

8 Insert and Modify Charts

In this chapter, you will learn how to

- ✓ Insert charts.
 - ✓ Modify charts.
 - ✓ Use existing data in charts.
-

You'll often find it helpful to reinforce the argument you are making in a document with facts and figures. When it's more important for your audience to understand trends than identify precise values, you can use a chart to present numerical information in visual ways.

In this chapter, you'll add a chart to a document and modify its appearance by changing its chart type, style, and layout, as well as the color of some elements. Then you'll recreate the chart by plotting data stored in an existing Microsoft Excel worksheet.

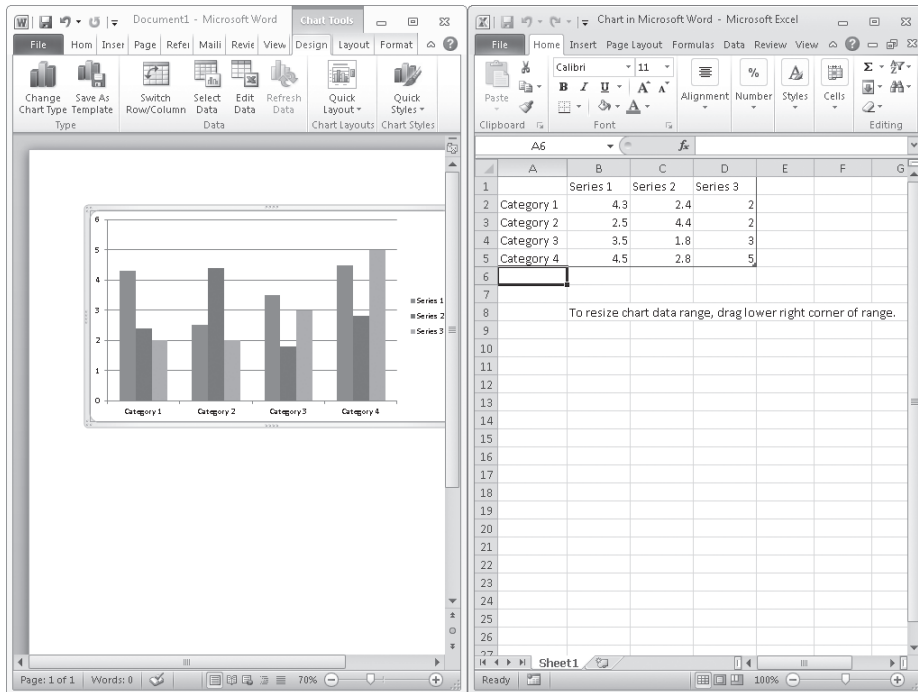
Important The exercises in this chapter assume that you have Microsoft Excel 2010 installed on your computer. If you do not have this version of Excel, the steps in the exercises won't work as described.

Practice Files Before you can complete the exercises in this chapter, you need to copy the book's practice files to your computer. The practice files you'll use to complete the exercises in this chapter are in the Chapter08 practice file folder. A complete list of practice files is provided in "Using the Practice Files" at the beginning of this book.

Inserting Charts

When you insert a chart into a document created in Microsoft Word 2010, a sample chart is embedded in the document. The data used to plot the sample chart is stored in an Excel worksheet that is associated with the Word file. (You don't have to maintain a separate Excel file.)

Tip Don't worry: you don't have to know how to use Excel to be able to create the chart.



A sample chart plotted from the data in its associated Excel worksheet.

Troubleshooting The appearance of buttons and groups on the ribbon changes depending on the width of the program window. For information about changing the appearance of the ribbon to match our screen images, see “Modifying the Display of the Ribbon” at the beginning of this book.

The Excel worksheet is composed of rows and columns of cells that contain values, which in charting terminology are called *data points*. Collectively a set of data points is called a *data series*. As with Word tables, each worksheet cell is identified by an address consisting of its column letter and row number—for example, A2. A range of cells is identified by the address of the cell in the upper-left corner and the address of the cell in the lower-right corner, separated by a colon—for example, A2:D5.

To customize the sample chart, you replace the sample data in the Excel worksheet with your own data. Because the Excel worksheet is linked to the chart, when you change the values in the worksheet, the chart changes as well. To enter a value in a cell, you click the cell to select it, and start typing. You can select an entire column by clicking the column header—the shaded box containing a letter at the top of each column—and an entire row by clicking the row header—the shaded box containing a number to the left of each row. You can select the entire worksheet by clicking the Select All button—the box at the junction of the column and row headers.

Tip If you create a chart and later want to edit its data, you can open the associated worksheet by clicking the chart and then clicking the Edit Data button in the Data group on the Design contextual tab.

In this exercise, you'll insert a chart into a document and then replace the sample data in the associated worksheet with seasonal minimum, average, and maximum temperature data.

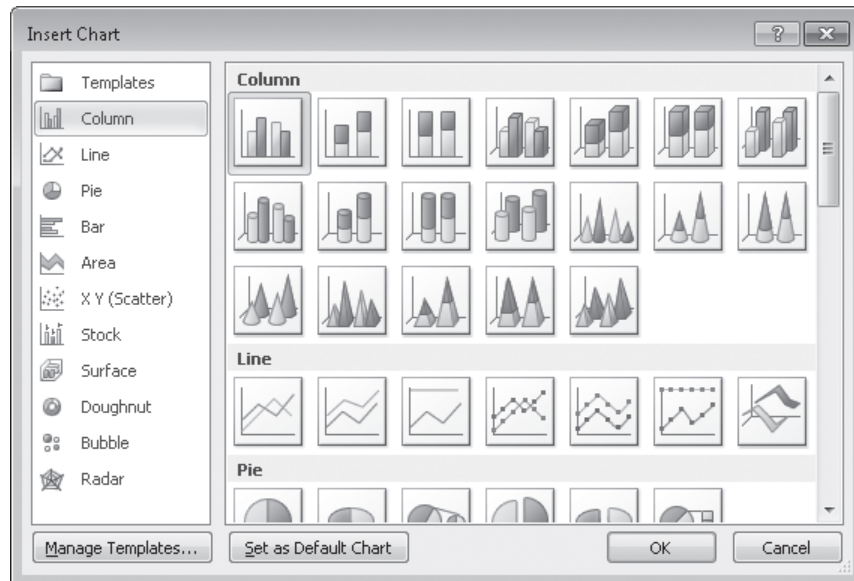
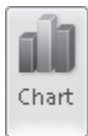
Tip If you open a document created in Word 2003 in Word 2010 and then insert a chart into it, Word uses Microsoft Graph to create the chart. This Word 2003 charting technology has been retained to maintain compatibility with earlier versions of the program. The steps in this exercise will work only with a document created in Word 2010 or Word 2007.



