the **Insert** tab.

③ Click the type of sparkline you want to create.
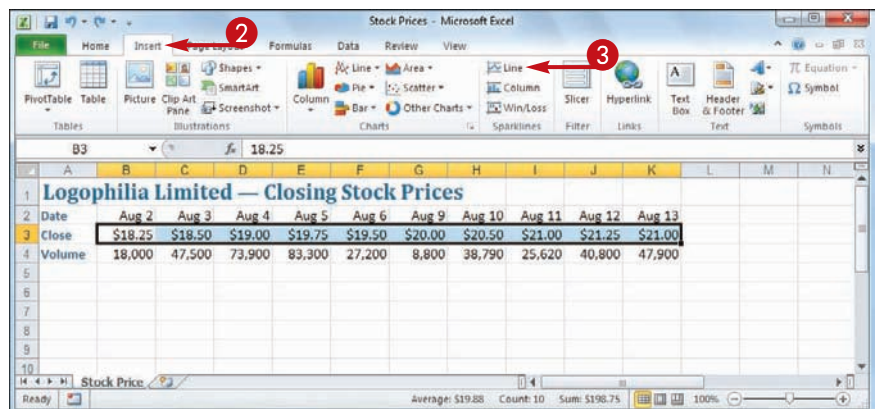
The Create Sparklines dialog box appears.

④ Click inside the **Location Range** box.

⑤ Click the cell where you want the sparkline to appear.

⑥ Click **OK**.

● Excel adds the sparkline to the cell.

● Excel displays the Sparkline Tools tab.

● Use the tools in the Design tab to format your sparkline.
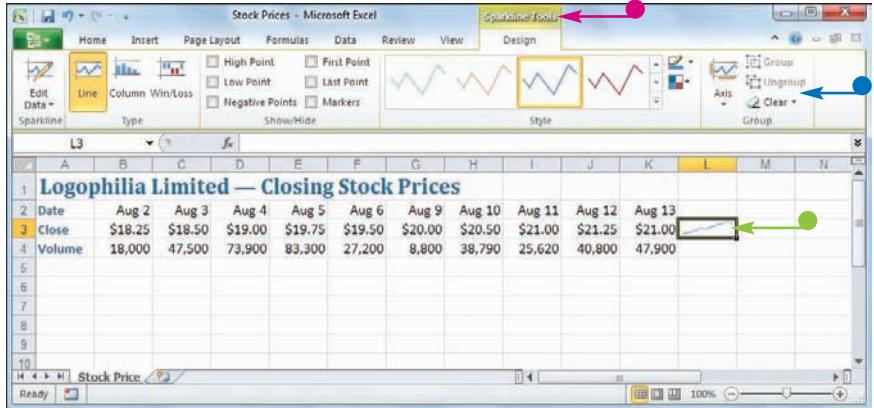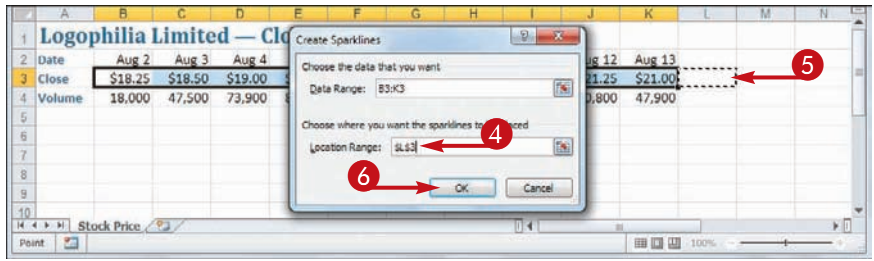
TIP

Can I add a sparkline to multiple rows or columns at once?
Yes. To do this, first select the rows or columns of data that you want to visualize. Follow Steps **2** to **4** to open the Create Sparklines dialog box and place the cursor inside the Location Range box. Select a single cell for each row or column that you have selected. For example, if you have selected five rows, select five cells. Click **OK**. Excel adds a sparkline for each selected row or column.
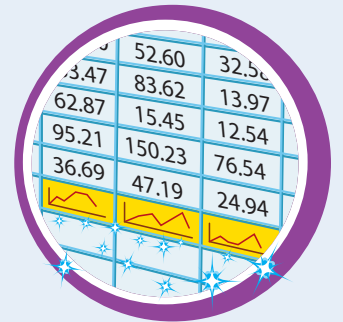
Formatting Excel Charts
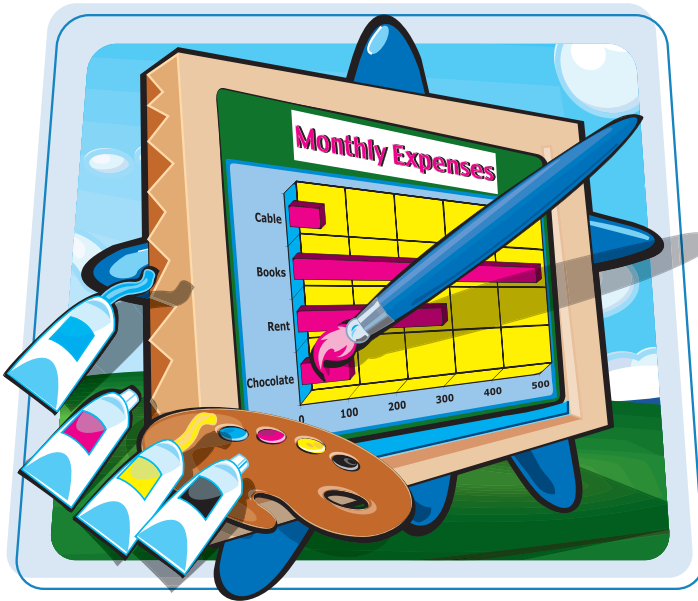
You use Excel charts to visualize worksheet data, and you can make these visualizations more eye-catching and more effective by formatting chart elements. In this chapter, you learn how to customize chart elements by formatting backgrounds, outlines, and effects, and by applying styles.

Format Chart Elements

You can customize 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.
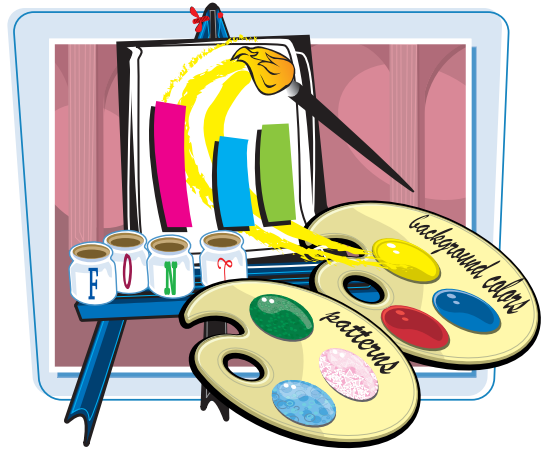
Format Chart Elements Using the Format Dialog Box

1. Click the chart element you want to format.

2. Click the **Format** tab.

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

3. Click **Format Selection** (🍷).
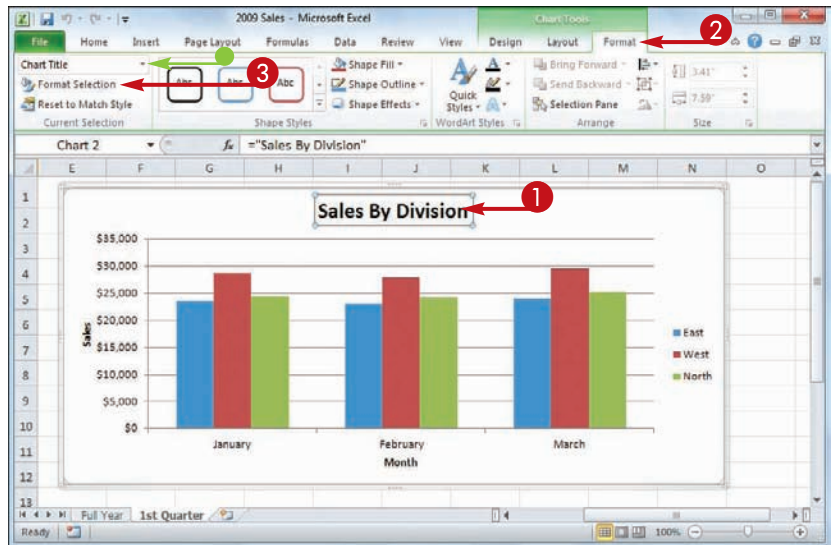
The Format dialog box appears for the object you selected. Here, it is the Format Chart Title dialog box.

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.
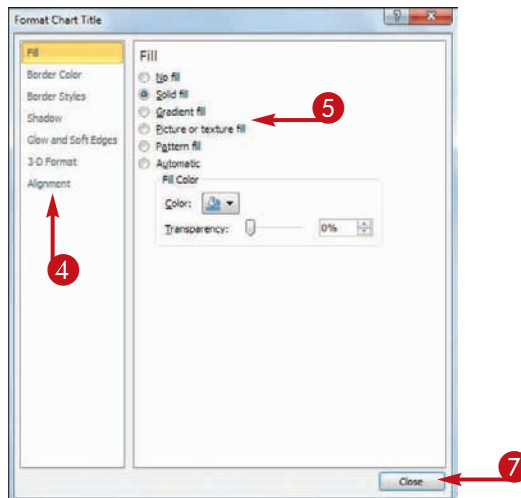
Format Chart Elements Using the Ribbon

1. Click the chart element you want to format.
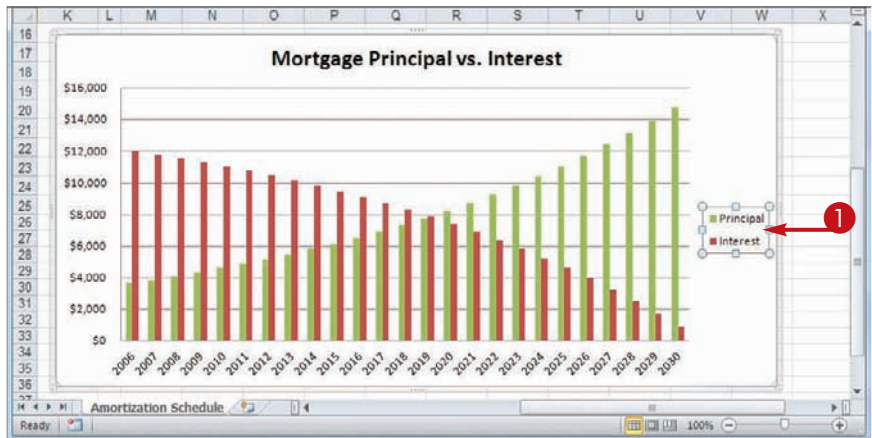
2. Click the **Format** tab.

3. Use the Ribbon controls to change the formatting options.

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

Excel applies the formatting.
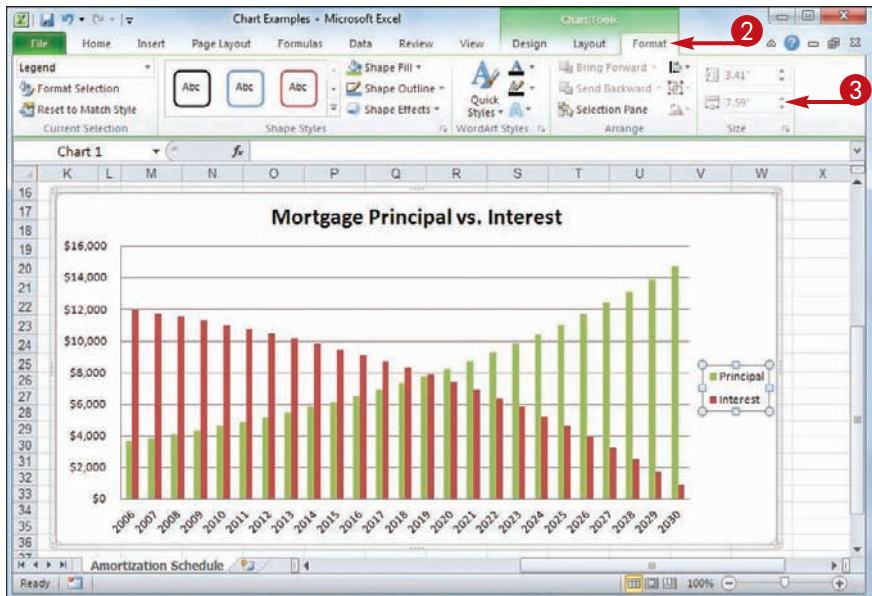
TIPS

Are there any formatting shortcuts I can use?

Yes. Excel offers several methods you can use to quickly open the Format dialog box. If you are using your mouse, position ▷ over the element you want to format, and then double-click. From the keyboard, first click the chart element you want to format and then press **Ctrl** + **1** . You can also right-click the chart element and then click **Format** *Element* (where *Element* is the name of the element).

How do I know where to click to select a chart element?

The easiest way to be sure you are clicking the correct element is to position ▷ over the object. If ▷ 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 ▷ until the correct banner appears.
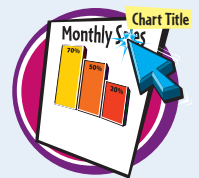
Customize a Chart Element Background

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

Most fills consist of a single color, but you can also apply a color gradient, a texture, or even a picture.
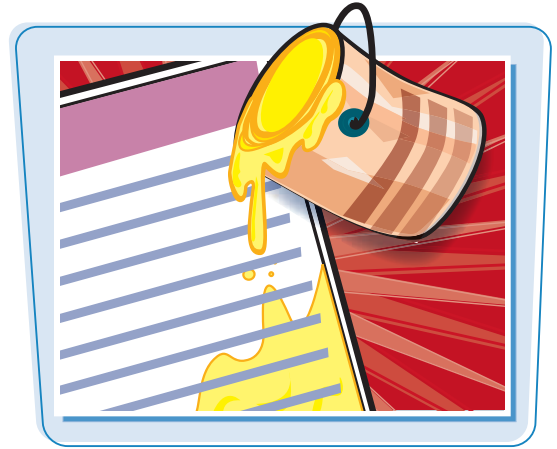
Customize a Chart Element Background

Apply a Color Fill

1 Click the chart element you want to format.

2 Click the **Format** tab.

3 Click the **Shape Fill** ⬇.

4 Click the color you want to apply.
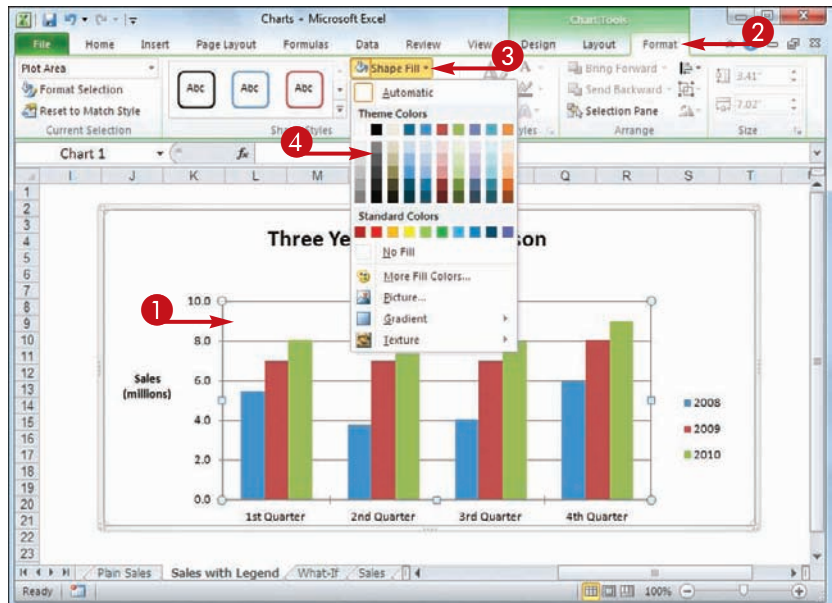
● Excel formats the element's background with the color you selected.
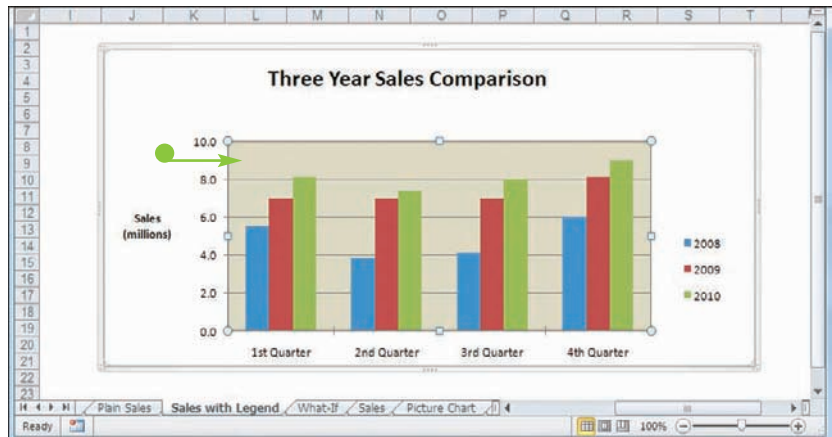
Apply a Gradient Fill

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.
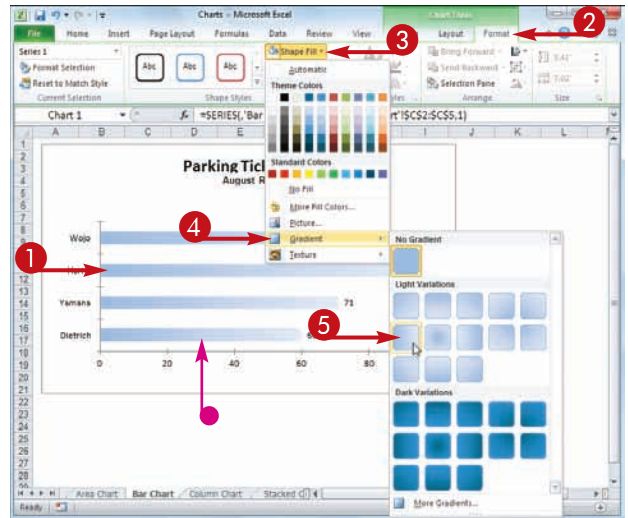
Apply a Texture Fill

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.
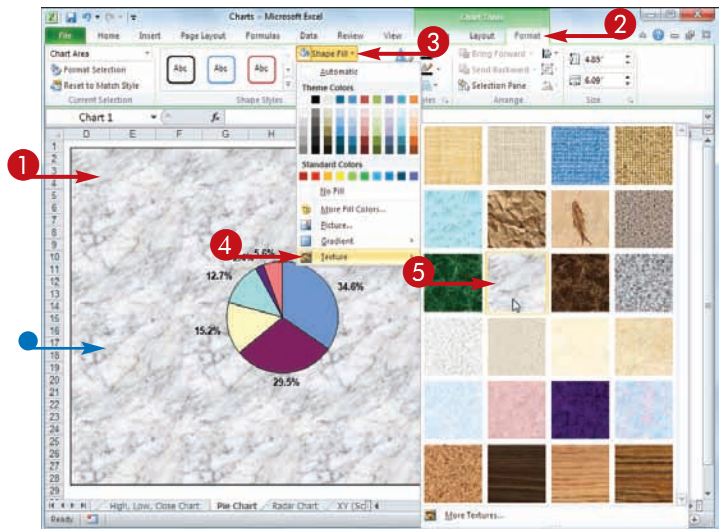
TIP

How do I use a picture as an element's background?
Follow these steps:

1 Follow Steps **1** to **3** to select the element and display the Shape Fill gallery.

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**.
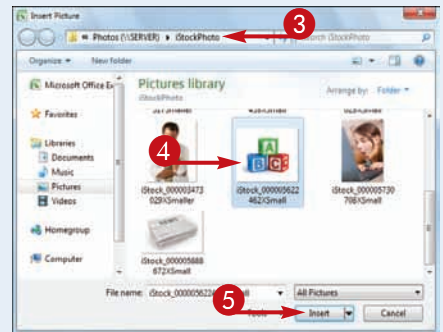
Set a Chart Element's Outline

You can make a chart element stand out by customizing 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 customize the outline's color, its weight — that is, its thickness — and whether the line is solid or consists of a series of dots or dashes.
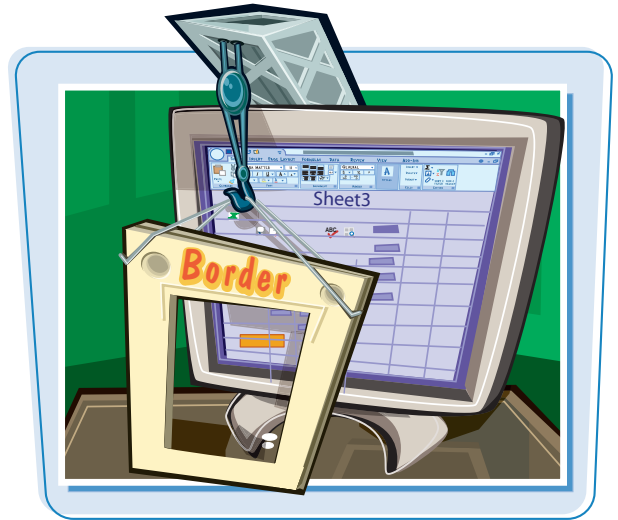
Set a Chart Element's Outline

1 Click the chart element you want to format.

2 Click the **Format** tab.

3 Click the **Shape Outline** ▾.

4 Click the color you want to apply.
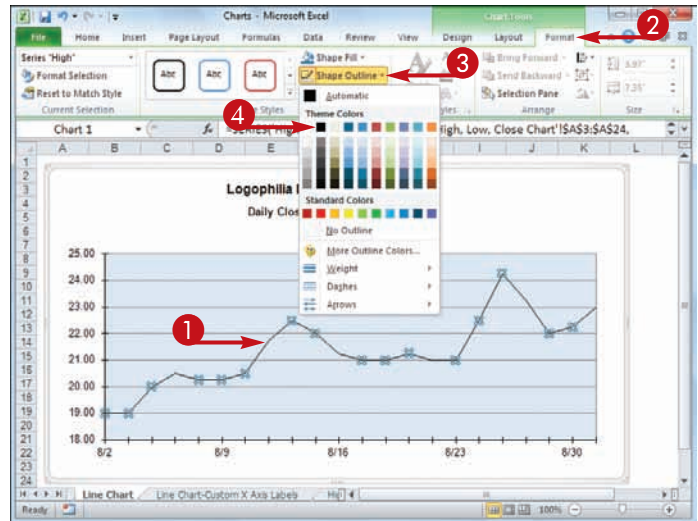
5 Click the **Shape Outline** ▾.

6 Click **Weight**.

7 Click the line thickness you want to apply.
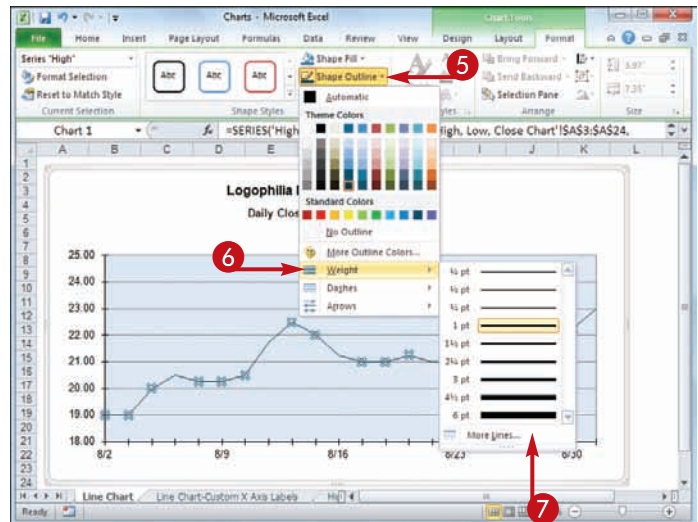
8 Click the **Shape Outline** ⊡.

9 Click **Dashes**.

10 Click the line style you want to apply.
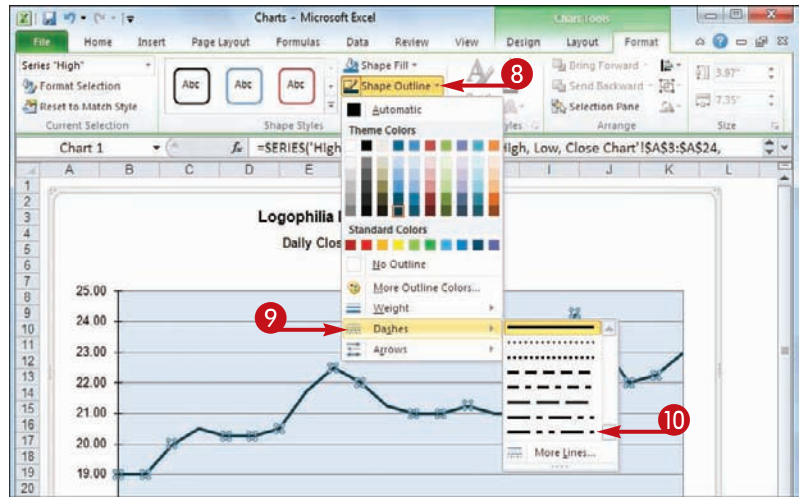
● Excel formats the element's outline with the color, weight, and style you selected.
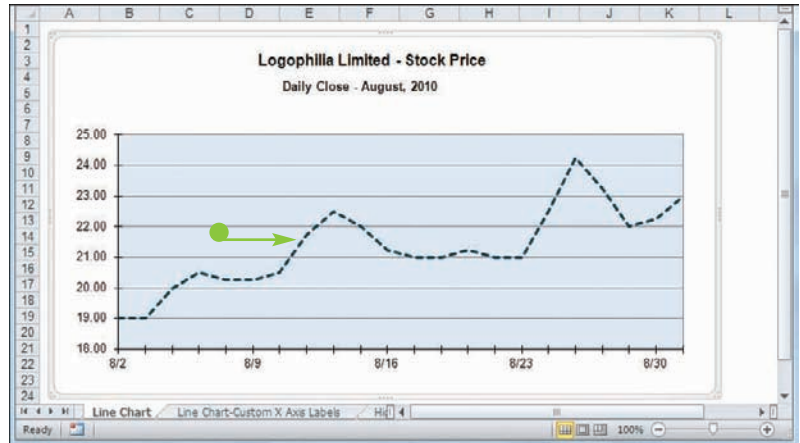
Can I display my chart with a rounded outline?

