

Using Charts in a Presentation 6

LESSON SKILL MATRIX

Skill	Exam Objective	Objective Number
Building Charts	Insert charts.	3.3.2
	Import charts from external sources.	3.3.6
Modifying the Chart Type and Data	Modify chart type.	3.3.3
Modifying Chart Elements	Add legends to charts.	3.3.4
	Modify chart parameters.	3.3.5
Formatting a Chart	Create and modify chart styles.	3.3.1

WILEY



KEY TERMS

- charts
- chart area
- chart element
- data marker
- data series
- legend
- plot area

©Tongsham/iStockphoto



©Tongshan/iStockphoto

You are the general manager of the Alpine Ski House, a small ski resort. One of your responsibilities is to provide information to the group of investors who share ownership of the resort. You will use PowerPoint presentations to convey that information. PowerPoint's charting capabilities enable you to communicate financial data in a visual way that makes trends and comparisons easy to understand. In this lesson, you will learn how to insert different types of charts, as well as how to modify and format a chart so it displays your data in the most attractive and useful way.

SOFTWARE ORIENTATION

A PowerPoint Chart

Charts can help your audience understand relationships among numerical values. Figure 6-1 shows a sample PowerPoint chart with some standard chart features labeled.

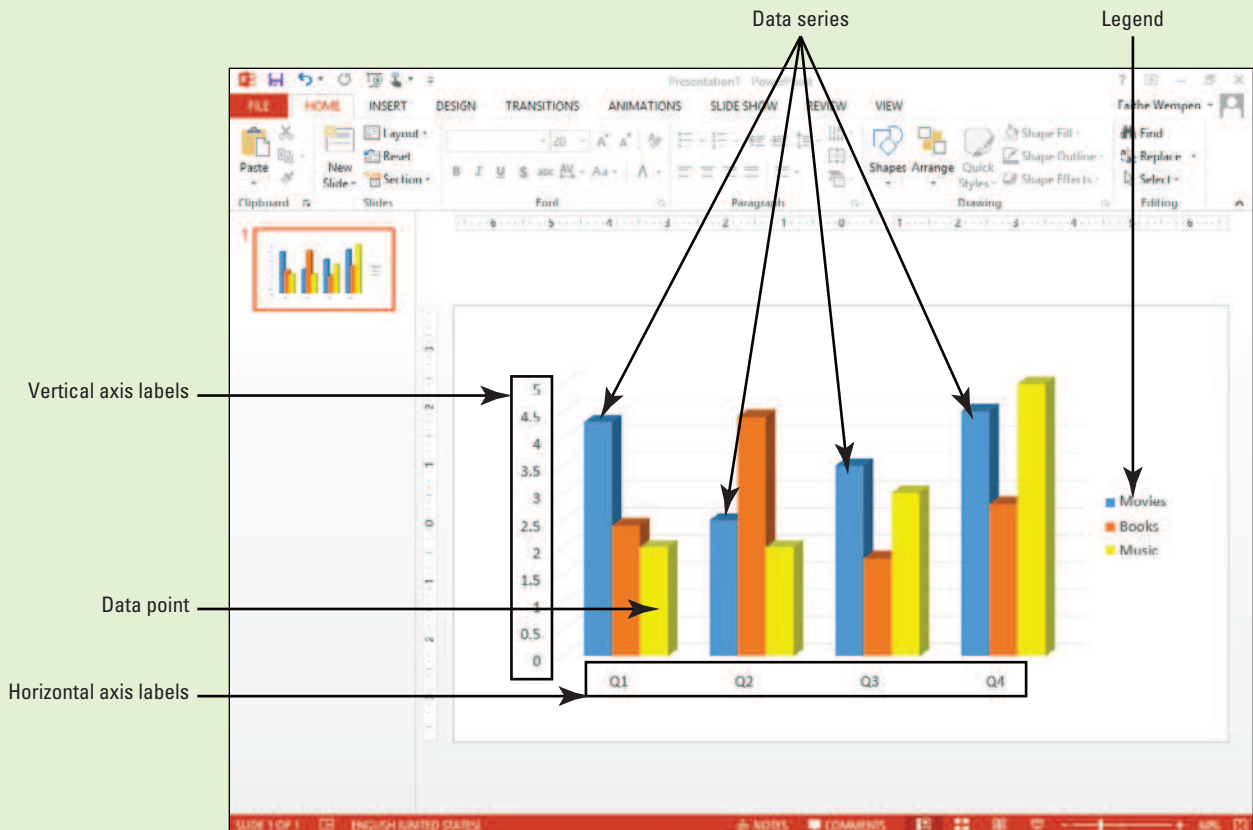


Figure 6-1
Components of a chart

A chart can compare multiple data series (see Figure 6-1) with each series represented by a different color or pattern. A **legend** explains what each color represents. Category axis labels explain what the groupings of bars represent (on the horizontal axis) and vertical axis labels explain the meaning of the numeric values (on the vertical axis). Optional elements such as gridlines behind the chart help make the chart more readable.

The Bottom Line

CERTIFICATION
READY? 3.3.2

How do you insert charts?

BUILDING CHARTS

Charts are visual representations of numerical data. Chart features such as columns, bars, lines, or pie slices make it easy to understand trends or compare values. Once you have created a chart in PowerPoint, you can easily modify the data on which the chart is based, choose a different type of chart to display the data, change the layout of the chart, and modify its formats.

Inserting a Chart from a Content Placeholder

Excel opens when you create a chart in PowerPoint, and you enter the data in Excel that you want to plot on the chart. Then when you return to PowerPoint, the chart appears with the data presented. As with tables and other objects such as diagrams and pictures, the easiest way to insert a chart is to click the Insert Chart icon in any content placeholder. PowerPoint guides you the rest of the way to complete the chart. In the following exercise, you will place a chart on a slide using a content placeholder.

STEP BY STEP

Insert a Chart



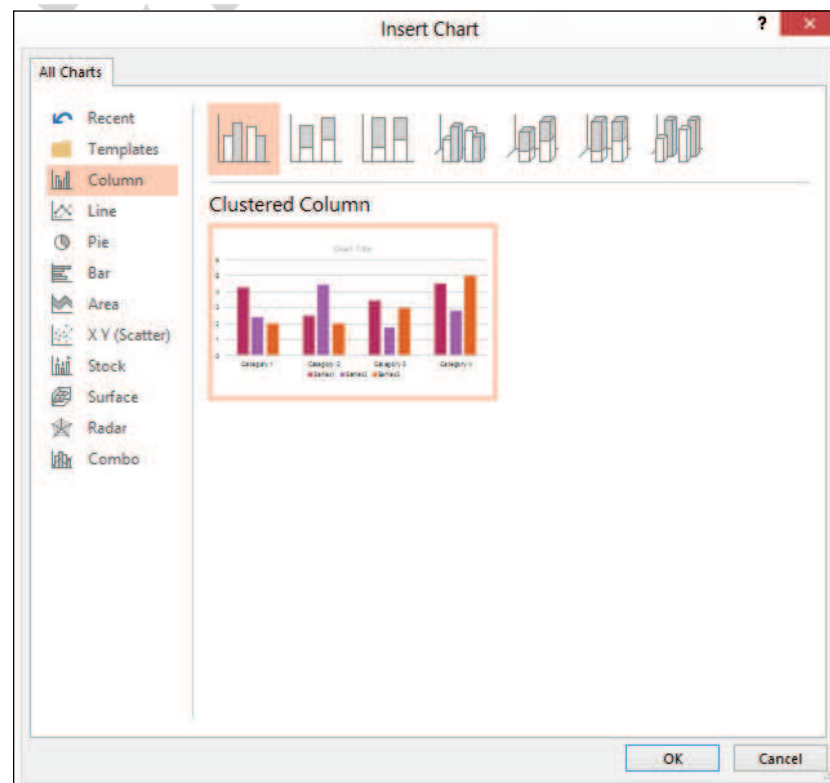
GET READY. Before you begin these steps, make sure that your computer is on. Log on, if necessary.



1. **START** PowerPoint if the program is not already running.
2. Locate and open the *Revenues* presentation and save it as *Revenues Final*.
3. Go to **slide 3**. Click the **Insert Chart** icon in the center of the content placeholder. The Insert Chart dialog box opens (see Figure 6-2), showing chart types and subtypes.

Figure 6-2

Select a chart type and subtype



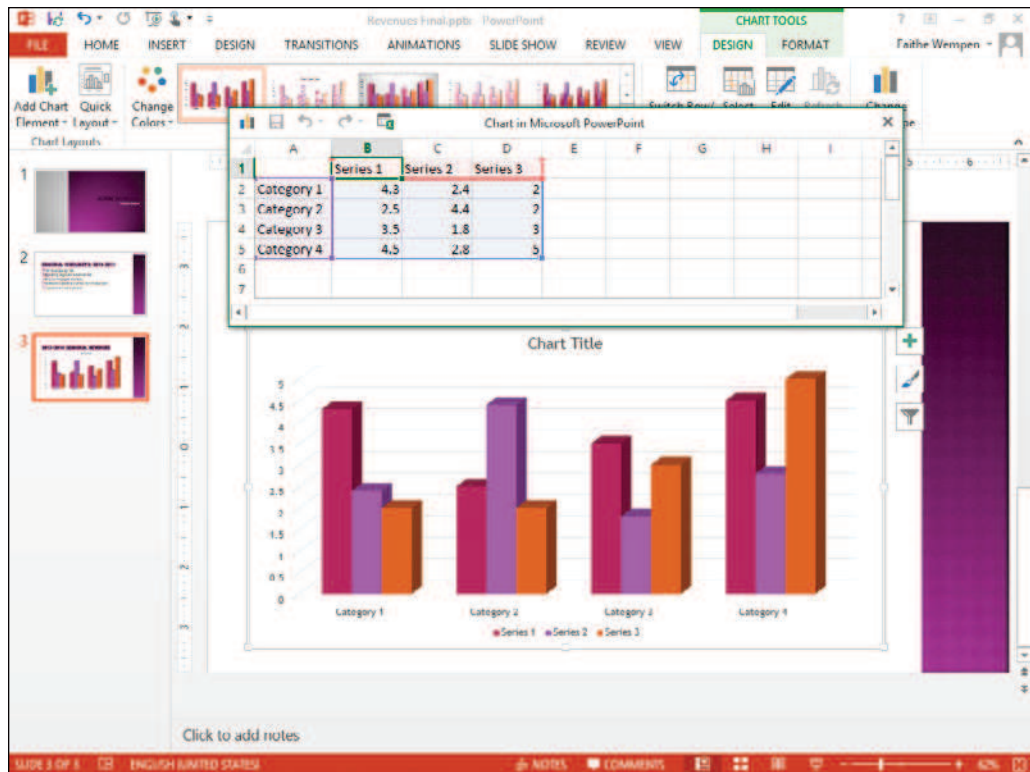
Another Way

To insert a chart on a slide that does not have a content placeholder, click the Chart button on the Insert tab.

4. Click the **3D Clustered Column** chart subtype (the fourth from the left in the row of icons across the top of the dialog box).
5. Click **OK**. A Chart in Microsoft PowerPoint window opens on top of the PowerPoint window containing the sample data on which the chart is based (see Figure 6-3). It is similar to an Excel worksheet. Notice the bright-blue border that surrounds the data range. This range border is used to indicate the data being charted.

