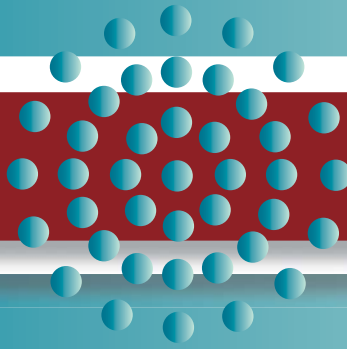


unit 3



ENHANCING WORKSHEET APPEARANCE

Lesson 9 Building Charts EX-222

Lesson 9

Building Charts

OBJECTIVES

MCAS OBJECTIVES

In this lesson:

XL07 4.1
XL07 4.1.1
XL07 4.1.2
XL07 4.1.3
XL07 4.2
XL07 4.2.1
XL07 4.2.2
XL07 4.2.3

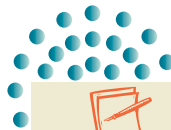
After completing this lesson, you will be able to:

1. View and print charts.
2. Work with chart elements.
3. Create charts.
4. Edit chart data.
5. Use images, gradients, and textures for a data series.
6. Create a combination chart.

Estimated Time: 2 hours

A *chart* is a visual representation of information in a worksheet. Charts can help you make comparisons, identify patterns, and recognize trends.

You can create a chart on the same sheet as its data or on its own sheet in the workbook. In either case, a chart is linked to the data used to create it and is updated when you edit the data.



NOTE

The workbooks you create and use in this course relate to the Case Study (see the frontmatter of the book) about Klassy Kow Ice Cream, Inc., a fictional ice cream company.



PREPARE

Point out to students that the learning objectives show what they will learn in the lesson. Each heading in the lesson correlates to a learning objective.

Required Files: SeptChart, MayChart, ComboChart



TEACH

Teaching Resources:

This text is supported by Classroom Presentations in a PowerPoint format. For this lesson, use Excel Classroom Presentation 9.

OBJECTIVE 1

Viewing and Printing a Chart

A chart that appears on the same sheet as the data is a graphic object and can be selected, sized, moved, and edited. An object is a separate, clickable element or part of a worksheet or chart. When a workbook has objects, you can use the Selection pane to select, view, and rearrange them.

Exercise 9-1 VIEW A CHART OBJECT

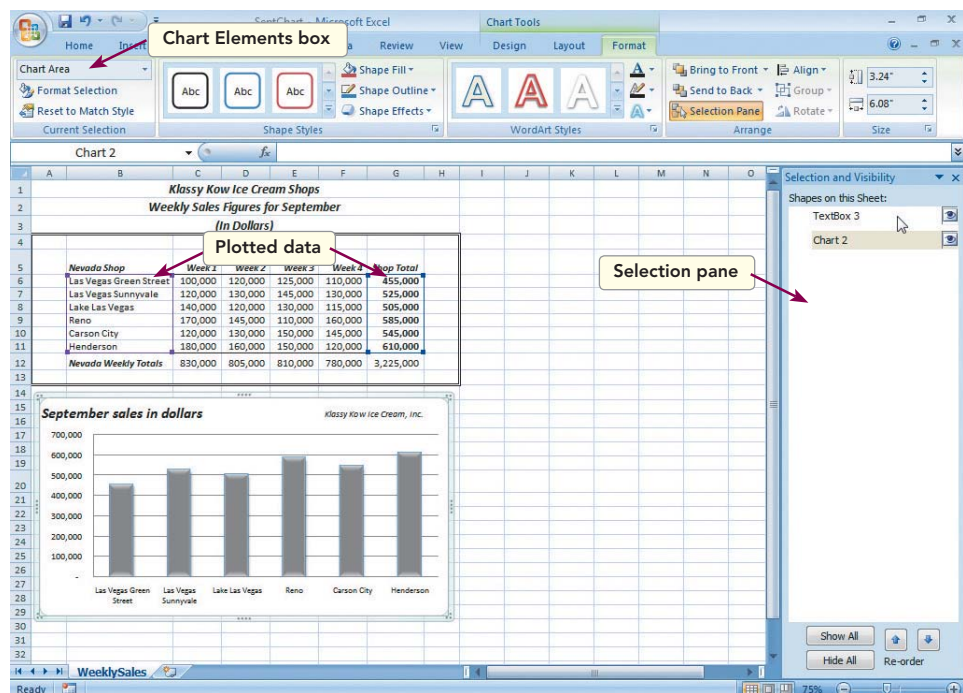
When you select a chart, the Chart Tools are activated. These tools include three command tabs: the Design tab, the Layout tab, and the Format tab.



1. Open **SeptChart**. The Zoom size is set to 75% so that you can see more of the worksheet and the chart without scrolling.
2. Click in the white chart background area to select the chart. The Chart Tools command tabs are now visible. The chart is surrounded by a light frame.
3. Press **[Alt]** to see the KeyTips. Key **jo** to select the Chart Tools Format tab. The Current Selection group shows that the chart area is the active chart element.
4. In the **Arrange** group, click the Selection Pane button . This worksheet has a chart and a text box. The Eye button toggles the object's visibility on/off.



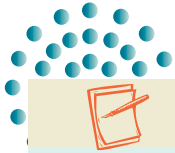
Figure 9-1
Chart selected in the worksheet
SeptChart.xlsx
WeeklySales sheet





Objective 1 Assignment:
Exercise 9-26 (Skills Review) can be assigned after completing Objective 1.

1 Discuss and demonstrate how to select a chart and its objects. Point out each object's selection handles.




Excel Classroom Presentation 9.

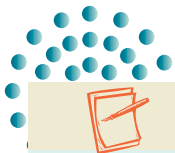
**NOTE**

In this worksheet, the text box is on top of the chart; otherwise it would be hidden by the chart's white background.

- Click the Eye button  for **TextBox 3**. The text box is the company name in the top-right corner of the chart. It's hidden now.
- Click the Eye button  for **TextBox 3** again to display it.
- Toggle the visibility of **Chart 2** on/off.

Exercise 9-2 PRINT A CHART OBJECT

- Click cell A1 to deselect the chart. The background frame is removed from the chart.
- Press **[Alt]** and key **n**. The Insert tab is active.
- Key **h** to choose **Header & Footer**.
- Click the Header button . A list of header arrangements opens.
- Choose the second option from the bottom of the list—the user name, the page number, and the date.
- Click the user name and change it to your name.
- Click cell A1 and print the sheet. The worksheet and the chart print on a single page.
- Click in the white background chart area to select the chart.
- Press **[Ctrl]+[P]**. In the **Print what** group, **Selected Chart** is chosen. Click **OK**. The chart prints by itself in landscape orientation. When you print a selected element, the header is not included, because a header is a page setting.
- Click cell A1. Click the Normal button  in the status bar.
- Click the Close button  in the **Selection & Visibility** pane.