Yes. Follow these steps:

1 Click the chart border to select the chart area element.

2 Click the **Format** tab.

3 Click **Format Selection** (⬛).

Excel displays the Format Chart Area dialog box.

4 Click the **Border Styles** tab.

5 Click **Rounded corners** (☐ changes to ☑).

6 Click **Close**.
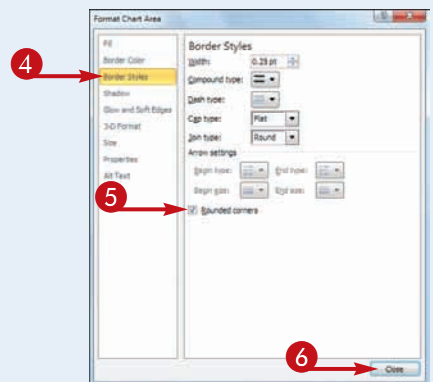
Add Effects to a Chart Element

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

For most chart elements, you can add one or more effects, including a shadow, glow, soft edges, or bevel.

Add Effects to a Chart Element

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.

● Excel formats the element with the shadow you selected.
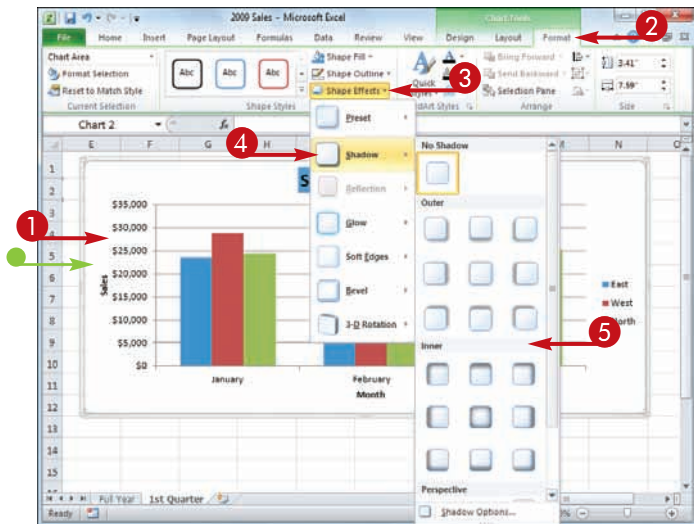
Add a Glow Effect

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.

● Excel formats the element with the glow you selected.
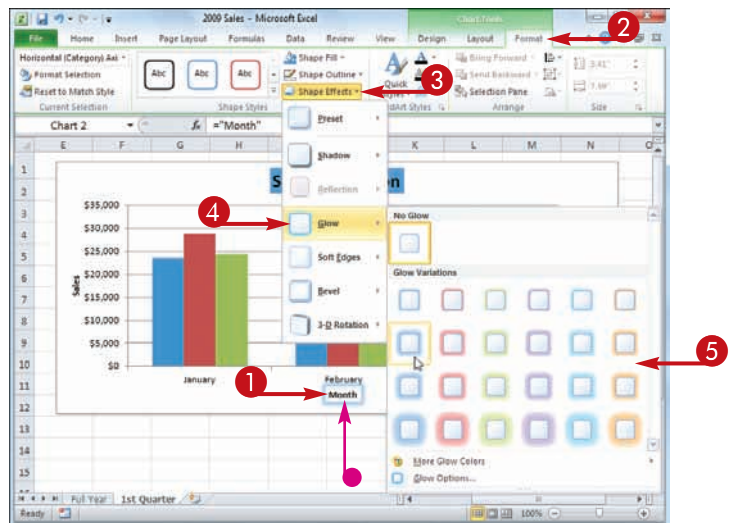
Add a Soft Edges Effect

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.

● Excel formats the element with the soft edges you selected.
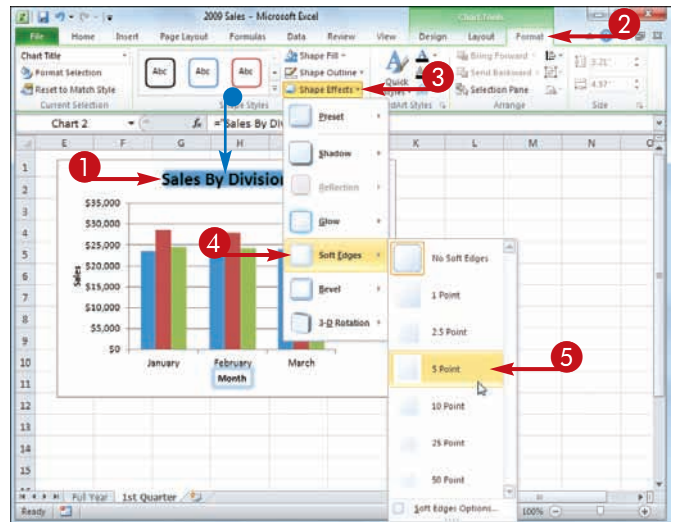
Add a Bevel Effect

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.

● Excel formats the element with the bevel you selected.
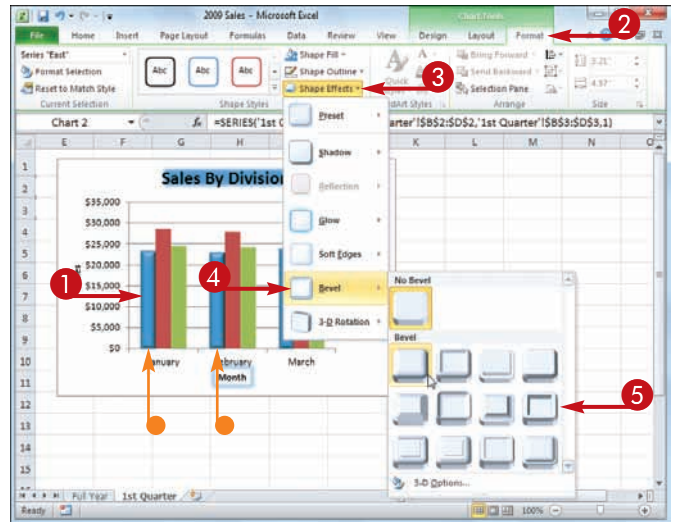
TIPS

The shadow I selected is not very noticeable. How can I get a better shadow effect?

Excel offers several controls that enable you to manually adjust various aspects of the shadow. Follow Steps **1** to **4** in "Add a Shadow Effect" and then click **Shadow Options**. Either use the Size spin box to increase the size of the shadow, or use the Distance spin box to increase the space between the chart element and the shadow. Click **Close** when you are done.

Is there an easier way to apply multiple special effects to a chart element?

Yes. Excel comes with several preset combinations of special effects, each of which includes two or more effects, such as a shadow and a bevel. To apply preset effects, click the chart element you want to format, click the **Format** tab, click the **Shape Effects** ▾, click **Preset**, and then click the preset effect you want to use.

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, including a background, outline, and special effects.

1 Click the chart element you want to format.
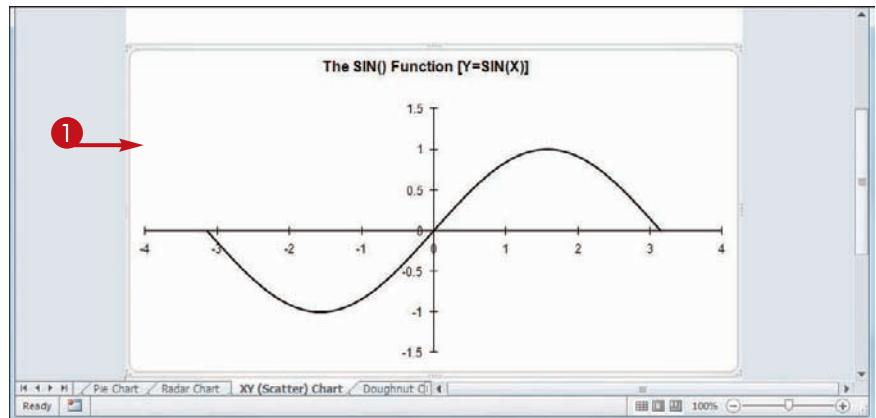
2 Click the **Format** tab.

3 Click the **Shape Styles** ☑.

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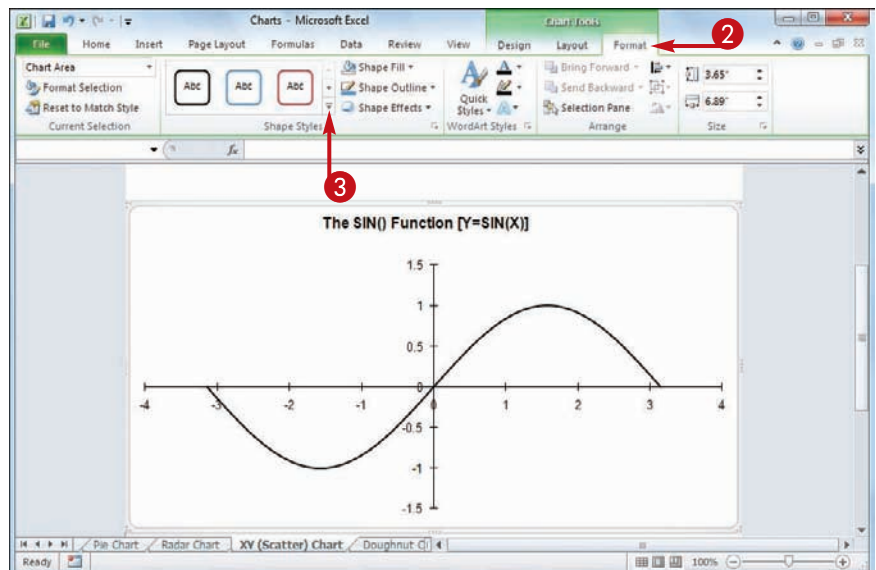
Excel displays the Shape Styles gallery.

4 Click the style you want to apply.
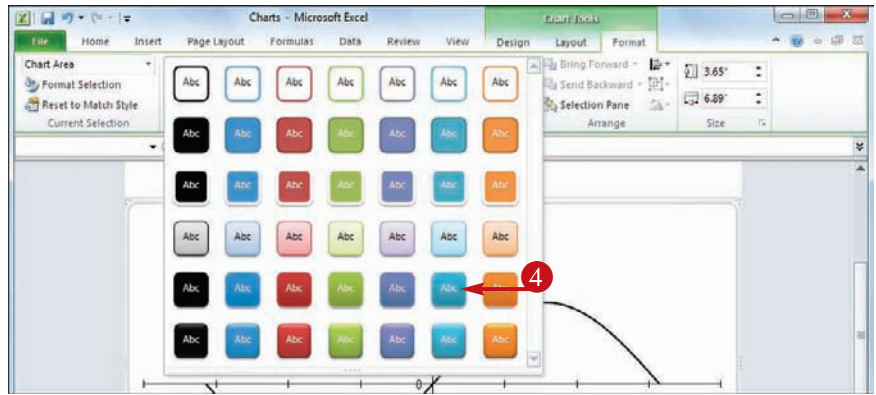
● Excel applies the style.
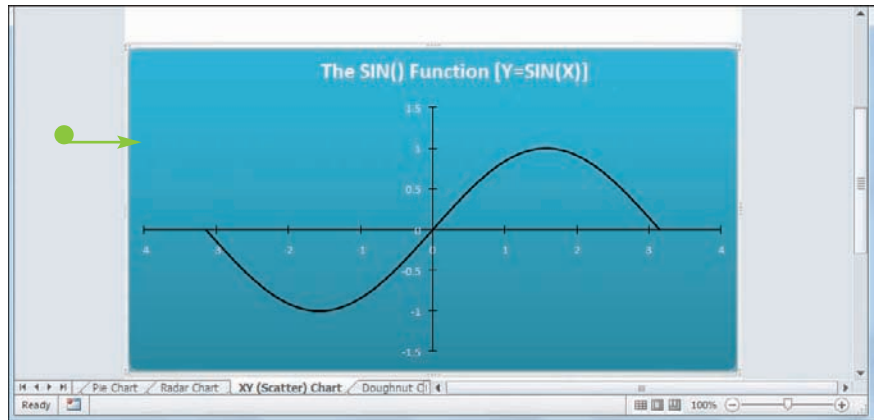
How do I remove a style from a chart element?

Unfortunately, Excel does not offer a simple method for removing a style. Instead, 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**.

Apply a WordArt Style to Chart Text

You can add visual interest to your chart text by formatting the text with a WordArt style. You can apply a WordArt style to the chart title, axis titles, axis text, legend text, and data labels.

Each WordArt style is a combination of text color, text outline, and one or more text effects.

Apply a WordArt Style to Chart Text

① Click the chart element you want to format.
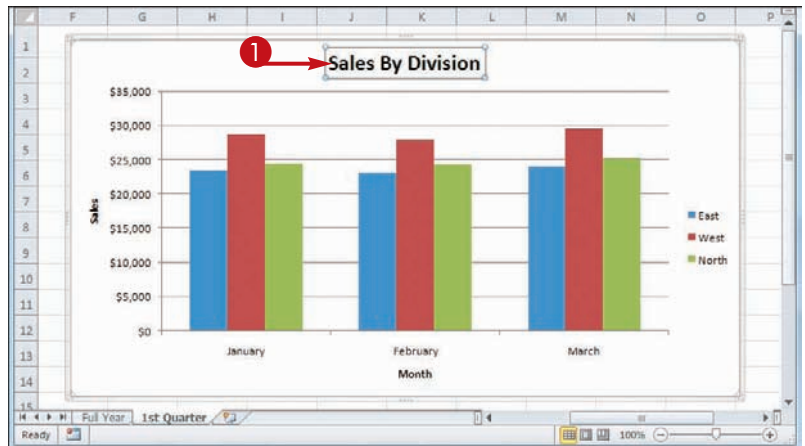
② Click the **Format** tab.

③ Click the **WordArt Quick Styles** ▾.
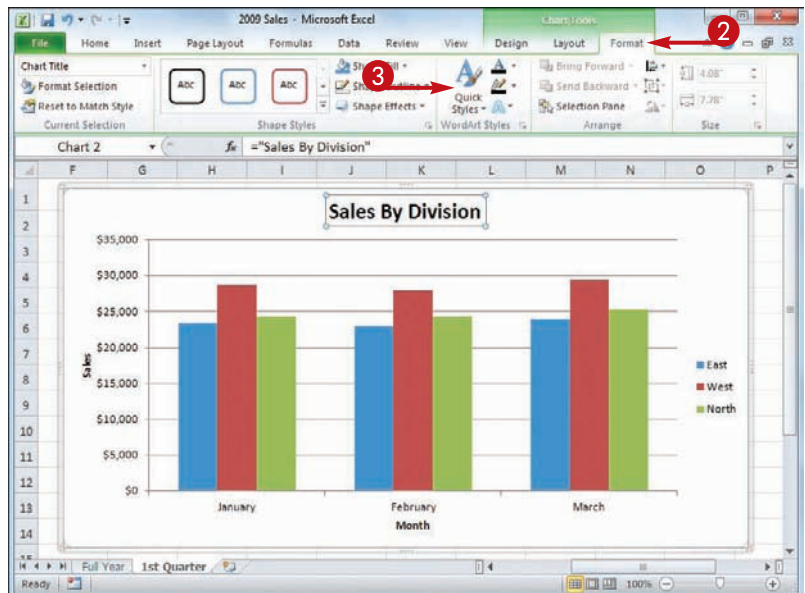
Excel displays the WordArt Quick Styles gallery.

④ Click the WordArt style you want to use.
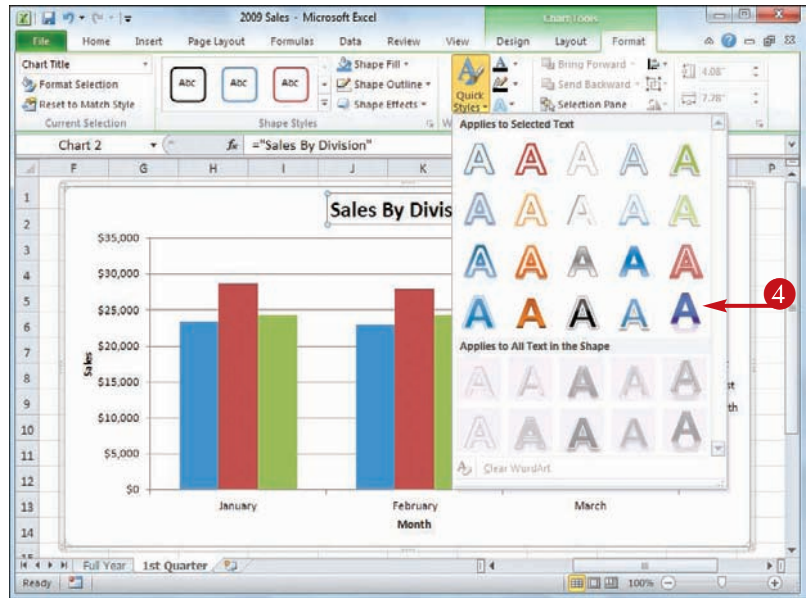
Excel applies the WordArt style to the text.

CHAPTER
14

Adding and Editing Worksheet Graphics

You can enhance the visual appeal and effectiveness of your Excel worksheets by incorporating graphic objects such as shapes, clip art, pictures, or WordArt and SmartArt images. This chapter shows you how to insert, format, and edit graphics.

Draw a Shape

Excel's Shapes gallery comes with more than 150 predefined objects called *shapes* (or sometimes *AutoShapes*) that enable you to quickly and easily draw anything from simple geometric figures such as lines, rectangles, and ovals, to more elaborate items such as starbursts, flowchart symbols, and callout boxes.

Draw a Shape

❶ Display the worksheet on which you want to draw the shape.

❷ Click the **Insert** tab.

❸ Click **Shapes** ().

❹ Click the shape you want to draw.

   ▷ changes to +.

5 Click and drag the mouse ✛ to draw the shape.

6 When the shape is the size you want, release the mouse button.

● The program draws the shape and adds edit handles around the shape's edges.

Note: If you need to move or size the shape, see "Move or Resize a Graphic" later in this chapter.

TIPS

Is there an easy way to draw a perfect circle or square?

Yes, Excel offers an easy technique for drawing circles and squares. Hold down the **Shift** key as you click and drag the shape to constrain the shape into a perfect circle or square. When you finish drawing the shape, release **Shift**.

Can I add text to a shape?

Yes. You can add text to the interior of any 2-D shape (that is, any shape that is not a line). After you draw the shape, right-click the shape, click **Edit Text**, and then type your text inside the shape. You can use the Home tab's Font controls to format the text. When you finish, click outside of the shape.

Insert a Clip Art Image

You can improve the look of an Excel worksheet by adding a clip art image to the sheet.

Clip art refers to small images or artwork that you can insert into your documents. Excel 2010 ships with more than 300 clip art images that you can use without charge.

Insert a Clip Art Image

① Display the worksheet on which you want to insert the clip art image.

② Click the **Insert** tab.

