

Chapter 6: Creating a Chart

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Nothing is more persuasive than a chart. The bars, pie slices, lines, or columns show instantaneously that production is up or down, that cats are better than dogs or dogs better than cats, or that catsup tastes better than ketchup. Fans of charts and graphs will be glad to know that putting a chart in a Word document, Excel worksheet, or PowerPoint slide is fairly easy.

This chapter explains how to create a chart. It looks at which charts are best for presenting different kinds of data, how to change a chart's appearance, and how to save charts in a template that you can use again. You discover some nice chart tricks, including how to make a picture the backdrop for a chart and how to annotate a chart. This chapter also addresses common chart problems.

A Mercifully Brief Anatomy Lesson

Throughout this chapter, I show you many ways to tinker with charts, but before you can begin tinkering, you need to know what you're tinkering with. In other words, you have to know what the different parts of a chart are. Here is a brief chart anatomy lesson. Figure 6-1 points out where some of the terms described here are found on a real, live chart:

- ◆ **Plot area:** The center of the chart, apart from the legend and data labels, where the data itself is presented.
- ◆ **Values:** The numerical values with which the chart is plotted. The values you enter determine the size of the *data markers* — the bars, columns, pie slices, and so on — that portray values. In the column chart in Figure 6-1, values determine the height of the columns.
- ◆ **Gridlines:** Lines on the chart that indicate value measurements. Gridlines are optional in charts (none are shown in Figure 6-1).
- ◆ **Worksheet:** Where you enter (or retrieve) the data used to plot the chart. The worksheet resembles a table. Figure 6-2 shows the worksheet I used to enter the data that produced the chart in Figure 6-1. Notice how the numbers at the top of the columns correspond to the numbers entered in the worksheet shown in Figure 6-2. A worksheet is called a *data table* when it appears along with a chart.

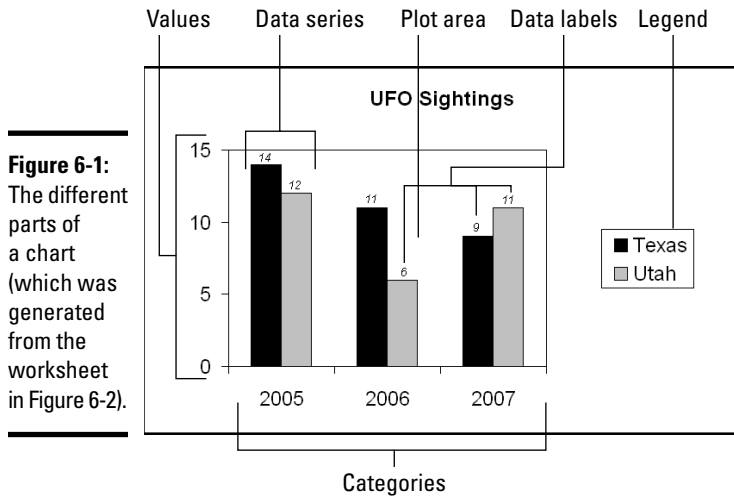


Figure 6-2: The information entered in this worksheet produced the chart shown in Figure 6-1.

	Data labels	Data series	
	A	B	C
1		Texas	Utah
2	2005	14	12
3	2006	11	6
4	2007	9	11

Categories

- ◆ **Data series:** A group of related data points presented by category on a chart. The chart in Figure 6-1 has two data series, one for Texas and one for Utah.
- ◆ **Categories:** The actual items that you want to compare or display in your chart. In Figure 6-1, the categories are the three years in which UFO sightings occurred in the two states.
- ◆ **Legend:** A text box located to the side, top, or bottom of a chart that identifies the chart's data labels.
- ◆ **Horizontal and vertical axes:** For plotting purposes, one side of the plot area. In the chart in Figure 6-1, UFO sightings are plotted on the *horizontal axis*; categories are plotted on the *vertical axis*. Sometimes these axes are called the *category axis* (or *x axis*) and the *value axis* (or *y axis*).

Axes can be confusing, but these axes aren't as evil as they seem. All you really need to know about them is this: You can label the axes in different ways and you can rotate the chart so that the horizontal becomes the vertical axis and vice versa (click the Switch Row/Column button).
- ◆ **Data point:** A value plotted on a chart that is represented by a column, line, bar, pie slice, dot, or other shape. Each data point corresponds to a value entered in the worksheet. In Figure 6-1, for example, the data points for Texas UFO sightings are 14 in 2005, 11 in 2006, and 9 in 2007. Hence the Texas columns in the table rise to the 14, 11, and 9 level.
- ◆ **Data marker:** Shapes on a chart that represent data points. Data markers include columns, lines, pie slices, bubbles, and dots. In Figure 6-1, columns are the data markers.
- ◆ **Data label:** A label that shows the actual values used to construct the data markers. In the chart in Figure 6-1, there are six data labels, one on the top of each column. Displaying data labels in charts is optional.



The good news where the anatomy of a chart is concerned is that you can click anywhere on a chart and see a pop-up box that tells you what part of the chart you just clicked. I wish biology class were that easy!

The Basics: Creating a Chart

Throughout this chapter, I explain the whys, wherefores, and whatnots of creating a chart. Before going into details, here are the basic steps that everyone needs to know to create a chart in Word, Excel, and PowerPoint:

1. Go to the Insert tab.
2. If you're working in Excel, select the data you'll use to generate the chart (in Word and PowerPoint, skip to Step 3).

In Excel, you select the data on a worksheet before creating the chart, but in Word and PowerPoint, you enter the data for the chart in Excel in Step 4. Yes, you heard me right — in Word and PowerPoint. Excel opens after you begin creating your chart so you can enter data for the chart in an Excel worksheet.