SET UP You need the CottageA_start document located in your Chapter08 practice file folder to complete this exercise. Open the CottageA_start document, and save it as CottageA. Then follow the steps.

1. Press Ctrl+End to move to the end of the document. Then set the zoom percentage so that you can see almost the entire page.
2. On the **Insert** tab, in the **Illustrations** group, click the **Chart** button.

The Insert Chart dialog box opens.



In the Insert Chart dialog box, you can select from a variety of chart types and their variations.

3. In the gallery in the right pane, under **Column**, click the fourth thumbnail in the first row (**3-D Clustered Column**). Then click **OK**.

The document window is resized to fill the left half of the screen, and a sample chart of the type you selected is inserted at the cursor. An Excel worksheet containing the data plotted in the sample chart opens on the right.



- Click the **Select All** button in the upper-left corner of the Excel worksheet, and then press the Delete key.

The sample data in the worksheet is deleted, and the worksheet is now blank. The columns in the sample chart in the document disappear, leaving a blank chart area.

- Click the second cell in row **1** (cell **B1**), type **March**, and then press the Tab key. Excel enters the heading and activates the next cell in the same row.
- In cells **C1** through **E1**, type **June**, **September**, and **December**, pressing Tab after each entry to move to the next cell.

Tip If you were entering a sequential list of months, you could type *January* and then drag the fill handle in the lower-right corner of the cell to the right to fill subsequent cells in the same row with the names of the months.

- Click cell **A2**, type **Minimum**, and then press the Enter key.

Excel enters the heading and activates the next cell in the same column.

Keyboard Shortcut Press Enter to move down in the same column or Shift+Enter to move up. Press Tab to move to the right in the same row or Shift+Tab to move to the left. Or press the Arrow keys to move up, down, left, or right one cell at a time.

See Also For more information about keyboard shortcuts, see “Keyboard Shortcuts” at the end of this book.

- In cells **A3** and **A4**, type **Average** and **Maximum**, pressing Enter after each entry. You have now entered the row and column headings for the data you want to plot.

	A	B	C	D	E	F	G
1		March	June	September	December		
2	Minimum						
3	Average						
4	Maximum						
5							
6							
7							
8							

The row and column headings for your data.

- Point to the border between the headers of columns **A** and **B**, and when the pointer changes to a double-headed arrow, double-click.

Excel adjusts the width of the column to the left of the border to fit the entries in the column.

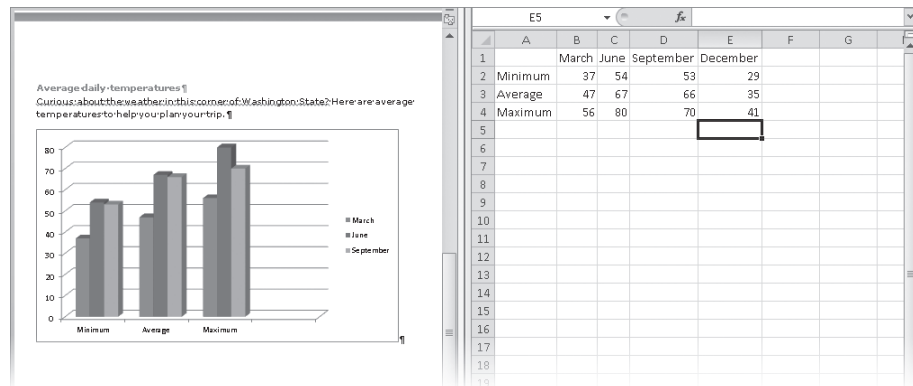
10. Select columns **B** through **E** by dragging through their headers. Then point to the border between any two selected columns, and double-click.

Excel adjusts the width of all the selected columns to fit their cell entries.

11. In cell **B2**, type **37**, and press Tab. Then in cells **C2** through **E2**, type **54**, **53**, and **29**, pressing Tab to move from cell to cell.
12. Type the following data into the cells of the Excel worksheet:

	B	C	D	E
3	47	67	66	35
4	56	80	70	41

As you enter data, the chart changes to reflect what you type.