③ Click **Clip Art** (📷).
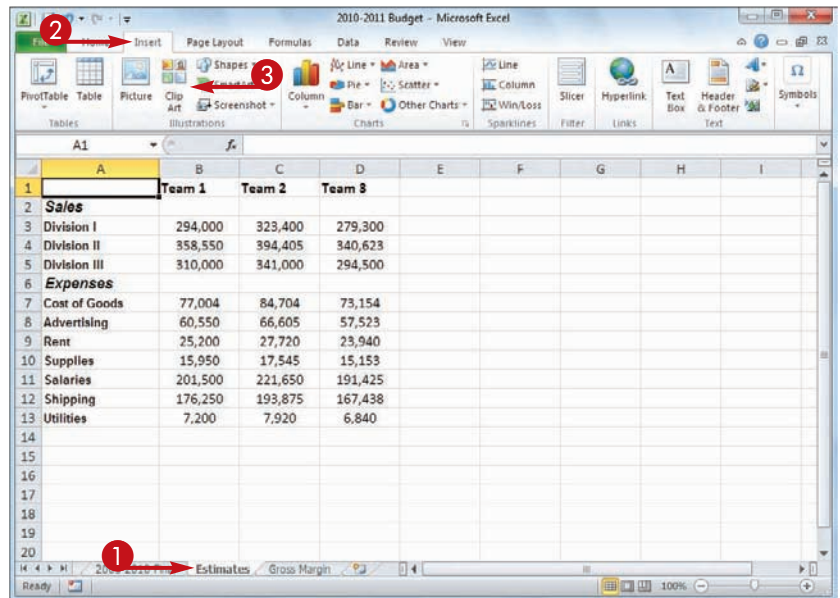
● Excel displays the Clip Art pane.

④ Use the Search for text box to type a word that describes the type of clip art image you want to insert.

⑤ Click **Go**.
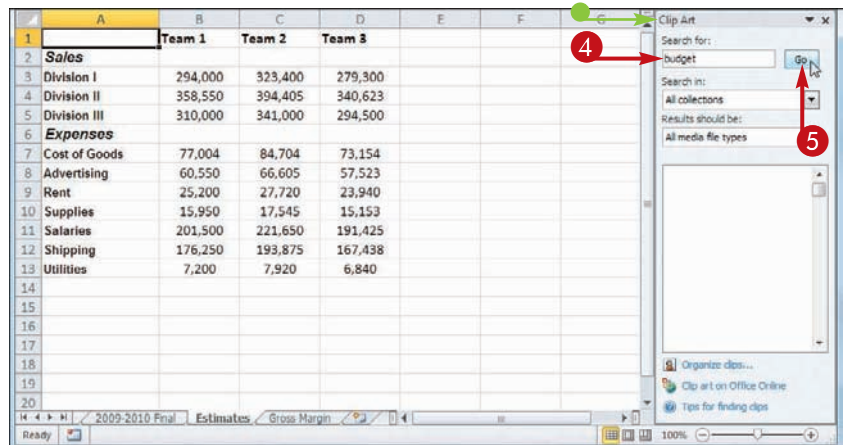
● Excel displays a list of clip art images that match your search term.

⑥ Click and drag the clip art image from the Object Palette (↖ changes to ↘) and drop it inside the document at the spot where you want the image to appear.
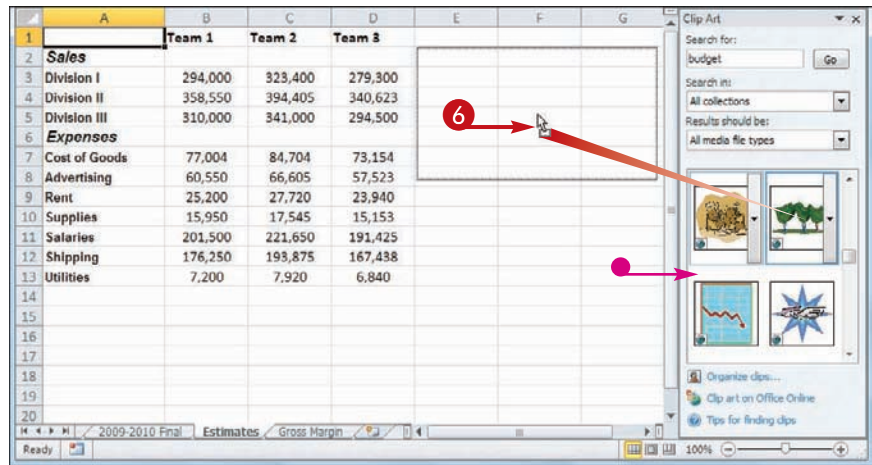
● Excel inserts the clip art.

Note: If you need to move or size the clip art, see "Move or Resize a Graphic" later in this chapter.

TIP
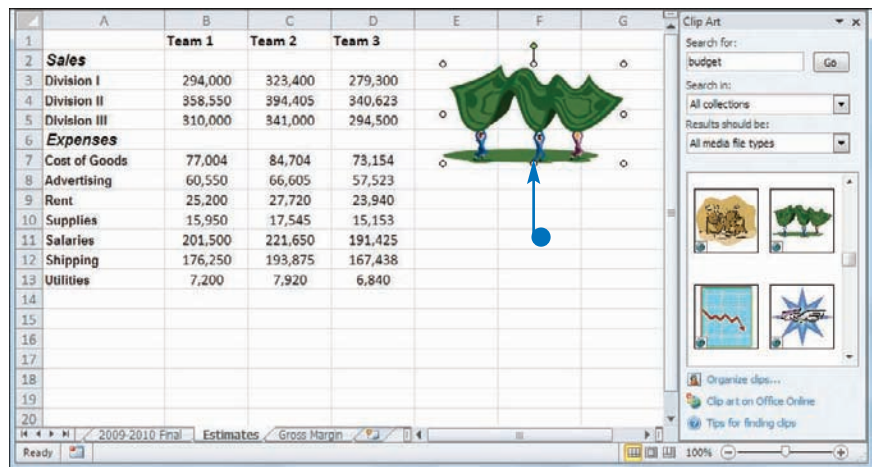
Is there an easier way to locate the clip art image that I want?

Yes. You can filter the clip art list to show only those images from a particular category, such as Animals or People. Follow these steps:

❶ Click the **Insert** tab.

❷ Click 🖻.

❸ Click the **Search in** 🔽.

❹ Click the **Everywhere** check box (☑ changes to ☐).

❺ Click the **Office Collections** ⊞.

❻ Click the check box beside the category you want to view (☐ changes to ☑).

❼ Click **Go**.
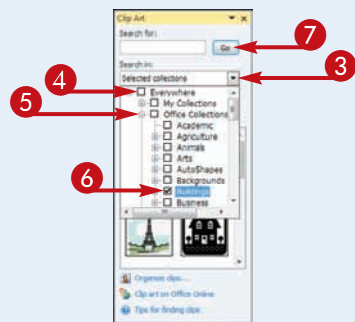
The Clip Art pane displays only the clip art images from the category you chose.

Insert a Photo

You can enhance the visual appeal and strengthen the message of an Excel worksheet by adding a photo to the file.

Excel can work with the most popular picture formats, including BMP, JPEG, TIFF, PNG, and GIF.

Insert a Photo

1 Open the worksheet where you want to insert the photo.

2 Click the cell where you want the upper left corner of the photo to appear.
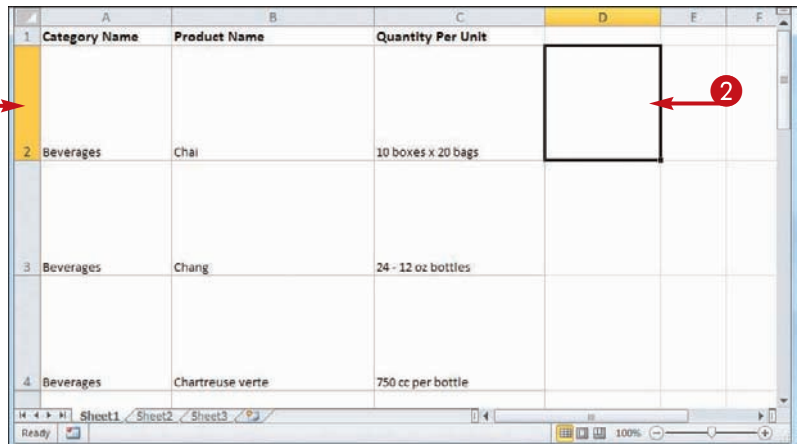
3 Click the **Insert** tab.

4 Click **Picture** (■).
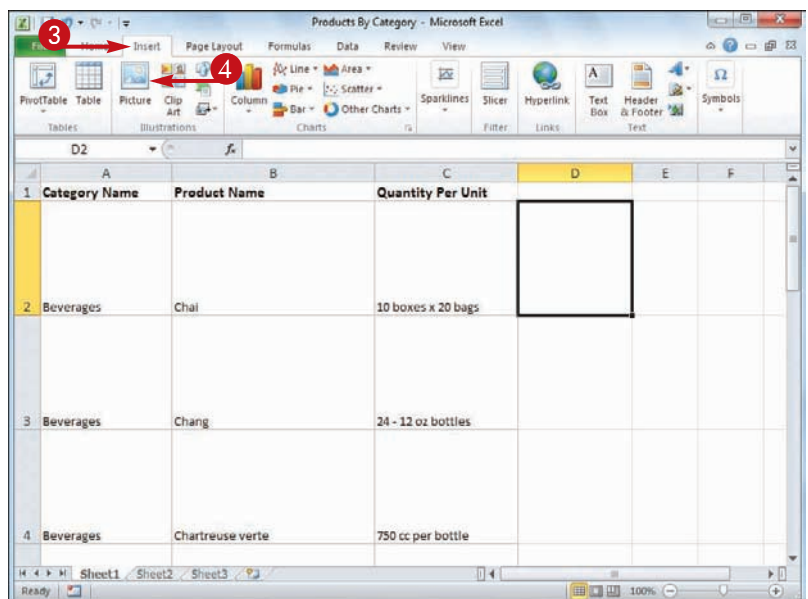
The Insert Picture dialog box appears.

5 Open the folder that contains the photo you want to insert.

6 Click the photo.

7 Click **Insert**.
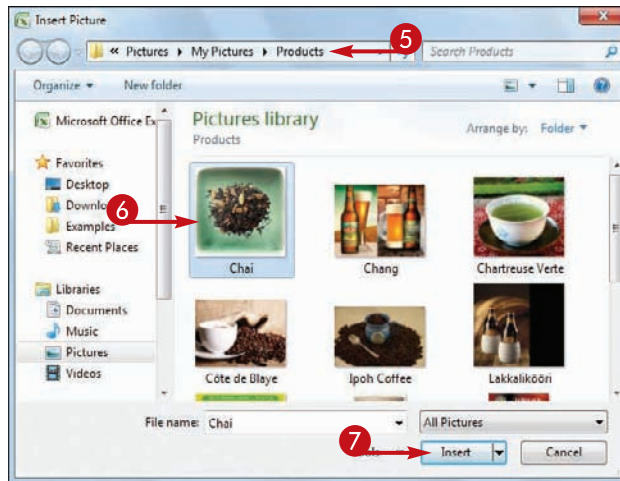
● Excel inserts the photo into the worksheet.

Note: If you need to move or size the photo, see "Move or Resize a Graphic" later in this chapter.
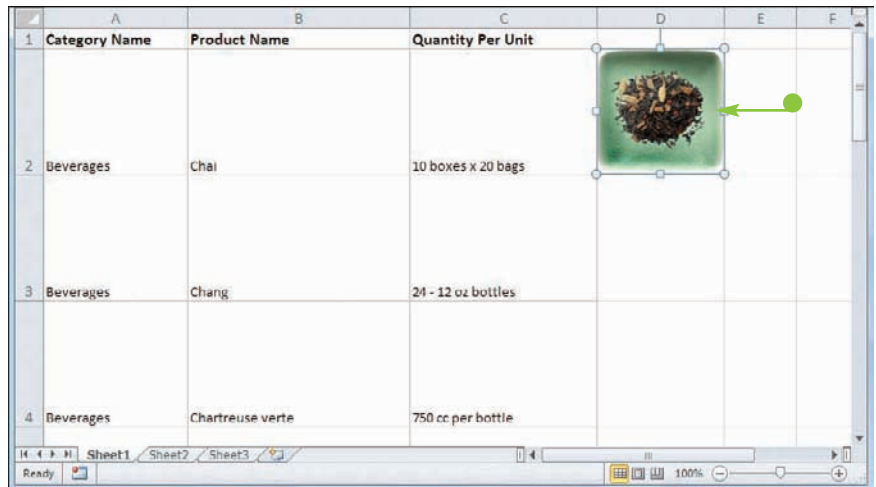
My photo has a distracting background. Can I remove it?

Yes. Excel 2010 comes with a new Background Removal feature that can eliminate the background in most photos. Click the photo, click the **Format** tab, and then click **Background Removal** ( ). If part of the foreground is in the removal color, click **Mark Areas to Keep** and then click and drag a line through the part you want to retain. When you are finished, click **Keep Changes**.

Is there a way to reduce the size of a workbook that has lots of photos?

Yes, you can use the Compress Pictures feature to convert the photos to a smaller resolution and so reduce the size of the workbook. Click any image in the workbook, click the **Format** tab, and then click **Compress Pictures** ( ). Click **Apply only to this picture** (changes to), click a **Target output** (changes to), and then click **OK**.

Insert a WordArt Image

You can add some pizzazz to your Excel workbooks by inserting a WordArt image. A WordArt image is a graphic object that contains text stylized with shadows, outlines, reflections, and other predefined effects.

WordArt images enable you to apply sophisticated and fun effects to text with just a few mouse clicks.

Insert a WordArt Image

1 Open the worksheet in which you want to insert the WordArt image.
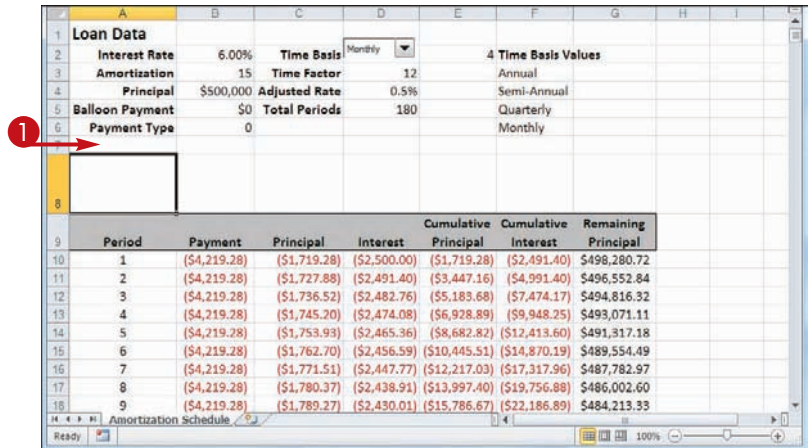
2 Click the **Insert** tab.

3 Click **WordArt** (icon).

The WordArt gallery appears.

4 Click the WordArt style you want to use.
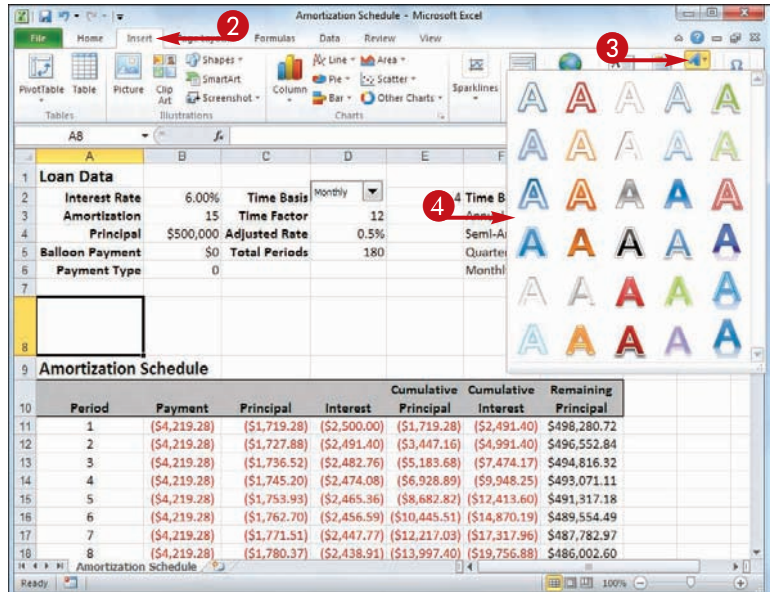
● The WordArt image appears in the worksheet.

⑤ Type the text that you want to appear in the WordArt image.

⑥ Click outside the image to set it.

Note: You will likely have to move the WordArt image into position; see "Move or Resize a Graphic" later in this chapter.

TIPS

Can I change the default WordArt formatting?

Yes. Click the WordArt image to select it, and then use the Home tab's Font controls to adjust the WordArt text font. Click the **Format** tab. In the WordArt Styles group, use the Text Fill (⬛), Text Outline (✏), and Text Effects (🅰) galleries to format the WordArt image. You can also use the Quick Styles gallery to select a different WordArt style.

Can I make my WordArt text run vertically?

Yes. Click the WordArt image to select it. Click the **Format** tab, and then click the dialog box launcher (◱) in the WordArt Styles group. In the Format Text Effects dialog box, click the **Text Box** tab. Click the **Text direction** ▾ and then click **Stacked**. Click **Close**. Excel displays the WordArt text vertically.

Insert a
SmartArt Graphic

You can add a SmartArt graphic to a workbook to help present information in a compact, visual format. A SmartArt graphic is a collection of *nodes* — shapes with some text inside — that enables you to convey information visually.

For example, you can use a SmartArt graphic to present a company organization chart, the progression of steps in a workflow, the parts that make up a whole, and much more.
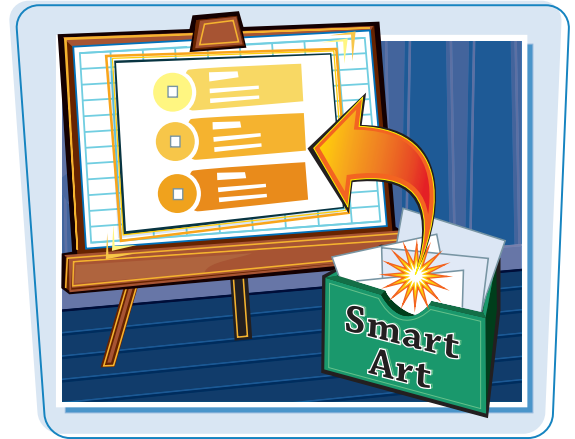
Insert a SmartArt Graphic

1. Open the worksheet in which you want to insert the SmartArt image.

2. Click the **Insert** tab.

3. Click **SmartArt** (📊).
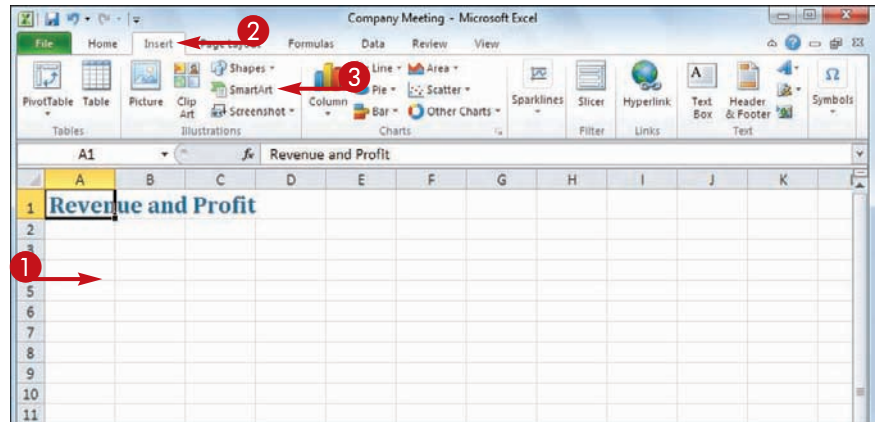
The Choose a SmartArt Graphic dialog box appears.

4. Click a SmartArt category.

5. Click the SmartArt style you want to use.

6. Click **OK**.
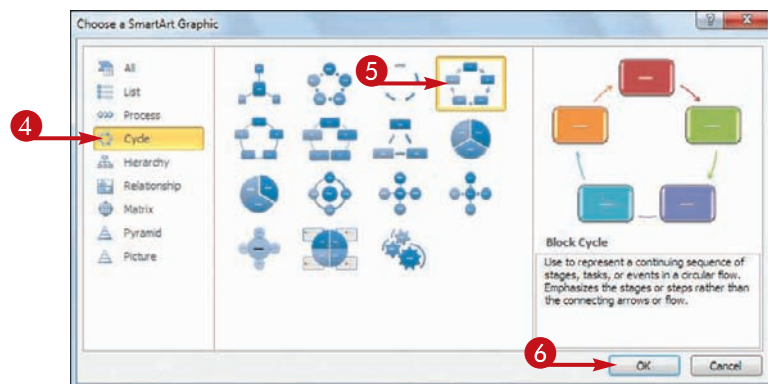
- The SmartArt graphic appears in the document.

- You use the Text pane to type the text for each node and to add and delete nodes.

7 Click a node in the Text pane.

8 Type the text that you want to appear in the node.

- The text appears automatically in the associated shape.
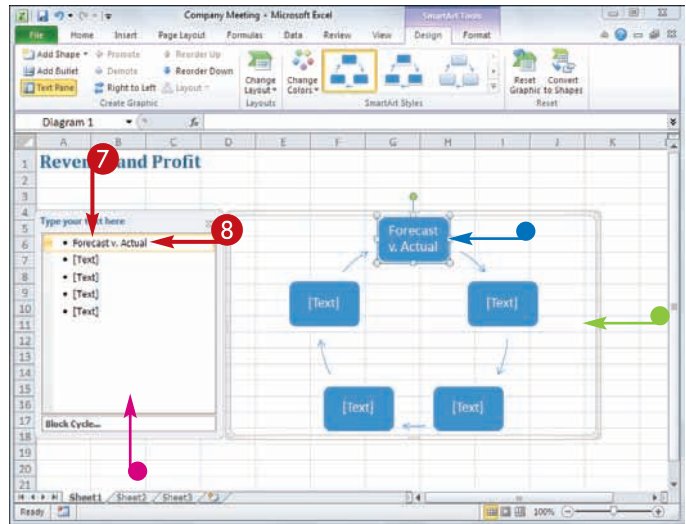
9 Repeat Steps **7** and **8** to fill in the other nodes in the SmartArt graphic.

- You can click **Text Pane** (□) to hide the Text pane.

Note: You will likely have to move the SmartArt graphic into position; see "Move or Resize a Graphic" later in this chapter.
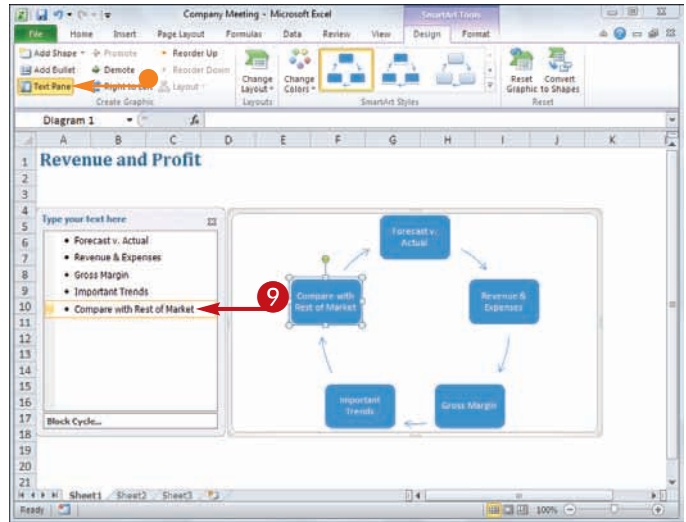
TIPS

How do I add a node to my SmartArt graphic?