**NOTE**


The user name in a classroom setting is set by the class or network administrator.

OBJECTIVE 2

Working with Chart Elements

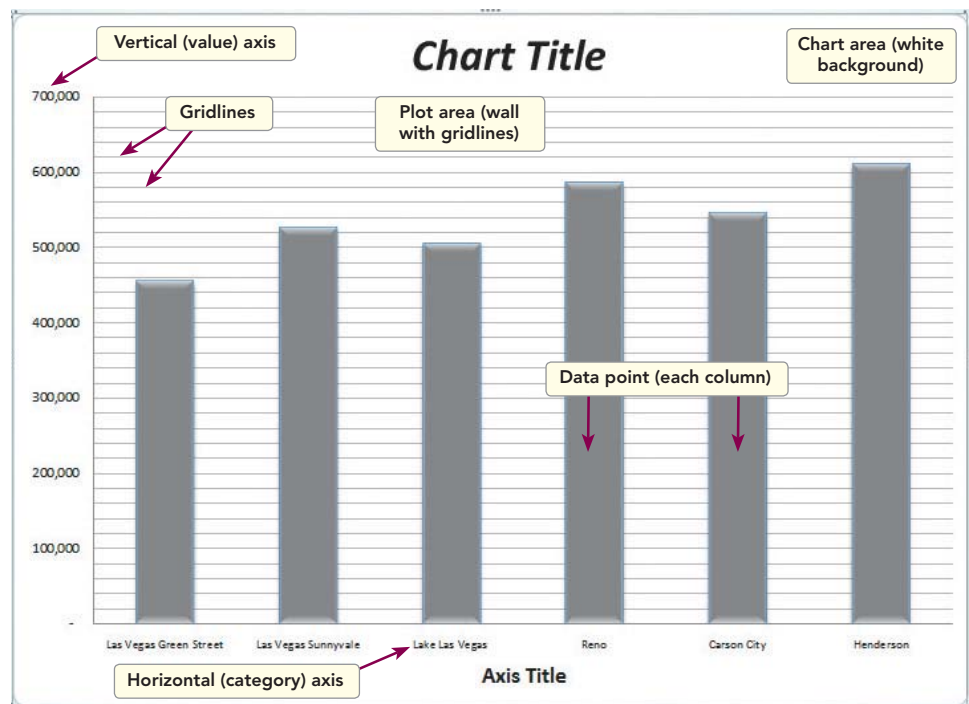
A chart is composed of many clickable elements or objects. These elements are formatted by the current layout and style, but you can change each object on its own, too. Here is a brief description of Excel chart elements:

- The *chart area* is the background for the chart. It can be filled with a color or pattern.
- An *axis* is the horizontal or vertical line that encloses the data.

 **Objective 2 Assignment:**
Exercise 9-27 (Skills Review) can be assigned after completing Objective 2.

- The *horizontal (category) axis* is created from row or column headings in the data. A category describes what is shown in the chart.
- The *vertical (value) axis* shows the numbers on the chart. Excel creates a range of values (the *scale*) based on the data.
- An *axis title* is an optional title for the categories or values.
- The *plot area* is the rectangular area bounded by the horizontal and vertical axes.
- The *chart title* is an optional title or name for the chart.
- A *data series* is a collection of related values from the worksheet. These values are in the same column or row and translate into the columns, lines, pie slices, and so on.
- A *data point* is a single value or piece of data from the data series.
- A *data marker* is the object that represents individual values. The marker can be a bar, a column, a point on a line, or an image.
- A *legend* is an element that explains the symbols, textures, or colors used to differentiate series in the chart.
- A *gridline* is a horizontal or vertical line that extends across the plot area to make it easier to read and follow the values.
- A *tick mark* is a small line or marker on the horizontal (category) and vertical (value) axes to help in reading the values.

Figure 9-2
Excel chart elements



Exercise 9-3 CHANGE THE CHART LAYOUT

The Chart Tools command tabs include layout and style choices to help you build a professional-looking chart. The Chart Layouts gallery offers various arrangements of chart elements for each chart type.


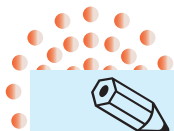
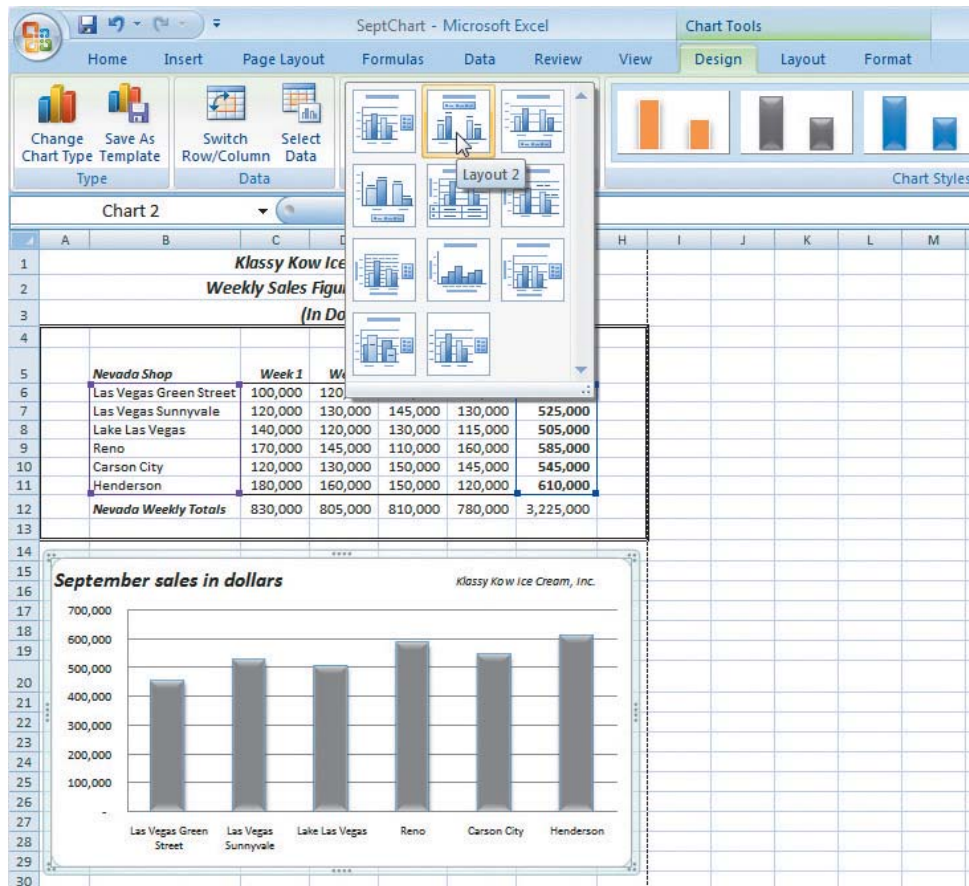

1. Click the chart background. Click the **Chart Tools Design** tab.
2. In the **Chart Layouts** group, click the More button . The Chart Layout gallery opens.
3. Click **Layout 2**. The chart is redesigned to show values above the columns with no values along the vertical axis.