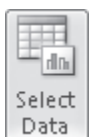


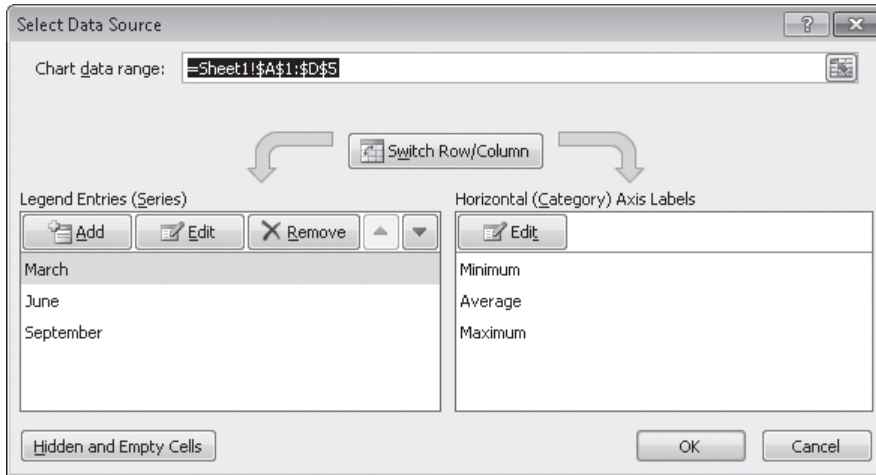
The data series in the columns (the months) are plotted by the categories in the rows (Minimum, Average, and Maximum).

Something is wrong. You entered data for March, June, September, and December, but December is not shown in the chart. This is because the original sample chart plotted only the cells in the range A1:D5, and you have entered data in A1:E4. You need to specify the new range.

13. In the Word document, click a blank area inside the chart frame to activate the chart. Then on the **Design** contextual tab, in the **Data** group, click the **Select Data** button.

In the Excel worksheet, the plotted data range is surrounded by a blinking dotted border, and the Select Data Source dialog box opens so that you can make any necessary adjustments.





The *Select Data Source* dialog box.



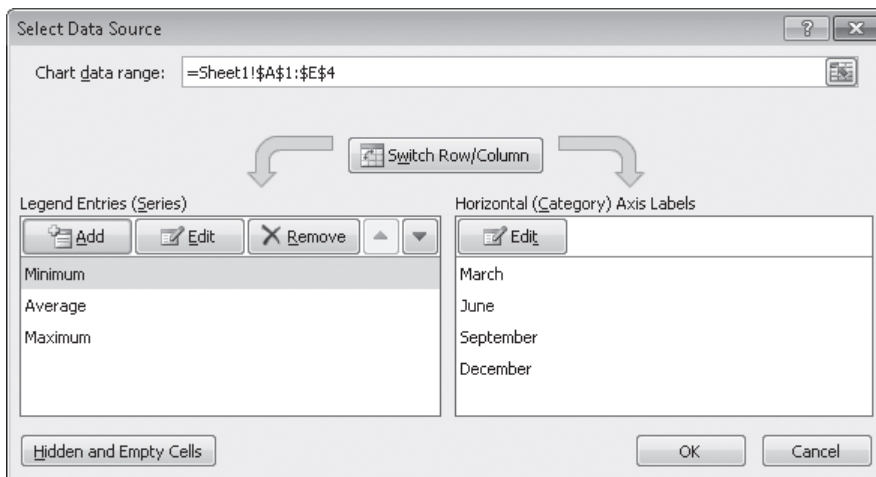
14. At the right end of the **Chart data range** box, click the **Collapse Dialog** button to shrink the **Select Data Source** dialog box. Then if you can't see the worksheet data, point to the title bar of the collapsed dialog box, and drag it downward.



15. In the Excel worksheet, point to cell **A1**, and drag down and to the right to cell **E4**. Then in the **Select Data Source** dialog box, click the **Expand Dialog** button. In the **Select Data Source** dialog box, the **Chart Data Range** box now contains the new range, and the **Legend Entries (Series)** list now includes **December**.

16. Click **Switch Row/Column**.

In the dialog box, Excel switches the entries in the **Legend Entries (Series)** and **Horizontal (Category) Axis Labels** boxes.



The data series in the rows will be plotted by the categories in the columns.

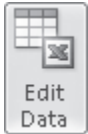
17. Click **OK** to close the dialog box. Then in the upper-right corner of the Excel window, click the **Close** button to close the worksheet.



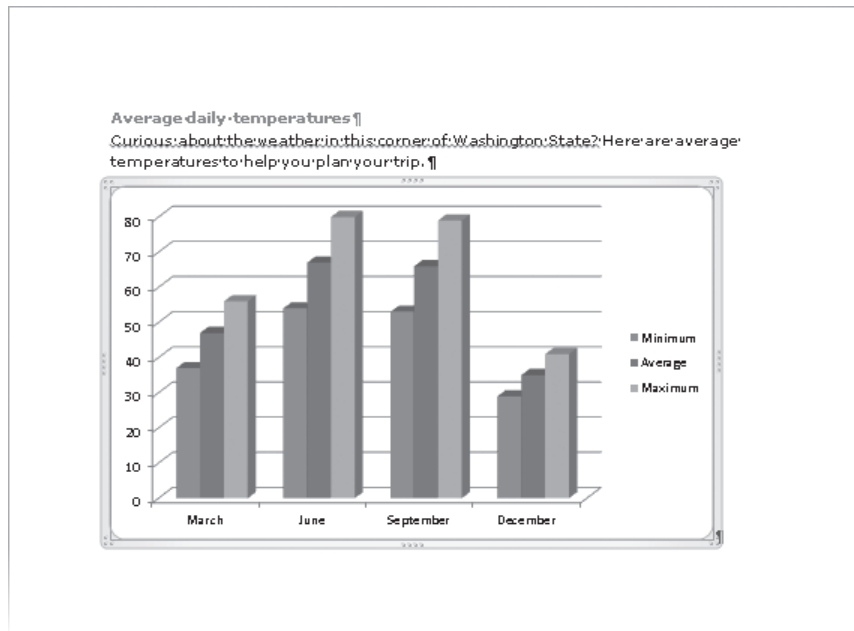
The Word window expands to fill the screen. The data for December now appears in the chart, which is plotted by month.

Suppose you realize that you made an error when typing the data for September.

18. Click a blank area inside the chart frame. Then on the **Design** tab, in the **Data** group, click the **Edit Data** button to open the Excel worksheet.
19. In the Excel worksheet, click cell **D4**, type **79** to replace the existing data, and press Enter. Then close the Excel window.