Figure 6-3

A worksheet opens for entering the data for the chart

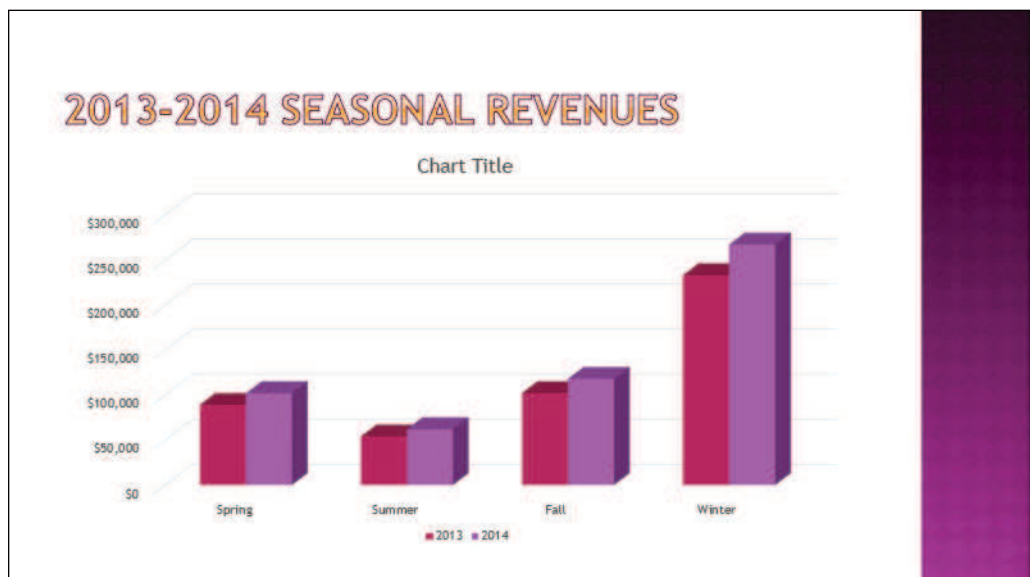


6. Drag the marker in the **bottom right corner of the range border** so that the range includes only cells **A1:C5**.
7. Select **Column D**, and then press **Delete** to clear the selected cells.
8. Click cell **B1** and type **2013**, replacing the current entry. Then press **Tab** to move to cell **C1**. Type **2014**, and press **Enter**.
9. Beginning in cell **A2**, type the following data in Excel to complete the chart:

Spring	\$89,000	\$102,000
Summer	\$54,000	\$62,000
Fall	\$102,000	\$118,000
Winter	\$233,000	\$267,000
10. Close the **worksheet window**. The chart appears with the data you entered (see Figure 6-4).

Figure 6-4

The completed chart



11. SAVE the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

As you saw in the previous exercise, a worksheet window opens to allow you to insert the data that creates the chart. You can edit the worksheet data any time you want by clicking the Edit Data button on PowerPoint's Chart Tools Design tab (which appears when a chart is selected). When you click Edit Data in the Data group, a menu appears offering for you to edit the data in PowerPoint (Edit Data) or in Excel (Edit Data in Excel 2013).

If you want to use data from an existing Excel workbook, open that workbook and Copy and Paste the data into the sheet created for the chart's data. Adjust the range border as needed.

Each PowerPoint chart type is designed to present a specific type of data. When you create a chart, you should select the chart type that will best display your data. Some of the most commonly used chart types are described below:

- **Column charts:** Column charts are generally used for showing data changes over a period of time or for comparing items. Categories (such as Quarter 1 or 2014) display on the horizontal axis (the X axis), and values display on the vertical axis (the Y axis).
- **Bar charts:** Bar charts are often used to compare individual items. They are especially useful when values are durations. Categories display on the vertical axis and values display on the horizontal axis.
- **Line charts:** Line charts are best used to display values over time or trends in data. Categories are usually evenly spaced items, such as months or years, and display on the horizontal axis.
- **Pie charts:** Pie charts are used to show the relationship of an individual category to the sum of all categories. Data for a pie chart consists of only a single column or row of data in the worksheet.
- **Area charts:** Area charts are used to show the amount of change over time as well as total value across a trend. Like a pie chart, an area chart can show the relationship of an individual category to the sum of all values.

You can learn more about chart types and subtypes and how they are designed to be used by consulting PowerPoint's Help files.

**CERTIFICATION
READY? 3.3.6**

How do you import charts from external sources?

Importing a Chart from Excel

You can create the chart in Excel, and then copy the completed chart to PowerPoint using the Clipboard. Excel's charting tools are virtually identical to those in PowerPoint, so there is little reason to create the chart in Excel first, but if the chart already exists in Excel, copying it to PowerPoint can save some time.

STEP BY STEP

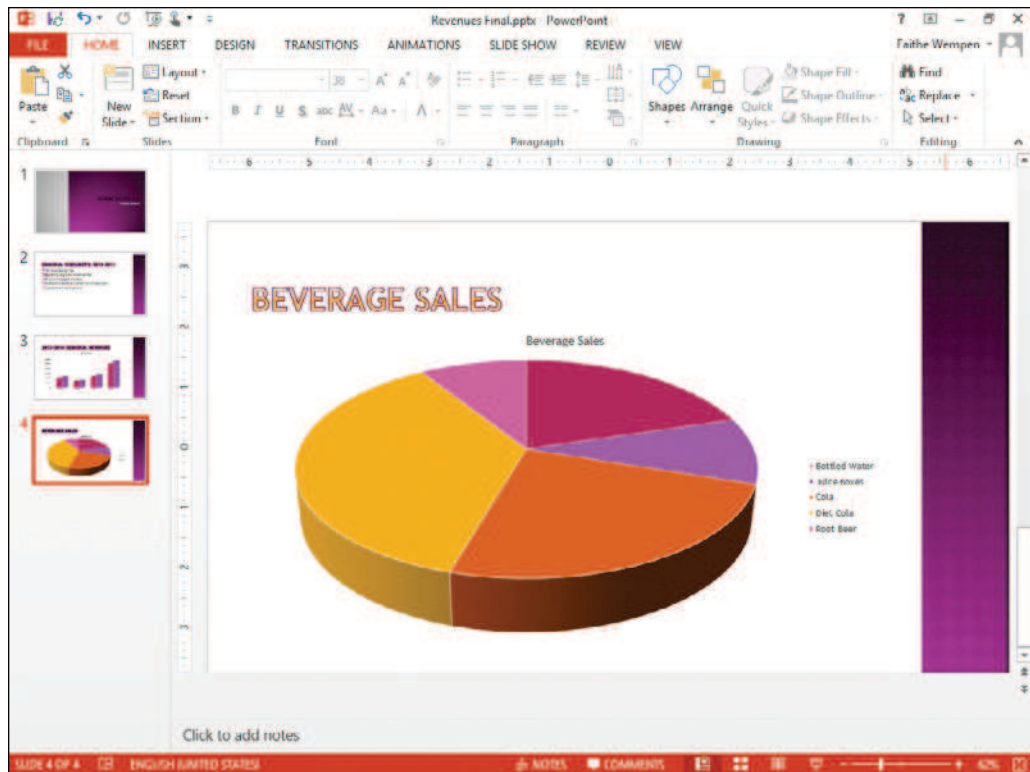
Import an Excel Chart

USE the *Revenues Final* presentation that is still open from the previous exercise.

1. With slide 3 selected, click **New Slide** on the Home tab. A new slide appears at the end of the presentation.
2. Open Microsoft Excel, and open the *Beverages* file from the data files for this lesson. Select the **chart**, and then press **Ctrl+C** to copy it to the Clipboard.
3. Switch back to PowerPoint and select the **outer frame of the content placeholder** box. Click **twice** on it to make sure the placeholder box itself is selected.
4. Press **Ctrl+V** to paste the chart into the placeholder.
5. Click in the slide's title **placeholder box** and type **Beverage Sales** (see Figure 6-5). Do not worry that the same title also appears above the chart; you will learn later in this lesson how to fix that.

Figure 6-5

The imported chart



6. Switch back to Excel, and exit Excel.
7. In PowerPoint, **SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

Resizing and Moving a Chart

In addition to moving the individual elements within a chart, you can move and resize the chart itself. The dotted areas on the chart's border are sizing handles. You can resize any object by dragging a side or corner handle of its container. Note that if you drag a side handle, you may "stretch" the container, distorting its contents. Hold down Shift to maintain the height-width ratio (the aspect ratio). You can move any object, including a chart, by dragging it by its border. When you see the four-headed pointer, just click and drag. In this exercise, you will resize and move a chart.

STEP BY STEP

Resize and Move a Chart

USE the *Revenues Final* presentation that is still open from the previous exercise.

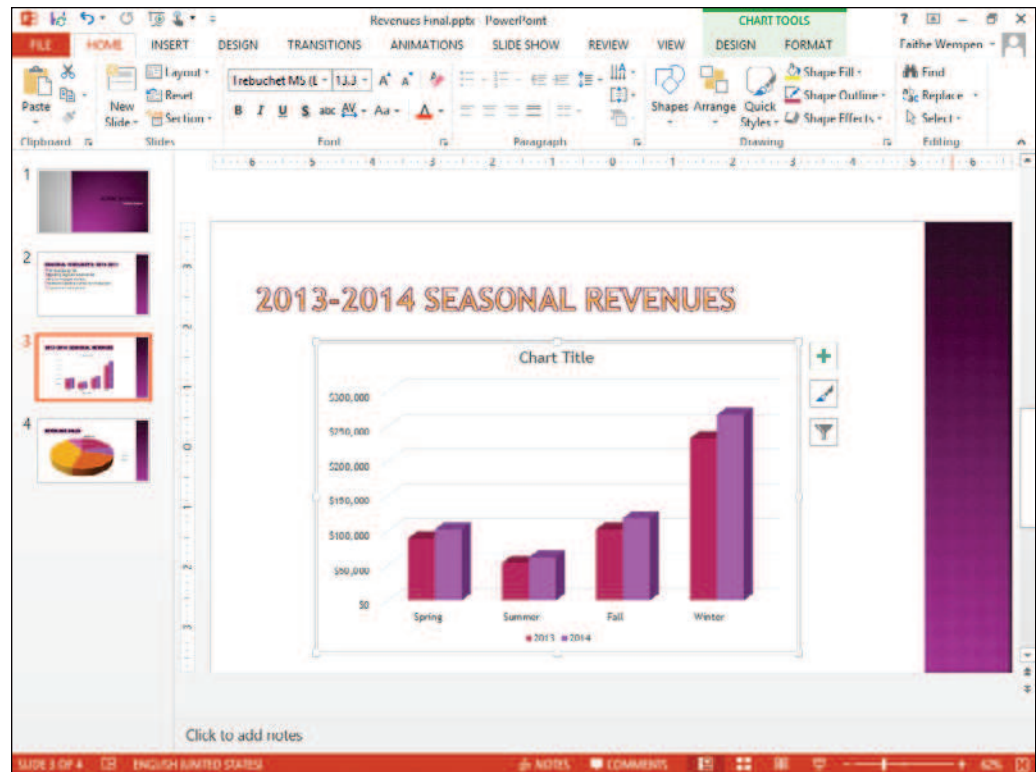
1. Select the chart on **slide 3**.
2. Position the pointer on the **lower-right corner of the chart's frame**, so the mouse pointer becomes a double-headed arrow.
3. Drag **inward to decrease the size of the chart** by about **2"** in width.