3. Select the kind of chart you want.

How you select a chart type depends on which program you're working in:

- *Excel:* Either open the drop-down list in one of buttons in the Chart group on the Insert tab (Column, Line, Pie, Bar, Area, Scatter, or Other Charts) and select a chart type, or click the Charts group button to open the Insert Chart dialog box and select a chart there. As shown in Figure 6-3, the Insert Chart dialog box shows all the kinds of charts you can create.
- *Word and PowerPoint:* Click the Chart button. You see the Insert Chart dialog box shown in Figure 6-3. Select a chart and click OK. The Excel program opens on the right side of your computer screen. (In PowerPoint, you can also click the Chart icon on a placeholder frame to open the Insert Chart dialog box.)



The next portion of this chapter, “Choosing the Right Chart,” describes all the charts types and advises you which to choose.

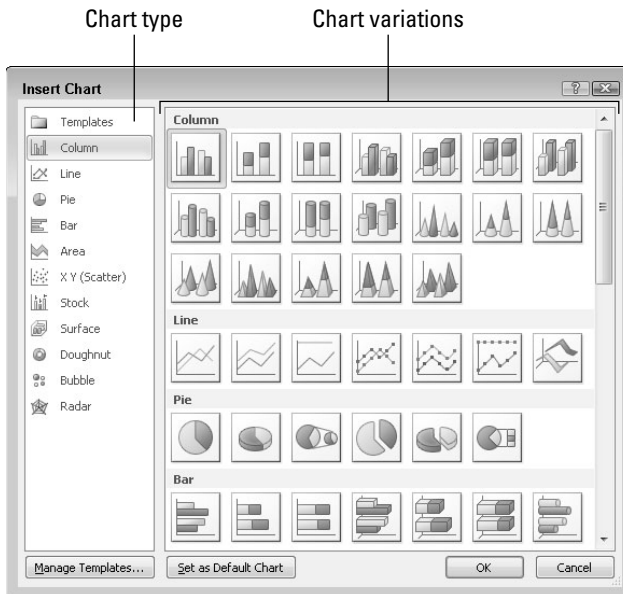


Figure 6-3:
Which chart
do you
want?

4. **In Word and PowerPoint, replace the sample data in the Excel worksheet with the data you need for generating your chart.**

Later in this chapter, “Providing the Raw Data for Your Chart” explains how to enter data in an Excel worksheet. After you finish entering the data, you can close Excel by clicking the Close button in the Excel window or going to the File tab and choosing Close.

5. **To modify your chart, start by selecting it.**

Click a chart to select it. Selecting a chart makes the Chart Tools tabs appear in the upper-right corner of the window. Use these tabs — Design, Layout, and Format — to make your chart just-so.

In Word, you must be in Print Layout view to see a chart.

6. **Select the (Chart Tools) Design tab when you want to change the chart’s layout, alter the data with which the chart was generated, or select a different chart type.**

Later in this chapter, “Changing a Chart’s Appearance” explains how to change the design of a chart.

7. **Select the (Chart Tools) Layout tab when you want to change the chart’s title, labels, or gridlines.**

You can add or remove parts of a chart starting on the Layout tab. Later in this chapter, “Changing the layout of a chart” describes how to change around the text and gridlines on a chart.












8. **Select the (Chart Tools) Format tab when you want to change the appearance of your chart.**

You can change colors and fills on your chart, as “Changing a chart element’s color, font, or other particular” explains later in this chapter.

And if you decide to delete the chart you created? Click its perimeter to select it and then press the Delete key.

Choosing the Right Chart

If you’re a fan of charts, the huge selection of charts can make you feel like a kid in a candy store, but if charts aren’t your forte, the wealth of charts you can choose from can be daunting. You can choose among 6 dozen charts in 11 categories (refer to Figure 6-3). Which chart is best? The golden rule for choosing a chart type is to choose the one that presents information in the brightest possible light. The purpose of a chart is to compare information across different categories. Select a chart that draws out the comparison so that others can clearly make comparisons. Table 6-1 describes the 11 chart categories and explains in brief when to use each type of chart.

Table 6-1		Chart Types
<i>Symbol</i>	<i>Chart Type</i>	<i>Best Use/Description</i>
	Area	Examine how values in different categories fluctuate over time, and see the cumulative change in values. (Same as a line chart except that the area between trend lines is colored in.)
	Bar	Compare values in different categories against one another, usually over time. Data is displayed in horizontal bars. (Same as a column chart except that the bars are horizontal.)
	Bubble	Examine data relationships by studying the size and location of the bubbles that represent the relationships. Bubble charts are often used in financial analyses and market research. (Similar to an XY scatter chart except that you can use three rather than two data series, and the data points appear as bubbles.)
	Column	Compare values in different categories against one another, usually over time. Data is displayed in vertical columns. (Same as a bar chart except that the bars are vertical.)
	Doughnut	See how values compare as percentages of a whole. (Similar to a pie chart except that you can use more than one data series and create concentric doughnut rings in the chart.)
	Line	Examine how values fluctuate over time. Data is displayed in a set of points connected by a line.
	Pie	See how values compare as percentages of a whole. Data from categories is displayed as a percentage of a whole. (Similar to a doughnut chart.)
	Radar	Examine data as it relates to one central point. Data is plotted on radial points from the central point. This kind of chart is used to make subjective performance analyses.
	XY (Scatter)	Compare different numeric data point sets in space to reveal patterns and trends in data. (Similar to a bubble chart except that the data appears as points rather than bubbles.)
	Stock	See how the value of an item fluctuates, as well as its daily, weekly, or yearly high, low, and closing price. This chart is used to track stock prices, but it can also be used to track air temperature and other variable quantities.
	Surface	Examine color-coded data on a 3-D surface to explore relationships between data values.

Providing the Raw Data for Your Chart

Every chart is constructed from *raw data* — the numbers and category names you select in an Excel worksheet (in Excel) or enter in an Excel worksheet (in Word and PowerPoint). If you're operating in Word or PowerPoint, you see, in the Excel worksheet, sample data in a *data range*. The information inside the data range is used to generate the chart. You can tell where the data range begins and ends because it is enclosed in a blue border. Your job is to replace the sample data in the data range with data of your own. As you enter your data, the chart on your slide or page takes shape.