In the chart, the maximum temperature column for September becomes taller to represent the new value.



A simple three-dimensional column chart showing seasonal temperatures.

✕ CLEAN UP Save the CottageA document, and then close it.

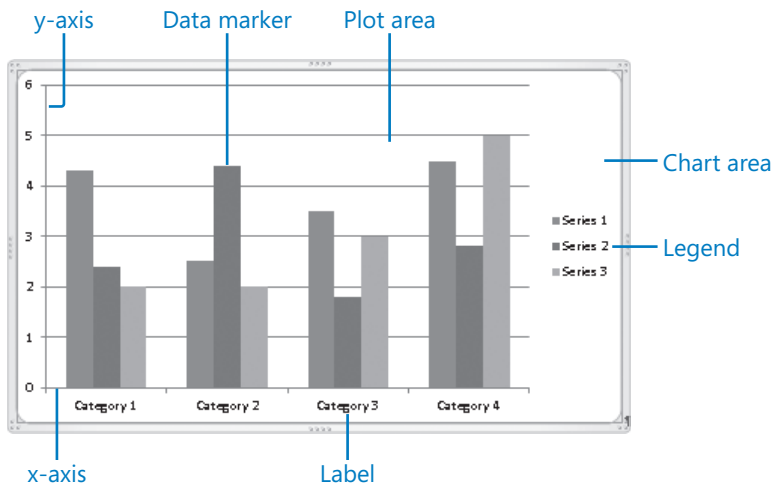
Modifying Charts

If you decide that the chart you created doesn't adequately depict the most important characteristics of your data, you can change the chart type at any time. Word provides 11 types of charts, each with two-dimensional and three-dimensional variations. Common chart types include the following:

- **Column** These charts show how values change over time.
- **Bar** These charts show the values of several items at one point in time.
- **Line** These charts show erratic changes in values over time.
- **Pie** These charts show how parts relate to the whole.

Having settled on the most appropriate chart type, you can modify the chart as a whole or any of its elements, such as the following:

- **Chart area** This is the entire area within the chart frame.
- **Plot area** This is the rectangular area bordered by the axes.
- **Axes** These are the lines along which the data is plotted. The x-axis shows the categories, and the y-axis shows the data series, or values. (Three-dimensional charts also have a z-axis.)
- **Labels** These identify the data along each axis.
- **Data markers** These graphically represent each data point in each data series.
- **Legend** This is a key that identifies the data series.



The main elements of a chart.

To modify a specific element, you first select it by clicking it, or by clicking its name in the Chart Elements box in the Current Selection group on the Format tab. You can then modify the element by clicking the buttons on the Design, Layout, and Format contextual tabs.

If you make extensive modifications, you might want to save the customized chart as a template so that you can use it for plotting similar data in the future without having to repeat all the changes.

In this exercise, you'll modify the appearance of a chart by changing its chart type and style. You'll change the color of the plot area and the color of two data series. You'll then hide gridlines and change the layout to display titles and a datasheet. After adding an annotation in a text box, you'll save the chart as a template.



SET UP You need the *CottageB_start* document located in your Chapter08 practice file folder to complete this exercise. Open the *CottageB_start* document, and save it as *CottageB*. Then follow the steps.

1. Scroll through the document to display the chart, and click a blank area inside the chart frame to activate it.

Troubleshooting Be sure to click a blank area inside the chart frame. Clicking any of its elements will activate that element, not the chart as a whole.

Word displays the Design, Layout, and Format contextual tabs.

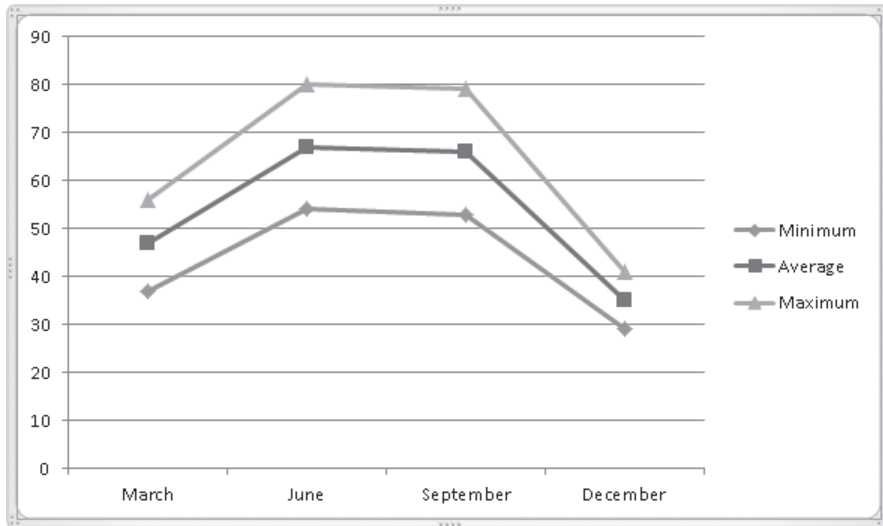
2. On the **Design** tab, in the **Type** group, click the **Change Chart Type** button.

The Change Chart Type dialog box opens. This dialog box is the same as the Insert Chart dialog box shown earlier in the chapter.

3. In the gallery on the right, under **Line**, double-click the fourth thumbnail (**Line with Markers**).

The column chart changes to a line chart, which depicts data by using colored lines instead of columns.