Take Note Optionally, you can hold down Shift while resizing to maintain the aspect ratio.

4. Position the pointer **anywhere on the chart's frame** except on one of the sizing handles. The mouse pointer becomes a **four-headed arrow**.
5. Drag to reposition the chart so that it is **centered attractively** on the slide (see Figure 6-6).
6. Click **outside of the placeholder**, and then **SAVE** the presentation.

Figure 6-6

The chart has been resized and moved



PAUSE. LEAVE the presentation open to use in the next exercise.

MODIFYING THE CHART TYPE AND DATA

The Bottom Line

CERTIFICATION
READY? 3.3.3

How do you modify
the chart type?

It is not uncommon to have to modify a chart after it has been created. You can change the data on which the chart is based at any time or change the way in which the data is plotted. You can also add or remove chart elements as desired to customize your chart.

Choosing a Different Chart Type

After creating a chart, you may choose to change its type and/or its layout. If you decide that the chart type you have chosen does not display the data the way you want, you can choose a different chart type or subtype.

Different chart types display the data series differently. A **data series** consists of all the data points for a particular category, such as all the points for each season's 2014 values. A data point, sometimes called a **data marker**, is one point in a series. The default chart type is a Column chart. In this exercise, you will change a chart's type.

STEP BY STEP

Choose a Different Chart Type

USE the *Revenues Final* presentation that is still open from the previous exercise.

1. In PowerPoint, select the chart on **slide 3** and then click the **Change Chart Type** button on the Chart Tools Design tab. The Change Chart Type dialog box opens showing the same chart types that appeared when you first created the chart.
2. On the list of chart types at the left, click **Bar**.
3. Click the **3-D Clustered Bar** subtype, and then click **OK**. The columns change to horizontal bars (see Figure 6-7).
4. **SAVE** the presentation and close it.

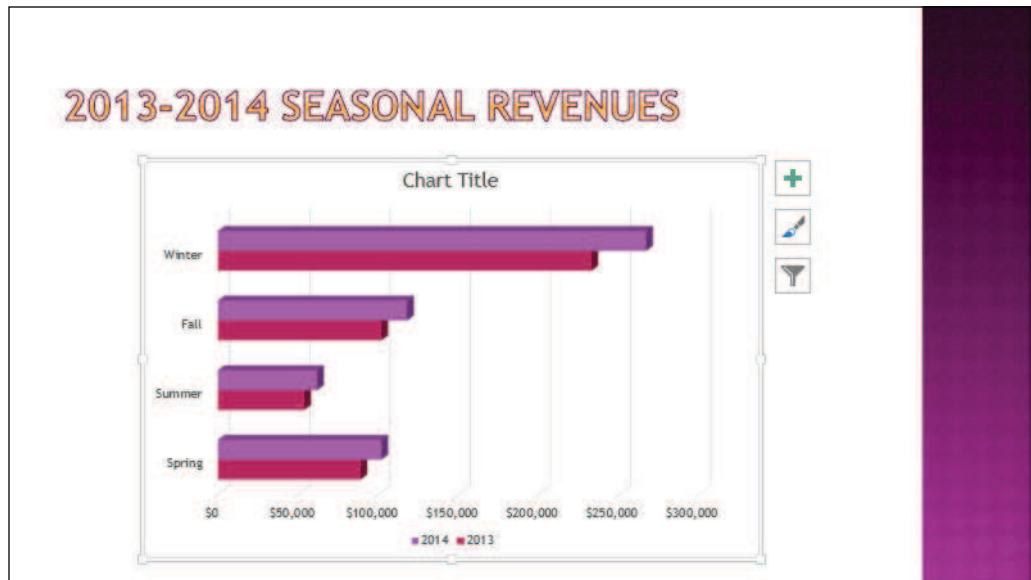


Another Way

You also can use a shortcut to change the chart's type. Right-click almost anywhere in the chart and then click Change Chart Type on the shortcut menu.

Figure 6-7

A new chart type applied



PAUSE. Leave PowerPoint open for the next exercise.

You can change any chart type to any other type, but the result may not always be what you expect, and you may lose some data. For example, when you change from any multi-series chart (such as a clustered bar or line) to a pie chart, only the first data series appears on the chart since a pie chart can only display one set of data.

If you apply a chart type that does not display your data as you want, use Undo to reverse the change, and then try another chart type.



Troubleshooting

Changing from a 2-D chart type to a 3-D type can yield unexpected results. For some chart types, PowerPoint may display the new chart type in a rotated perspective view that you might not like. It is best to decide when you create the original chart whether you want it to use 2- or 3-D and then stick with those dimensions when making any change to the chart type.

Editing a Chart's Data

Chart data remains “live” as long as the chart remains on the slide. You can reopen the chart worksheet at any time to adjust the data. Changes you make to the chart worksheet window are immediately reflected on the PowerPoint chart. Use the Edit Data button to reactivate the worksheet window in Excel, and make your changes there. You can also use the Switch Row/Column button to plot the data on different axes.

Before you can edit chart data, you must select it. To select an individual cell in the data sheet, click that cell. To select ranges of cells, drag across them, or click a column or row header to select the entire row or column. In the following exercise, you will practice editing chart data, including selecting individual cells and entire columns.

STEP BY STEP

Edit a Chart's Data



GET READY. To edit a chart's data, do the following:



1. **OPEN** the *Pricing* presentation and save it as *Pricing Final*. Examine the **information** on the slides, and notice that the **dates on the title slide** do not agree with the dates on the chart.
2. Go to **slide 2** and click the **chart** to select it.

3. On the Chart Tools Design tab, click the **Edit Data** button in the Data group. The worksheet window opens.
4. Click cell **B1** and type **2011**, replacing the current entry there. Then press **Tab** to move to cell **C1**, and type **2012**, replacing the current entry. Repeat the process for **D1 (2013)** and **E1 (2014)**.
5. Click **column B's column header** to select the entire column, and then **right-click** the column and click **Delete**. The data in the worksheet should now resemble Figure 6-8.

Figure 6-8

The edited data for the chart

Edit Data in Microsoft Excel

	A	B	C	D	E	F	G	H	I
1		2012	2013	2014					
2	Lift Pass	90	115	125					
3	Rental	300	335	375					
4									
5									
6									
7									

6. Click the **Edit Data in Microsoft Excel** icon on the worksheet window's toolbar. The data opens in Excel.
7. Click cell **A3** and type **Equipment Rental**, replacing the current entry there.
8. Close the **Excel window** and return to **PowerPoint**. Select the chart again if it is not still selected.
9. If the Switch Row/Column button is available on the Chart Tools Design tab, click it to **switch rows and columns**. If it is not, do the following to switch rows and columns:
 - a. Click **Select Data**. The Select Data Source dialog box opens.
 - b. Click **Switch Row/Column** (see Figure 6-9).
 - c. Click **OK**.

Figure 6-9

Switch rows and columns from the Select Data Source dialog box if the Switch Row/Column button is unavailable on the Chart Tools Design tab

Switch Row/Column

Average 3-Day Package Prices

3-Day Package Price

Select Data Source

Chart data range: #Sheet1!\$A\$3:\$D\$3

Legend Entries (Series)

- Lift Pass
- Equipment Rental

Horizontal (Category) Axis Labels

- 2012
- 2013
- 2014

Hidden and Empty Cells

OK Cancel

10. Click the **Switch Row/Column** button on the Chart Tools Design tab to switch the rows and columns back to their original settings. (Even if the button was unavailable in step 9, it will be available now.)
11. Close the worksheet window if it is still open.
12. **SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

The Switch Row/Column feature can be very helpful in adjusting the way data appears in a chart. In essence, the legend entries and the horizontal axis labels switch places. If you find that your chart does not seem to show the data as you wish, try switching rows and columns for a different perspective on the data.

MODIFYING CHART ELEMENTS

The Bottom Line

Chart elements are the optional parts of a chart, such as the legend, title, data labels, data table, axes, axis labels, and so on. You can apply Quick Layouts that apply preset combinations of these elements, and you can turn each element type on or off individually and apply different options to it.

Applying and Modifying a Quick Layout

PowerPoint supplies several preformatted chart layouts that you can apply quickly to modify the default layout. These layouts may adjust the position of features, such as the legend, or add chart components such as titles and data labels. In this exercise, you will choose a different chart layout.

PowerPoint charts can be customized in a variety of ways by adding and removing chart elements such as titles, labels, and gridlines. If you do not want to take the time to add elements, PowerPoint's quick layouts can provide you with some standard appearance options to choose from. You will learn how to add elements yourself later in this lesson.

STEP BY STEP

Apply and Modify a Quick Layout

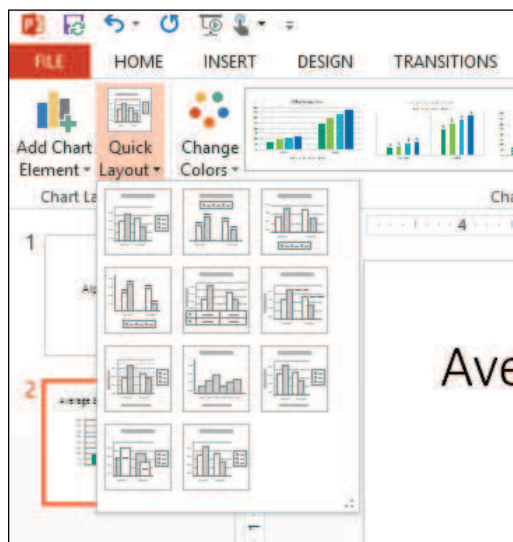
USE the *Pricing Final* presentation that is still open from the previous exercise.

1. With the chart on slide 2 selected, click the **Quick Layout** button on the Chart Tools Design tab. The Chart Layout gallery displays (see Figure 6-10).

Take Note The thumbnails in the Chart Layout gallery show in miniature the new layout and elements of the chart.

Figure 6-10

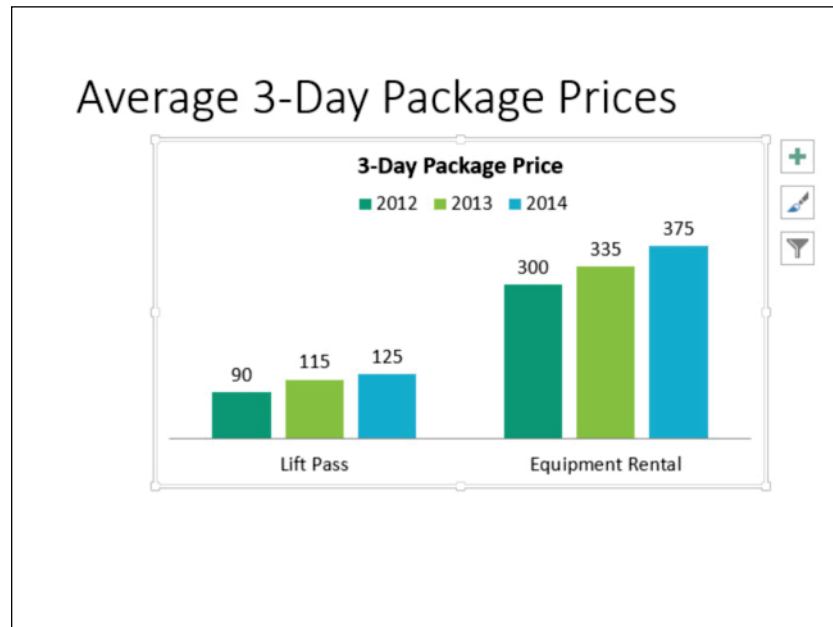
The Chart Layout gallery



- Click **Layout 2** in the gallery. The layout is modified to place the legend above the chart and add data labels to each of the bars (see Figure 6-11).