Figure 9-3
The Chart Layouts gallery
SeptChart.xlsx
WeeklySales sheet



TIP

In a column chart with one series, you do not need a legend.

4. In the **Chart Layouts** gallery, click **Layout 3**. This is similar to Layout 1 but with a legend at the bottom (**Series 1**).
5. In the **Chart Layouts** group, click the More button . Click **Layout 4**. This layout does not include a chart title.

6. Choose **Layout 3**. The chart title object is a placeholder and will need to be rekeyed (later in the lesson). There is a legend at the bottom.



Exercise 9-4 CHANGE THE CHART STYLE

The Chart Styles gallery provides variations in colors and effects for chart elements using the document theme. There are many predefined styles that combine theme colors and effects.


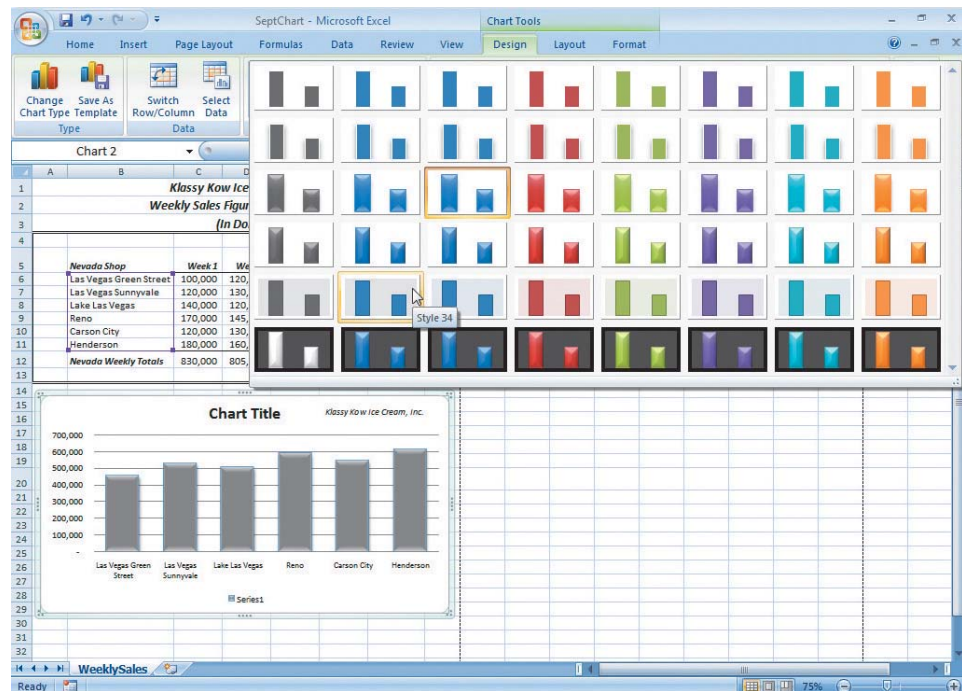

1. In the **Chart Styles** group, click the More button . The Chart Styles gallery opens. Your chart uses Style 19, but the column colors were modified.
2. Click **Style 34**. The columns show a flat effect in a new color.

Figure 9-4
The Chart Styles
gallery
SeptChart.xlsx
WeeklySales sheet

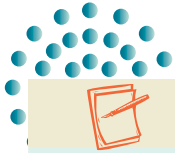


3. In the **Chart Styles** group, click the More button . Click **Style 44**. This style changes the background color, too.
4. Choose **Style 20**. The columns again have a beveled effect.

Exercise 9-5 EDIT AND FORMAT THE CHART TITLE

Chart elements show a ScreenTip when you hover over them. To edit an element, select it by pointing and clicking. When an element is selected, it shows a bounding frame and selection handles, and its name appears in the Chart Elements box on the Chart Tools Format tab. *Selection handles* are small circles, rectangles, or dots at the corners and along each border of the bounding frame. They can be used to size the element.



**NOTE**

The bounding box and selection handles do not print.


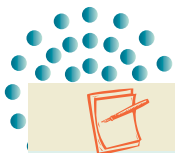
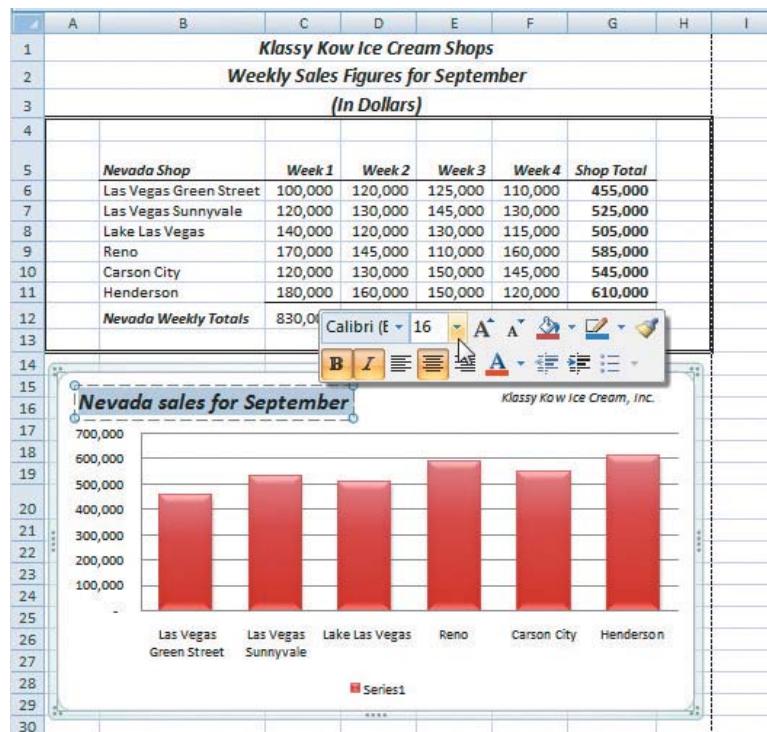
1. Click the **Chart Tools Format** tab.
2. Point at the placeholder text **Chart Title** on the chart and click. The object is selected and shows a bounding border with four selection handles. Its name appears in the Chart Elements box in the Current Selection group.
3. Point at an edge of the object to display a four-pointed arrow. This is the move pointer.
4. Drag the object left to align with the values on the vertical axis.
5. Triple-click **Chart Title**. This is placeholder text.
6. Key **Nevada sales for September**. The placeholder text is replaced.
7. Triple-click **Nevada sales for September** to select it. Point at the Mini toolbar.
8. Click the Italic button . Change the font size to 16.