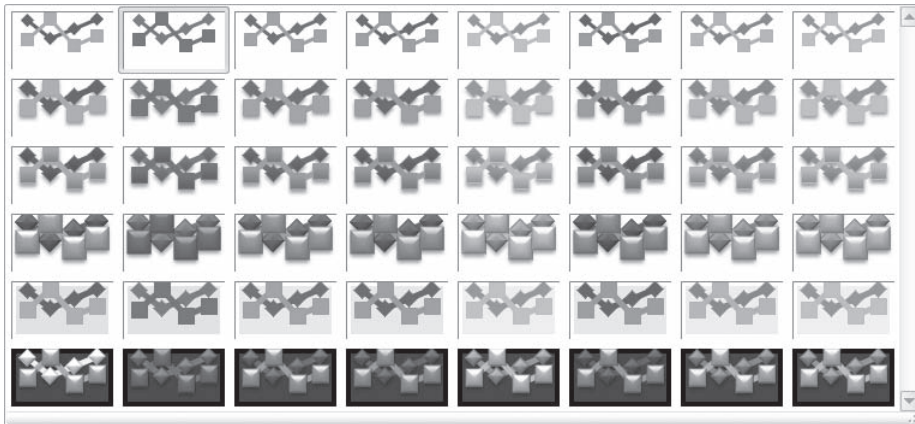


The temperature data plotted as a line chart.



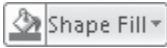
- In the **Chart Styles** group, click the **More** button.

The Chart Styles gallery appears.



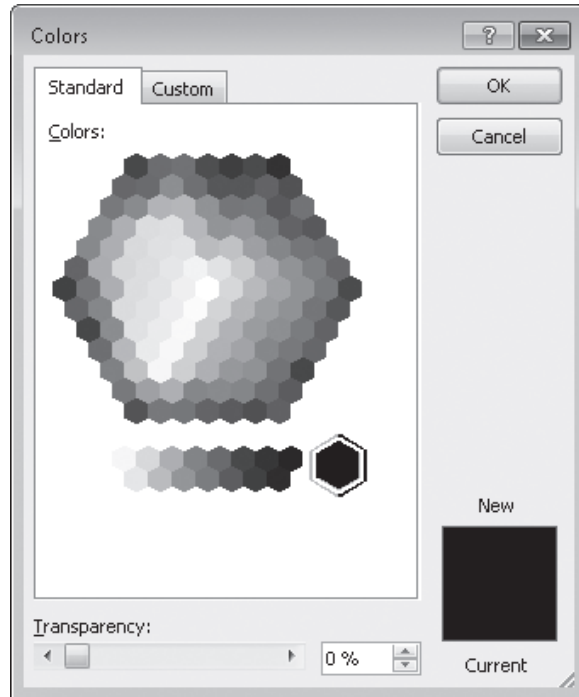
You can quickly switch to a different color scheme or data marker style.

- In the gallery, click the second thumbnail in the fourth row (**Style 26**).
The lines are now thicker, and the data markers are three-dimensional.
- Move the pointer over the chart between the axes that contains the data markers, and when a ScreenTip indicates that you are pointing to the plot area, click to select it.



7. On the **Format** tab, in the **Shape Styles** group, click the **Shape Fill** button, and then click **More Fill Colors**.

The Colors dialog box opens.



When none of the theme or standard colors meets your needs, you can pick a color in the Colors dialog box.

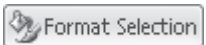
8. On the **Standard** page of the **Colors** dialog box, click the pale yellow hexagon below and to the left of the center, and then click **OK**.

The plot area is now a pale yellow shade to distinguish it from the rest of the chart.

Tip To change several aspects of the plot area, right-click the area and then click **Format Plot Area** to open the **Format Plot Area** dialog box. You can then change the fill, border, shadow, and 3-D format in one location.

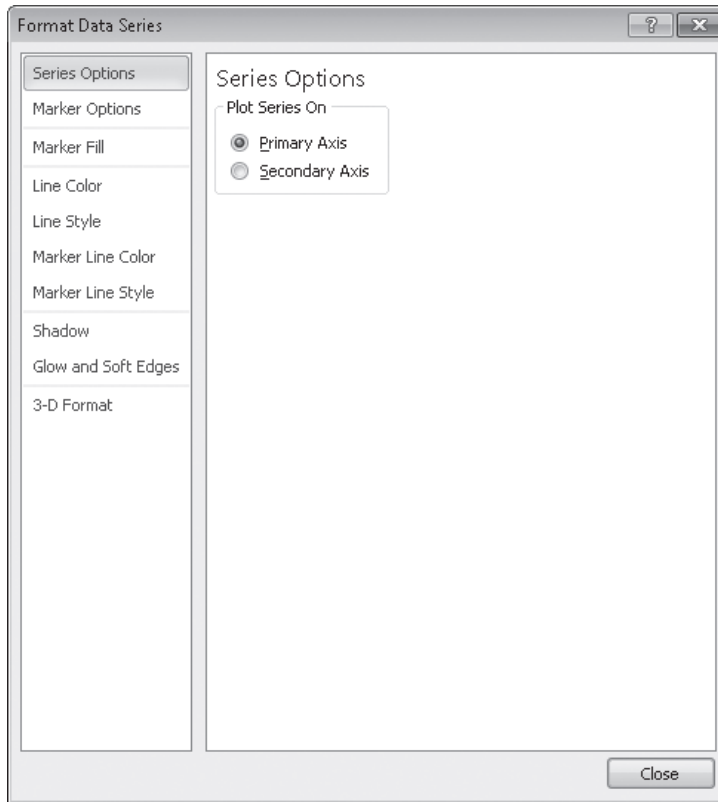
9. At the top of the **Current Selection** group, click the **Chart Elements** arrow to display the list of elements, and then click **Series "Average"**.

An outline appears around the data points of the selected series.



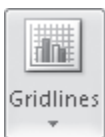
10. In the **Current Selection** group, click the **Format Selection** button.

The Format Data Series dialog box opens.



You can change several aspects of the selected data series in this dialog box.