Book V, Chapter 1 explains in detail how to enter data in an Excel worksheet, but here are the basics of entering data in case you're new to Excel:

- ◆ **Entering the data in a cell:** A cell is the box in a worksheet where a column and row intersect; each cell can contain one data item. To enter data in a cell, click the cell and start typing. When you're finished, press Enter, press Tab, or click a different cell. You can also click in the Formula bar (above the worksheet) and enter the data there.
- ◆ **Deleting the data in a cell:** To delete the data in a cell, including the sample data Excel provides for charts, click the cell and press Delete.
- ◆ **Displaying the numbers:** When a number is too large to fit in a cell, Excel displays pound signs (###) or displays the number in scientific notation. Don't worry — the number is still recorded and is used to generate your chart. You can display large numbers by widening the columns in which the numbers are found. Move the pointer between column letters (A, B, and so on at the top of the worksheet) and when you see the double-headed arrow, click and drag to the right.



To enclose more or fewer cells in the data range, move the pointer to the lower-right corner of the data range, and when the pointer changes into a two-headed arrow, click and drag so that the blue box encloses only the data you want for your chart.



In Word and PowerPoint, click the Edit Data button on the (Chart Tools) Design tab at any time to open Excel and fiddle with the numbers and data from which your chart is generated.

Positioning Your Chart in a Workbook, Page, or Slide

To change the position of a chart, click to select it, click its perimeter, and when you see the four-headed arrow, start dragging. Otherwise, follow these instructions to land your chart where you want it to be:



◆ **Excel:** To move your chart to a different worksheet or create a new worksheet to hold your chart, go to the (Chart Tools) Design tab and click the Move Chart button. You see the Move Chart dialog box.

- To move your chart to a different worksheet, click the Object In option button, choose the worksheet in the drop-down list, and click OK.
- To create a new worksheet for a chart, click the New Sheet option button, enter a name for the new worksheet, and click OK.



◆ **Word:** Starting in Print Layout view, select your chart, and in the Page Layout or (Chart Tools) Format tab, click the Position button (you may have to click the Arrange button first, depending on the size of your screen). You see a drop-down list with text-wrapping options. Choose the option that describes how you want surrounding text to behave when it crashes into your chart. Book II, Chapter 4 looks in detail at wrapping text around charts and other objects in Word.

◆ **PowerPoint:** Select the chart and drag it on the slide to the right position.

Changing a Chart's Appearance

Charts are awfully nice already, but perhaps you want to redesign one. Perhaps you're an interior decorator type and you want to give charts your own personal touch. Excel, PowerPoint, and Word offer these Chart Tools tabs for redecorating charts:

- ◆ **Design tab:** For quickly changing a chart's appearance. Go to the Design tab if you're in a hurry. The ready-made gallery choices give you the opportunity to change a chart's layout and appearance in a matter of seconds. You can also choose a new chart type from the Design tab. See "Relying on a chart style to change appearances," later in this chapter.
- ◆ **Layout tab:** For rearranging, hiding, and displaying various parts of a chart, including the legend, labels, title, gridlines, and scale. Go to the Layout tab to tweak your chart and make different parts of it stand out or recede into the background. For example, you can display axis labels more prominently or make them disappear, enter a title for your chart, or display more or fewer gridlines. See "Changing the layout of a chart" and "Handling the gridlines," later in this chapter.
- ◆ **Format tab:** For changing the color, outline, font, and font size of various parts of a chart, including the labels, bars, and pie slices. You have to really know what you're doing and have a lot of time on your hands to change colors and fonts throughout a chart. See "Changing a chart element's color, font, or other particular," later in this chapter.

These pages explain how to change a chart's appearance, starting with the biggest change you can make — exchanging one type of chart for another.

Changing the chart type

The biggest way to overhaul a chart is to ditch it in favor of a different chart type. Luckily for you, Office makes this task simple. I wish that changing jobs were this easy. Follow these steps to change a pumpkin into a carriage or an existing chart into a different kind of chart:



1. **Click your chart to select it.**
2. **On the (Chart Tools) Design tab, click the Change Chart Type button, or right-click your chart and choose Change Chart Type on the short-cut menu.**

The Change Chart Type dialog box appears. Does it look familiar? This is the same dialog box you used to create your chart in the first place.

3. **Select a new chart type and click OK.**

Not all chart types can be converted successfully to other chart types. You may well have created a monster, in which case go back to Step 1 and start all over or click the Undo button.

Changing the size and shape of a chart

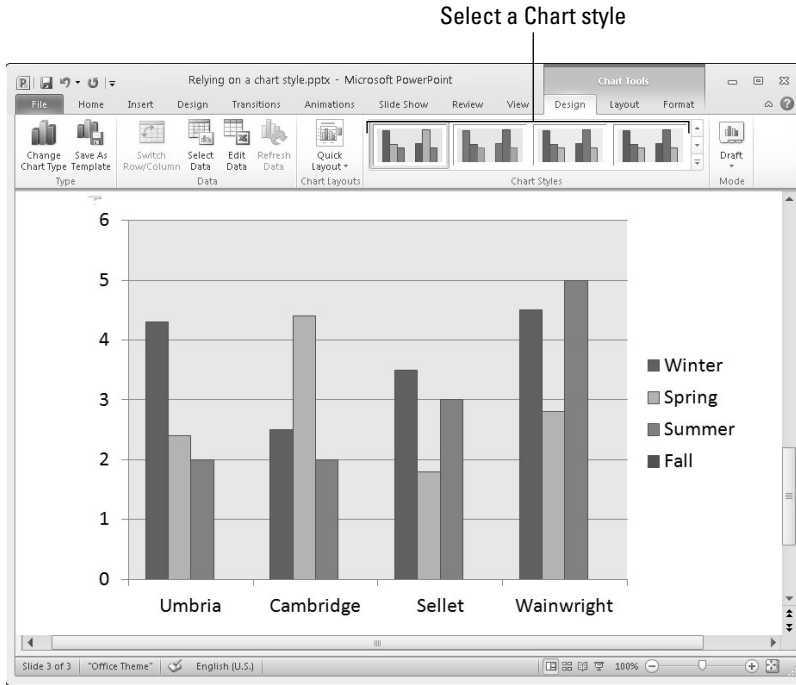
To make a chart taller or wider, follow these instructions:

- ◆ Click the perimeter of the chart to select it and then drag a handle on the side to make it wider, or a handle on the top or bottom to make it taller.
- ◆ Go to the (Chart Tools) Format tab and enter measurements in the Shape Height and Shape Width boxes. You can find these boxes in the Size group (you may have to click the Size button to see them, depending on the size of your screen).