To add a node to the SmartArt graphic, first decide where you want that node to appear in the current image. That is, decide which existing node you want the new node to come before or after. Click the existing node, click the **Design** tab, click the **Add Shape** ▾, and then click **Add Shape After**. (If you want the new node to appear before the existing node, click **Add Shape Before**.)

Can I use shapes other than the ones supplied in the default SmartArt graphics?

Yes. Click the node you want to change. Click the **Format** tab, and then click the **Change Shape** ▾ to display the Shapes gallery. Click the shape you want to use. Excel updates the SmartArt graphic node with the new shape.

Move or Resize a Graphic

To ensure that a graphic is ideally placed within an Excel worksheet, you can move the graphic to a new location, or you can resize the graphic in its current location. You can move or resize any graphic, including shapes, clip art, pictures, WordArt images, and SmartArt graphics.

Move or Resize a Graphic

Move a Graphic

1 Click and drag the graphic you want to move.

The mouse ➢ changes to ✛.

2 Drop the graphic in the location you prefer.

● As you drag the graphic, Excel displays the graphic's outline to show you the current position.
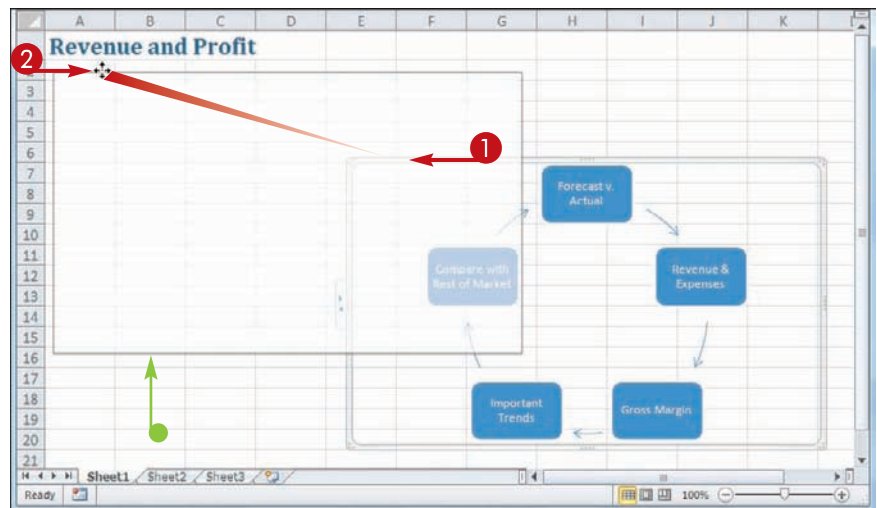
● Excel moves the graphic to the new location.
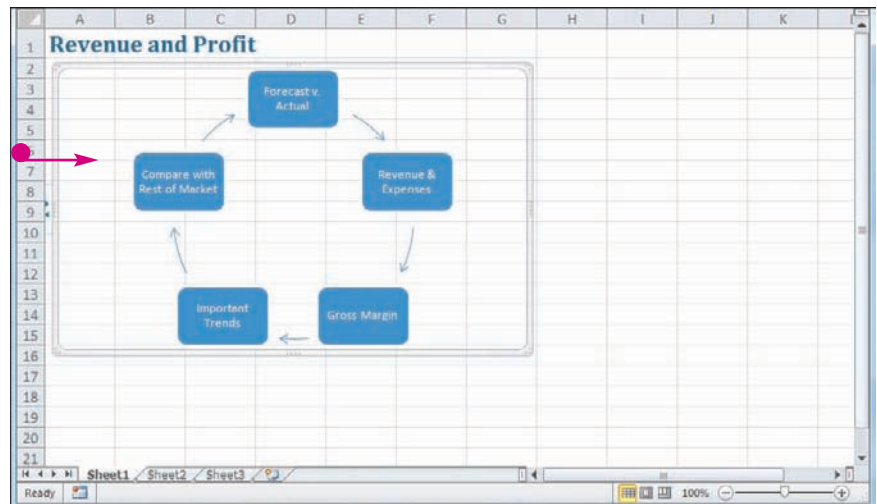
Resize a Graphic

1 Click the graphic you want to resize.

● Sizing handles appear around the graphic's edges.

2 Click and drag a sizing handle.

The mouse ⬉ changes to ⬄.

● Drag a side handle to adjust that side.

● Drag a corner handle to adjust the two sides adjacent to the corner.

3 Release the mouse button when the handle is in the position you want.

● Excel resizes the graphic.

4 Repeat Steps 2 and 3 to resize other sides of the graphic, as necessary.
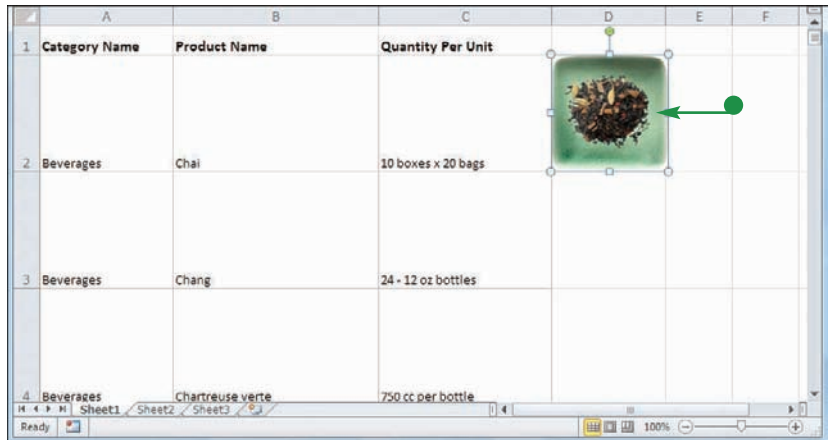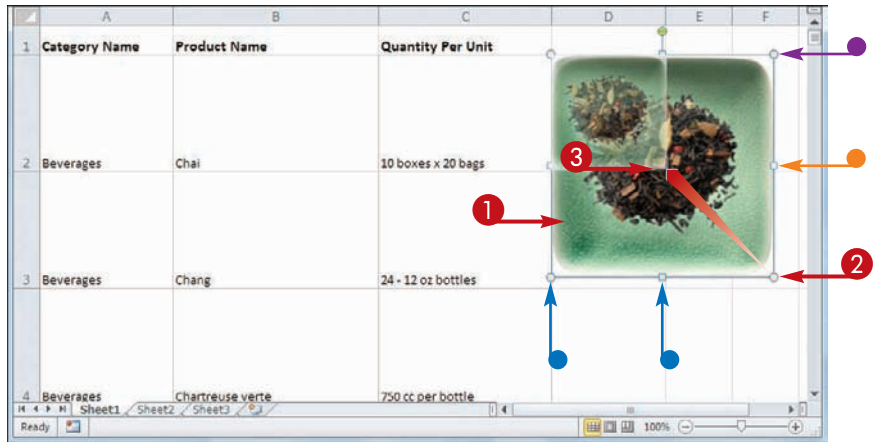
TIPS

Can I rotate a graphic?

Yes. Most graphic objects come with a green rotate handle. Follow these steps:

1 Move the mouse ⬉ over the rotate handle (⬉ changes to ↻).

2 Click and drag the rotate handle clockwise or counterclockwise to rotate the graphic.

3 Release the mouse button when the graphic is in the position you want.

Is it possible to resize a graphic in all directions at once to keep the proportions the same?

Yes. You normally resize one side at a time by dragging a side handle, or two sides at a time by dragging a corner handle. To resize all four sides at once, hold down the Ctrl key and then click and drag any corner handle.

Crop a Picture

If a picture contains extraneous material near the outside edges of the image, you can crop the picture to remove that material. This not only reduces the size of the picture in the worksheet, but it also serves to focus more attention on the remaining part of the image.
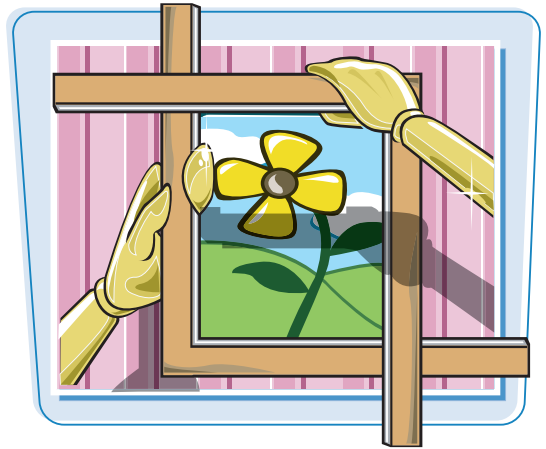
Crop a Picture

1 Click the picture you want to crop.
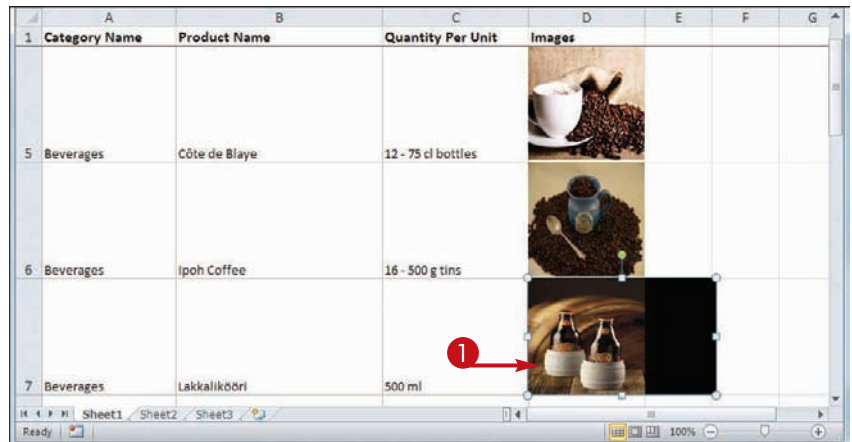
2 Click the **Format** tab.

3 Click the **Crop** button (⬚).

● Crop handles appear around the picture.
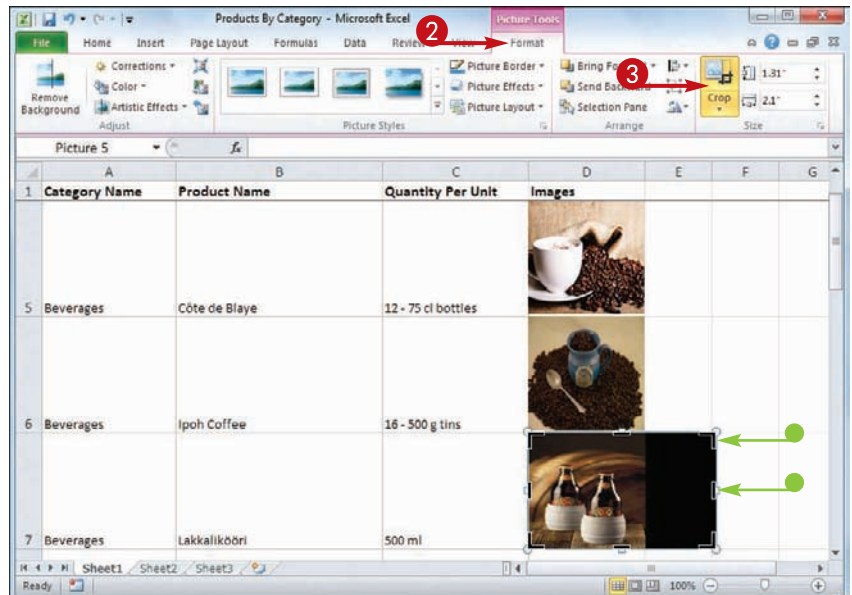
④ Click and drag a crop handle.

The mouse ⊕ changes to ＋.

● Click and drag a side handle to crop that side.

● Click and drag a corner handle to crop the two sides adjacent to the corner.

⑤ Release the mouse button when the handle is in the position you want.
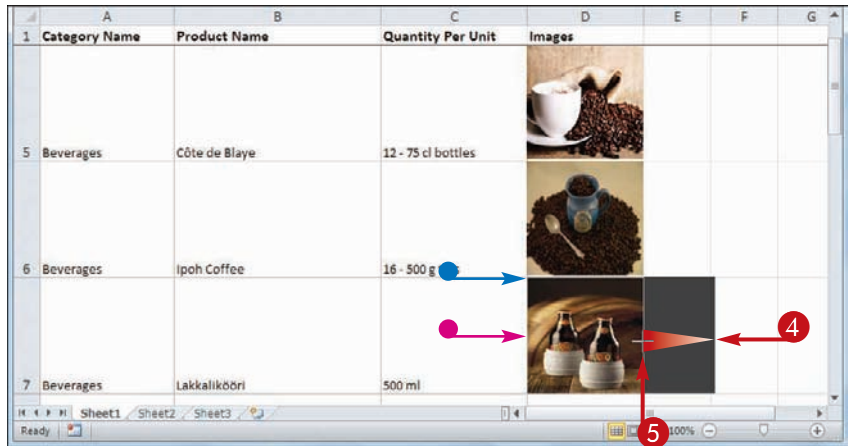
⑥ Click 🔲.

Excel turns off the Crop feature.

● Excel crops the picture.
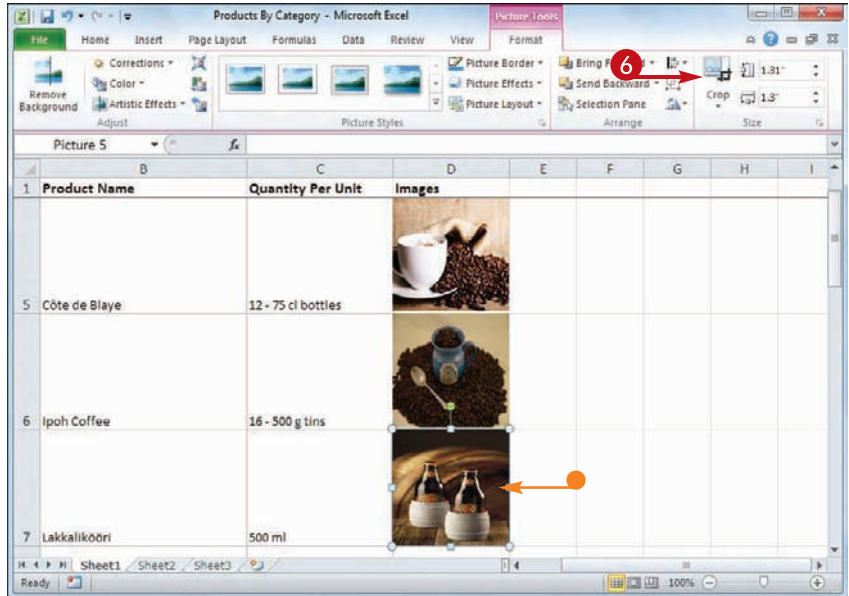
If I have a picture with the main element in the middle, is it possible to crop in all directions at once to keep just that middle element?

Yes. You normally crop one side at a time by clicking and dragging a side crop handle, or two sides at a time by clicking and dragging a corner crop handle. To crop all four sides at once, hold down the Ctrl key and then click and drag any corner crop handle.
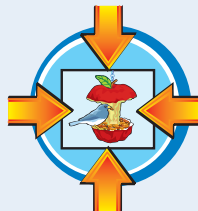
Can I crop a picture to a particular aspect ratio or shape?

Yes. Excel offers a couple of cropping options. If you know the aspect ratio (the ratio of the width to the height) you want, click the **Crop** ▼, click **Aspect Ratio**, and then click the ratio, such as 3:5 or 4:6. If you prefer to crop to a shape, such as an oval or arrow, click the **Crop** ▼, click **Crop to Shape**, and then click the shape.
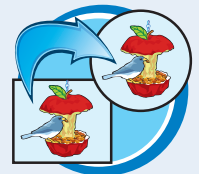
Format a Picture

You can enhance your clip art and pictures by formatting the images. For example, Excel offers a number of picture styles, which are predefined formats that apply shadows, reflections, and borders. Excel also offers several 3-D picture effects, which are preset special effects such as bevels and 3-D rotations.

Format a Picture

Apply a Picture Style

① Click the picture you want to format.

② Click the **Format** tab.

③ Click the **Picture Styles** ▾.
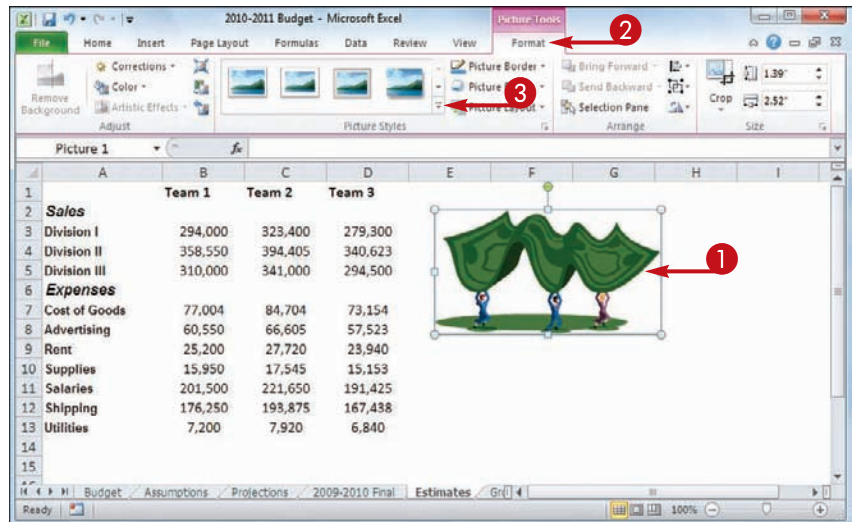
● Excel displays the Picture Styles gallery.

④ Click the picture style you want to use.

● Excel applies the Quick Style to the picture.
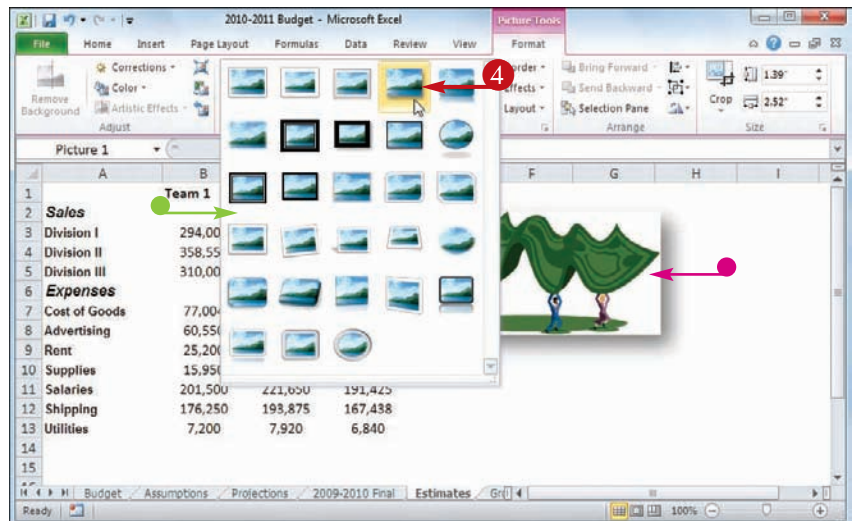
Apply a Picture Effect

1 Click the picture you want to format.

2 Click the **Format** tab.

3 Click the **Picture Effects** button ( ).

*Note: If the image is a shape, the button is named **Shape Effects**.*

4 Click **Preset**.

5 Click the effect you want to apply.
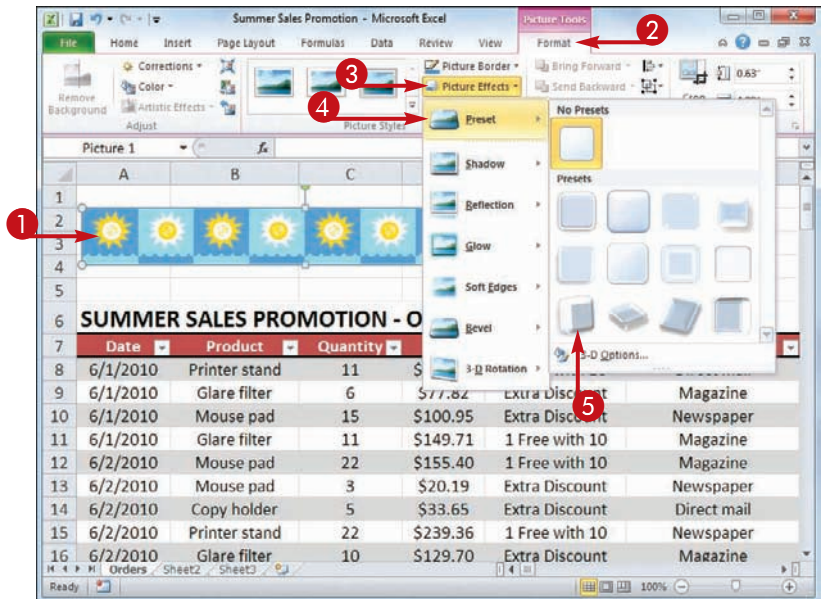
● Excel applies the effect to the picture.
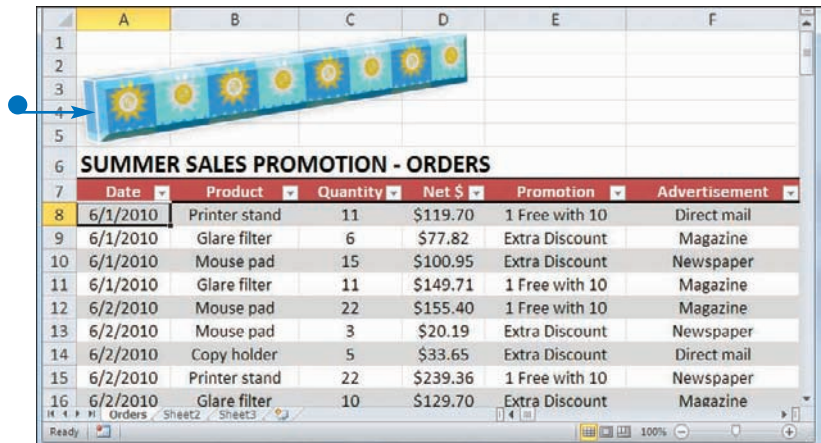
I applied a Quick Style to a picture, but now I want to change the picture to something else. Do I have to start over?

No. You can simply replace the existing picture with the other picture, and Excel preserves the Quick Style so you do not have to repeat your work. Click the existing picture, click the **Format** tab, and then click the **Change Picture** button ( ). Click the new picture you want to use, and then click **Insert**.

If I do not like the formatting that I have applied to a picture, can I return the picture to its original look?

Yes. If you have not performed any other tasks since applying the formatting, click **Undo** ( ) until Excel has removed the formatting. Alternatively, click , click **Preset**, and then click **No Preset**. To reverse all the changes you have made to a picture since you inserted the image, click the picture, click **Format**, and then click **Reset Picture**.

Add a Shadow or Glow to a Picture

You can give your clip art, photos, shapes, and other pictures more prominence by enhancing them with either a shadow effect or a glow effect. Excel offers a number of predefined shadow and glow effects that you can apply with just a few mouse clicks.