Figure 9-5
Editing the chart title
SeptChart.xlsx
WeeklySales sheet

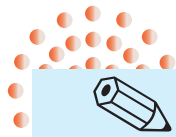
**NOTE**

If you accidentally select the text box with "Klassy Kow Ice Cream, Inc.," the Drawing Tools Format command tab is activated. Click away from that area in the chart background.

9. Click the white background area of the chart to deselect the title.



Exercise 9-6 SET SHAPE FILL AND EFFECTS



TIP

Many chart experts refer to the value axis as the y-axis and the category (horizontal) axis as the x-axis.

The data series in this chart are the values from column G. Each value is represented by the height of its column. The values are plotted against the value (vertical) axis, the column of numbers at the left. The category for this chart is the city name, shown along the horizontal axis.




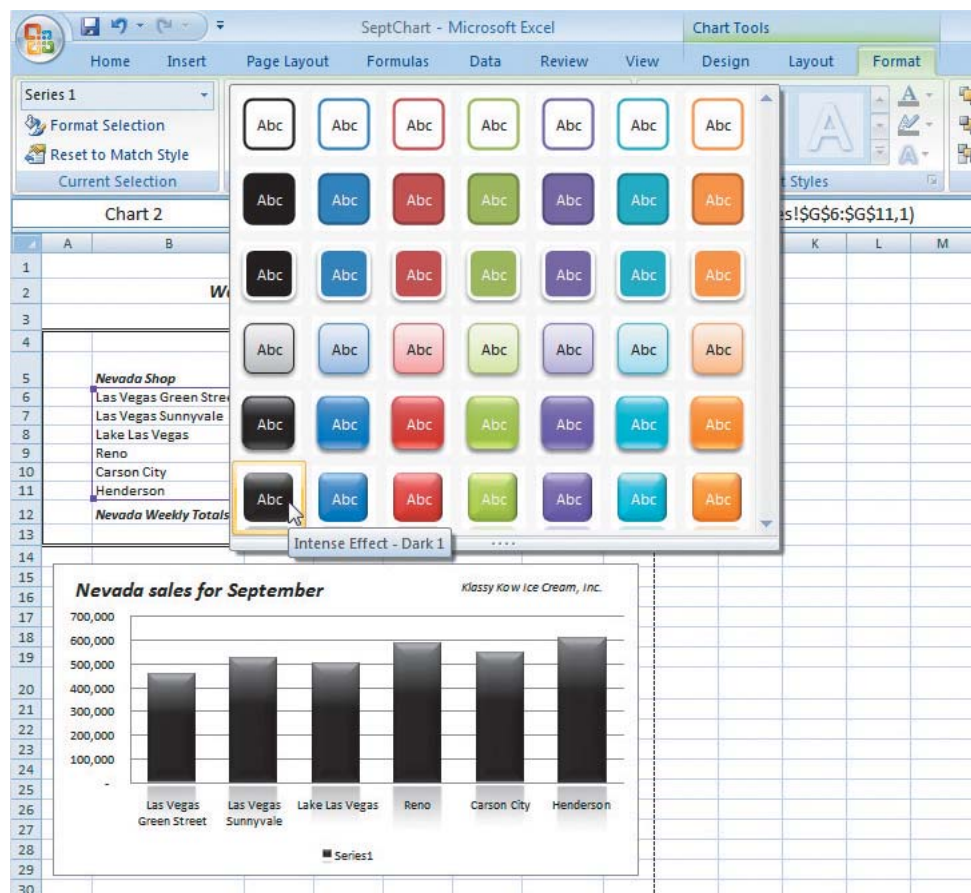
1. Make sure the chart is selected.
2. Rest the mouse pointer on the Reno column to see its ScreenTip. It is one data point from the series.
3. Click the Reno column. The entire data series is selected, and the Chart Elements box shows **Series 1**. This is the first (and only) series in this chart.
4. In the **Shape Styles** group on the **Chart Tools Format** tab, click the More button  for the **Shape Styles**. The styles include some with an outline and no fill, some with both outline and fill, and beveled and shadow styles.



Figure 9-6
Changing the shape's style
SeptChart.xlsx
WeeklySales sheet



Tell students that the category axis describes what is charted. It can be horizontal or vertical depending on the chart type.