Relying on a chart style to change appearances

The easiest way to change the look of a chart is to choose an option in the Chart Styles gallery in the (Chart Tools) Design tab, as shown in Figure 6-4. You can choose among 50 options. These gallery options are quite sophisticated. You would have a hard time fashioning these charts on your own.

Figure 6-4: Redesign your chart in the Chart Styles gallery.



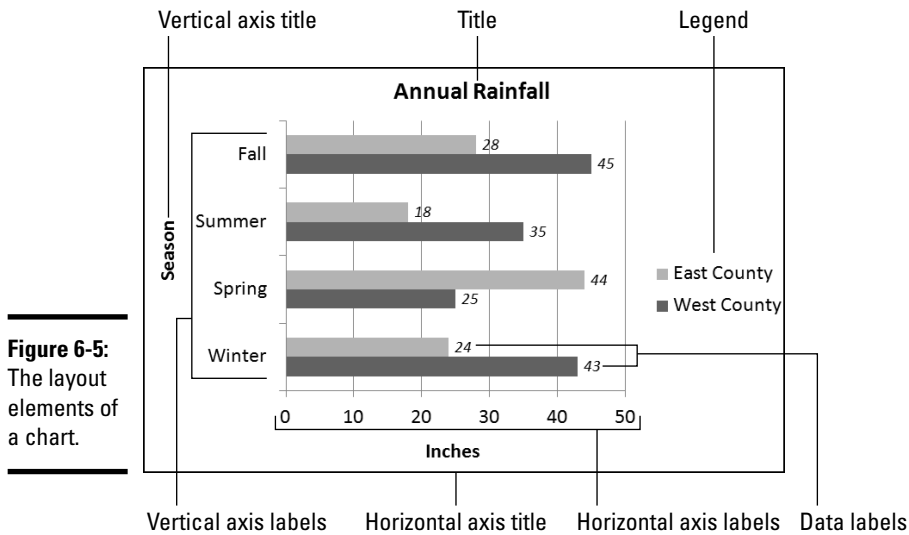
If your file includes more than one chart, make the charts consistent with one another. Give them a similar appearance so that your file doesn't turn into a chart fashion show. You can make charts consistent with one another by choosing similar options for charts in the Chart Styles gallery.

Changing the layout of a chart

Figure 6-5 identifies the chart elements that you can lay out in different ways. Some of these elements can be removed as well as placed on different parts of a chart. For example, you can display the legend on any side of a chart or not display it at all. Some of the elements can be labeled in different ways. To decide on the layout of a chart, select it and visit the (Chart Tools) Layout tab.



The following pages explain how to change the layout of a chart starting on the (Chart Tools) Layout tab. However, before hurrying to the Layout tab to change your chart's layout, you may consider taking a detour to the (Chart Tools) Design tab (refer to Figure 6-4). The Chart Layouts gallery on the Design tab offers ten ready-made layouts, one of which may meet your high expectations and spare you a trip to the Layout tab.



Deciding where chart elements appear and how they are labeled

On the (Chart Tools) Layout tab, open the drop-down list on these buttons and choose options to determine how and whether chart elements are labeled:



- ◆ **Chart Title:** The chart title appears above the chart and describes what the chart is about (refer to Figure 6-5). Place a centered title inside or above the chart. The Above Chart option shrinks the chart a bit to make room for the title. Click in the text box and enter the title after Office creates a chart title text box.



- ◆ **Axis Titles:** Axis titles list the series name and category name of the data being plotted in the chart (refer to Figure 6-5). You can select Rotated Title for the vertical axis to make the axis label read vertically rather than horizontally (refer to Figure 6-5).



- ◆ **Legend:** The legend is the box to the side, top, or bottom of the chart that describes what is being plotted (refer to Figure 6-5). Choose an option from the drop-down list to place the chart's legend above, below, or to the side of a chart.



- ◆ **Data Labels:** Data labels show the numeric values by which the data markers — the bars, columns, pie slices, or dots — in your chart are constructed (refer to Figure 6-5). For example, if a bar in your chart represents the number 28, the data label 28 appears in the bar. You can also label the series name or category name by choosing More Data Label Options on the drop-down list and making selections in the Format Data Labels dialog box.



- ◆ **Axes:** The axes labels are the series names and scale markers that appear in the chart. Choose Primary Horizontal Axis or Primary Vertical Axis and then select None to remove series names and scale markers from your chart. The other axes options are for deciding how to display axes labels (and are explained in the next section of this chapter).

Deciding how the chart's scale and axes labels are presented

The labels and scale on the horizontal and vertical axes of a chart tell viewers what is being plotted on the chart (refer to Figure 6-5). By clicking the Axes button on the (Chart Tools) Layout tab, you can fine-tune the axes labels and scale on your chart.



After you click the Axes button, you see options for changing around your chart's horizontal or vertical axis. What the horizontal and vertical axis options are depends on whether the axis you're dealing with presents text labels, expresses numerical values, or expresses date values.

Text axis options

Choose a text axis option on the drop-down list to remove the labels or present category name labels in reverse order from the way in which these labels are listed on the worksheet.