Add a Shadow or Glow to a Picture

Add a Shadow to a Picture

1 Click the picture you want to format.

2 Click the **Format** tab.

3 Click the **Shape Effects** button (□).

*Note: For non-shape images, the □ button is named **Picture Effects**.*

4 Click **Shadow**.

5 Click the shadow effect you want to use.
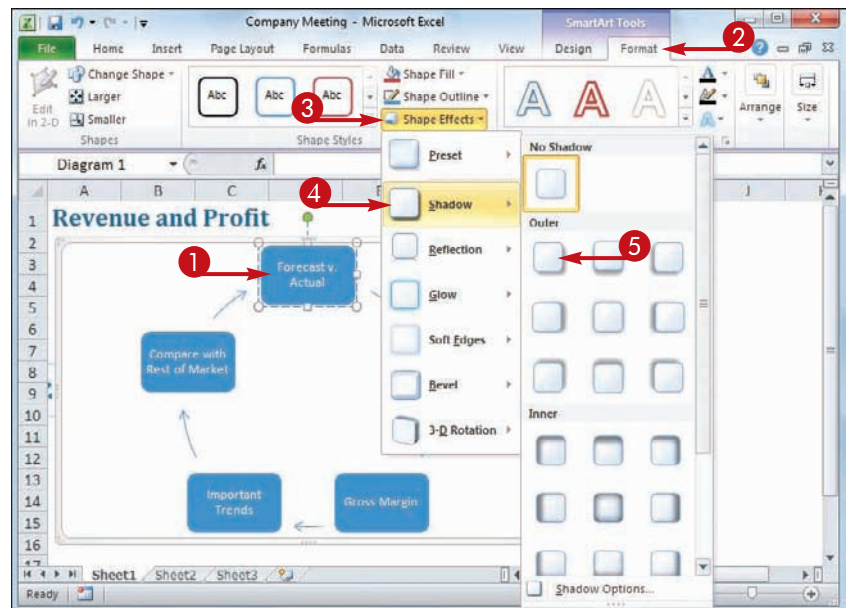
● Excel applies the shadow to the picture.
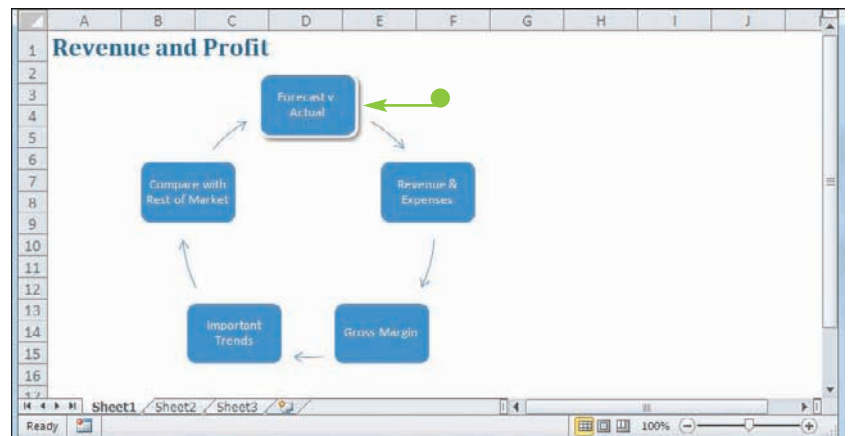
Add a Glow to a Picture

1 Click the picture you want to format.

2 Click the **Format** tab.

3 Click the **Picture Effects** button ( ).

*Note: If the image is a shape, the button is named **Shape Effects**.*

4 Click **Glow**.

5 Click the glow effect you want to use.
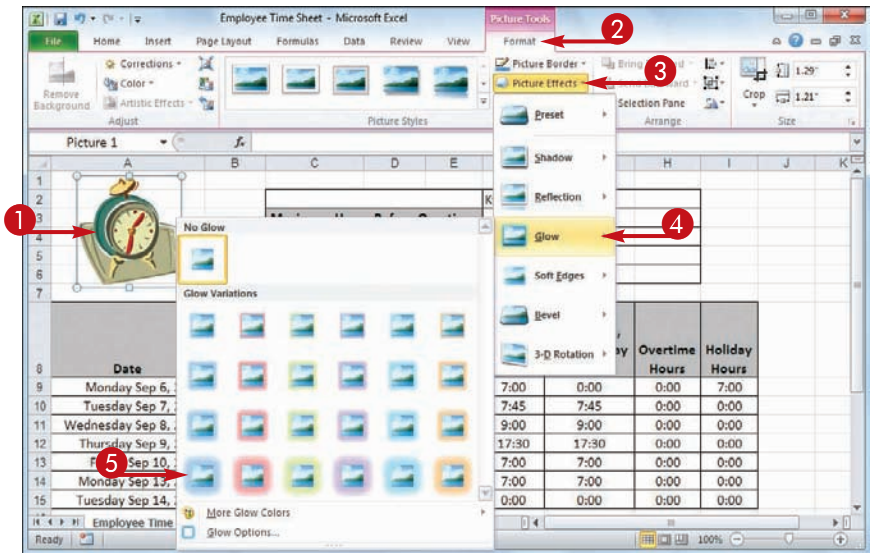
● Excel applies the glow to the picture.
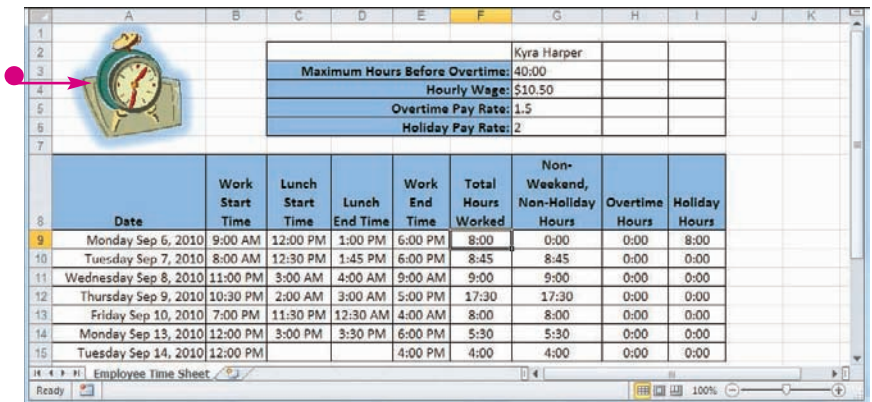
TIPS

Can I manually adjust the shadow to get the exact effect I want?

Yes. Excel offers several controls that enable you to manually adjust various aspects of the shadow. Click the picture, click the **Format** tab, and then click the in the Picture Styles group. In the Format Picture dialog box, click the **Shadow** tab. Use the Angle slider to adjust the angle of the shadow; use the Size slider to set the shadow size; and use the Blur and Transparency sliders to set the look of the shadow.

How do I remove a shadow or glow from a picture?

If you no longer require a shadow or glow effect, you can remove it. If the effect was the last thing you did, click **Undo** ( ) to reverse it. Otherwise, to remove a shadow, follow Steps **1** to **4** in "Add a Shadow to a Picture," and then click the **No Shadow** button. To remove a glow, follow Steps **1** to **4** in "Add a Glow to a Picture," and then click the **No Glow** button.

Add a Reflection or 3-D Effect to a Picture

You can make your clip art, photos, shapes, and other pictures stand out by enhancing them with either a reflection effect or a 3-D effect. Excel offers a number of predefined reflection and 3-D bevel and rotation effects that you can apply with just a few mouse clicks.

Add a Reflection or 3-D Effect to a Picture

Add a Reflection to a Picture

① Click the picture you want to format.

② Click the **Format** tab.

③ Click the **Picture Effects** button (▣).

Note: *If the image is a shape, the* ▣ *button is named* **Shape Effects**.

④ Click **Reflection**.

⑤ Click the reflection effect you want to use.
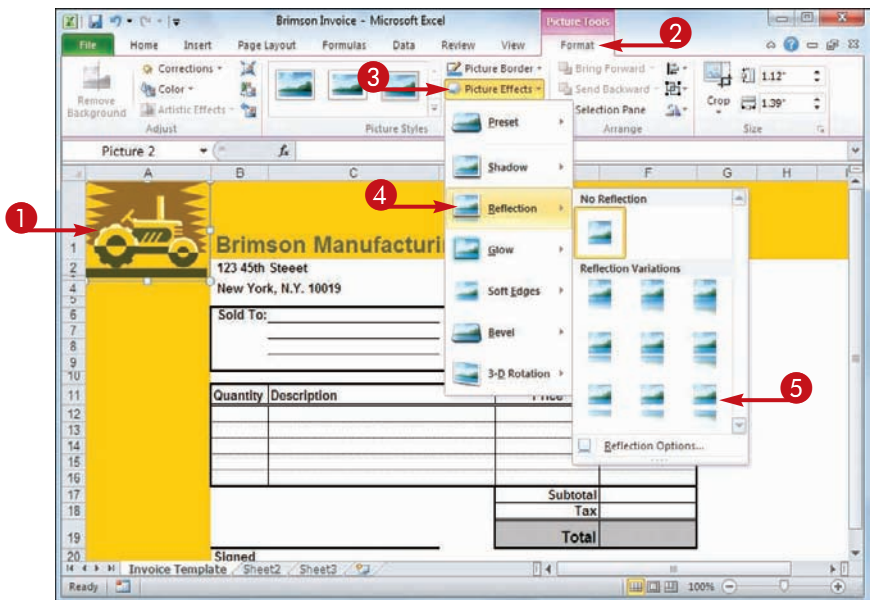
● Excel applies the reflection to the picture.
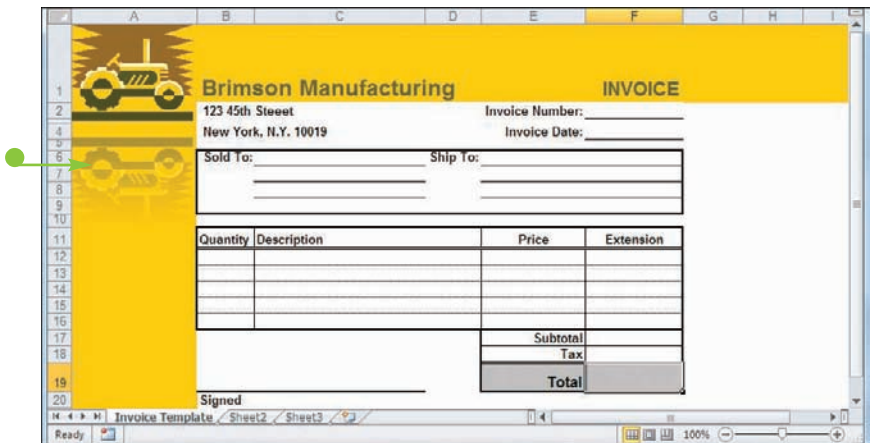
Add a 3-D Effect to a Picture

1 Click the picture you want to format.

2 Click the **Format** tab.

3 Click the **Picture Effects** button (▣).

*Note: If the image is a shape, the ▣ button is named **Shape Effects**.*

4 Click **Bevel**.

5 Click the bevel effect you want to use.
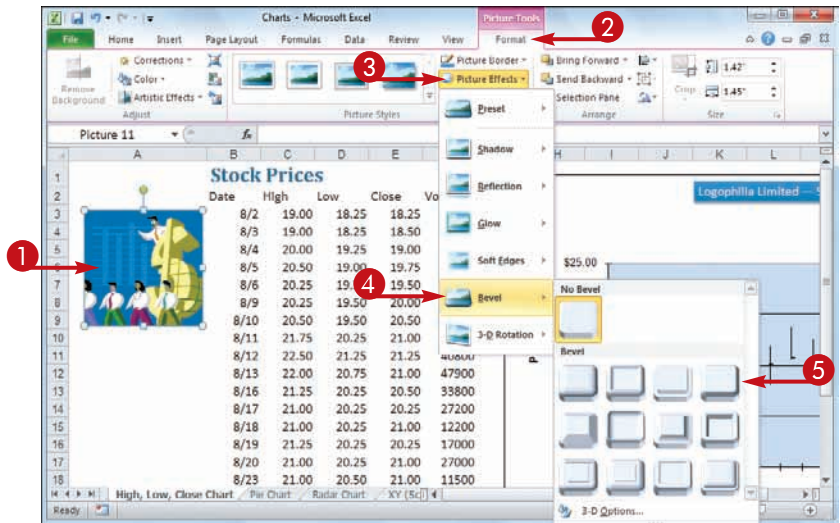
● Excel applies the bevel effect to the picture.

6 Click ▣.

7 Click **3-D Rotation**.

8 Click the 3-D rotation effect you want to use.

Excel applies the 3-D rotation effect to the picture.
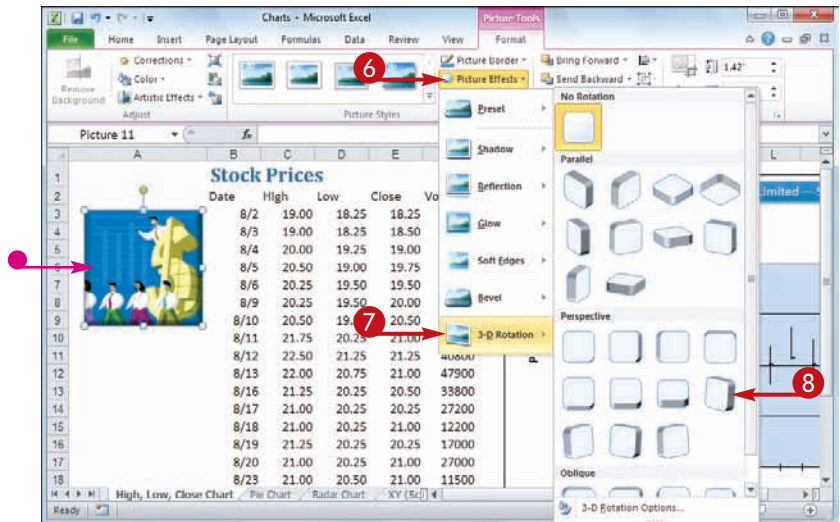
TIPS

Can I manually adjust the 3-D settings to get the exact effect I want?

Yes. Excel offers several controls that enable you to manually adjust various aspects of a bevel and 3-D rotation. Click the picture, click the **Format** tab, and then click the ▣ in the Picture Styles group. In the Format Picture dialog box, click the **3-D Format** tab to set the location and size of the bevel, and click the **3-D Rotation** tab to adjust the 3-D angle and perspective.

How do I remove a reflection or 3-D effect from a picture?

If the effect was the last thing you did, click **Undo** (↶). Otherwise, to remove a reflection, follow Steps 1 to 4 in "Add a Reflection to a Picture," and then click the **No Reflection** button. To remove a bevel, follow Steps 1 to 4 in "Add a 3-D Effect to a Picture," and then click the **No Bevel** button. To remove a 3-D rotation, follow Steps 6 and 7 in "Add a 3-D Effect to a Picture," and then click the **No Rotation** button.

Add an Artistic Effect to a Photo

You can add a bit of flair to a worksheet by applying an effect that makes a photo look like it was created using an artistic technique. Excel comes with more than 20 artistic effects, including Pencil Sketch, Chalk Sketch, Paint Brush, Watercolor Sponge, and Glass.

1 Click the photo you want to format.
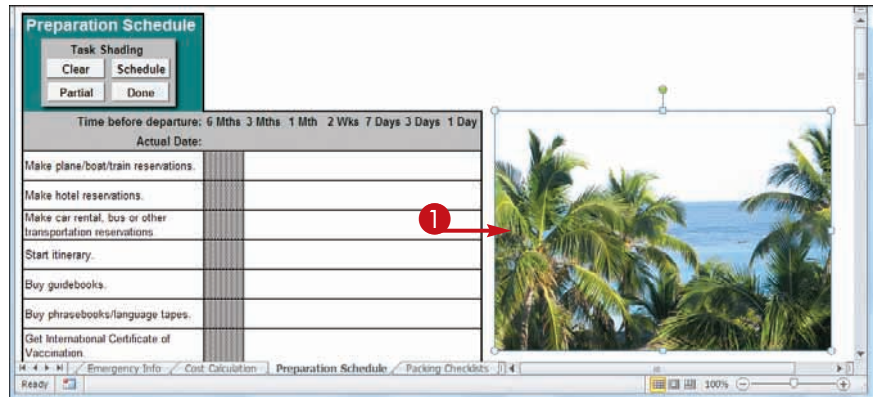
2 Click the **Format** tab.

3 Click the **Artistic Effects** button (⬛).
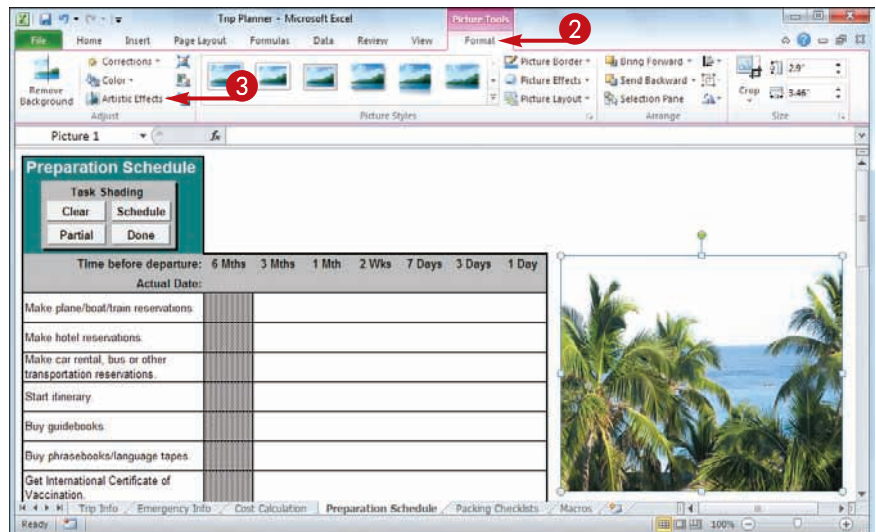
④ Click the effect you want to use.
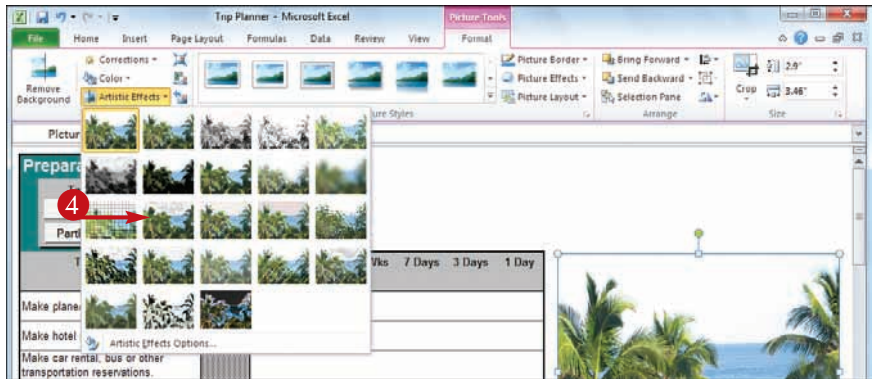
● Excel applies the artistic effect to the photo.
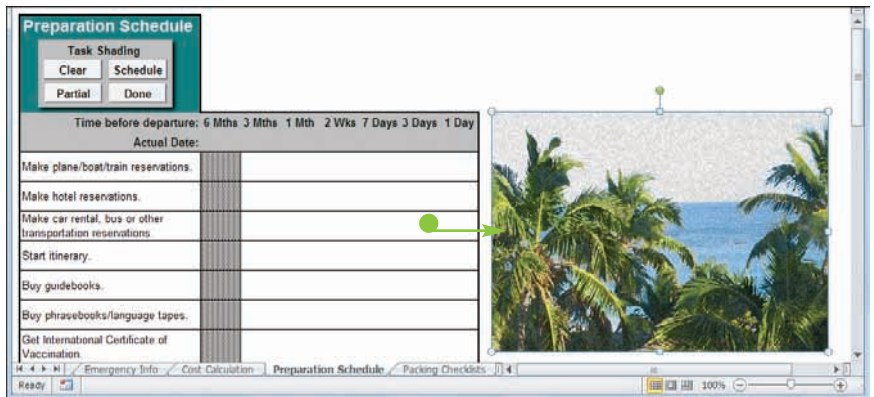
TIPS

Can I manually adjust the artistic effect to get the exact look I want?

Yes. For most of the artistic effects, Excel offers a couple of controls that enable you to manually adjust the effect. Click the picture, click the **Format** tab, click ![icon] to open the Artistic Styles gallery, and then click **Artistic Effects Options**. Excel opens the Format Picture dialog box with the Artistic Effects tab displayed. Use the controls to customize the effect, and then click **Close**.
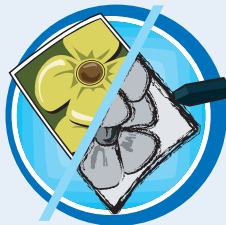
How do I remove an artistic effect from a photo?

If the artistic effect was the last thing you did in Excel, click **Undo** (![icon]). Otherwise, follow Steps **1** to **3** to display the Artistic Effects gallery, and then click the **None** icon in the upper left corner of the gallery.

Recolor an Image

You can modify the colors in an image to get the effect you want. For example, you can change a picture to black and white or you can apply a sepia effect to make the photo look older. You can also apply one of the document's theme colors to help get the image to match the document. This is known as *recoloring* the image.