Figure 6-11

The chart with Layout 2 applied to it



- Click the **Add Chart Element** button to open a menu, point to **Chart Title**, and click **None**. The chart title is removed. (It is not necessary because the slide itself provides a title.)
- SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

Working with a Legend

As you learned earlier in this lesson, a legend is a key that tells what each color or pattern in a chart represents. There are many options available for adding, positioning, and customizing legends.

A *legend* is a very important chart element, because without it, the audience has no way of knowing what each colored bar, dot, line, or pie slice represents. In this exercise, you will practice adding, modifying, and moving a legend.

**CERTIFICATION
READY? 3.3.4**

How do you add legends to charts?

STEP BY STEP

Work with a Legend

USE the *Pricing Final* presentation that is still open from the previous exercise.


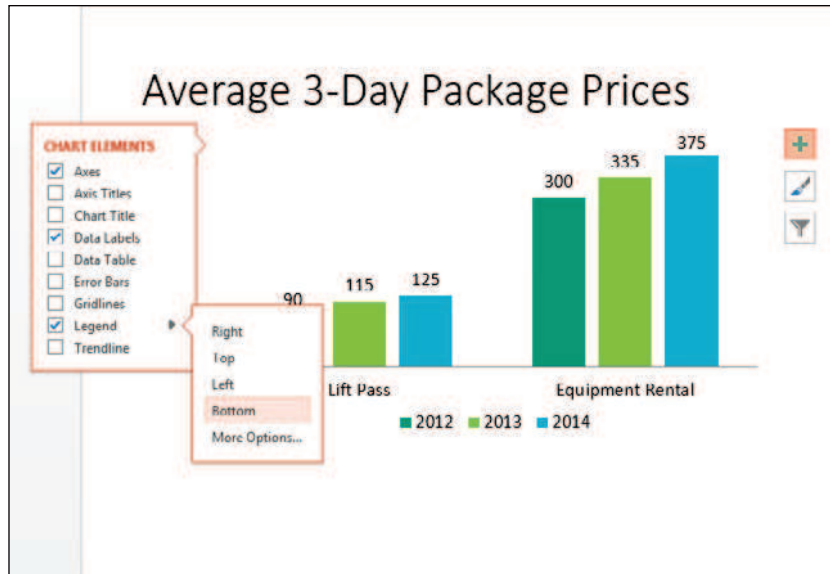
- With the chart on slide 2 selected, click the **Chart Elements button**  to the right of the chart. The Chart Elements list appears.
- Click the **Legend** check box. The legend disappears.
- Click the **Legend** check box again. The legend reappears.
- An arrow appears to its right. Then click the **arrow** to display a submenu.
- Click **Bottom**. The legend moves below the chart (see Figure 6-12).

Figure 6-12

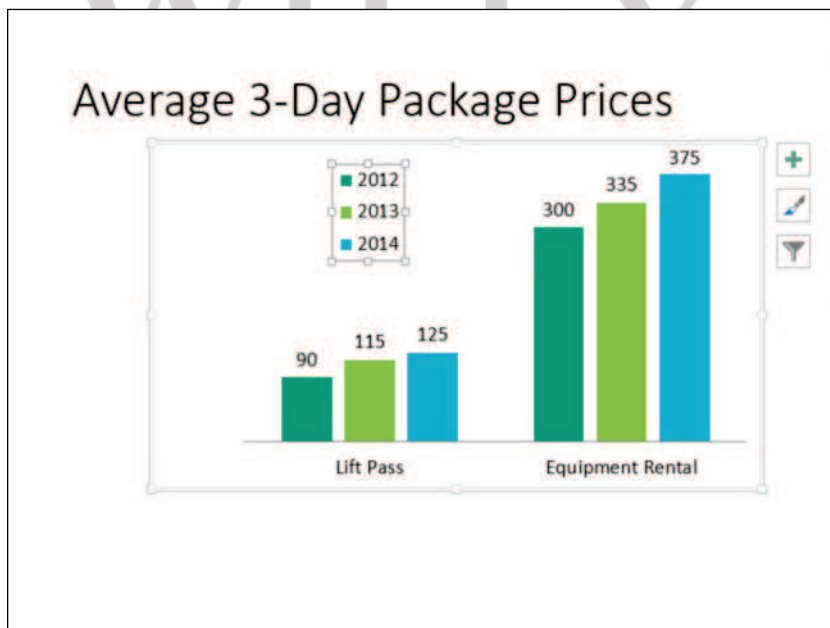
Set legend options from the Legend submenu



6. Click the **arrow** next to Legend to redisplay the submenu, and click **More Options**. The Format Legend task pane opens.
7. Under Legend Position, click **Left**. The legend moves to the left of the chart area.
8. Close the **task pane**.
9. Position the mouse pointer **over the border of the legend** and drag it to place it in the empty space above the Lift Pass bars (see Figure 6-13).

Figure 6-13

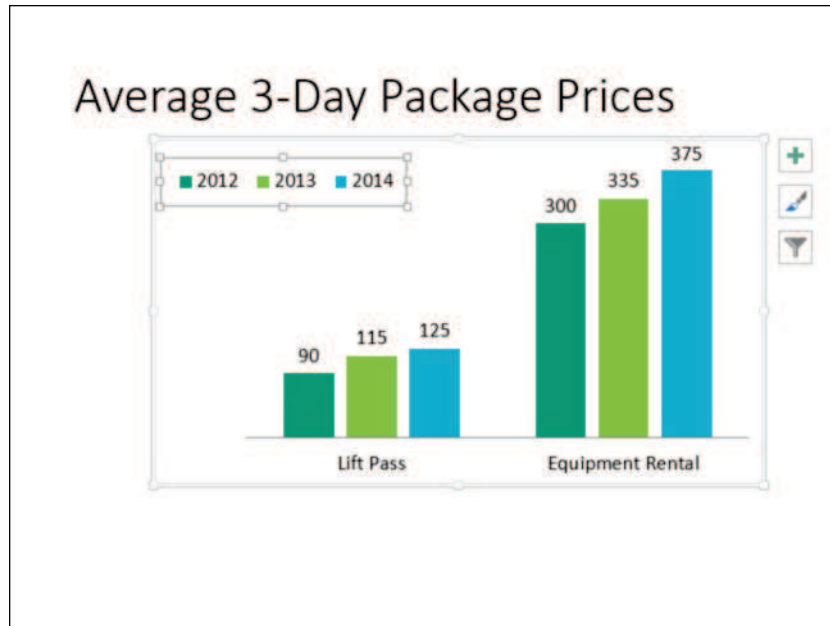
Position the legend over the first set of bars



10. Drag the **left side selection handle** on the legend's frame to widen the legend so that all its content fits on a single line, and drag the bottom selection handle to decrease the legend height (see Figure 6-14).

Figure 6-14

Resize the legend frame so the legend appears horizontally



11. On the Chart Tools Design tab, click **Add Chart Element**, point to **Legend**, and click **Bottom** to move the legend below the chart.
12. **SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

Adding and Deleting Other Chart Elements

Elements such as axis labels, a chart title, and data labels make your chart more informative. Use the tools on the Chart Tools Design tab to turn chart elements on or off or adjust settings for a particular element. The controls for these elements are very similar to the controls for the legend that you learned about in the preceding exercise.

**CERTIFICATION
READY?** 3.3.5

How do you modify chart parameters?

As you saw in the preceding exercise, the Chart Tools Design tab has an Add Chart Element button that opens a menu system for controlling chart elements of many different types. Each type of that menu opens a submenu that includes several basic choices (including None) plus a More command that opens a task pane for controlling that element.

You can remove chart elements by choosing None from their submenu, or in some cases by simply clicking the item to select it and then pressing Delete.

In this exercise, you will practice adding and deleting chart elements.

STEP BY STEP

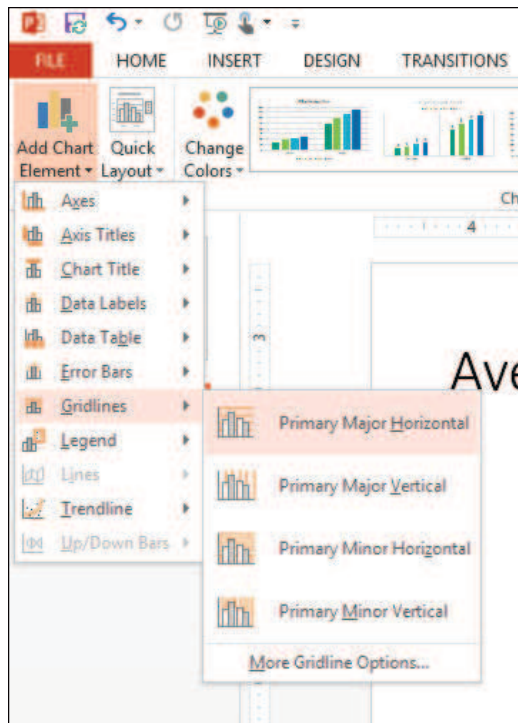
Add and Delete Chart Elements

USE the *Pricing Final* presentation that is still open from the previous exercise.

1. Click the chart on **slide 2** to select it, and click the **Chart Tools Design** tab.
2. Click the **Add Chart Element** button, point to **Gridlines**, and click **Primary Major Horizontal** (see Figure 6-15). Horizontal gridlines are added to the chart.

Figure 6-15

Adding horizontal gridlines to the chart



3. Click the **Add Chart Element** button, point to **Data Labels**, and click **None**. The data labels disappear from the chart.
4. Click the **chart's outer frame** to re-select the entire chart if it is not already selected.
5. Click the **Add Chart Element** button, point to **Axes**, and click **Primary Vertical**. Numbers appear along the vertical axis.
6. Click the **Add Chart Element** button, point to **Data Table**, and click **More Data Table Options**. The Format Data Table task pane opens.
7. Clear the **Show legend keys** check box.
8. Clear the **Vertical** and **Outline** check boxes (see Figure 6-16).

Figure 6-16

Customize the data table options

Data table

	Lift Pass	Equipment Rental
2012	90	300
2013	115	385
2014	125	375

9. Close the **task pane**.
10. Drag the **bottom selection handle** on the chart frame downward to increase the chart's height by approximately **1"**, so that it is less crowded-looking.
11. **SAVE** the presentation and close it.

PAUSE. LEAVE PowerPoint open to use in the next exercise.

Applying elements such as a chart title or axis titles generally reduces the size of the plot area and the data markers. You can offset this adjustment by resizing the chart, as you did in step 10, and/or by reducing the font size of axis labels and titles, as you will learn later in this lesson.

FORMATTING A CHART

The Bottom Line

Once you have final data and have added the elements you want to include in the chart, you can make final adjustments to the size and position of the chart and its elements and apply final formatting. Use the tools on the Chart Tools Format tab to apply formats to any part of a chart, including the entire chart area, the data series markers, the legend, and the chart's labels and titles.