Numerical and date axis options

The axis options that pertain to numbers and dates are for declaring how to present the scale on your chart. You can present the numbers in thousands, millions, billions, or with a log scale. By opening the Format Axis dialog box shown in Figure 6-6, you can get quite specific about how the scale is presented on your chart. To open this dialog box, click the Axes button, select the appropriate axis option on the drop-down list, and choose More Options on the submenu. Which options you see in this dialog box depends greatly on which chart type you're dealing with.

The Format Axis dialog box offers these opportunities for changing around the scale of a chart:

- ◆ **Changing the scale's range:** By default, the scale ranges from 0 to 10 percent more than the largest value being plotted, but you can change the scale's range by selecting a Fixed option button and entering a new value in the Minimum and Maximum text box.
- ◆ **Changing the number of unit measurement labels:** Label measurements (and gridlines) appear at intervals on a chart according to the number entered in the Major Unit text box. For example, an entry of 10 tells Office to mark each 10 units with a measurement label. Select the Fixed option button and change the number in the Major Unit text box to draw fewer or more unit labels (and gridlines) on your chart. If your chart displays minor tick marks, do the same in the Minor Unit text box.

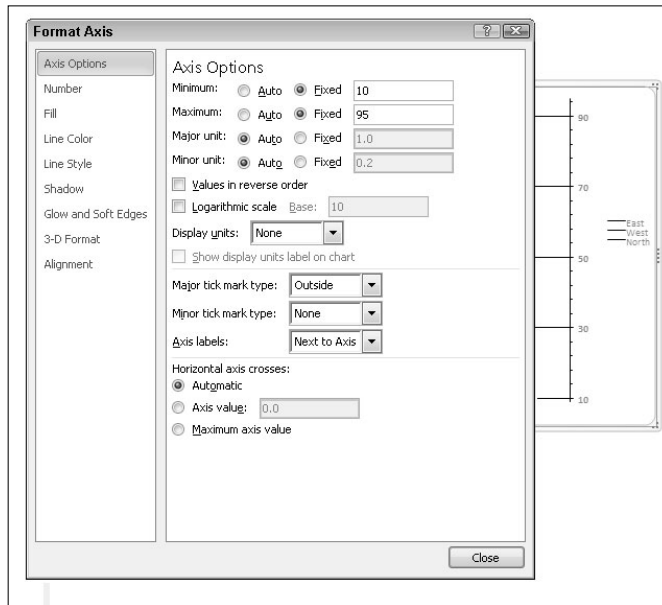


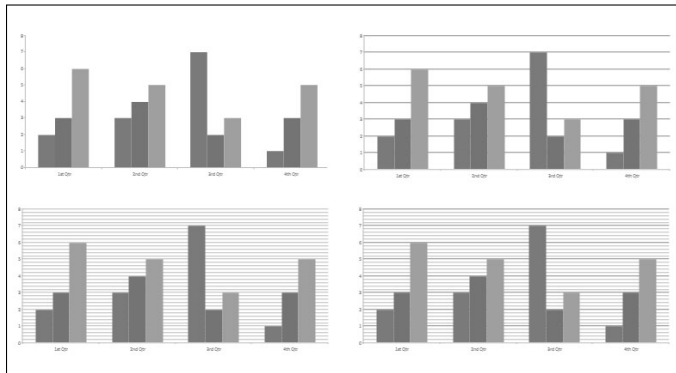
Figure 6-6: Fashion a numerical scale for a chart in the Format Axis dialog box.

- ◆ **Displaying numbers as thousandths, millionths, or billionths:** If your chart presents large numbers, consider listing these numbers in thousandths, millionths, or billionths by selecting an option in the Display Units drop-down list. You can also select the Logarithmic Scale check box to display numbers as logarithms.
- ◆ **Changing the tick-mark scale markers:** Choose Tick Mark options to tell Office where or whether to place *tick marks* — small unit markers — on the scale.
- ◆ **Changing the location of axis labels:** Choose an option in the Axis Labels drop-down list to tell Office where to place the unit labels on the scale.
- ◆ **Change the axis crosses:** Select the Axis Value option button and enter a measurement in the Axis Value text box if you want to change the baseline of your chart. Usually, the axis value is set to 0, and markers rise from 0 on the chart; but by entering a different measurement, you can make markers rise or fall from the baseline. For example, if the Axis Value baseline is 5, markers less than 5 fall from a baseline in the middle of the chart and markers greater than 5 rise above it.

Handling the gridlines

Gridlines are lines that cross a chart and indicate value measurements. Most charts include major gridlines to show where bars or columns meet or surpass a major unit of measurement, and you can also include fainter, minor gridlines that mark less significant measurements. Figure 6-7 shows a chart with gridlines displayed in different ways.

Figure 6-7: Options for handling gridlines (clockwise from upper left): None, Major Gridlines, Major & Minor Gridlines, and Minor Gridlines.



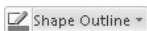
Select your chart and follow these instructions to hide or display gridlines, change the lines' width, or change the lines' color:



- ◆ **Hiding and choosing the frequency of gridlines:** On the (Chart Tools) Layout tab, click the Gridlines button, choose Primary Horizontal Gridlines or Primary Vertical Gridlines on the drop-down list, and choose an option on the submenu. You can hide gridlines (by choosing None), display major gridlines, display minor gridlines, or display major and minor gridlines (refer to Figure 6-7).

The frequency of gridlines on a chart is tied to the scale. If you want to control the frequency of the gridlines on your own without relying on a Gridlines option, change your chart's scale. The preceding section in this chapter explains how to handle scales.

- ◆ **Changing gridline width:** On the (Chart Tools) Format tab, open the Chart Elements drop-down list and choose Axis Major Gridlines or Axis Minor Gridlines (display gridlines on your chart if you don't see these options). Then click the Format Selection button, and in the Line Style category of the Format Gridlines dialog box, enter a measurement in the Width text box to make the gridlines heavier or thinner.