Recolor an Image

1 Select the image you want to recolor.
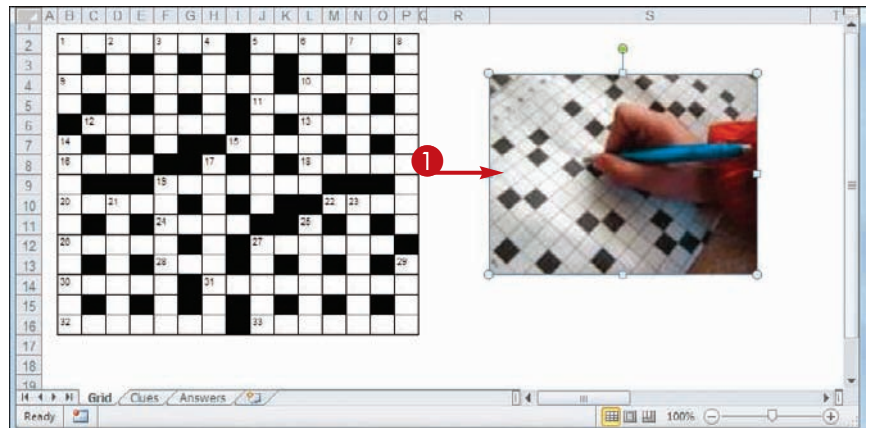
2 Click the **Format** tab.

3 Click the **Color** button (📷).
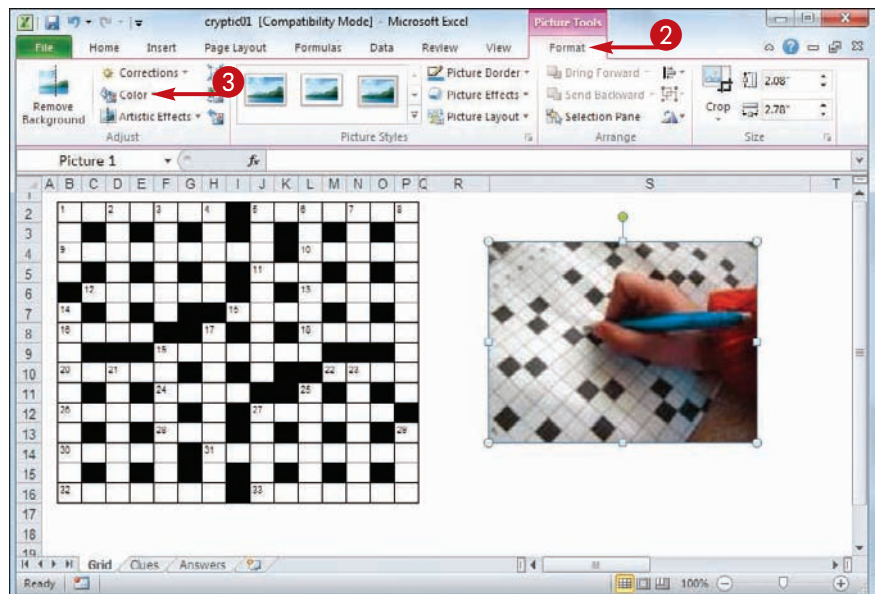
Excel displays the Color gallery.

④ Click the color effect you want to apply.
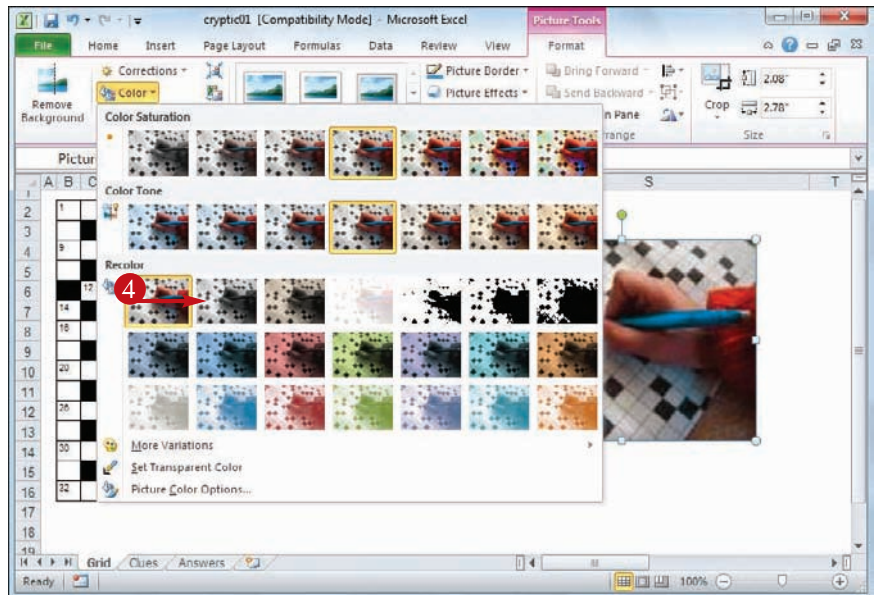
● Excel recolors the image.
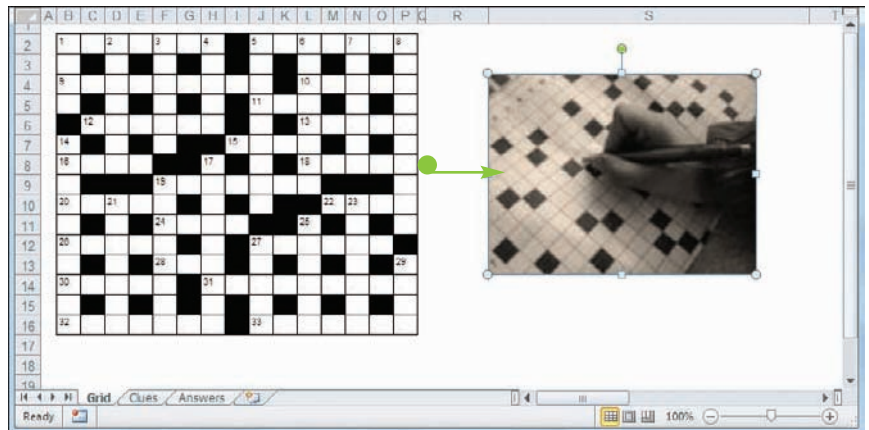
Can I manually adjust the recolor effect?

Yes. For each color effect, Excel enables you to adjust the saturation (the amount of color) and the tone (the intensity of the color). Click the picture, click the **Format** tab, click ▓ to open the Color gallery, and then click **Picture Color Options**. Excel opens the Format Picture dialog box with the Picture Color tab displayed. Use the Saturation and Temperature sliders to customize the effect, and then click **Close**.

How do I remove a recolor effect from a picture?

If the recolor effect was the last thing you did in Excel, click **Undo** (▼). Otherwise, follow Steps **1** to **3** to display the Color gallery, and then click the **No Recolor** icon in the upper left corner of the gallery's Recolor section.

Collaborating with Other People

If you want to collaborate with other people on a workbook, Excel gives you several ways to do this, including adding comments, sharing a workbook, and even working on a spreadsheet online.

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 each comment in a balloon.

Matt:
These figures were given before the June inventory.

Add a Comment to a Cell

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**.
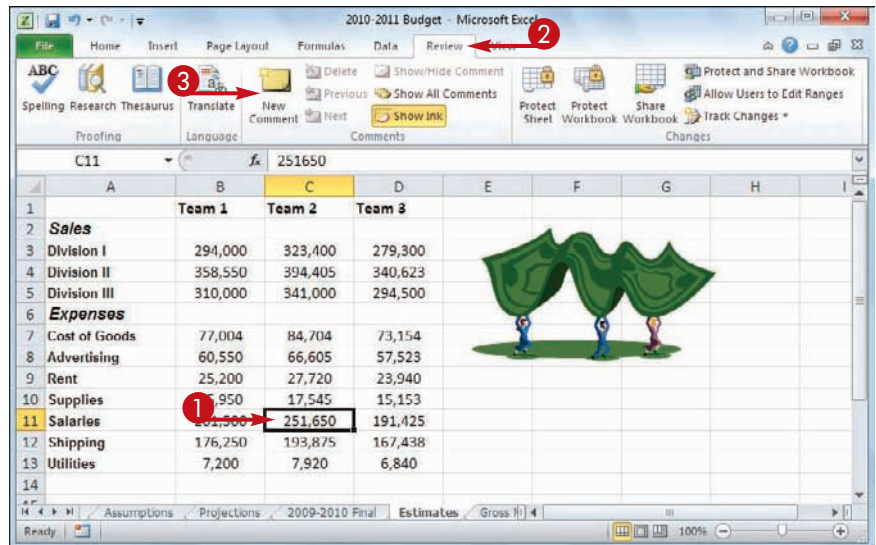
Excel displays a comment balloon.

● Excel precedes the comment with your Excel user name.

4 Type your comment.

5 Click outside the comment balloon.
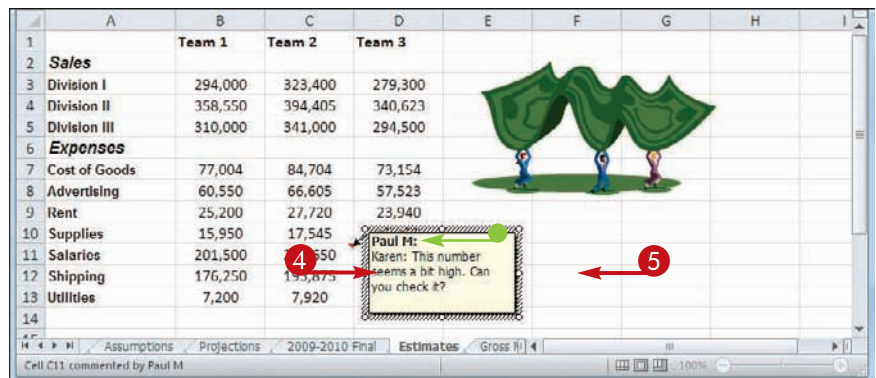
● Excel adds a comment indicator (🔺) to the top right corner of the cell.
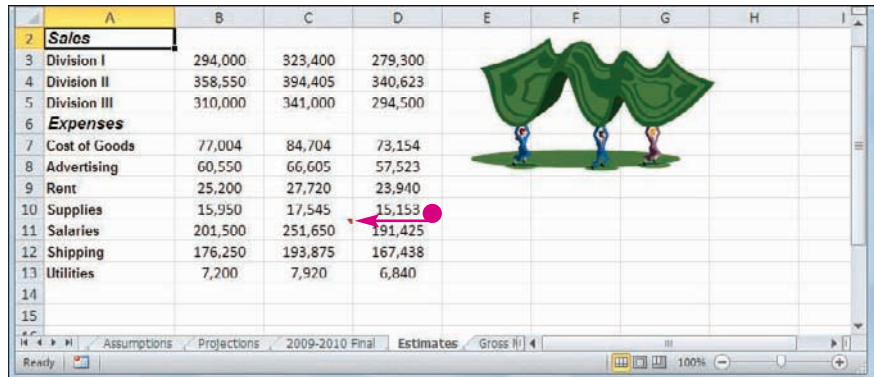
View a Comment

1️⃣ Move the mouse ⬚ over the cell.

● Excel displays the comment in a balloon.

● In the Review tab, you can also click **Next** (📄) and Previous (📄) to run through the comments.

● In the Review tab, you can also click **Show All Comments** (📄) to display every comment at once.
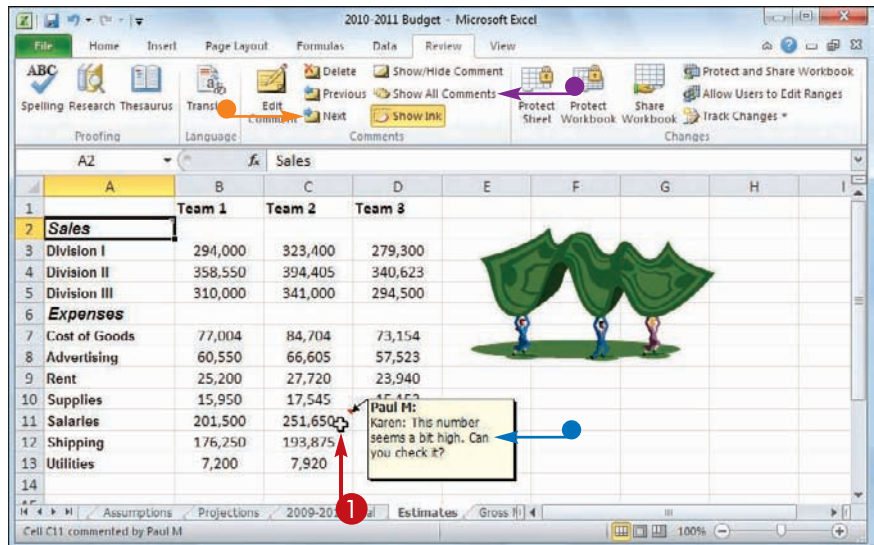
TIPS

Can I edit or remove a comment?

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

How do I change my Excel user name?

When collaborating, your user name is important because it tells other people who added the comments. If your current user name consists of only your first name or your initials, you can 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**. Note, however, that this does not change your user name in any existing comments.

Protect a Worksheet's Data

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 configure the worksheet to require a password to unprotect it.

There are two main methods you can use to safeguard worksheet data: You can unlock only those cells that users are allowed to edit, and you can configure a range to require a password before it can be edited.
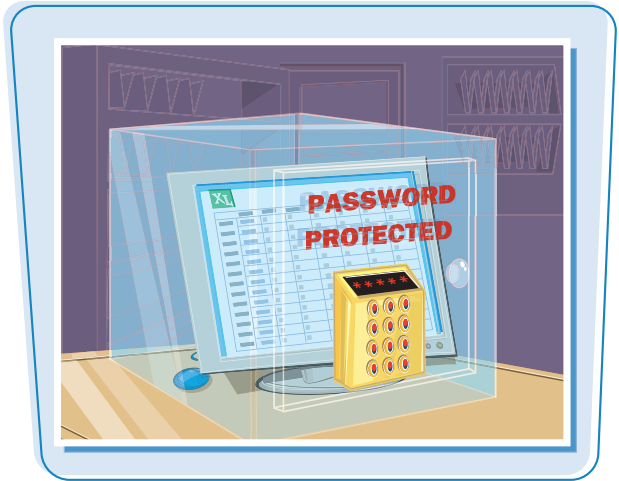
Protect a Worksheet's Data

1 Display the worksheet you want to protect.

2 Click the **Review** tab.

3 Click **Protect Sheet** (⬛).
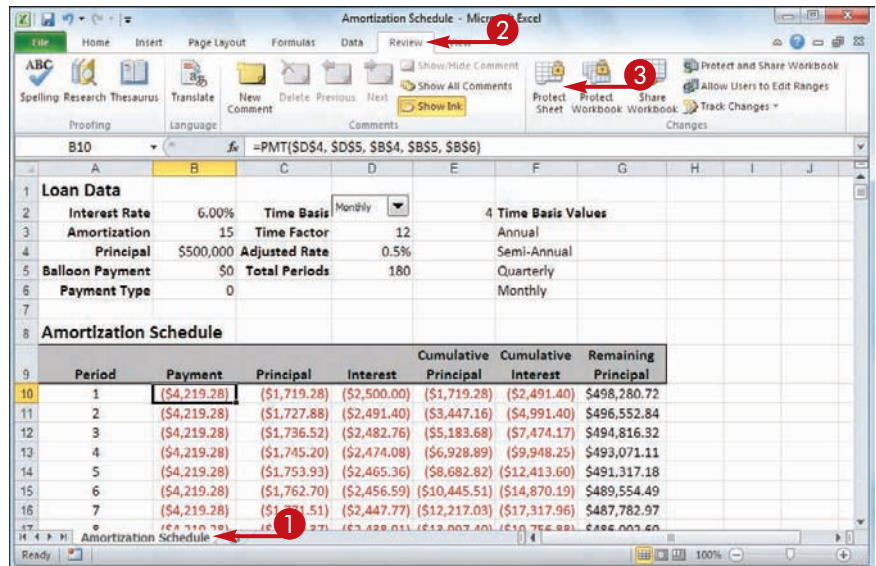
Excel displays the Protect Sheet dialog box.

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

5 Use the Password to unprotect sheet password box to type a password, if required.
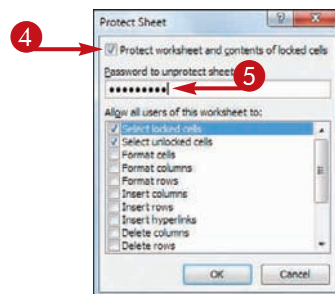
6 Click the check box beside each action that you want to allow unauthorized users to perform (☐ changes to ☑).

7 Click **OK**.

Protect Sheet

☑ Protect worksheet and contents of locked cells

Password to unprotect sheet:

`•••••••••`

Allo̲w all users of this worksheet to:

6 →
- ☑ Select locked cells
- ☑ Select unlocked cells
- ☑ Format cells
- ☐ Format columns
- ☐ Format rows
- ☐ Insert columns
- ☐ Insert rows
- ☐ Insert hyperlinks
- ☐ Delete columns
- ☐ Delete rows

7 → OK   Cancel
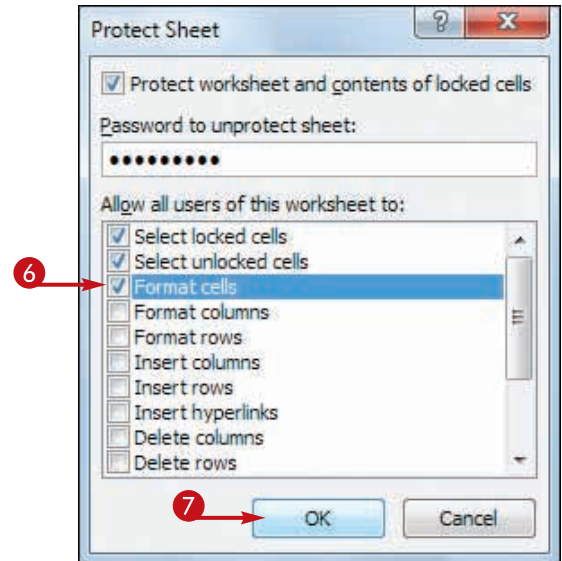
If you specified a password, Excel asks you to confirm the password.

8 Type the password.

9 Click **OK**.

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

Confirm Password

Reenter password to proceed.

`••••••••••` ← **8**

Caution: If you lose or forget the password, it cannot be recovered. It is advisable to keep a list of passwords and their corresponding workbook and sheet names in a safe place. (Remember that passwords are case-sensitive.)

9 → OK   Cancel

TIPS

When I protect a worksheet, no one can edit any of the cells. Is there a way to allow users to edit some of the cells?

Yes. This is useful if you have a data entry area or other range that you want other people to be able to edit, but you do not want them to alter any other part of the worksheet. First, unprotect the sheet if it is currently protected. Select the range you want to unlock, click **Home**, click **Format**, and then click **Lock Cell** to turn off that option for the selected range.

When I protect a worksheet, can I configure a range to require a password before a user can edit the range?

Yes. First, unprotect the sheet if it is currently protected. Select the range you want to protect, click the **Review** tab, and then click **Allow Users to Edit Ranges**. In the Allow Users to Edit Ranges dialog box, 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**.
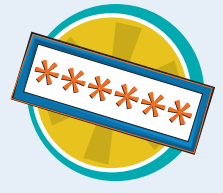
Protect a Workbook's Structure and Windows

You can prevent unwanted changes to a workbook by activating protection for the workbook's windows and structure. You can also configure the workbook to require a password to unprotect it.

See the Tips on the following page to learn what Excel does when you protect a workbook's structure and windows.
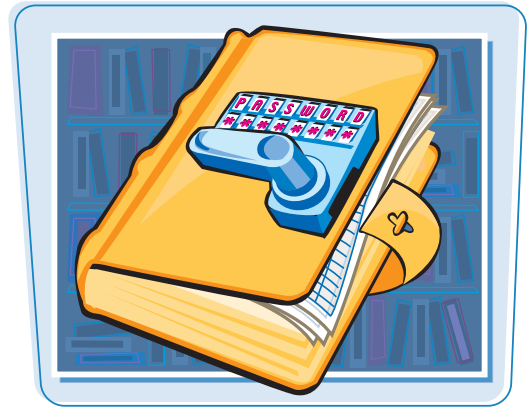
Protect a Workbook's Structure and Windows

1 Display the workbook you want to protect.

2 Click the **Review** tab.

3 Click **Protect Workbook** (icon).
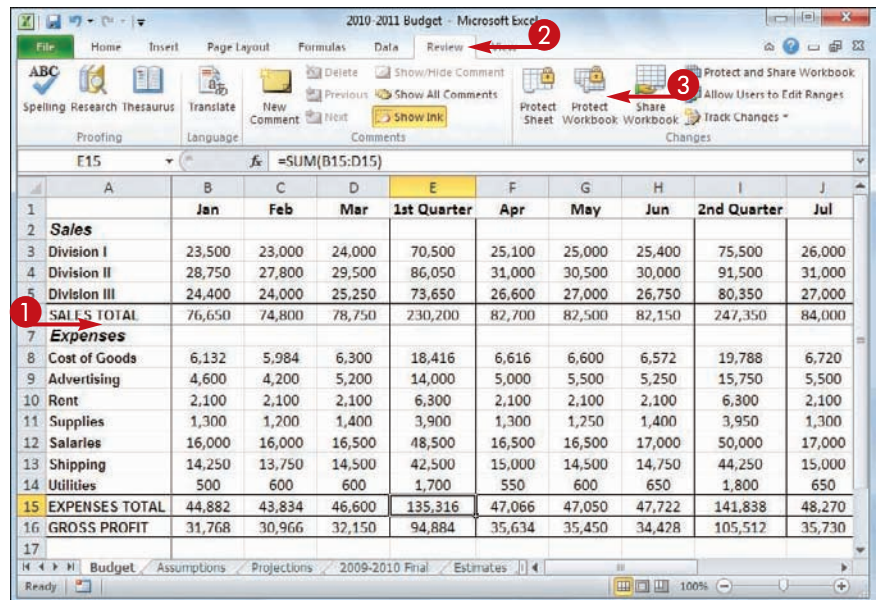
Excel displays the Protect Structure and Windows dialog box.

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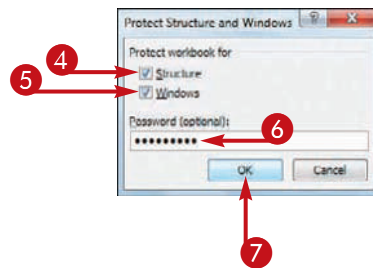
If you specified a password, Excel asks you to confirm it.

8 Type the password.

9 Click **OK**.

● If you protected the windows, Excel hides the window controls.

● If you protected the windows, Excel disables many window-related commands on the View tab.

● If you protected the structure, Excel disables most sheet-related commands on the sheet shortcut menu.
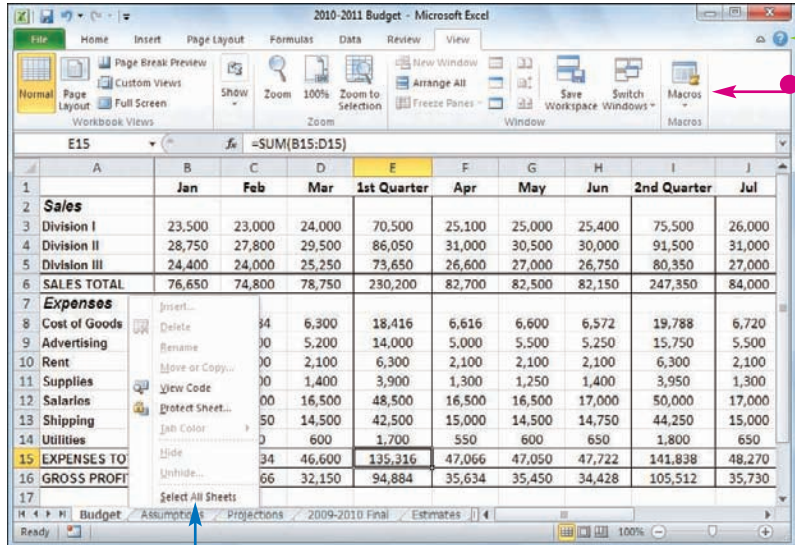
What happens when I protect a workbook's structure?

Excel disables most worksheet-related commands, including Insert Sheet, Delete Sheet, Rename Sheet, Move or Copy Sheet, Tab Color, Hide Sheet, and Unhide Sheet. Excel also prevents the Scenario Manager from creating a summary report.

Protect Structure
☑ Insert Sheet
☑ Delete Sheet
☑ Rename Sheet
☑ Tab Color
☑ Hide Sheet
☑ Unhide Sheet

What happens when I protect a workbook's windows?