CERTIFICATION READY? 3.3.1

How do you create and modify chart styles?

Applying Chart Styles

Chart styles provide instant formatting to change the look of a chart. A style can change colors and borders of data markers, apply effects to the data markers, and apply color to the chart or plot area. You can use a style to format a chart if you do not have time to adjust formatting of chart elements such as data series or the individual data points in a series. In this exercise, you apply a style to a chart and then modify it.

STEP BY STEP

Apply and Modify a Chart Style

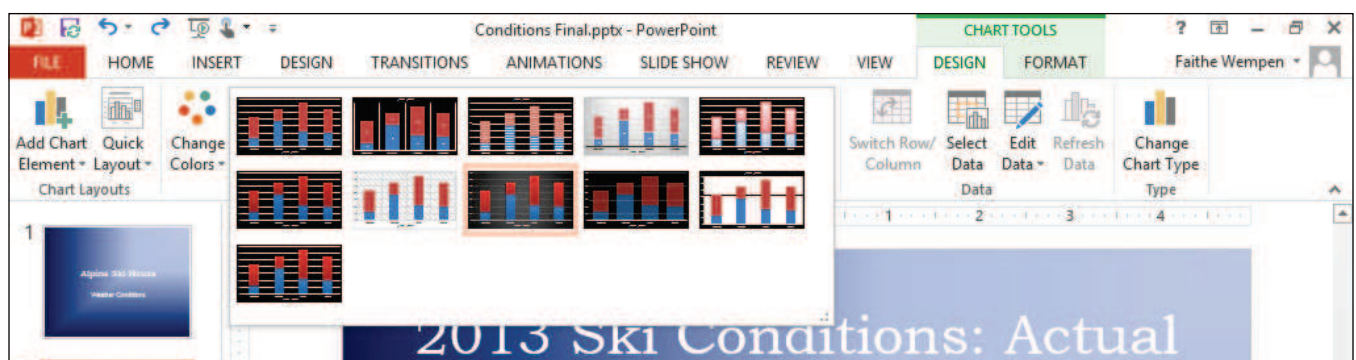
GET READY. To apply a quick style to a chart, perform the following steps:



1. **OPEN** the **Conditions** presentation and save it as **Conditions Final**.
2. Go to **slide 2** and click the **chart** to select it.
3. On the Chart Tools Design tab, click the **More** button in the Chart Styles group. The Chart Styles gallery appears (see Figure 6-17).

Figure 6-17

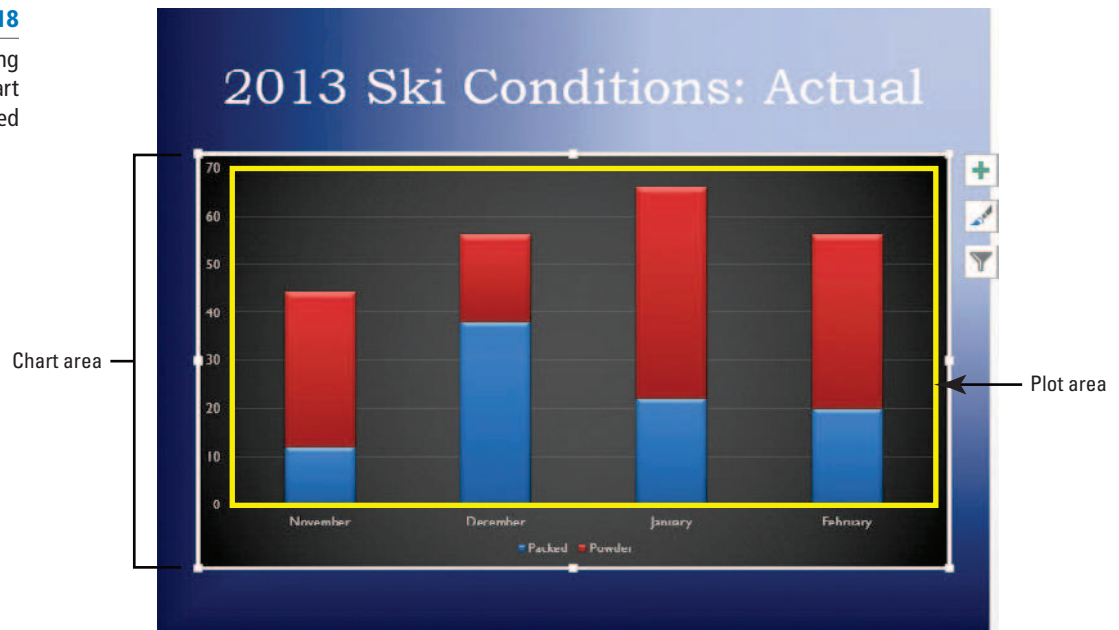
The Chart Styles gallery



4. Click **Style 8**. This style applies a new theme color, bevel effects, and a different chart background color (see Figure 6-18).

Figure 6-18

The chart is more interesting with the new Chart Style applied



5. **SAVE** the presentation and then **CLOSE** the file.

PAUSE. LEAVE PowerPoint open to use in the next exercise.

Changing the Fill of the Chart Area

To make a chart really “pop” on a slide, you can change its default fill. When you change the **chart area** fill, you format the entire area within the chart’s frame. When choosing a fill for the chart area, you have familiar choices: you can select a theme color, picture, gradient, or texture. Take care that colors harmonize with the current theme and that pictures or textures do not overwhelm the other chart elements.

Do not confuse the chart area with the **plot area**. Look back at Figure 6-18 to see the difference. Whereas the chart area includes everything inside the chart’s frame the plot area includes only the area within the chart’s frame where the data is plotted. The plot area typically excludes the extra elements such as the legend, the chart title, and the data table, but some chart styles place the legend overlapping the plot area.

In this exercise, you will select the chart area and change the chart area’s fill.

STEP BY STEP

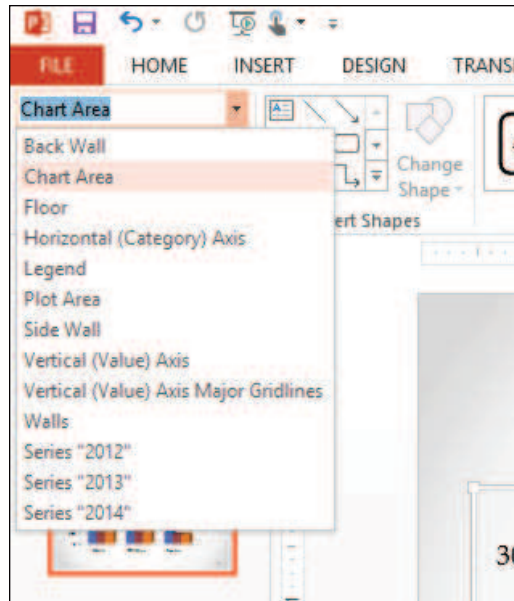
Change the Chart Area Fill

GET READY. To apply a chart area fill, follow these steps:

1. **OPEN** the *Admissions* presentation and save it as *Admissions Final*.
2. Select the **chart on slide 2**, and then click the **Chart Tools Format** tab.
3. If Chart Area does not already appear in the Chart Elements box, open the drop-down list in the **Current Selection** group and select it (see Figure 6-19).

Figure 6-19

Make sure the chart area is selected



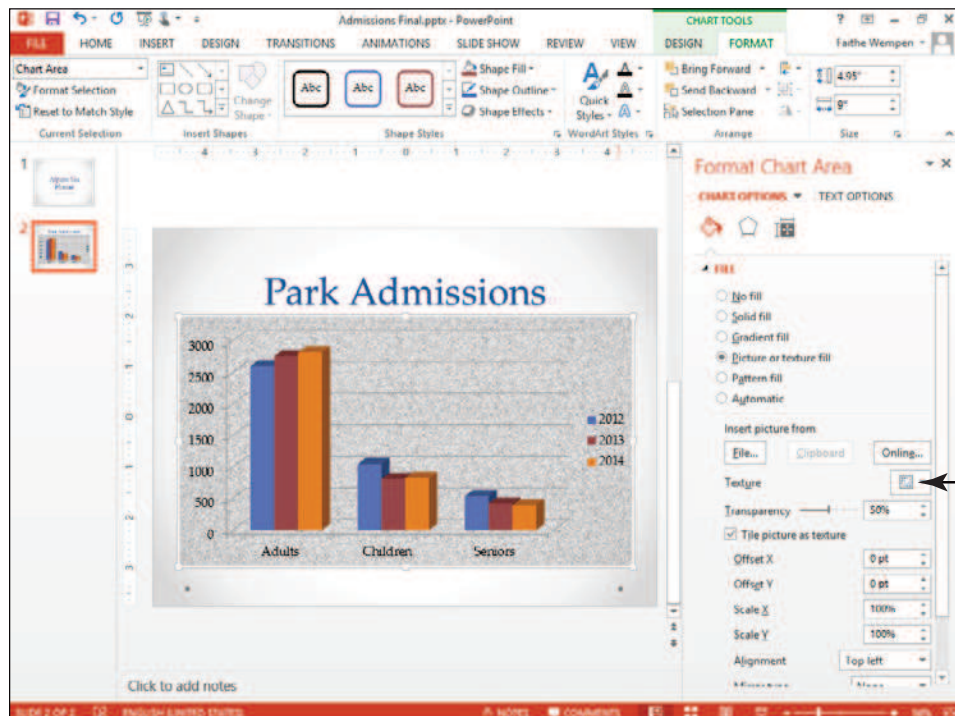
Another Way

You can also right-click on a blank area of the chart and then click Format Chart Area on the shortcut menu.

4. Click the **Format Selection** button below the Chart Elements box. The Format Chart Area task pane opens.
5. If the Fill options are collapsed in the task pane, click the **Fill** heading to expand it.
6. Click **Picture or texture fill**, and then click the **Texture** button. The texture gallery opens.
7. Click the **Granite** texture, and then drag the **Transparency** slider to **50%**. The chart area has been formatted with a light texture background that makes it stand out from the slide (see Figure 6-20).
8. Close the **Format Chart Area** task pane.
9. **SAVE** the presentation.

Figure 6-20

The chart with background texture applied



PAUSE. LEAVE the presentation open to use in the next exercise.

When formatting parts of a chart, it is sometimes a challenge to make sure you have selected the element you want to change. Use the Chart Elements list in the Current Selection group on the Chart Tools Format tab to help you select the element you want. This list clearly identifies all elements of the current chart so that you can easily select the one you want to modify.

You can also select any element on the chart to format by right-clicking it. The shortcut menu displays a Format command at the bottom that corresponds to the element you have clicked. If you right-click one of the columns in the chart, for example, the shortcut menu offers the Format Data Series command.

The task pane that opens when you select a chart element to format provides options specifically for that element. The Format Axis task pane, for instance, allows you to change the interval between tick marks on the axis, number style, line color and style, and alignment of axis labels.

Applying a Border to the Chart Area

By default, the chart area does not display a border. The lack of a border enables the chart to blend in seamlessly with the background of the slide on which you place it. If you prefer, you can apply a border that clearly identifies the chart area. In this exercise, you will add a border to a chart.