- ◆ **Changing gridline color:** On the (Chart Tools) Format tab, open the Chart Elements drop-down list and select Axis Major Gridlines or Axis Minor Gridlines. (Display gridlines on your chart if you don't see these options.) Then open the drop-down list on the Shape Outline button and choose a color. You can also click the Format Selection button, and in the Line Color category of the Format Gridlines dialog box, select the Solid Line option button and then click the Color button and choose a color there.



Gridlines are essential for helping read charts, but be very, very careful about displaying minor gridlines on charts. These lines can make your chart unreadable. They can turn a perfectly good chart into a gaudy pinstripe suit.

Changing a chart element's color, font, or other particular

Generally speaking, the (Chart Tools) Format tab is the place to go to change the color, line width, font, or font size of a chart element. As I explain shortly, you can do some interior decorating tasks on the (Chart Tools) Layout tab as well.

Follow these basic steps to change a color, line width, font, or font size in part of a chart:

1. Select the (Chart Tools) Format tab.

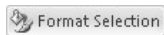
The tools on the (Chart Tools) Format tab are very similar to the tools found on the (Drawing Tools) Format tab. You can find all the tools you need here to change the color, outline, and size of a chart element. These tools are explained in detail in Book I, Chapter 8.

2. Select the chart element that needs a facelift.

To select a chart element, either click it or choose its name on the Chart Elements drop-down list, as shown in Figure 6-8. You can find this list in the upper-left corner of the window.

3. Format the chart element you selected.

Use one of these techniques to format the chart element:



- *Open a Format dialog box.* Click the Format Selection button to open a Format dialog box. The dialog box offers commands for formatting the element you selected.
- *Do the work on your own.* Format the chart element as you would any object. For example, to change fonts in the chart element you selected, right-click and choose a font on the shortcut menu. Or go to the Home tab to change font sizes. Or open the drop-down list on the Shape Fill button on the (Chart Tools) Format tab and select a new color.

Select a chart element so that you can format it

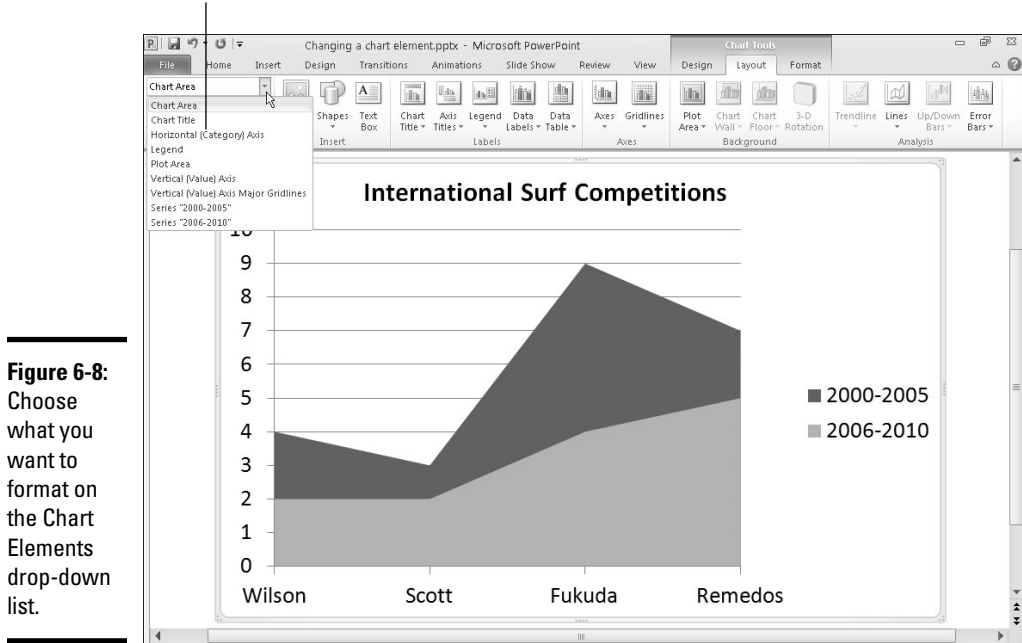


Figure 6-8: Choose what you want to format on the Chart Elements drop-down list.

The (Chart Tools) Layout tab also offers these convenient commands for changing the color of a chart element:



- ◆ **Plot area:** The *plot area* is the rectangle in which the chart's gridlines, bars, columns, pie slices, or lines appear. In some chart designs, the plot area is filled with color. To remove this color or choose a different color, click the Plot Area button and choose an option. Choose More Plot Area Options to open the Format Plot Area dialog box and select a new fill color.
- ◆ **3-D chart wall and chart floor:** Three-dimensional charts have chart walls and a chart floor. The *chart wall* forms the backdrop of a 3-D chart; the *chart floor* forms the bottom of the chart. Click the Chart Wall button and choose an option to remove the chart wall or change its color; click the Chart Floor button and choose an option to remove the chart floor or change its color.

Saving a Chart as a Template So That You Can Use It Again

If you go to the significant trouble of redecorating a chart and you expect to do it again the same way in the future, save your chart as a template. This way, you can call on the template in the future to create the same chart and not have to decorate it again. Perhaps you've created charts with your

company's colors or you've created a chart that you're especially proud of. Save it as a template to spare yourself the work of reconstructing it.

A chart template holds data series colors, gridline settings, plot area colors, font settings, and the like. It doesn't hold data. These pages explain how to save a chart as a template and how to create a chart with a template you created.

Saving a chart as a template

Follow these steps to make a template out of a chart:

1. **Save your file to make sure that the chart settings are saved on your computer.**
2. **Select your chart.**
3. **Go to the (Chart Tools) Design tab.**
4. **Click the Save As Template button.**



You can find this button in the Type group. You see the Save Chart Template dialog box.

5. **Enter a descriptive name for the template and click the Save button.**

Include the type of chart you're dealing with in the name. This will help you understand which template you're selecting when the time comes to choose a chart template.