Excel hides the window's Close, Maximize, and Minimize buttons. If the workbook is not maximized, Excel also disables the window borders, which means the window cannot be moved, sized, or closed. Excel also disables the View tab's New Window, Split, Freeze Panes, and View Side By Side commands when the window is active.

Protect Windows
☑ Close
☑ Maximize
☑ Minimize
☑ Borders
☑ New Window
☑ Split

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.

Share a Workbook with Other Users

① Display the workbook you want to share.

② Click the **Review** tab.

③ Click **Share Workbook** ( ).
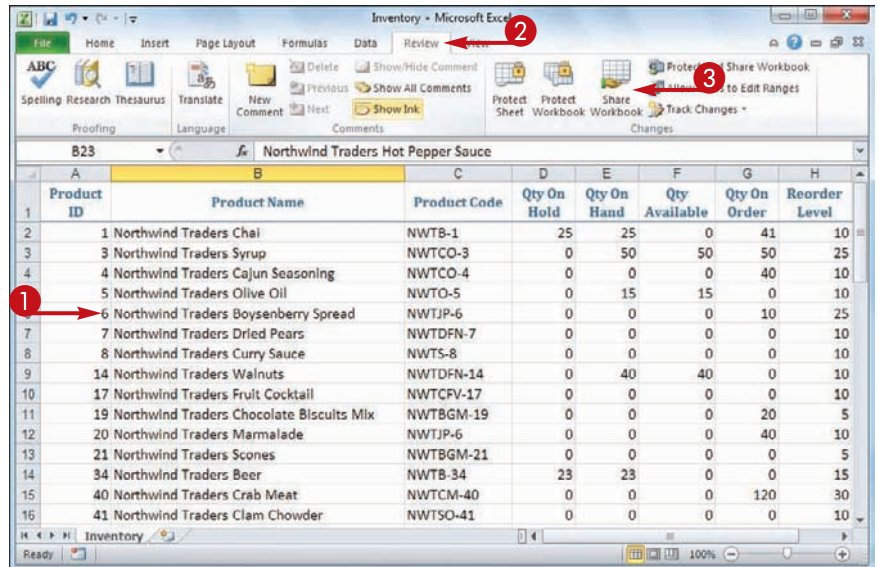
The Share Workbook dialog box appears.

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**.
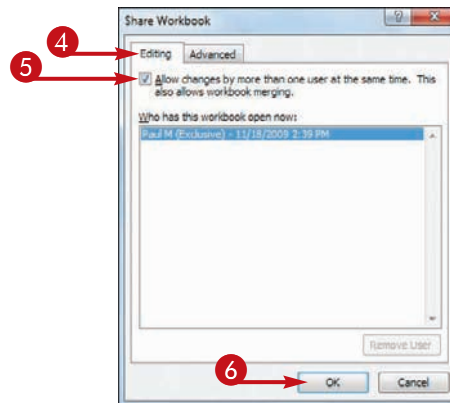
Excel tells you that it will now save the workbook.

7 Click **OK**.
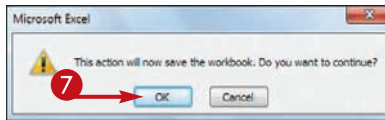
Excel saves the workbook and activates sharing.

● Excel displays [Shared] in the title bar.

You and users on your network can now edit the workbook at the same time.
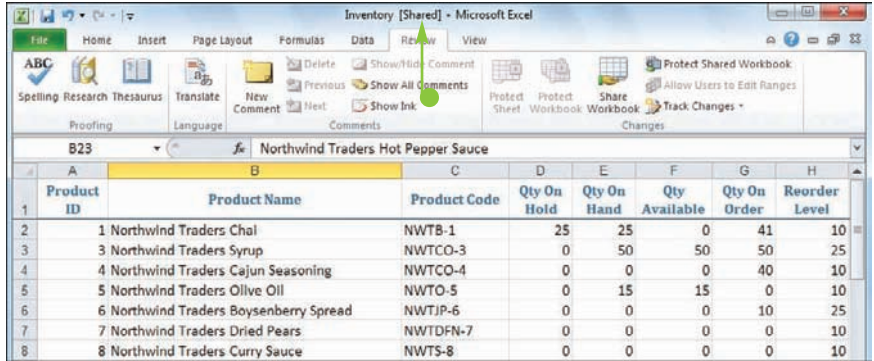
TIP

How do I know if other people currently have the workbook open?

The Editing tab of the Share Workbook dialog box maintains a list of the users who have the workbook open. To see this list, follow these steps:

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**.
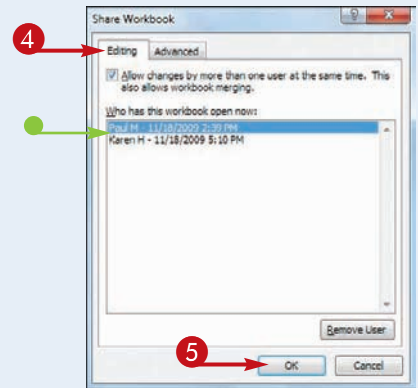
Track Workbook Changes

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.
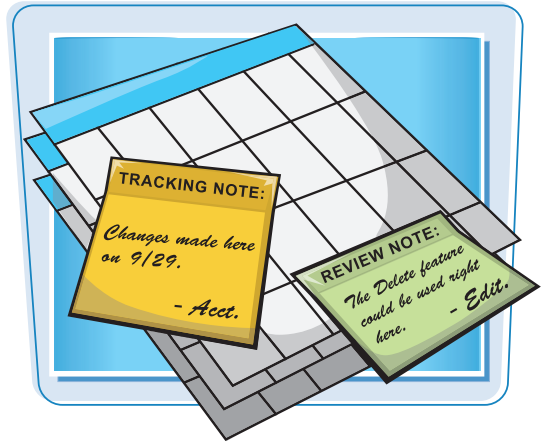
Track Workbook Changes

1 Display the workbook you want to track.

2 Click the **Review** tab.

3 Click **Track Changes** ( ).

4 Click **Highlight Changes**.
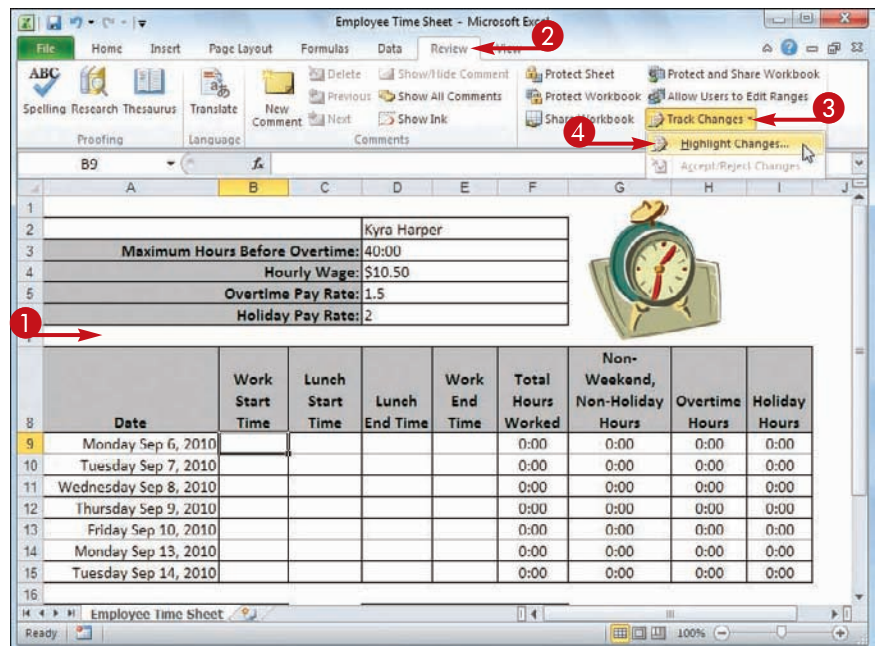
The Highlight Changes dialog box appears.

5 Click the **Track changes while editing** check box (changes to).

● Leave the When check box activated ( ) and leave All selected in the list.

● To learn more about the Who and Where options, see the Tips on the next page.

● Leave the Highlight changes on screen check box activated ( ) to view the workbook changes.

6 Click **OK**.
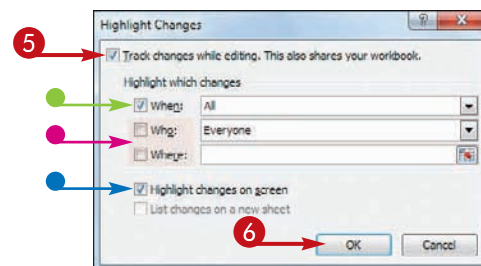
Excel tells you it will now save the workbook.

7 Click **OK**.
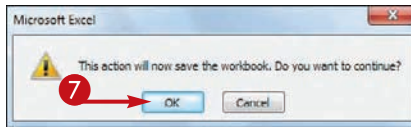
Excel activates the Track Changes feature.

● 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.
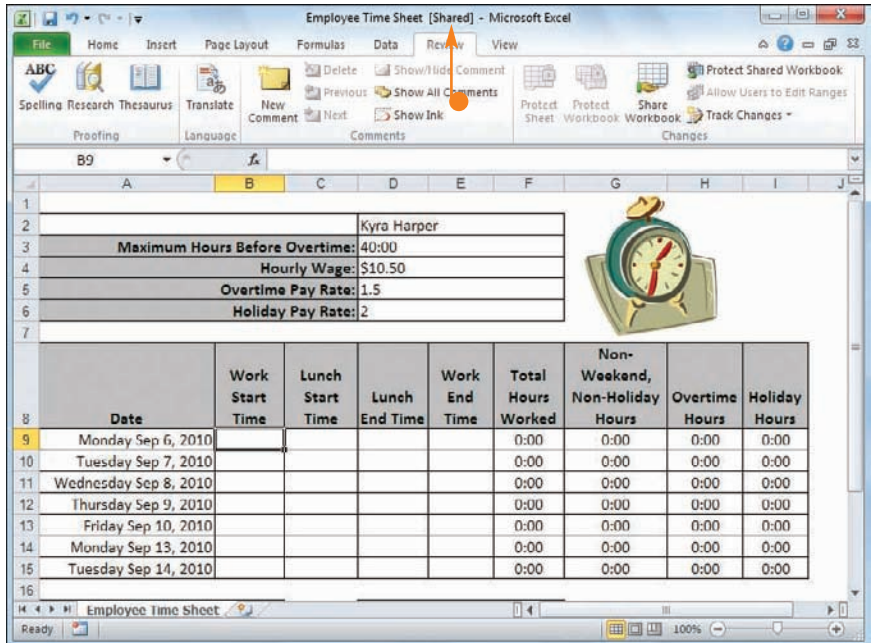
TIPS

Is there a way to avoid having my own changes highlighted?

Yes, you can configure the workbook to show every user's changes but your own. Follow Steps **1** to **4** to open the Highlight Changes dialog box. Click the **Who** check box (☐ changes to ☑), click the **Who** ▾, and then click **Everyone but Me**. Click **OK** to put the new setting into effect.
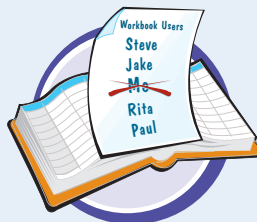
Can I track changes in just part of the worksheet?

Yes, you can modify this task so that Excel only tracks changes in a specific range. Follow Steps **1** to **4** to open the Highlight Changes dialog box. Click the **Where** check box (☐ changes to ☑), click inside the **Where** range box, and then select the range you want to track. Click **OK** to put the new setting into effect.

Accept or Reject Workbook Changes

After you turn on Excel's Track Changes features (see "Track Workbook Changes"), you can then accept or reject the changes that other users make to the workbook.

REVIEW NOTE:

Accept all updates?

Yes ✔

No ☐

– Edit.
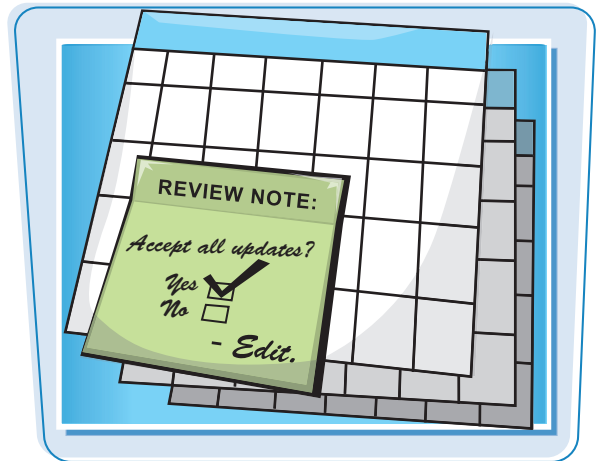
Accept or Reject Workbook Changes

1 Display the workbook you are tracking.

2 Click the **Review** tab.

3 Click **Track Changes** (⬚).

4 Click **Accept/Reject Changes**.
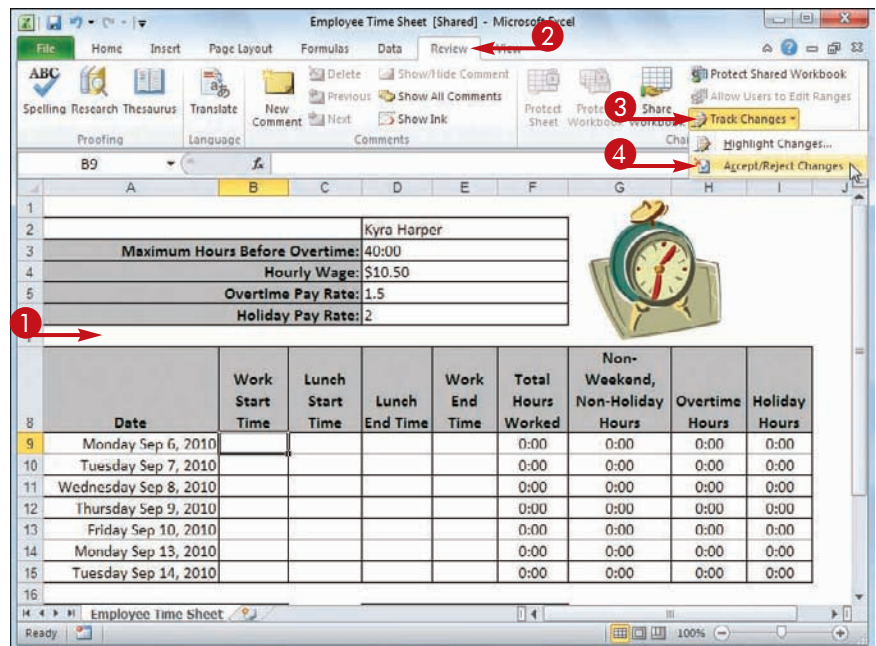
If your workbook has unsaved changes, Excel tells you it will now save the workbook.

5 Click **OK**.

The Select Changes to Accept or Reject dialog box appears.
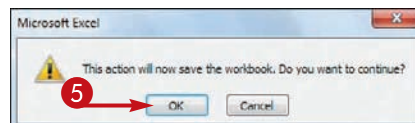
- Leave the When check box activated (☑) and leave Not yet reviewed selected in the list.

- If you only want to review changes made by a particular user, click the **Who** check box (☐ changes to ☑), click the **Who** ▾, and then click the user's name.

6 Click **OK**.

The Accept or Reject Changes dialog box appears.

- Excel displays the details of the current change.

7 Click an action for the change.

- Click **Accept** to leave the change in the workbook.

- Click **Reject** to remove the change from the workbook.

Excel displays the next change.

8 Repeat Step **7** to review all the changes.

- You can also click **Accept All** or **Reject All** to accept or reject all changes at once.
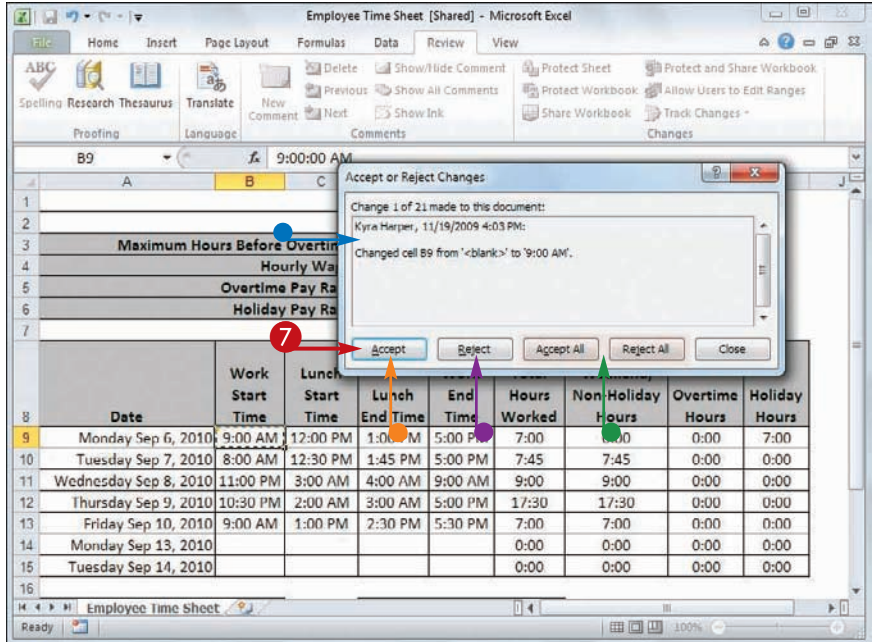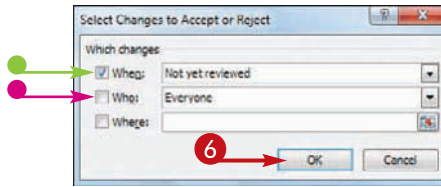
TIPS

What happens if I and another user make changes that affect the same cell?

In this situation, when you save the workbook, Excel displays the Resolve Conflicts dialog box, which shows the change you made as well as the change the other user made. 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**.
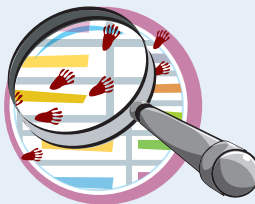
When I complete my review, should I turn off the tracking feature?

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 the click **OK**.

Send a Workbook as an E-Mail Attachment

If you want to send an Excel workbook to another person, you can attach the workbook to an e-mail message and send it to that person's e-mail address. The other person can then open the workbook in Excel after receiving your message.
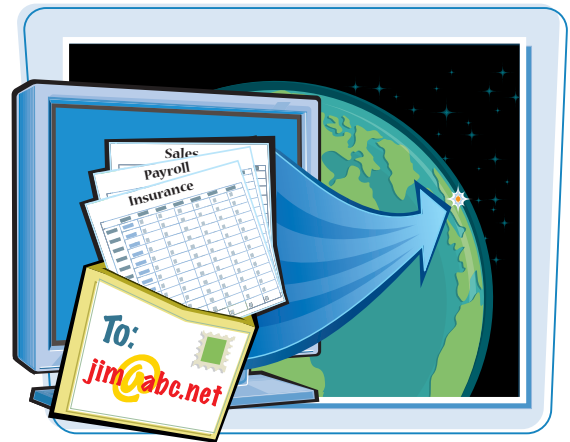
Send a Workbook as an E-Mail Attachment

1. Open the workbook you want to send.

2. Click the **File** tab.
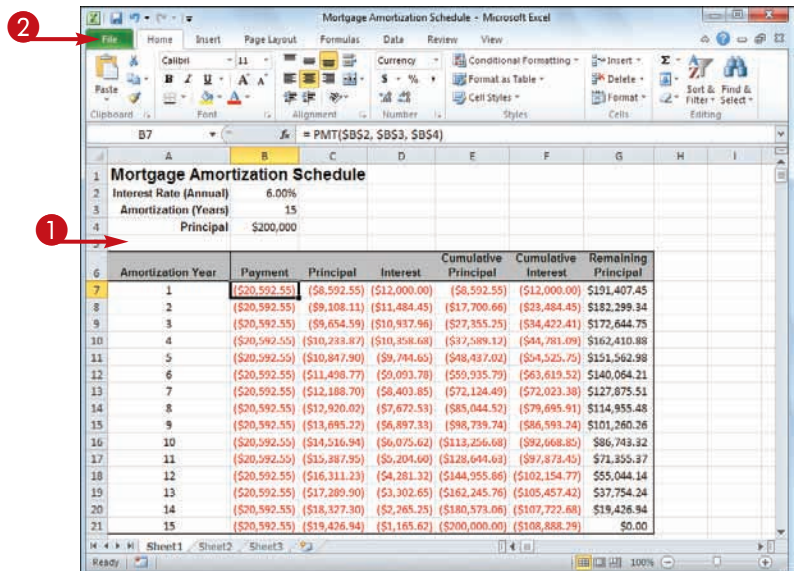
3. Click **Save & Send**.

4. Click **Send Using E-mail**.

   Excel displays the Send Using E-mail commands.

5. Click **Send as Attachment**.
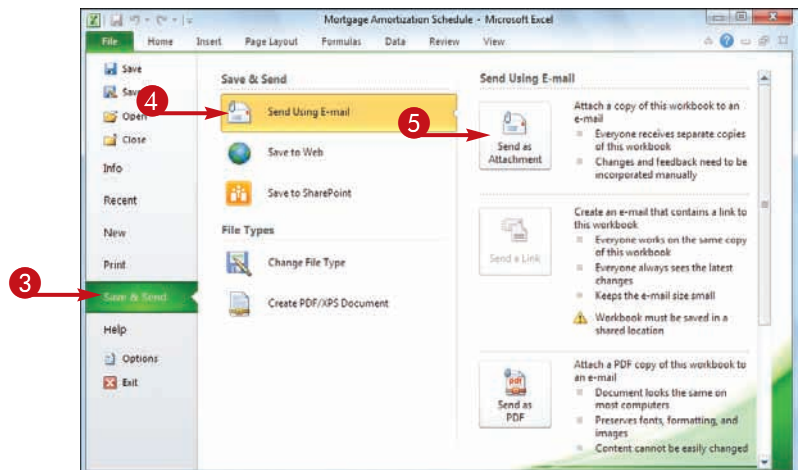
Outlook creates a new e-mail message.

● Outlook attaches the workbook to the message.