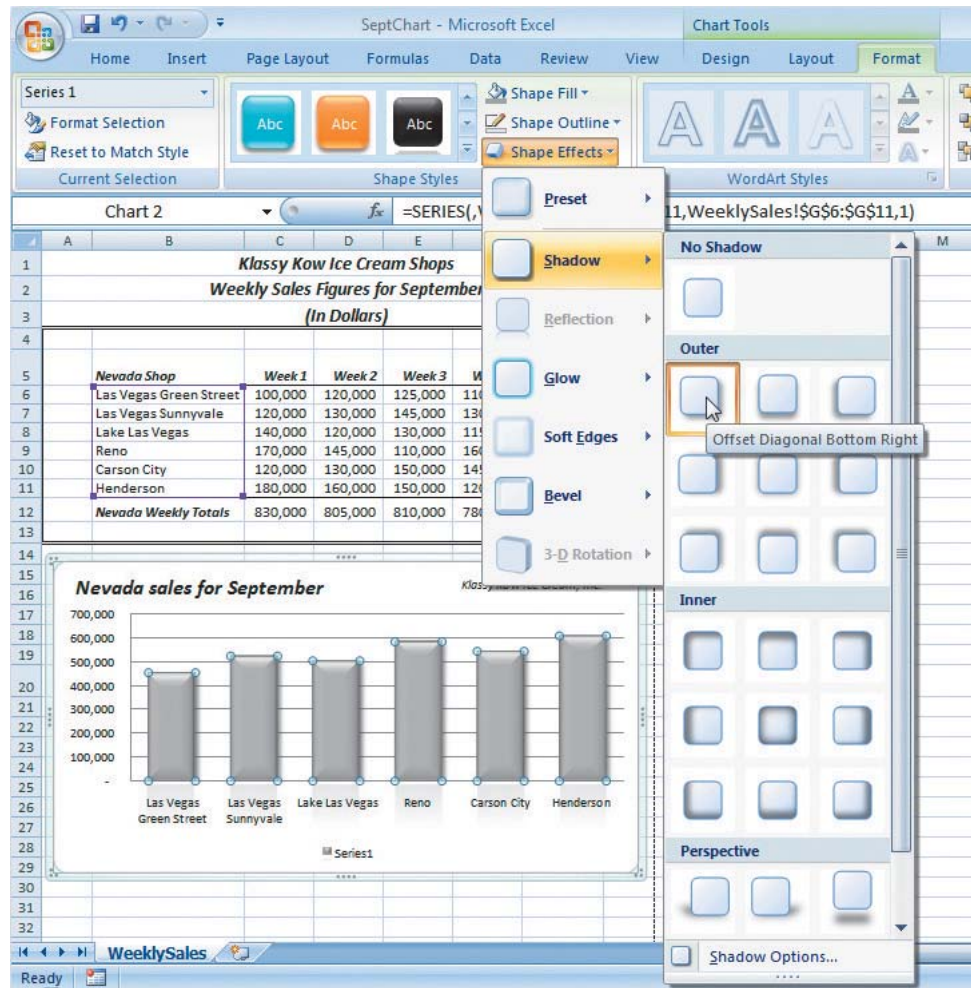
EX-230

UNIT 3 Enhancing Worksheet Appearance



- Choose **Intense Effect, Dark 1**. Each column now has a reflection, too.
- In the **Shape Styles** group, click the Shape Fill button .
- Choose **White, Background 1, Darker 35%** in the first column.
- In the **Shape Styles** group, click the Shape Effects button . Most effects are available for this shape.

Figure 9-7
Changing the
shape's effect
SeptChart.xlsx
WeeklySales sheet





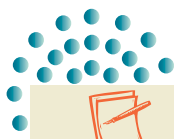
- Hover over **Shadow** to display its gallery. Then choose **Offset Diagonal Bottom Right** (first effect in the Outer group).
- Click the white chart background.

Exercise 9-7 SET AND FORMAT DATA LABELS

A *data label* is an optional title shown for each value. It is the value from column G in this case. The Chart Tools Layout tab provides options for setting and positioning individual chart elements.



1. Click the **Chart Tools Layout** tab.
2. Hover over the Data Labels button  and read its ScreenTip. Click one of the labels.
3. Click the Data Labels button  and choose **Outside End**. The value of each data point appears above its column.
4. Rest the mouse pointer on one of the data labels to see the ScreenTip.



NOTE


The Chart Elements box is in the Current Selection group on both the Layout and Format command tabs.

5. Click the **Chart Tools Format** tab. Click the arrow next to the **Chart Elements** box and choose **Series 1 Data Labels**. The data labels are selected and show bounding boxes and selection handles.
6. Click the **Home** tab and change the font size to 9 points.

Exercise 9-8 FORMAT THE AXES

The Horizontal (Category) Axis is the x-axis in this chart, the city names.

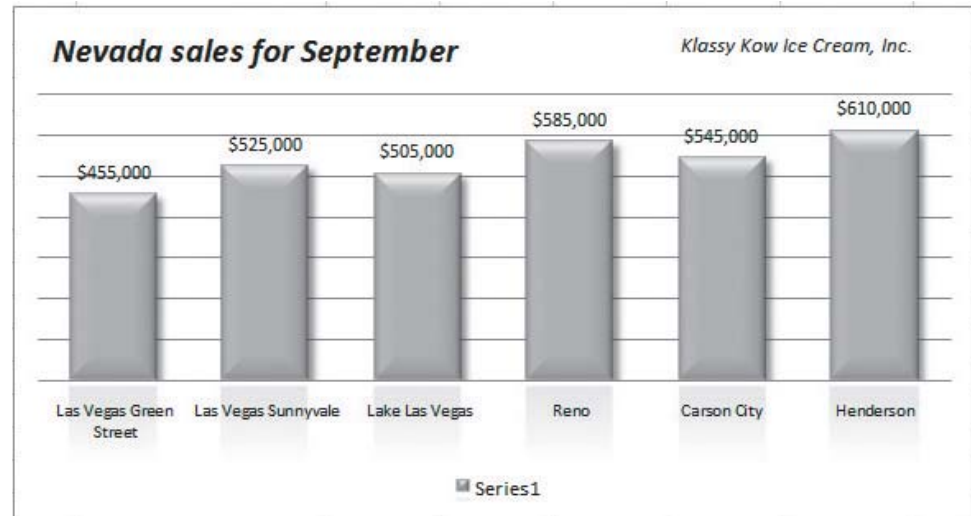


1. Position the mouse pointer on a city name to see its ScreenTip.
2. Click the **Chart Tools Format** tab. Click the **Chart Elements** arrow and choose **Horizontal (Category) Axis**. The city names are selected and show a bounding box and selection handles.
3. On the **Home** tab, change the font size to 8 points.
4. Click one of the values along the Vertical (Value) Axis, the y-axis, the sales in dollars.
5. Click the **Chart Tools Layout** tab. Click the Axes button . Choose **Primary Vertical Axis** and **None**. With the data labels displayed, you don't need the axis values.
6. Right-click one of the data labels (above the columns). Choose **Format Data Labels**.
7. Click **Number**. Choose **Currency** with **0** decimals and **\$** as the **Symbol**. Click **Close**.

EX-232

UNIT 3 Enhancing Worksheet Appearance

Figure 9-8
Formatted data
labels
SeptChart.xlsx
WeeklySales sheet



8. Click a cell in column I to better see the chart.

Exercise 9-9 **FORMAT THE PLOT AND CHART AREAS**

1. Click **Series 1** at the bottom of the chart. This is the legend. There is one series in this chart, the amount shown by each column.

2. Press **[Delete]**.

3. Click the **Chart Tools Format** tab. Click the **Chart Elements** arrow and choose **Plot Area**. The plot area is the background grid for the columns, currently white. It is selected.