By default, chart templates are saved in this folder in Windows 7 and Windows Vista: `C:\Users\Username\AppData\Roaming\Microsoft\Templates\Charts`. Chart templates are stored in this folder in Windows XP: `C:\Documents and Settings\Username\Application Data\Microsoft\Templates\Charts`. The templates have the `.ctrx` extension. If you want to delete or rename a template, open the Charts folder in Windows Explorer or Computer and do your deleting and renaming there. You can open the Charts folder very quickly by clicking the Manage Templates button in the Insert Chart dialog box (refer to Figure 6-3).

Creating a chart from a template

To create a chart from your own customized template, open the Create Chart dialog box (click the Chart button) and go to the Templates category. The dialog box shows a list of templates you created. Move the pointer over a template to read its name in a pop-up box. Select a template and click OK.

Chart Tricks for the Daring and Heroic

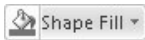
This chapter wouldn't be complete without a handful of chart tricks to impress your friends and intimidate your enemies. In the pages that follow, you discover how to make charts roll over and play dead. You also find out

how to decorate a chart with a picture, annotate a chart, display worksheet data alongside a chart, and create an overlay chart.

Decorating a chart with a picture

As shown in Figure 6-9, a picture looks mighty nice on the plot area of a chart — especially a column chart. If you have a picture in your computer that would serve well to decorate a chart, you are hereby encouraged to start decorating. Follow these steps to place a picture in the plot area of a chart:

1. **Select your chart.**
2. **On the (Chart Tools) Format tab, open the Chart Elements drop-down list and choose Plot Area.**
3. **Click the Shape Fill button and choose Picture on the drop-down list.**



You see the Insert Picture dialog box.

4. **Locate the picture you need and select it.**



Try to select a light-colored picture that will serve as a background. Book VIII, Chapter 3 explains how you can recolor a picture to make it lighter.

5. **Click the Insert button.**

The picture lands in your chart.

You may need to change the color of the *data markers* — the columns, bars, lines, or pie slices — on your chart to make them stand out against the picture. See “Changing a chart element’s color, font, or other particular,” earlier in this chapter.

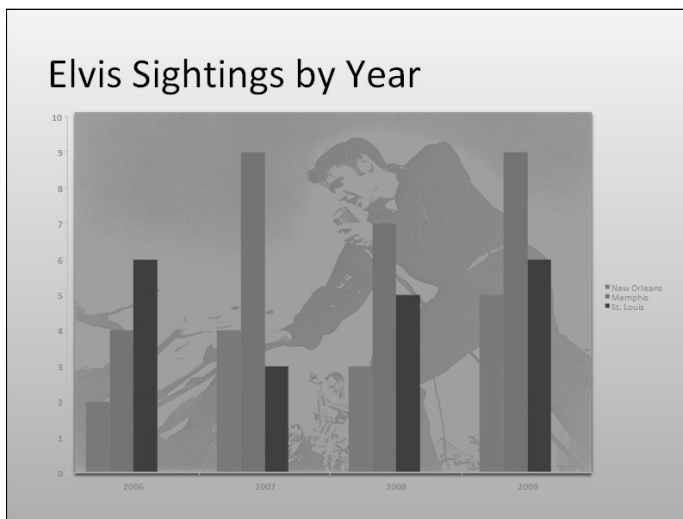
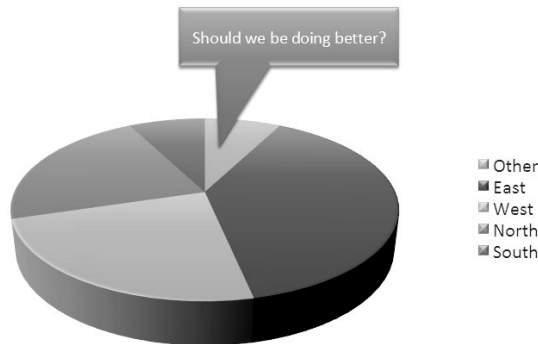


Figure 6-9:
Using a picture as the backdrop of a chart.

Annotating a chart

To highlight part of a chart — an especially large pie slice, a tall column, or a bar showing miniscule sales figures — annotate it with a callout text box and place the text box beside the pie slice, column, or bar. Figure 6-10 shows an example of an annotated chart. The annotation tells you that one sector isn't performing especially well and somebody ought to get on the ball.

Figure 6-10:
Annotations
point out
a chart's
salient
features.



To annotate a chart, select a callout shape, enter text in the callout shape, and connect the shape to part of your chart. Follow these steps to annotate a chart:

1. Select your chart and go to the (Chart Tools) Layout tab.



2. Click the Shapes button, scroll to the Callouts section of the drop-down list, and choose a callout.

Depending on the size of your screen, you may have to click the Insert button to get to the Shapes button.

3. Drag on your slide to draw the callout shape.

Book I, Chapter 8 explains drawing shapes in gory detail.

4. Type the annotation inside the callout shape.

5. Resize the callout shape as necessary to make it fit with the chart.

6. Drag the yellow diamond on the callout shape to attach the callout to the chart.

You probably have to do some interior decorating to make the callout color fit with the chart. Book I, Chapter 8 explains how to change an object's color.

Displaying the raw data alongside the chart

Showing the worksheet data used to produce a chart is sort of like showing the cops your ID. It proves you're the real thing. It makes your chart more authentic. If yours is a simple pie chart or other chart that wasn't generated with a large amount of raw data, you can display the data alongside your chart in a data table. Anyone who sees the table knows you're not kidding or fudging the numbers.

Select your chart and use of one of these techniques to place a table with the raw data below your chart:



- ◆ On the (Chart Tools) Layout tab, click the Data Table button and choose an option on the drop-down list.
- ◆ On the (Chart Tools) Design tab, open the Chart Layouts gallery and select a layout that includes a data table.