6 Type the address of the recipient.

7 Type your message text.
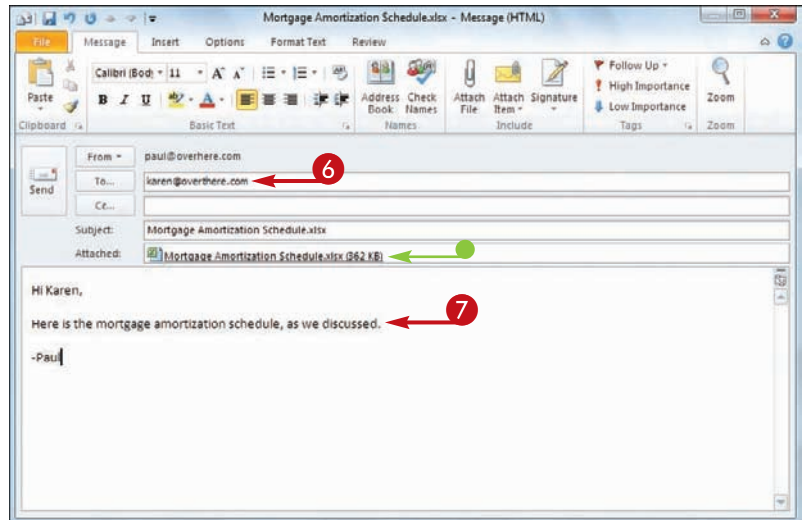
8 Click **Send**.

Outlook sends the message.
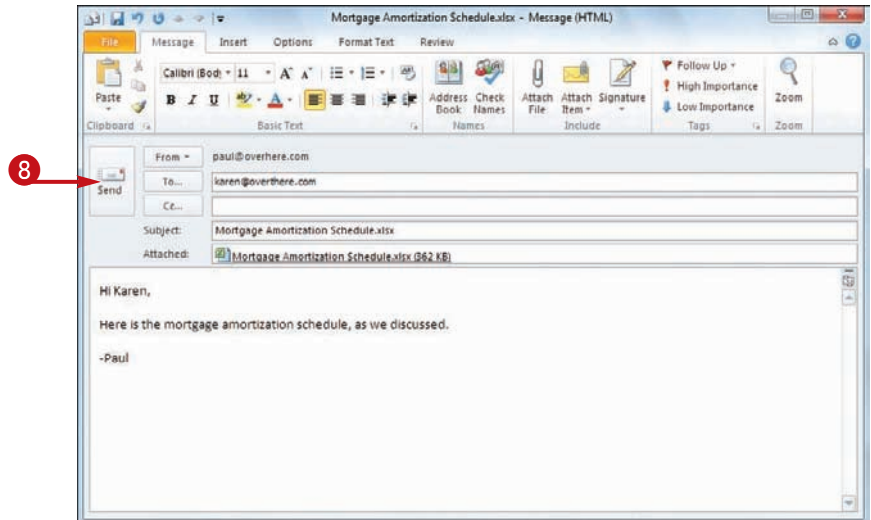
Are there any restrictions related to sending file attachments?

There is no practical limit to the number of workbooks you can attach to a message. However, you should be careful with the total size of the files you send. If you or the recipient has a slow Internet connection, sending or receiving the message can take an extremely long time. Also, many Internet service providers (ISPs) place a limit on the size of a message's attachments, which is usually between 2 and 5MB.
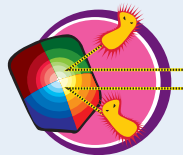
What can I do if the recipient does not have Excel?

If the other person does not use Excel, you can send the workbook in a different format. One possibility would be to save the workbook as a Web Page (see "Save Excel Data as a Web Page"). Alternatively, if your recipient can view PDF (Portable Document Format) files, follow Steps **1** to **4** to display the Send Using E-mail options, and then click **Send as PDF**.

Save Excel Data as a Web Page

If you have an Excel range, worksheet, or workbook that you want to share on the Web, you can save that data as a Web page that you can then upload to your Web site.

When you save a document as a Web page, you can also specify the title text that appears in the browser's title bar and the keywords that search engines use to index the page.
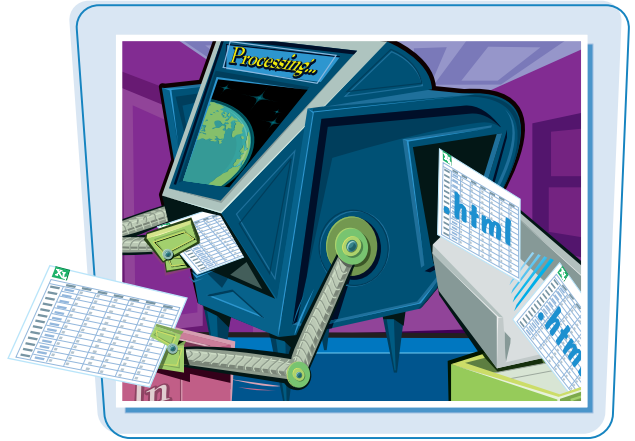
Save Excel Data as a Web Page

1 Open the workbook that contains the data you want to save as a Web page.

● To save a worksheet as a Web page, click the worksheet tab.

● To save a range as a Web page, select the range.
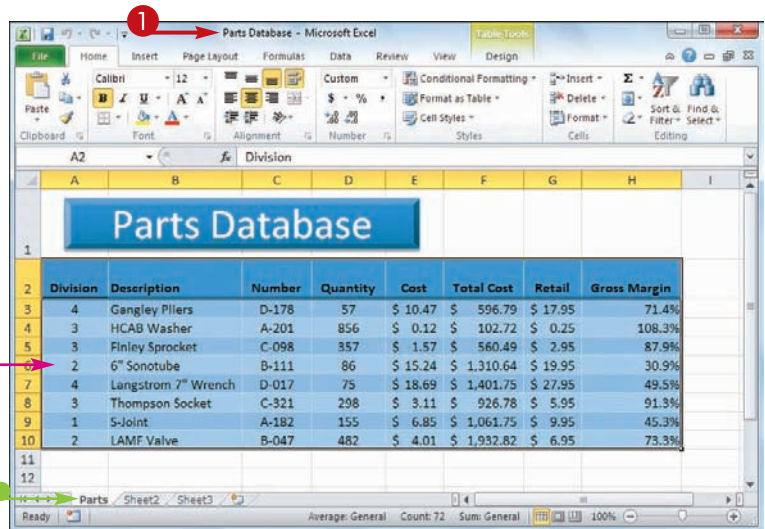
2 Click **File**.

3 Click **Save As**.
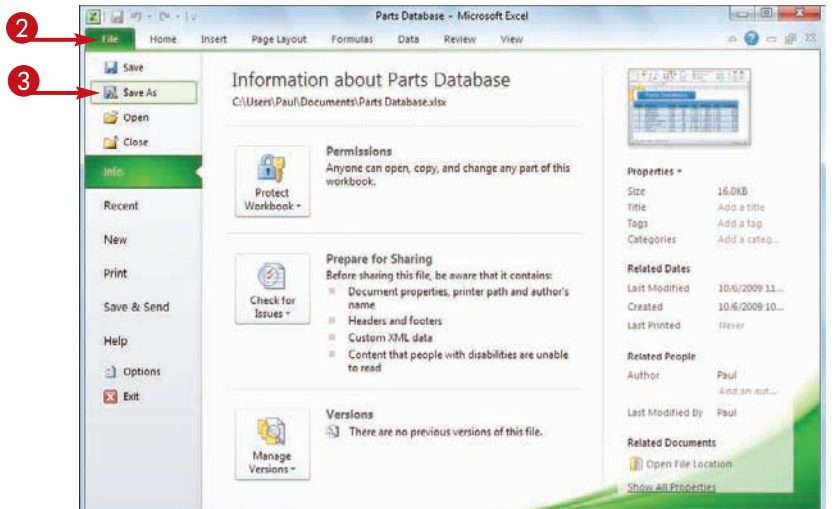
The Save As dialog box appears.

④ Click the **Save as type** ☐ and then click **Web Page**.

⑤ Select the folder where you want to store the Web page file.

⑥ Click **Change Title**.
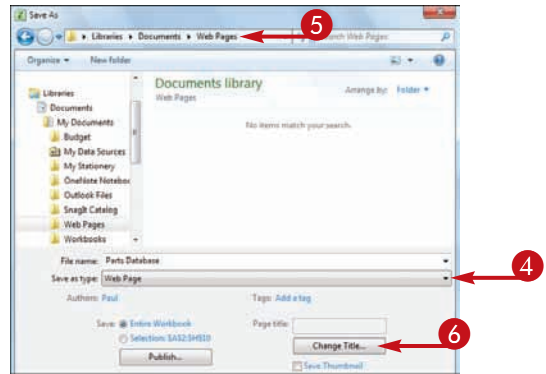
The Enter Text dialog box appears.

⑦ Type the page title in the **Page title** text box.

⑧ Click **OK**.

⑨ Click **Tags** and then type one or more keywords, separated by semicolons.

⑩ Choose which part of the file you want to save as a Web page (◎ changes to ◉):
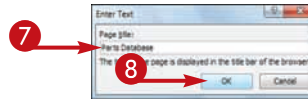
● Click **Entire Workbook** to save the whole workbook.

● Click **Selection** to save either the current worksheet or the selected cells.

⑪ Click **Save**.

Excel saves the data as a Web page.

TIP
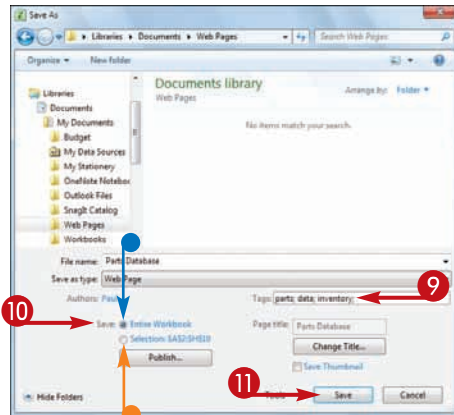
Can I save an Excel workbook to my Windows Live SkyDrive?
Yes. Follow these steps:

① Sign in to your Windows Live account. In Excel, open the workbook you want to share.

② Click the **File** tab.

③ Click **Save & Send**.

④ Click **Save to Web**.

⑤ Click the Web folder you want to use.

⑥ Click **Save As**.

⑦ Click **Save**.
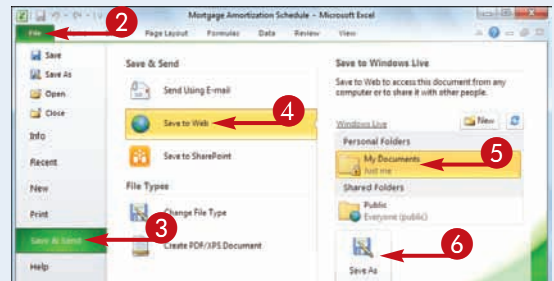
Make a Workbook Compatible with Earlier Versions of Excel

You can save an Excel workbook in a special format that makes it compatible with earlier versions of Excel. This enables you to share your workbook with other Excel users.

If you have another computer that uses a version of Excel prior to Excel 2007, or if the people you work with use earlier Excel versions, those programs cannot read documents in the standard format used by Excel 2010 and Excel 2007.

Make a Workbook Compatible with Earlier Versions of Excel

1 Open the workbook you want to make compatible.

2 Click **File**.

3 Click **Save As**.
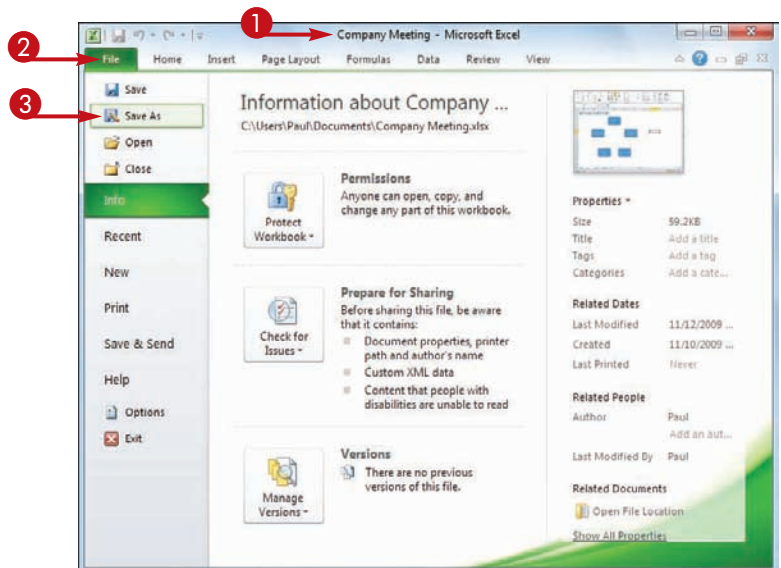
The Save As dialog box appears.

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** [▼].
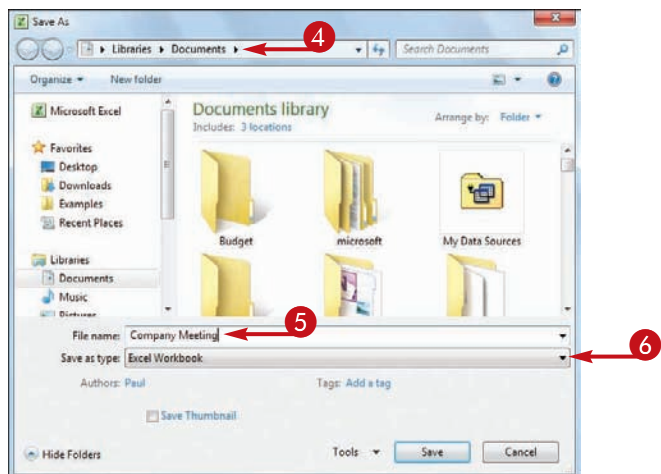
7 Click the **Excel 97-2003 Workbook** file format.
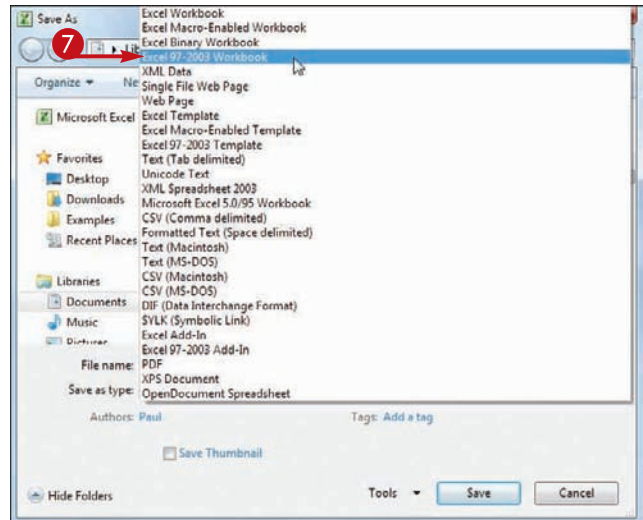
8 Click **Save**.

Excel saves the file using the Excel 97-2003 Workbook format.
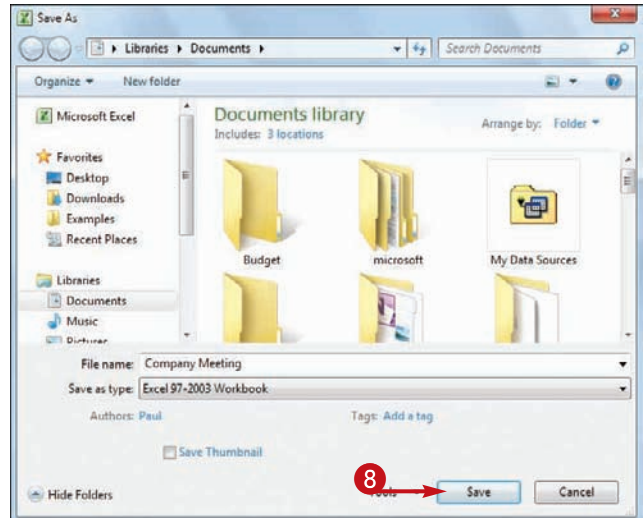
TIPS

Can people using Excel 2007 open my Office documents?

Yes. The file format used by both Excel 2010 and Excel 2007 is the same. If you only work with people who use either or both of 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.

Which versions of Excel are compatible with the Excel 97-2003 Workbook file format?

For Windows, the Excel 97-2003 Workbook file format is compatible with Excel 97, Excel 2000, Excel XP, and Excel 2003. For the Mac, the Excel 97-2003 Workbook file format is compatible with Excel 98, Excel 2001, and Office 2004. In the unlikely event that you need to share a document with someone using either Excel 5.0 or Excel 95, use the Microsoft Excel 5.0/95 Workbook file format instead.

COMPATIBILITY LIST
☑ EXCEL 97
☑ EXCEL 98
☑ EXCEL 2000
☑ EXCEL 2001
☑ EXCEL 2003
☑ EXCEL 2004

Collaborate on a Workbook Online

If you have a Windows Live account, you can use the SkyDrive 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.

To allow another person to collaborate with you on your online workbook, that person must have a Windows Live ID.

① Log on to your Windows Live account.

② Click **SkyDrive**.
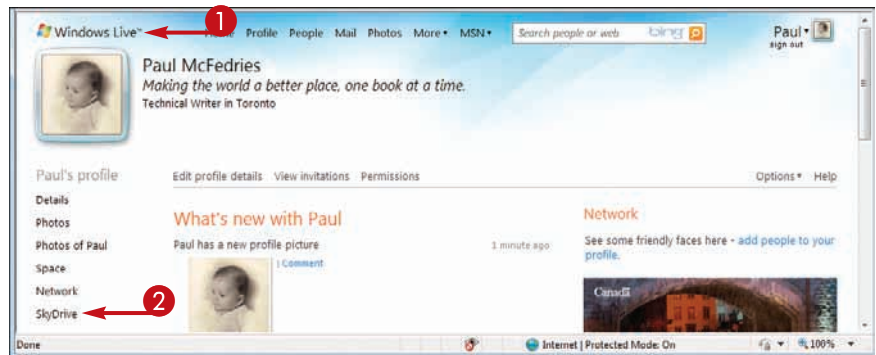
Your Windows Live SkyDrive appears.

③ Click the folder that contains the workbooks you want to share.
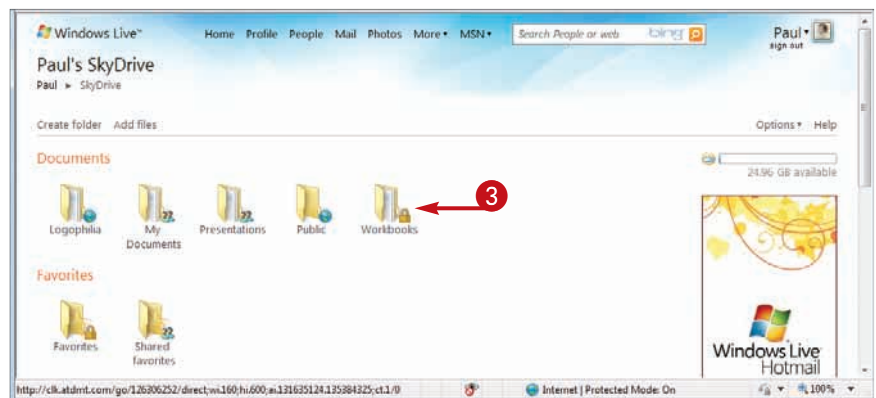
4 Click **More**.

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`.

● 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 clicks the link in that message, logs on to Windows Live, and can then edit a workbook in the shared folder.

Workbooks
Paul ▸ SkyDrive ▸ Workbooks

New ▾   Add files   Create folder   View: Icons ▾   Sort by: Name ▾   More ▾

Send a link
Download as .zip file
Edit permissions
Delete
Rename
Properties

2010-2011 Budget   2010 Sales   Accounts Receivable   Budget Estimates   Expenses   Inventory

Shared with: Just me

Individuals

Enter a name or an e-mail address: Select from your contact list

kmchammond@live.com

☑ kmchammond@live.com   Can add, edit details, and delete files ▾

Save   Cancel

Done   Internet | Protected Mode: On

Send a notification (optional)

People who already had permission are not included in this notification.

To: kmchammond@live.com

Include your own message:

Hi Karen,

Log in to this SkyDrive folder so that we can collaborate on the 2010-2011 budget workbooks.

Send   Skip this

TIP

How do I know when other people are also using a workbook online?

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. To see who it is, click the **2 people editing** message (●), as shown here.

People editing this workbook
kmchammond@live.com
paulmcfedries@hotmail.com

2 people editing
100%
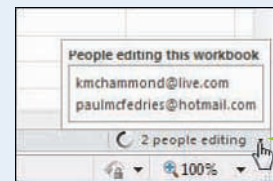
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Teach Yourself VISUALLY™

Are you a visual learner? Do you prefer instructions that *show* you how to do something — and skip the long-winded explanations? If so, then this book is for you. Open it up and you'll find clear, step-by-step screen shots that show you how to tackle more than 150 Excel 2010 tasks. Each task-based spread covers a single technique, sure to help you get up and running on Excel 2010 in no time.

You'll learn to:

- **Customize the Ribbon**
- **Enter and edit cell data**
- **Build formulas and functions**
- **Format a range or chart**
- **Analyze Excel data**
- **Insert worksheet graphics**
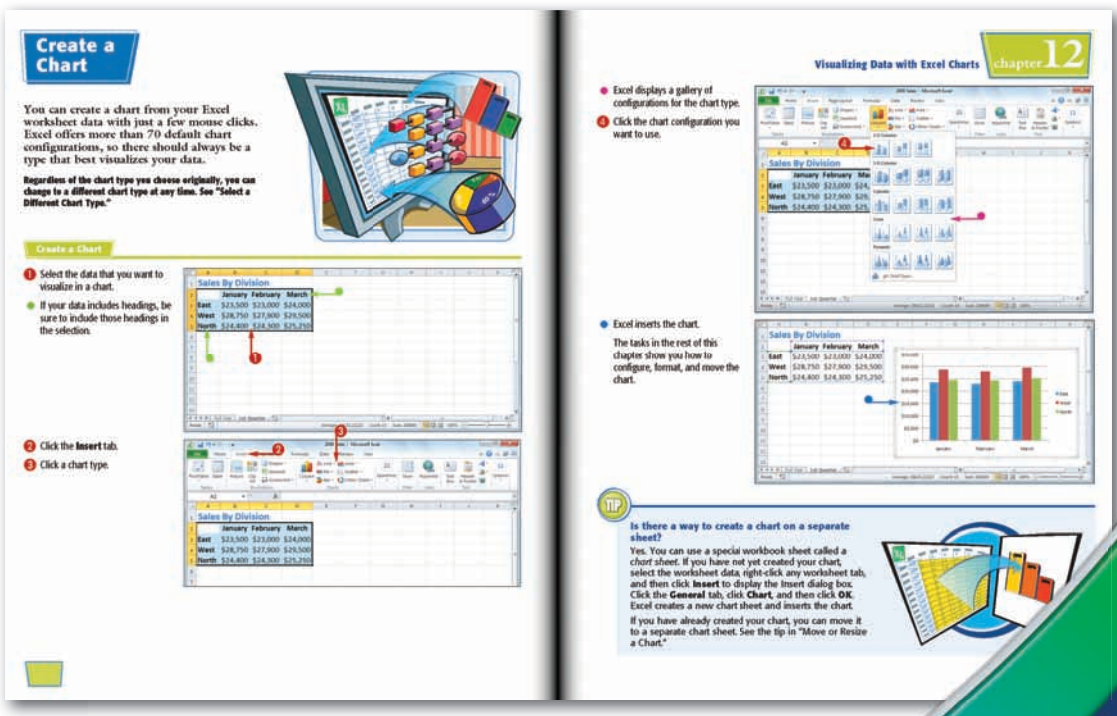
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- **Succinct explanations walk you through step by step**
- **Full-color screen shots demonstrate each task**
- **Helpful sidebars offer practical tips and tricks**

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Spreadsheets