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

5. On the **Fill** pane, choose **No fill**. Click **Close**. The color (white) is removed but is not noticeable yet.

6. Click the **Chart Elements** arrow and choose **Chart Area**. The chart's background is selected; it is white, too.

7. Click the **Format Selection** button .

8. On the **Fill** pane, choose **No fill**. Click **Close**. You can now see that there is no fill color.

9. Click cell A1.

10. Save the workbook as *[your initials]9-9* in a folder for Lesson 9.

11. Close the workbook.

 Format Selection

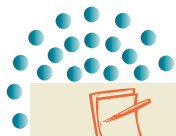


TIP

Choosing no background color means your chart will print faster than with a white background color and look the same on white paper.

OBJECTIVE 3

Creating Charts



NOTE

The appearance of a button in the Ribbon is affected by the screen size and resolution setting. All buttons have ScreenTips for clarification.

Before you build your own chart, you must consider two questions. First, what data should you use for the chart? And, second, what type of chart is best for that data? With practice and experience, you can develop a good sense of how to identify data and choose chart types.

You can create basic chart types such as column charts, bar charts, pie charts, and line charts. You can also create specialized charts such as doughnut and radar charts. Table 9-1 describes the chart types available.



TABLE 9-1 Chart Types in Excel

Type	Definition
 Column	A column chart is the most popular chart type. Column charts show how values change over a period of time or make comparisons among items. They can be prepared with 3-D effects or stacked columns. Categories are on the horizontal axis (x), and values are on the vertical axis (y). The shape can also be a cone, a cylinder, or a pyramid.
 Line	Line charts show trends in data over a period of time. They emphasize the rate of change. 3-D effects are available. Lines can be stacked and can show markers, a symbol that indicates a single value.
 Pie	Pie charts show one data series and compare the sizes of each part of a whole. Pie charts should have fewer than six data points to be easy to interpret. A pie chart can use 3-D effects and can show exploded slices.
 Bar	Bar charts illustrate comparisons among items or show individual figures at a specific time. Bar charts can use 3-D effects and stacked bars. Categories are on the vertical axis (y). Values are on the horizontal axis (x). The shape can also be a cone, a cylinder, or a pyramid.
 Area	Area charts look like colored-in line charts. They show the rate of change and emphasize the magnitude of the change. 3-D effects are available.
 Scatter	Scatter charts are used to show relationships between two values, such as comparing additional advertising to increased sales. Scatter charts do not have a category; both axes show numbers/values.
 Stock	Stock charts are often called “high-low-close charts.” They use three series of data in high, low, close order. They can also use volume as a fourth series.
 Surface	Surface charts illustrate optimum combinations of two sets of data. They show two or more series on a surface. Surface charts can use 3-D effects.
 Doughnut	Doughnut charts compare the sizes of parts. A doughnut chart has a hole in the middle. A doughnut chart shows the relative proportion of the whole. A doughnut chart can show more than one data series, with each concentric ring representing a series.
 Bubble	Bubble charts compare sets of three values. They are like scatter charts with the third value displayed as the size of the bubble. Bubble charts can be 3-D.
 Radar	Radar charts show the frequency of data relative to a center point and to other data points. There is a separate axis for each category, and each axis extends from the center. Lines connect the values in a series.

Exercise 9-10 CREATE AND EDIT A CHART SHEET

After you select values and labels, press **F11** to create a chart sheet with the default chart type. It is inserted on a new sheet, and you can edit it like any chart.

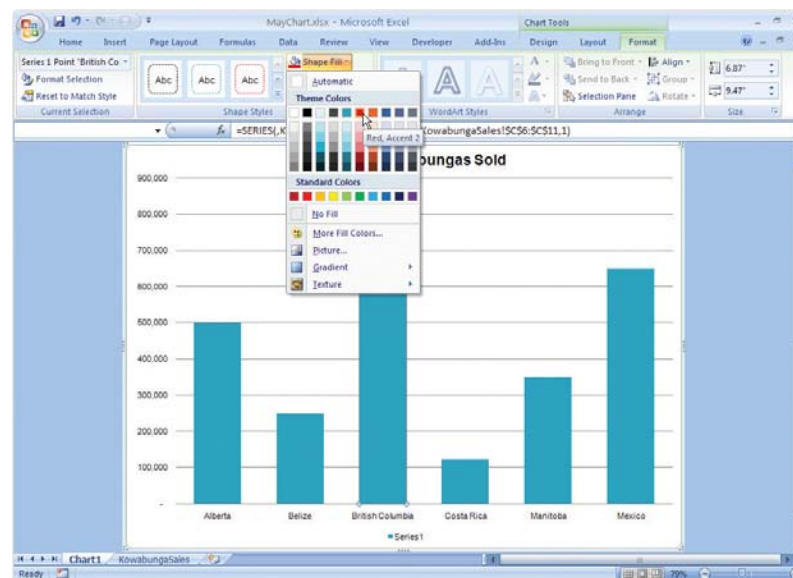
1

1. Open **MayChart**. There is no chart yet.
2. Select cells B6:C11. This range includes the province/country category and the values.
3. Press **F11**. A column chart is inserted on its own sheet.
4. On the **Chart Tools Design** tab in the **Chart Layouts** group, click the **More** button .
5. Choose **Layout 3**. This layout includes a chart title and a legend (at the bottom).
6. Click the chart title object. Its bounding box and selection handles are visible.
7. Triple-click the placeholder text. Key **Number of Kowabungas Sold**.
8. Click any column and notice that the entire series is selected.
9. While all columns are selected, click the “British Columbia” column. It is selected alone.
10. Click the **Chart Tools Format** tab. In the **Shape Styles** group, click the **Shape Fill** button .
11. Choose **Red, Accent 2** in the sixth column. Only the selected column is changed.

2



Figure 9-9
Changing an individual column
MayChart.xlsx
Chart1 sheet



1

Verify that the default chart type is column on classroom computers. To change the default chart type, click the **Dialog Box Launcher** in the **Charts** group on the **Insert** tab. Choose the type and click **Set as Default Chart**.

2

Make sure students can distinguish between selecting the data series and selecting a data point.

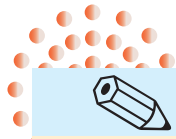


Excel Classroom
Presentation 9.

12. Click the legend at the bottom of the sheet and press **Delete**.

Exercise 9-11 CREATE A CHART OBJECT

A *chart object* appears on the same sheet as the data; it may also be called an *embedded chart*. You create it by choosing the chart type from the Insert command tab.



TIP
The keyboard shortcut to create a chart object using the default chart type is **Alt+F1**.

1. Click the **KowabungaSales** tab. Cells B6:C11 are still selected.
2. Click the **Insert** tab. The Charts group includes buttons for the most commonly used chart types.