11. In the left pane, click **Marker Fill**, and on the **Marker Fill** page, click **Solid Fill**. In the **Fill Color** area, click the **Color** button, and under **Theme Colors**, click the purple box (**Purple, Accent 4**).
12. In the left pane, click **Line Color**. Then on the **Line Color** page, change the color to the same solid purple.
13. Check that the marker line color is also purple, and then click **Close**.
The Average data series is now represented by the color purple.
14. On the **Layout** tab, in the **Axes** group, click the **Gridlines** button, point to **Primary Horizontal Gridlines**, and then click **None** to remove the horizontal gridlines from the chart.
15. On the **Design** tab, in the **Chart Layouts** group, click the **More** button.



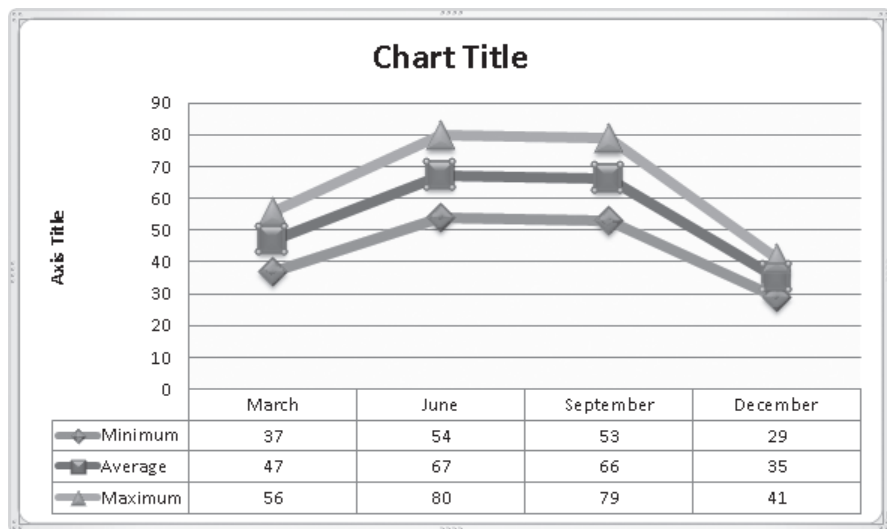
The Chart Layouts gallery appears.



You can quickly change the layout of the chart by selecting one of the predefined options.

16. In the gallery, click the second thumbnail in the second row (**Layout 5**).

The legend now appears below the chart with the data points in a datasheet. Gridlines have been turned back on, and placeholders for a chart title and axis title have been added to the chart.

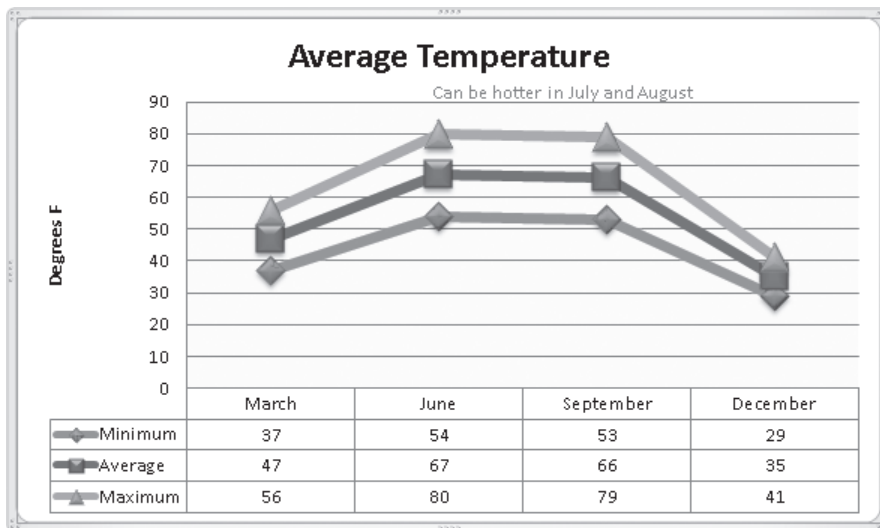


When you don't have a lot of data, displaying a datasheet can clarify without adding clutter.

17. In the chart, drag across the **Chart Title** placeholder at the top, and type **Average Temperature**. Then replace the **Axis Title** placeholder on the left with **Degrees F**.
18. On the **Layout** tab, in the **Insert** group, click the **Draw Text Box** button.



19. Point below the chart title and above the **June** maximum temperature data point, and then drag diagonally down and to the right until the text box stretches as far as the **December** data.
 20. Type **Can be hotter in July and August**. Then select the text, and on the **Home** tab, in the **Font** group, change the size to **10** points and the color to **Red**.
 21. Click outside the text box (but not outside the chart).
- You can now see the results of your changes.



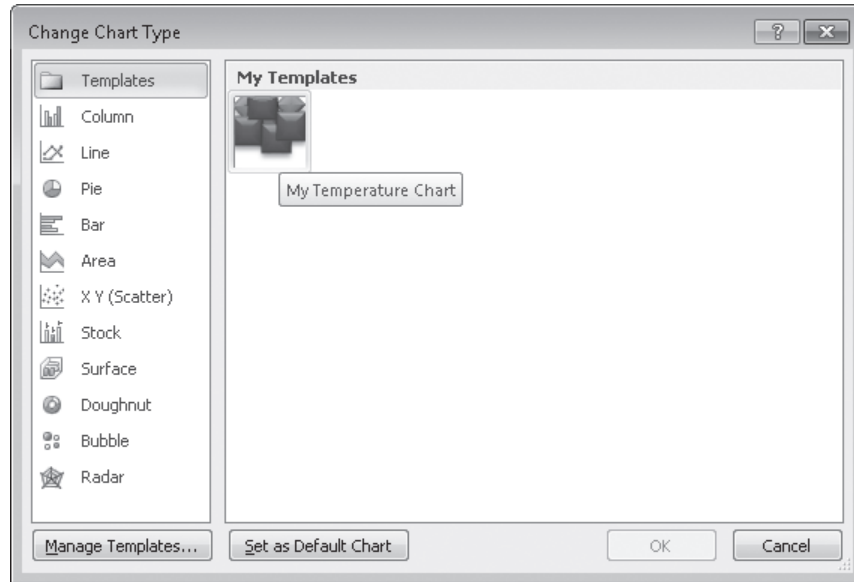
The chart with titles and a custom label.