STEP BY STEP

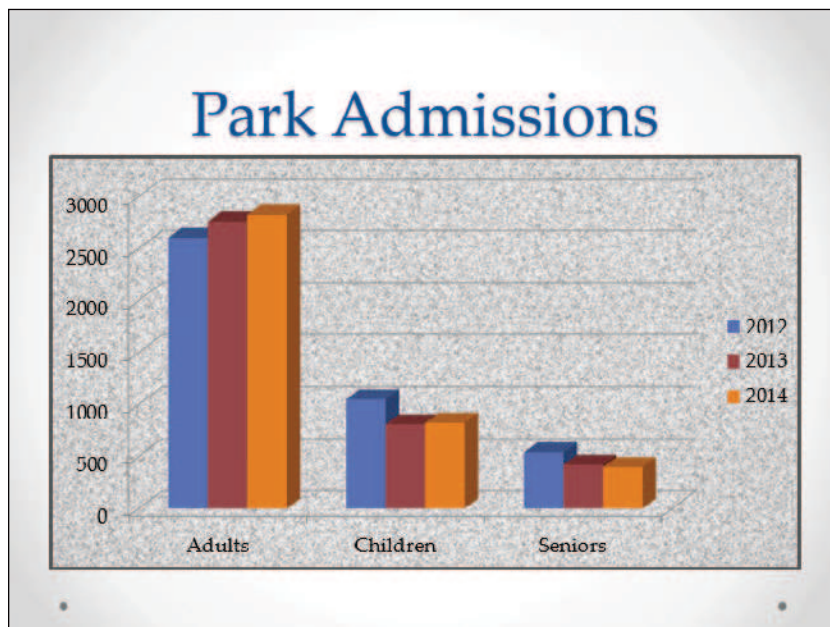
Apply a Border to the Chart Area

USE the *Admissions Final* presentation that is still open from the previous exercise.

1. Click the **outer border** of the chart to select the chart area.
2. On the Chart Tools Format tab, click **Format Selection** in the Current Selection group to open the Format Chart Area task pane.
3. Click the **Fill** heading to collapse the Fill options. Then click the **Border** heading to expand the border options.
4. Click the **Solid line** option button.
5. Click the **Color** button, then click the **Black, Text 1, Lighter 35%** theme color.
6. Click the **Width** up increment arrow until the width is **3 pt**.
7. Close the task pane.
8. Click outside the chart so you can see the **chart area border**. Your slide should look similar to Figure 6-21.

Figure 6-21

The chart with a border applied



9. **SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

Applying Formatting Effects

You can apply some of the same types of effects to charts that you apply to other objects in PowerPoint. For example, you can add bevels, 3-D effects, and shadows. Some of these effects apply to individual elements in the chart, while others apply to the chart as a whole. In this exercise, you will apply formatting effects to a chart.

STEP BY STEP

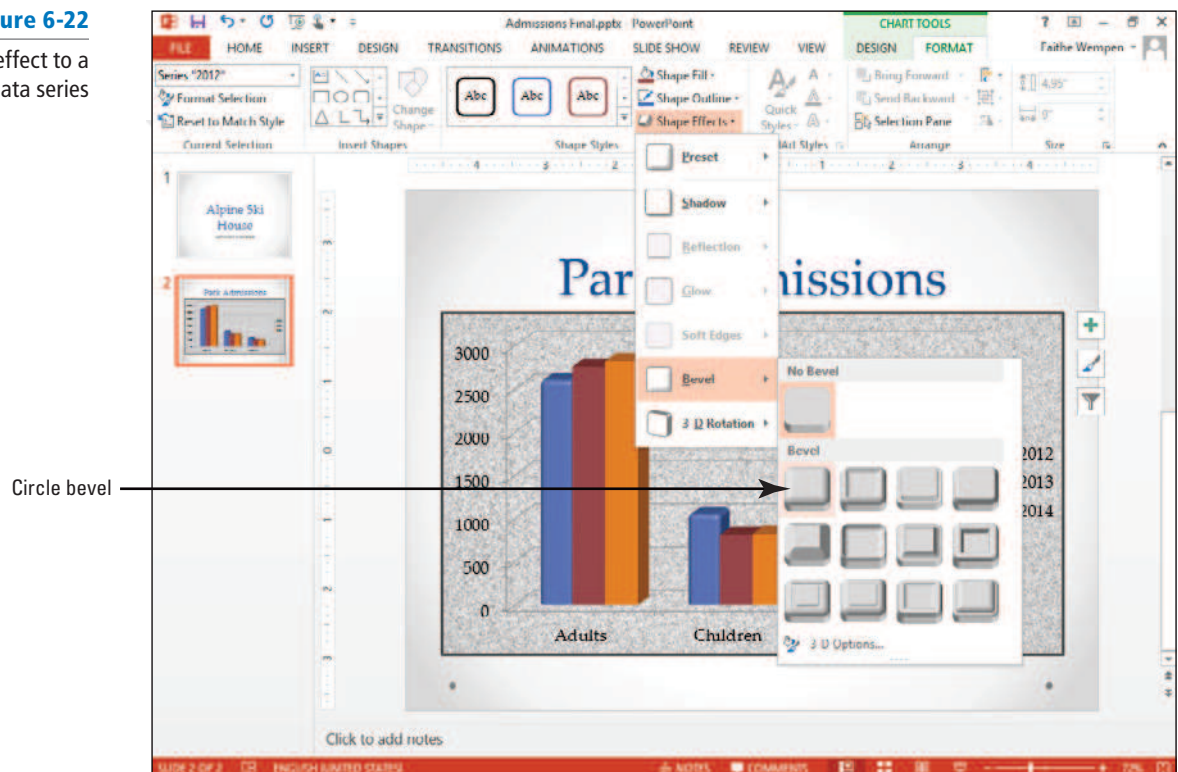
Apply Formatting Effects

USE the *Admissions Final* presentation that is still open from the previous exercise.

1. In the chart on slide 2, click one of the **blue bars** to select it. All three blue bars become selected.
2. On the Chart Tools Format tab, click the **Shape Effects** button in the Shape Styles group, and on the menu that appears, point to **Bevel**, and then click the **Circle bevel** (see Figure 6-22).

Figure 6-22

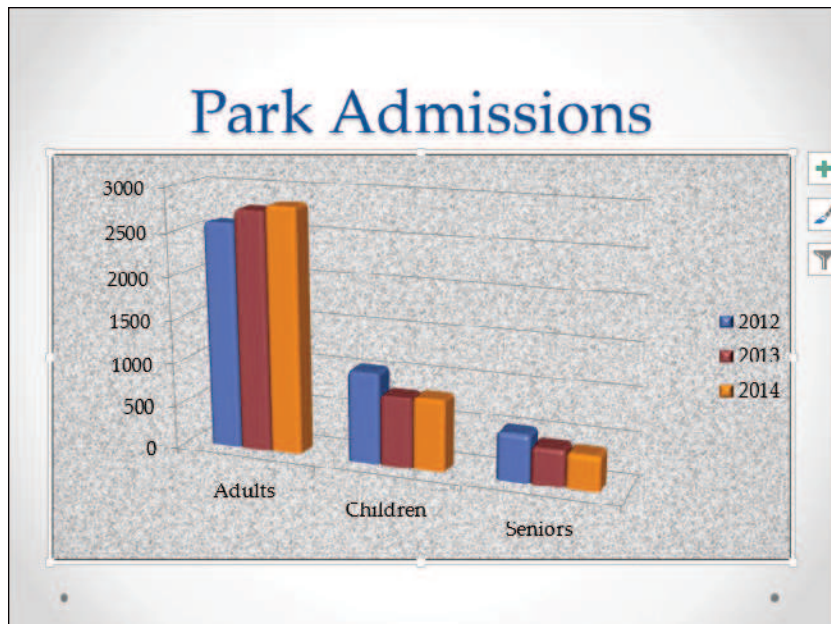
Applying a bevel effect to a data series



3. Repeat **steps 1 and 2** for the **red**, and then the **orange** bars, so that all bars are formatted using the **same bevel effect**.
4. Select **Chart Area** from the drop-down list in the Current Selection group.
5. Click the **Shape Effects** button again, point to **3-D Rotation**, and click the **Perspective Heroic Extreme Right** effect (the last one in the Perspective section). The entire chart receives a 3-D effect (see Figure 6-23).
6. **SAVE** the presentation.

Figure 6-23

Apply 3-D rotation to the chart



PAUSE. LEAVE the presentation open to use in the next exercise.

Formatting a Chart's Data Series

As you learned earlier, a chart's data series is the visual display of the actual data points. Data series can be columns, bars, lines, or pie slices. You can give a chart considerably more visual appeal by customizing data series fill and border options and by applying effects. In this exercise, you will format a data series.

STEP BY STEP

Format a Chart's Data Series

USE the *Admissions Final* presentation that is still open from the previous exercise.

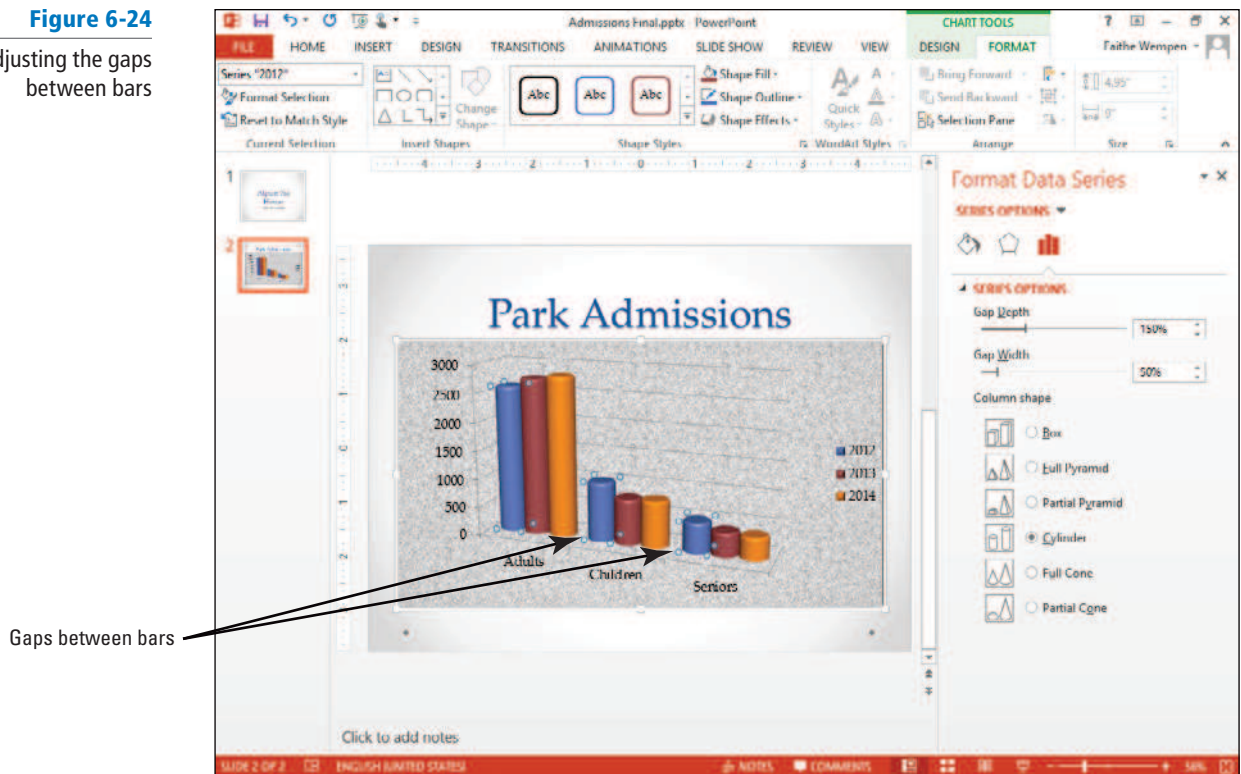
1. Click the **chart to select** it if it is not already selected.
2. Click one of the **red bars** to select the **entire data series** (all the red bars).