3. Click the Pie button . You can create two- or three-dimensional charts. A ScreenTip describes each type when you hover over the icon.

Figure 9-10
Creating a pie chart
MayChart.xlsx
KowabungaSales
sheet



4. In the **2-D** list, choose **Pie**. The chart is on the worksheet with its data.

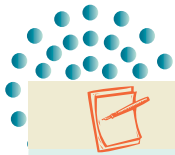
Exercise 9-12 MOVE AND SIZE A CHART OBJECT

The selection handles for the chart object are three dots arranged in a triangle shape on the corners. The handles are four dots arranged in a row in the middle of each edge. The move pointer is a four-pointed arrow; the sizing pointer is two-pointed.

1. Point at the top edge of the chart object to display a four-pointed arrow. Drag the chart so that its top-left corner aligns at cell A14.

EX-236

UNIT 3 Enhancing Worksheet Appearance



NOTE

Change the Zoom size so that you can see cell A14 and row 30.

2. Point at the bottom-right selection handle. A two-pointed sizing pointer appears.
3. Click and drag the bottom-right selection handle to cover cell E32. As you drag, the chart is made larger.

Exercise 9-13 CHANGE THE LAYOUT AND STYLES







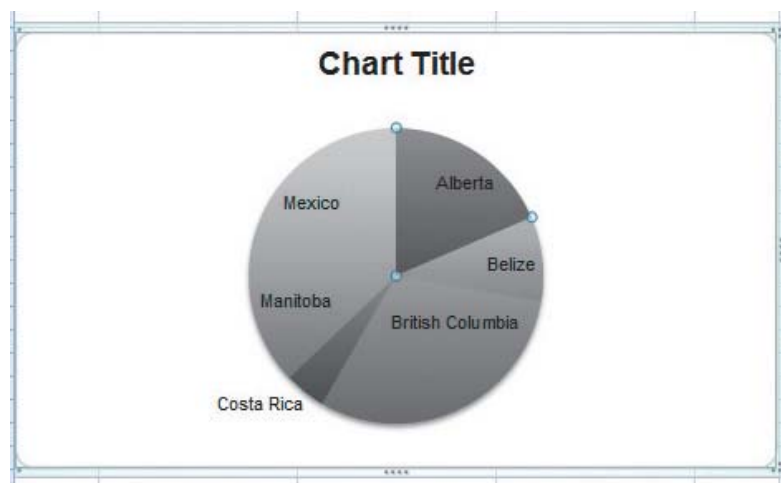

1. Click the **Chart Tools Design** tab. In the **Chart Layouts** group, click the More button .
2. Choose **Layout 5**. This layout includes a chart title, no legend, and data labels inside the pie slices.
3. In the **Chart Styles** group, click the More button .
4. Choose **Style 17**. The slices are shown in shades of gray.
5. Click the **Chart Tools Format** tab. Make sure that the chart area is the current selection.
6. For **Shape Styles**, click the More button .
7. Hover over several different styles. Since the chart area is selected, the entire object is affected.
8. Press **[Esc]** to close the gallery without making a change.
9. Point at any pie slice, but away from the label and click.
10. For **Shape Styles**, click the More button .
11. Hover over several styles. Now the slices would be affected, not the background.
12. Press **[Esc]** to close the gallery without making a change.
13. While the slices are selected, click only the Alberta slice. You should see selection handles for just this slice.

Figure 9-11
Pie chart with a
single slice selected
MayChart.xlsx
KowabungaSales
sheet



14. Click the More button  for **Shape Styles**.
15. Hover over several styles. Now just one slice would be affected.
16. Press **[Esc]**.
17. Click the chart title object.
18. Triple-click the placeholder text and key **Kowabunga Sales**.
19. Right-click the pie and choose **Format Data Labels**.
20. On the **Label Options** pane, click to select **Percentage**.
21. Click **Close**. The slices now show the name and the percentage.

Exercise 9-14 CREATE A BAR CHART SHEET

You can create a chart object and later move it to its own sheet. It is still linked to the data in the worksheet.





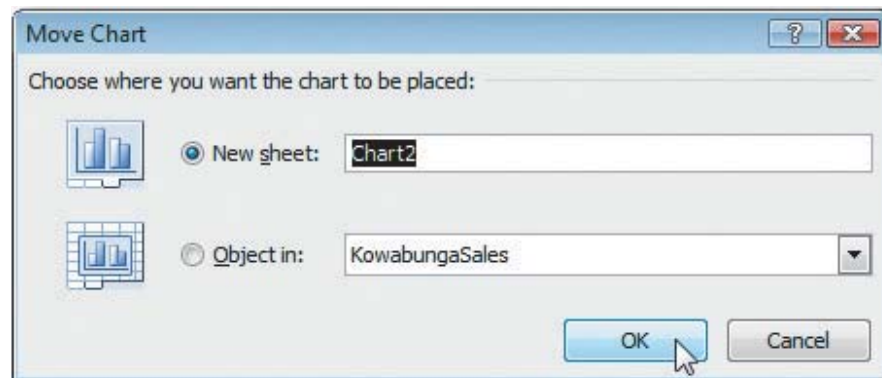

1. Select cells B6:C11 and click the **Insert** tab.
2. In the **Charts** group, click the Bar button .
3. In the **3-D** group, choose **Clustered Bar in 3-D**, the first icon. The chart object appears on your worksheet.
4. In the **Location** group, click the Move Chart button . The Move Chart dialog box allows you to move the chart to its own sheet or to another worksheet in the workbook.

Figure 9-12
Move Chart dialog
box
MayChart.xlsx
KowabungaSales
sheet



5. Choose **New sheet** and click **OK**. The chart is placed on a new sheet.
6. Click **Series 1** and press **[Delete]**. That was the legend.
7. Click the **Chart Tools Layout** tab. In the **Labels** group, click the Chart Title button .
8. Choose **Above Chart**. A placeholder object is inserted.



9. Triple-click **Chart Title** and key **Comparison of Weekly Sales**.
10. Click anywhere in the side panel to deselect the chart.

Exercise 9-15 ADD GRIDLINES AND A DATA TABLE

A data table lists the values and names displayed in the chart. It is separate from the chart and appears below the horizontal axis. Gridlines appear on the plot area to make it easy to relate values to the bars or columns. Only major vertical gridlines are shown in this chart.