22. On the **Design** tab, in the **Type** group, click the **Save As Template** button. The Save Chart Template dialog box opens and displays the contents of your Charts folder, which is a subfolder of your Templates folder.

Troubleshooting If the **Charts** folder is not displayed in the **Address** bar, navigate to the **C:\Users\\AppData\Roaming\Microsoft\Templates\Charts** folder.
23. With the **Charts** folder displayed in the **Address** bar, type **My Temperature Chart** in the **File name** box, and then click **Save**.
24. In the **Type** group, click the **Change Chart Type** button, and then in the left pane of the **Change Chart Type** dialog box, click **Templates**. Then, in the right pane, point to the icon under **My Templates**.

A ScreenTip identifies this template as the one you just created.



In the future, you can click the custom template to create a chart with the same layout and formatting.

25. Click **Cancel** to close the dialog box.

✘ CLEAN UP Save the CottageB document, and then close it.

Using Existing Data in Charts

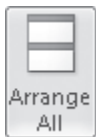
If the data you want to plot as a chart already exists in a Microsoft Access database, an Excel worksheet, or a Word table, you don't have to retype it in the chart's worksheet. You can copy the data from its source program and paste it into the worksheet.

In this exercise, you'll copy data stored in an Excel worksheet into a chart's worksheet and then expand the plotted data range so that the new data appears in the chart.

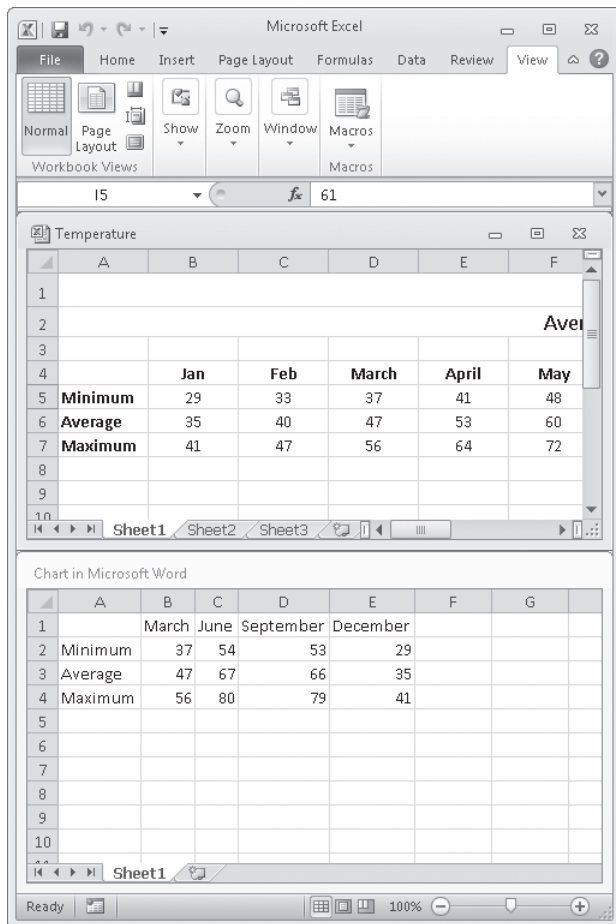
➔ SET UP You need the CottageC_start document and the Temperature workbook located in your Chapter08 practice file folder to complete this exercise. Open the CottageC_start document, and save it as CottageC. Then follow the steps.

1. Press Ctrl+End to move to the end of the document, and then if necessary, adjust the zoom percentage so that you can see the entire page.
2. Right-click a blank area inside the chart frame, and then click **Edit Data** to open the associated Excel worksheet.

- In the Excel window, click the **File** tab to display the Backstage view, and in the left pane, click **Open**. In the **Open** dialog box, navigate to your **Chapter08** practice file folder, and double-click the **Temperature** workbook.
- On the Excel **View** tab, in the **Window** group, click the **Arrange All** button. Then in the **Arrange Windows** dialog box, click **Horizontal**, and click **OK**.



Excel arranges the Temperature worksheet above the worksheet associated with the chart so that both are visible at the same time.



Displaying two worksheets at the same time makes it easy to copy data between them.

- In the **Temperature** worksheet, click cell **B4**. Then at the bottom of the **Temperature** pane, to the right of the sheet tabs, drag the horizontal scroll bar until you can see column **M**. Hold down the Shift key, and click cell **M7**.

You have selected the range B4:M7.



6. On the Excel **Home** tab, in the **Clipboard** group, click the **Copy** button.
7. Click the title bar of the **Chart in Microsoft Word** worksheet to activate it, click cell **B1**, and then on the Excel **Home** tab, in the **Clipboard** group, click the **Paste** button.

The copied data is pasted into the worksheet associated with the chart.

The screenshot shows two overlapping windows. The top window is Microsoft Excel, displaying a worksheet titled 'Temperature'. The data in the worksheet is as follows:

	Jan	Feb	March	April	May
Minimum	29	33	37	41	48
Average	35	40	47	53	60
Maximum	41	47	56	64	72

The bottom window is Microsoft Word, displaying a chart titled 'Chart in Microsoft Word'. The data in the chart is as follows:

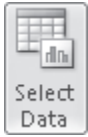
	Jan	Feb	March	April	May	June
Minimum	29	33	37	41	48	54
Average	35	40	47	53	60	67
Maximum	41	47	56	64	72	80

The copied data will be plotted in the chart.