Take Note If you want to format a single data bar, click on it twice.

3. Click the **Chart Tools Format** tab, and notice that the Chart Elements box in the Current Selection group shows that **Series "2013"** is selected.
4. Click the **Format Selection** button in the Current Selection group. The Format Data Series task pane opens.
5. Under the **Column Shape** heading, click **Cylinder**. The bars turn to cylinders for the 2013 series.
6. Repeat **step 5** for each of the other two data series.
7. Drag the **Gap Width** slider to the **50%** setting. This action decreases the amount of space between the categories on the horizontal axis (see Figure 6-24).

Figure 6-24

Adjusting the gaps between bars



8. Close the task pane.
9. **SAVE** the presentation.

PAUSE. LEAVE the presentation open to use in the next exercise.

You have almost limitless options in formatting the data series for a chart. If you have plenty of time, you can use options in the Format Data Series task pane and the Shape Fill, Shape Outline, and Shape Effects menus to apply colors, pictures, textures, gradients, shadows, bevels, and many other choices. If your time is limited, you can achieve sophisticated effects by simply applying a Chart Style from the Chart Styles gallery.

In some situations, you may want to apply formats to a specific data marker rather than to the entire data series. To select a single data marker, click it once to select the data series, and then click it again to remove selection handles from the other markers.

Adjusting and Formatting Chart Axes

PowerPoint automatically determines the numeric scale to be used for the chart's axes, with the minimum value at zero (usually) and the maximum value slightly higher than the largest value to be plotted. You can adjust the axis scale if you like, however, to create different effects. You can also apply formatting to the axis labels, such as formatting the numbers as currency or changing their font, font size, and font color, or any of the other font-formatting actions you have learned in earlier lessons. In this exercise, you will practice formatting chart axes.

STEP BY STEP

Adjust a Chart Axis

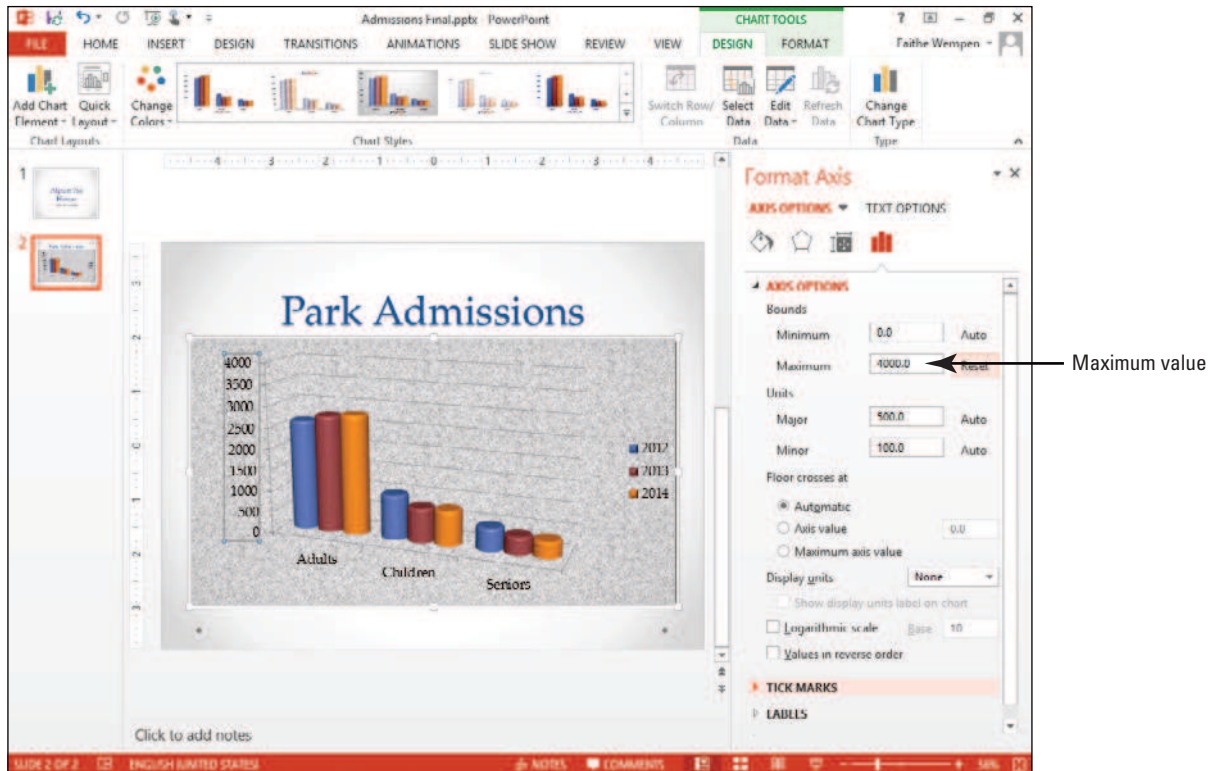
USE the *Admissions Final* presentation that is still open from the previous exercise.

1. Click the **chart on slide 2** to select it, if necessary.
2. **Double-click** one of the numbers on the vertical axis. The Format Axis task pane opens.

3. If the **Axis Options** icon is not selected at the top of the task pane (rightmost icon), click it. Then, if the **Axis Options** section is collapsed, click the **heading** to expand that category.
4. Under **Bounds**, in the Maximum text box, change the value to **4000** to establish that as the maximum value for the chart's vertical axis (see Figure 6-25).

Figure 6-25

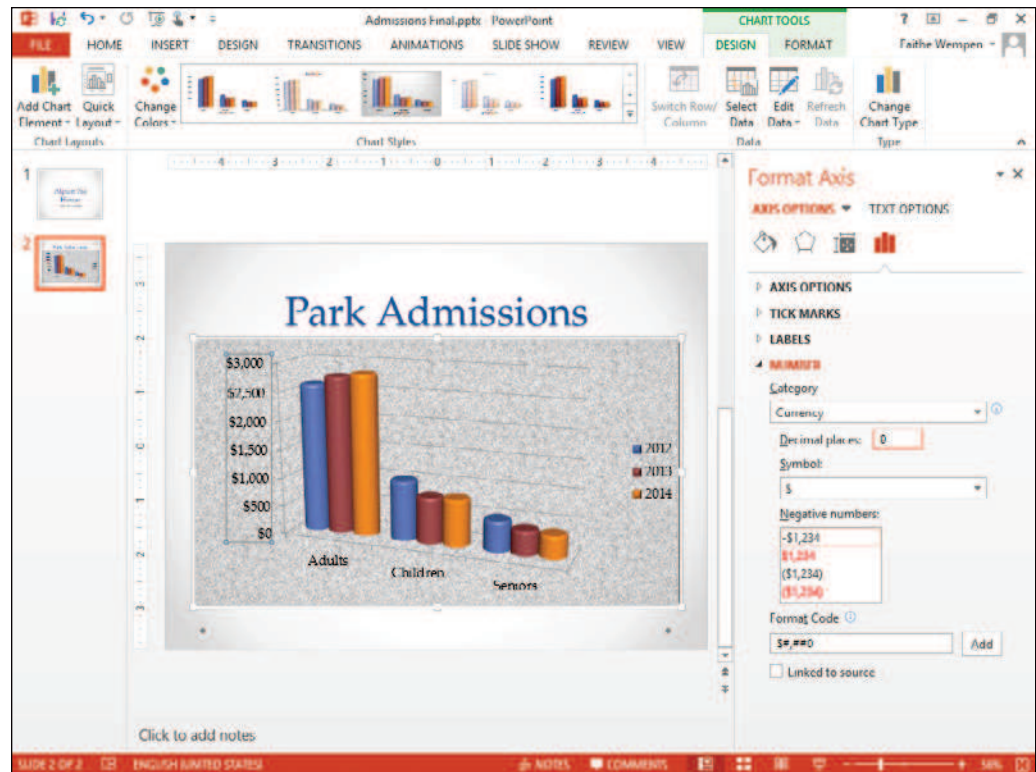
Adjust the maximum value for the vertical axis



5. Click the **Auto** button next to **Maximum** to reset the axis scale.
6. Click the **Axis Options** heading to collapse that category. Then click the **Number** heading to expand that category.
7. Open the **Category drop-down list** and choose **Currency**.
8. Select the value in the **Decimal** places box and type **0** to reduce decimal places to zero (see Figure 6-26).

Figure 6-26

Change the number type to Currency with no decimal places



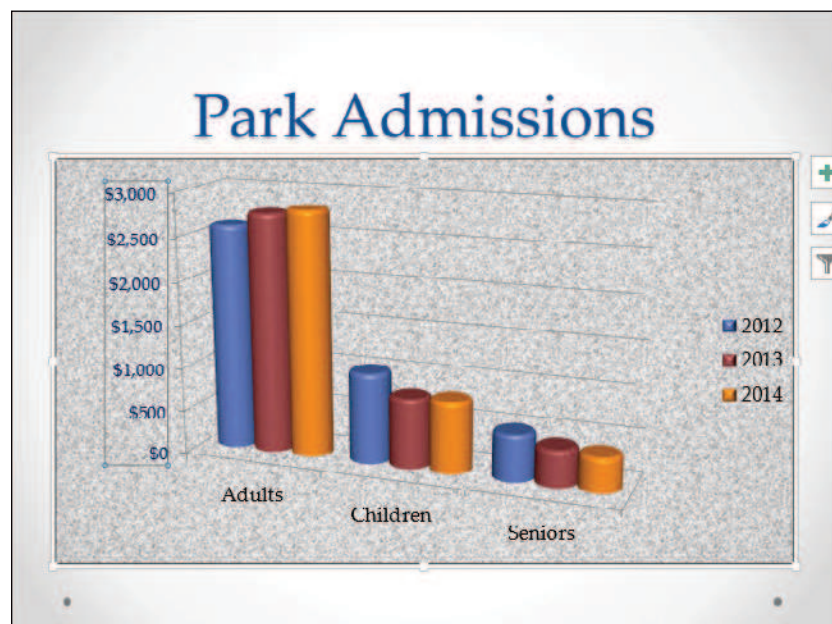
9. Close the task pane.

10. On the Home tab, open the **Font Size drop-down list** and click **16**.

11. Click the **Font Color button's drop-down arrow** to open its palette, and click the **dark blue** square in the Standard Colors section. The chart should resemble Figure 6-27.

Figure 6-27

The chart's vertical axis has been formatted



12. **SAVE** the presentation and close it.

PAUSE. Exit PowerPoint, or leave PowerPoint open to complete the end-of-lesson exercises that follow.

By default, a chart's axis and formatting are automatically adjusted as needed when you make changes to the chart. Be aware, however, that if you specify exact values for settings, those settings will remain fixed even if you make changes to the chart.