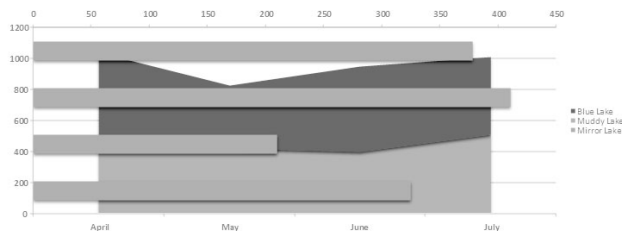
To format a data table, go to the (Chart Tools) Format tab, open the Chart Element drop-down list and choose Data Table. Then click the Format Selection button. You see the Format Data Table dialog box, where you can fill the table with color and choose colors for the lines in the table.

Creating an overlay chart

An *overlay chart* is a secondary chart that appears over another chart, the idea being to contrast two sets of data. Create an overlay chart by selecting one data series in a chart you already created and instructing Office to use the data in the series for the overlay chart. To create an overlay chart, the original chart must plot more than one data series. Figure 6-11 shows a bar chart overlaying a stacked area chart.

Figure 6-11: An overlay chart, in this case a bar chart overlaying a stacked area chart.

Yields at Blue, Muddy, and Mirror Lake



Follow these steps to create an overlay chart:

1. In a chart you created, click to select the data series that you will use to create the secondary chart.

The easiest way to select a data series is to click the chart itself, but you can also go to the (Chart Tools) Format tab and select a series in the Chart Elements drop-down list.

2. Right-click the data series you selected and choose Change Series Chart Type.

You see the Change Chart Type dialog box.

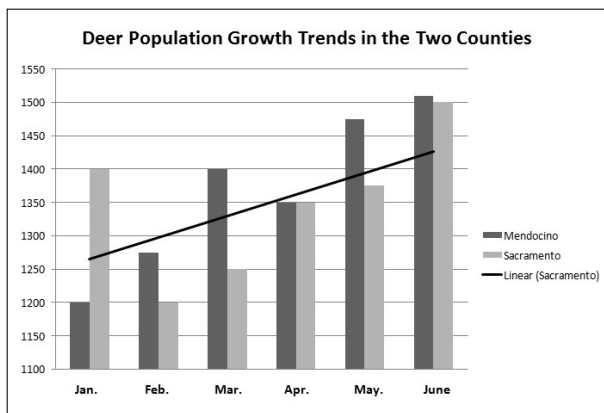
3. Choose a chart type for the overlay chart and click OK.

Be sure to click a chart type different from the one in the other chart.

Placing a trendline on a chart

Especially on column charts, a *trendline* can help viewers more clearly see changes in data. Viewers can see, for example, that sales are going up or down, income is rising or falling, or annual rainfall is increasing or decreasing. Figure 6-12 shows an example of a trendline on a chart. In this case, the trendline shows that the deer population in Sacramento County is rising.

Figure 6-12: A trendline helps viewers recognize changes in data.



Follow these steps to put a trendline on a chart:

1. On the (Chart Tools) Layout tab, open the Chart Elements drop-down list and choose the data series that you want to highlight with a trendline.



2. Click the Trendline button and choose a trendline option on the drop-down list.

You can choose More Trendline Options on the drop-down list to open the Format Trendline dialog box and choose additional types of trendlines.

To change the look of a trendline, right-click it and choose Format Trendline. In the Format Trendline dialog box, choose a line color and line style.

To remove a trendline from a chart, go to the (Chart Tools) Layout tab, click the Trendline button, and choose None on the drop-down list.

Troubleshooting a Chart

Sometimes tinkering with a chart opens a Pandora's box of problems. You find yourself having to correct little errors that appear in charts. Here are some shorthand instructions for fixing common chart problems:

- ◆ **The dates in the chart aren't formatted right.** To change the way in which dates are formatted on a chart, go to the (Chart Tools) Format tab, open the Chart Elements drop-down list, and choose Horizontal (Value) Axis or Vertical (Value) Axis. Then click the Format Selection button, and in the Format Axis dialog box, go to the Number category, select Date in the Category menu, and choose a date format.
- ◆ **The numbers in the chart aren't formatted right.** To change the number of decimal places, include comma separators in numbers, display currency symbols, or do all else that pertains to numbers, go to the (Chart Tools) Format tab, open the Chart Elements drop-down list, and choose Horizontal (Value) Axis or Vertical (Value) Axis. Then click the Format Selection button. You see the Format Axis dialog box. Visit the Number category and select options for displaying numbers.
- ◆ **“Category 1” or “Series 1” appears in the chart legend.** To direct you to the right place to enter data in Excel worksheets, phantom names such as “Category 1” and “Series 1” appear in worksheets. Sometimes these phantoms wind up in chart legends as well. To remove them, go to the (Chart Tools) Design tab and click the Edit Data button. You see the Excel worksheet, where the data range used to generate the chart is enclosed in a blue box. Drag the lower-right corner of the box so that the box encloses only the data you want for your chart.

- ◆ **In 3-D charts, small markers are obscured by large markers in the foreground.** For all the data markers to be shown in a 3-D chart, the smaller ones have to be in the foreground. To rearrange data markers, go to the (Chart Tools) Design tab and click the Select Data button to open the Select Data Source dialog box. Then select a series and click the Up or Down button to rearrange the series in your chart. Series that are high on the list go to the back of the chart; series that are low on the list go to the front.
- ◆ **The chart doesn't gather all data from the worksheet.** On the (Chart Tools) Design tab, click the Edit Data button, and in the Excel worksheet that stores data for your chart, enlarge the blue data-range box so that it encloses all your data. You can enlarge the box by dragging its lower-right corner.
- ◆ **The scale is too big for my chart.** Especially if the scale range on a chart is small, the scale can be too big compared to the data markers. To change the scale range, go to the (Chart Tools) Layout tab, click the Axes button, choose the appropriate axis option on the drop-down list, and choose More Options. Then, in the Format Axis dialog box, select the Fixed option button and enter a Maximum value to establish the top of the scale for your chart. For more details, see "Deciding how the chart's scale and axes labels are presented," earlier in this chapter.