8. Click the **Temperature** title bar to activate that worksheet, and close the **Temperature** workbook. Then maximize the chart worksheet.

Troubleshooting Be sure to click the **Close** button at the right end of the **Temperature** title bar, and not the **Close** button in the upper-right corner of the Excel program window.

Now you need to specify that the new data should be included in the chart.



- In the Word document, click a blank area inside the chart frame, and then on the **Design** contextual tab, in the **Data** group, click the **Select Data** button.

The Select Data Source dialog box opens.

- In the **Chart data range** box, click to the right of the highlighted cell range, and change the range to read **=Sheet1!\$A\$1:\$M\$4**.

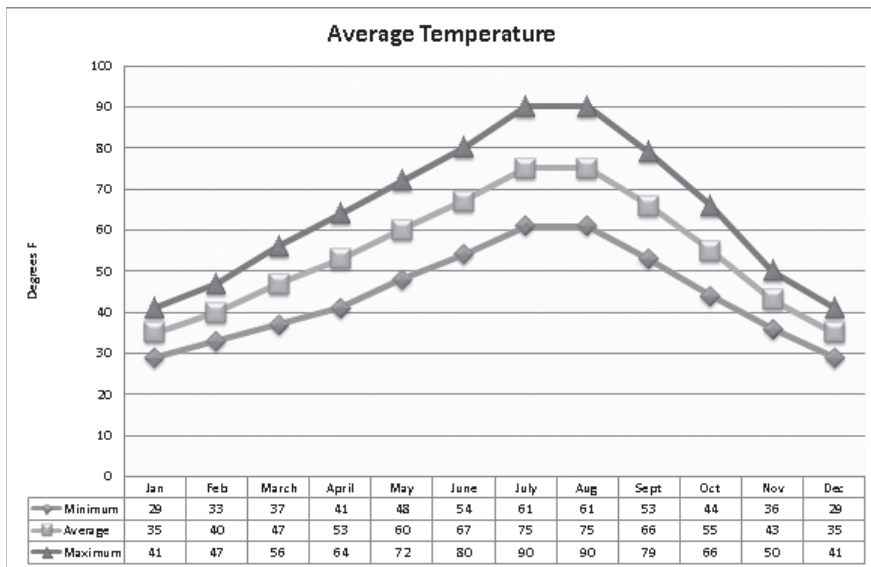
You are telling Excel to use the values in A1:M4 on Sheet1 of the associated worksheet. (The \$ signs ensure that only that range of cells will be used as the source of the chart's data. Sheet1 is the name defined for the worksheet on the sheet tab at the bottom of the Excel program window.)

- Click **OK**, and then close the Excel window.
- In the lower-right corner of the chart frame, drag the sizing handle down and to the right until the chart occupies most of the available space on the page.

Troubleshooting If the chart disappears onto the next page when you release the mouse button, click the Undo button on the Quick Access Toolbar, and then try again.

- Click **Can be hotter in July and August**, click the border of the text box, and press the Delete key. Then click outside the chart frame.

You can now see twelve months of data.



You can see from the chart that winter is relatively cold, summer is relatively hot, and spring and fall are mild.



CLEAN UP Save the CottageC document, and then close it.

Tip You can also import data into your chart from a text file, Web page, or other external source, such as Microsoft SQL Server. To import data, first display the associated Excel worksheet. Then on the Excel Data tab, in the Get External Data group, click the button for your data source, and navigate to the source. For more information, see Microsoft Excel Help.

Key Points

- A chart is often the most efficient way to present numeric data with at-a-glance clarity.
- You can select the type of chart and change the appearance of its elements until it clearly conveys key information.
- Existing data in a Word table, Excel workbook, Access database, or other structured source can easily be copied and pasted into the associated chart worksheet, eliminating time-consuming typing.

Chapter at a Glance

Joyce Cox

Joyce has 30 years' experience in the development of training materials about technical subjects for non-technical audiences, and is the author of dozens of books about Office and Windows technologies. She is the Vice President of Online Training Solutions, Inc. (OTSI).

As President and principal author for Online Press, she developed the Quick Course series of computer training books for beginning and intermediate adult learners. She was also the first managing editor of Microsoft Press, an editor for Sybex, and an editor for the University of California.

Joan Lambert

Joan has worked in the training and certification industry for 13 years. As President of OTSI, Joan is responsible for guiding the translation of technical information and requirements into useful, relevant, and measurable training and certification tools.

Joan is a Microsoft Certified Trainer (MCT), a Microsoft Certified Applications Specialist (MCAS) Instructor, a Microsoft Certified Technology Specialist (MCTS), and the author of more than two dozen books about Windows and Office (for Windows and Mac).

Online Training Solutions, Inc. (OTSI)

OTSI specializes in the design, creation, and production of Office and Windows training products for office and home computer users. For more information about OTSI, visit:

www.otsi.com

Add watermarks,
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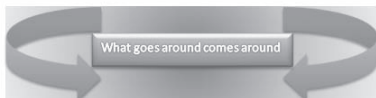
Welcome!

We would like to welcome you to our cottage, your home away from home during your visit to beautiful Walla Walla. Please take a few minutes to read the following information about our home and its amenities. Knowing where things are and how they work will help make your stay more comfortable and relaxing.

Kitchen

Our kitchen is fully equipped for everything from a simple breakfast to a gourmet

Insert symbols
and equations,
page 247



Draw and modify shapes,
page 255

Insert screen clippings,
page 263

Directions to the Bellevue Library