Workplace Ready

MANIPULATING A CHART TO CONVEY A DIFFERENT MESSAGE

Numbers do not lie, but you can present the same numbers in different ways to create a very different impression. For example, adjusting an axis's scale can be useful if you are trying to make the data convey a certain message. If you want to accentuate the differences between values, tighten up the axis scale. For example, if all the data points are between 110 and 120, you might make the minimum value 100 and the maximum value 120 instead of a minimum of 0 and a maximum of 200. Conversely, if you want to minimize the differences between values, make the axis scale a wider range of values.

On a bar or line chart with multiple series, you can also present data in rows rather than columns to convey a different message. For example, suppose you are presenting sales figures for three salespeople for three months. If the chart presents each salesperson's data in a different series, the values for each salesperson are clustered together, inviting a comparison between the salespeople's performances. In contrast, if you present each month in a different series, the values for each month are clustered together, inviting a comparison between the months' data.

SKILL SUMMARY

In This Lesson, You Learned How To:	Exam Objective	Objective Number
Build Charts	Insert charts.	3.3.2
	Import charts from external sources.	3.3.6
Modify the Chart Type and Data	Modify chart type.	3.3.3
Modify Chart Elements	Add legends to charts.	3.3.4
	Modify chart parameters.	3.3.5
Format a Chart	Create and modify chart styles.	3.3.1

Knowledge Assessment

Fill in the Blank

Fill in each blank with the term or phrase that best completes the statement.

1. On a bar chart, the bars that share a common color are a data _____.
2. If you want to change a column chart to a line chart, click the _____ button on the Chart Tools Design tab.
3. A(n) _____ is a visual depiction of numeric data.
4. _____ charts show the relationship of parts to a whole.
5. A chart's _____ provides a key to the information plotted on the chart.
6. On a column chart, the data is charted along the _____ axis.

7. Hold the _____ key as you drag a chart's corner handle to resize it to maintain its aspect ratio.
8. The _____ is the entire area within the chart's border, including not only the plot area but also the chart title and legend.
9. You can quickly tell what part of a chart you have selected by looking at the _____ box on the Chart Tools Format tab.
10. The _____ contains the gridlines and elements such as columns or bars, but excludes elements like the chart title.

Multiple Choice

Circle the correct answer.

1. PowerPoint's charting feature includes a worksheet window that is similar to which other Office application?
 - a. Microsoft Word
 - b. Microsoft Excel
 - c. Microsoft Equation
 - d. Microsoft Chart
2. If you want to select a different range of cells for a chart, use the
 - a. Edit Data button on the Chart Tools Design tab
 - b. Source Data button on the Chart Tools Design tab
 - c. Edit Data button on the Chart Tools Format tab
 - d. Data Source button on the Chart Tools Format tab
3. The default PowerPoint chart type is a:
 - a. column chart
 - b. bar chart
 - c. line chart
 - d. pie chart
4. If you want to show the amount of change over time and the total values across a trend, use a(n):
 - a. column chart
 - b. line chart
 - c. area chart
 - d. pie chart
5. You can move a chart on a slide by:
 - a. dragging its border
 - b. cutting from one location and pasting elsewhere on the slide
 - c. dragging a sizing handle
 - d. issuing the Move command
6. _____ enables you to quickly format a chart with different colors, effects, and background.
 - a. WordArt
 - b. A Chart Style
 - c. Master Themes
 - d. SmartArt
7. Select a single data point by:
 - a. clicking once on it
 - b. clicking once to select the whole series, and then clicking again to select only that data point
 - c. right-clicking on it
 - d. Shift+clicking on it
8. To change the numbers along the vertical axis on a column chart, adjust the:
 - a. legend
 - b. data labels
 - c. titles
 - d. axis scale

9. The _____ area can be formatted with a different background than the chart area.
 - a. Axis
 - b. Plot
 - c. Artwork
 - d. Title
10. Text that identifies information about the values on an axis is called a(n):
 - a. legend
 - b. chart title
 - c. plot title
 - d. axis label

Competency Assessment

Project 6-1: Voter Turnout

You are a member of the Center City Board of Elections. You have been asked to create a presentation to deliver to the Board showing how turnout has varied in the city over the past four presidential elections. You can create a line chart to display this data clearly.

GET READY. LAUNCH PowerPoint if it is not already running.



1. **OPEN** the *Turnout* presentation.
2. Go to **slide 2**, click the **Insert Chart** icon in the content placeholder, and then click **Line**. Click **OK** to accept the default subtype.
3. Starting in cell A1, type the following data in the Excel worksheet:

Year	Turnout
2000	0.62
2004	0.74
2008	0.49
2012	0.40
4. Adjust the **range border** to include only the data you typed, and then delete **all extra data** on the sheet.
5. Close the **worksheet window**.
6. Click **Layout 9** in the Quick Layout gallery.
7. Click **Style 9** in the Chart Styles gallery.
8. Click the **legend** to select it, and then press **Delete**.
9. Click the **Add Chart Element** button, and then point to **Data Labels**, and click **Above**.
10. **Right-click** one of the data labels, then click **Format Data Labels**. Change the number format to **Percentage** with **0** decimal places.
11. **SAVE** the presentation as *Turnout Final* and **CLOSE** the file.

LEAVE PowerPoint open for use in the next project.

Project 6-2: And the Results Are . . .

You are a project manager for Trey Research. You have been asked to create a slide show to present results of a survey you conducted on opinions about violence in the media. You saved your research results as an Excel file that you can use to create a chart in PowerPoint.



1. **OPEN** the *Survey* presentation.
2. Go to **slide 2**, click the **Insert Chart** icon in the content placeholder, click **3-D Clustered Column**, and click **OK** to create the chart.



3. In Excel, open the *Media* workbook. Select the cell range **A3:C6** and click the **Copy** button on the Excel Home tab.
4. In PowerPoint, in the worksheet window, click in cell **A1**, and press **Ctrl+V** to paste.
5. Delete **any unnecessary sample data** in the worksheet, and make sure the range border surrounds the range **A1:C4**.
6. Switch back to **Excel** and close it.
7. Switch back to **PowerPoint** and close the **worksheet window** and select the **chart again** if it is not already selected.
8. On the Chart Tools Design tab, click **Add Chart Element**, point to **Legend**, and click **Bottom** to ensure the legend is located at the bottom of the chart.
9. Change the **fill colors** of both series to two different colors of your choice using the **Shape Fill** palette.
10. Click a **vertical axis label** to select the axis, click the **Home** tab, click the **Font Size** box, and click **16** to change the font size of all axis labels.
11. Change the **horizontal axis labels** and the **legend labels to 16 points** as directed in step 10.
12. **SAVE** the presentation as *Survey Final* and **CLOSE** the file.

LEAVE PowerPoint open for the next project.

Proficiency Assessment

Project 6-3: Visitors Welcome

You work in the Tourist Bureau for the town of Lucerne. As part of your regular duties, you compile a presentation that shows information on visitors. You have created a slide that shows visitors by age. The chart needs some modification and formatting.



1. **OPEN** the *Tourists* presentation.
2. Go to **slide 2** and view the chart. The line chart type does not seem appropriate for the data.
3. With the chart selected, click the **Change Chart Type** button on the Chart Tools Design tab and select the **first chart in the Pie category**.
4. Apply **Layout 2** from the Quick Layout gallery and **Style 5** from the Chart Styles gallery.
5. Click the **pie** and apply a **Circle bevel effect**.
6. Reduce the **width of the chart area** by dragging the selection handles on the right and left sides so the chart area is approximately **5"** in width.
7. Delete the chart title **Percent**.
8. Select the legend and increase the **font size** to **16 point**.
9. Apply a **light-colored fill** to the legend, and a **dark-colored border**. Change the **text color** if needed for better text readability.
10. Apply a **Circle bevel effect** to the legend.
11. Increase the **font size** for the data labels on the slices to **18 point**.
12. **SAVE** the presentation as *Tourists Final* and **CLOSE** the file.

LEAVE PowerPoint open for use in the next project.

Project 6-4: Free for All

You are a marketing consultant hired by Woodgrove Bank. The bank's managers have asked you to determine which freebies customers would find most attractive when opening a new checking

account. One of your assistants has created a chart of the survey results. You need to improve the look of the chart by editing the data and applying formats.



1. **OPEN** the *Freebies* presentation.
2. Go to **slide 2** and select the **chart area**.
3. Use the **Format Chart Area** task pane to apply a gradient fill of your choice to the chart area.
4. Apply a **border color** and **weight** of your choice to the chart area.
5. Change the **color** of at least one of the data series. (You may change more than one or all colors if desired.)
6. Move the **legend** to the top of the chart. Then apply a **new background fill** for the legend and add a border to it.
7. Format the **vertical axis** to show numbers as percentages rather than numeric values.
8. Set the **vertical axis scale** to have a maximum value of **1 (100%)**.
9. Show data labels in **percentages** with **no decimal places**.
10. **SAVE** the presentation as *Freebies Final* and **CLOSE** the file.

LEAVE PowerPoint open for use in the next project.

Mastery Assessment

Project 6-5: More Power

You are a financial analyst for City Power & Light. Senior managers have asked you to determine how much power sales increased from 2012 to 2013, based on customer types. You can compare rates of power sales using a bar chart.

1. **OPEN** a new blank presentation and **apply a theme** of your choice. Set the slide size to Standard (4:3).
2. Change the layout of the first slide to **Title and Content**, and type the slide title **2012 – 2013 Sales**.
3. Create a Clustered Bar chart, and type the following chart data:

	Industrial	Commercial	Residential
2012	\$3,010	\$4,273	\$5,777
2013	\$2,588	\$3,876	\$4,578
4. Apply **Quick Layout 3** to the chart, and change the chart title to **Sales by Customer Type**.
5. Apply a **Chart Style** of your choice to the chart.
6. Add a **horizontal axis title** and type the axis title **In Millions**.
7. Change the size of the horizontal axis labels to **16-point**.
8. Add a **border** around the legend.
9. **SAVE** the presentation as *Power Sales* and **CLOSE** the file.

LEAVE PowerPoint open for use in the next project.

Project 6-6: Patient Visits

You are a veterinarian hoping to attract investors to your clinic. You have created a chart to be used in a presentation for prospective investors. You want to show investors the reasons for patient visits during a given month, by percentage. You are not satisfied with your chart, however, so you want to improve it before the investor meeting.



1. **OPEN** the *Patients* presentation.
2. In the chart worksheet, edit the values to become **percentages** (e.g., change 38 to 0.38).
3. Format the **horizontal axis** to show numbers using Percentage format with **0** decimal places.
4. Change the chart type from **Bar** to a **3-D Pie Chart**.
5. Apply **Quick Layout 6**.
6. Delete the **chart title**.
7. Use the **3-D Rotation** settings in the **Format Chart Area** task pane (Effects section) to set the Perspective to **5°** and the Y Rotation to **40°**.
8. Select the **data labels** and increase their size to **24 point**. Apply **bold** formatting.
9. With data labels still selected, open the **Format Data Labels** task pane and specify a **solid white fill** for the labels.
10. Change the fill color of the plot area to **Tan, Background 2**, and apply the **Offset Center** shadow effect to the plot area.
11. Apply the **same fill and effect** to the legend as you applied to the plot area in step 10.
12. **SAVE** the presentation as *Patients Final* and **CLOSE** the file.

EXIT PowerPoint.

WILEY