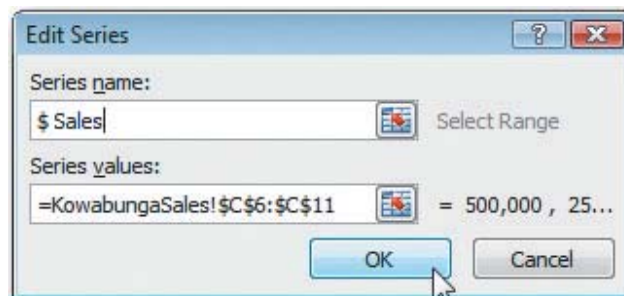
1. Click the white chart background to select the chart.
2. On the **Chart Tools Layout** tab, click the Gridlines button .
3. Choose **Primary Vertical Gridlines** and then choose **Major and Minor Gridlines**.
4. Click the Data Table button .
5. Choose **Show Data Table**. It appears below the chart and shows “Series 1” as the name.
6. Right-click anywhere in the data table and choose **Select Data**. The source worksheet data is active and the Select Data Source dialog box opens.
7. Click **Series 1** in the Legend Entries list and then click **Edit**. There is no series name at this point.
8. Key **\$ Sales** and click **OK**. Click **OK** again. The data table shows the new series name.

Figure 9-13
Editing the series
name
MayChart.xlsx
KowabungaSales
sheet



REVIEW

You can right-click a tab to rename it.

9. Name the sheet **BarChart**.
10. Save the workbook as **[your initials]9-15** in your folder.



OBJECTIVE 4

Editing Chart Data

Because a chart is linked to its data, changes that you make in the worksheet are reflected in the chart. You can add categories or value series to your data and then to its chart.

Exercise 9-16 EDIT CHART DATA

1. Click the **KowabungaSales** tab in *[your initials]9-15*. Notice the pie-slice size for Manitoba and its corresponding value in the worksheet.
2. Click the **BarChart** tab. Note the length of the bar for Manitoba.
3. Click the **Chart1** tab. Note the height of the Manitoba column.
4. Click the **KowabungaSales** tab.
5. Click cell C10, key **900000**, and press **[Enter]**. Notice the larger pie slice for Manitoba.
6. Click the **Chart1** tab. The height of the Manitoba column is increased.
7. Click the **BarChart** tab. Note the length of the Manitoba bar.

Exercise 9-17 ADD A DATA POINT

If you add another country and its total to the worksheet, you add a data point to the data series. If you insert the new data within the chart's current data range, it appears automatically in all charts linked to the data. If you add data below or above the chart's original source data range, you need to reset the data range for each chart.

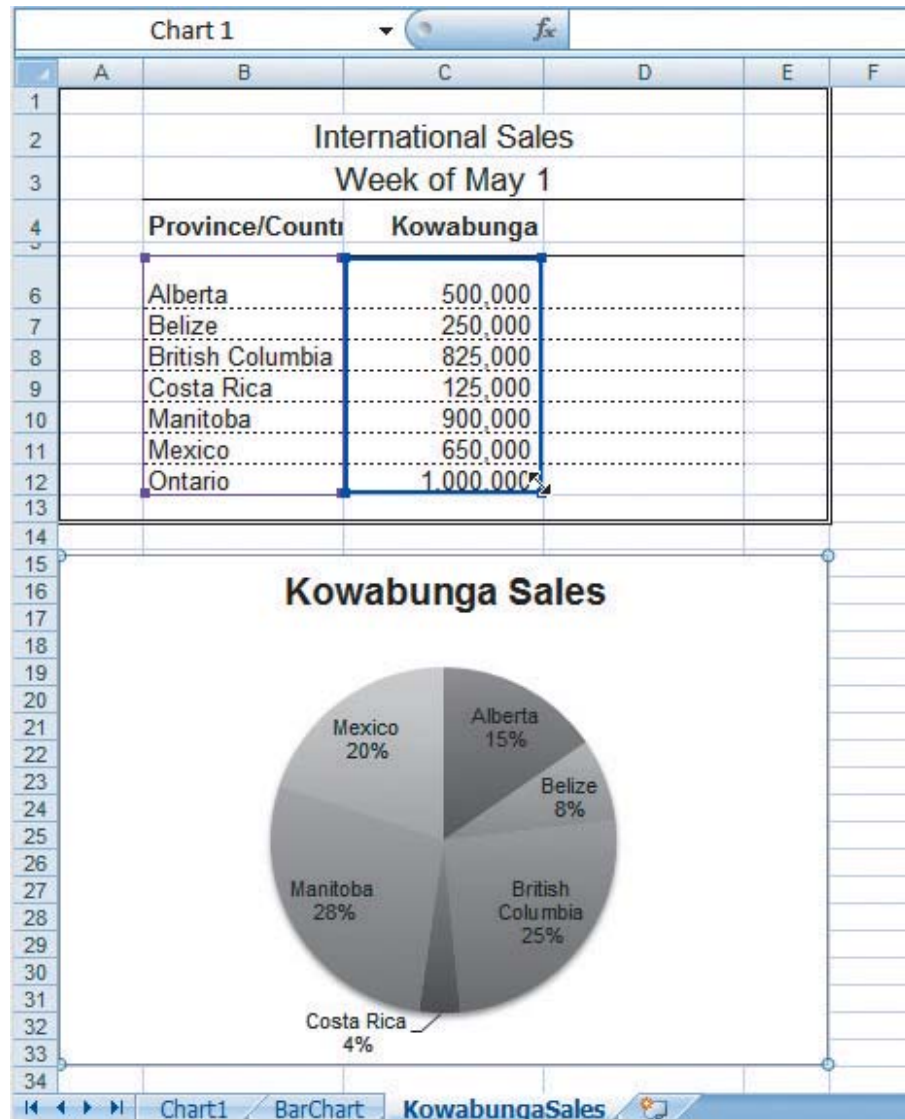
1. On the **KowabungaSales** sheet, insert a row at row 12.
2. Key **Ontario** in cell B12. Key **1000000** in cell C12. This data is not within the existing data range for the charts.
3. Right-click the white background area for the pie chart. Choose **Select Data**. The Select Data Source dialog box opens, and a moving marquee encloses the current data range.
4. Click **Cancel**. The data range shows sizing handles at each corner.
5. Position the pointer on the bottom-right handle for cell C11. A two-pointed sizing arrow appears.
6. Drag the sizing arrow to include the Ontario information. The chart is updated when you release the mouse button.

Objective 4 Assignment:
Exercises 9-28 (Skills Review); 9-30, 9-32,
and 9-33 (Lesson Applications); 9-34 and
9-35 (On Your Own) can be assigned after
completing Objective 4.

EX-240

UNIT 3 Enhancing Worksheet Appearance

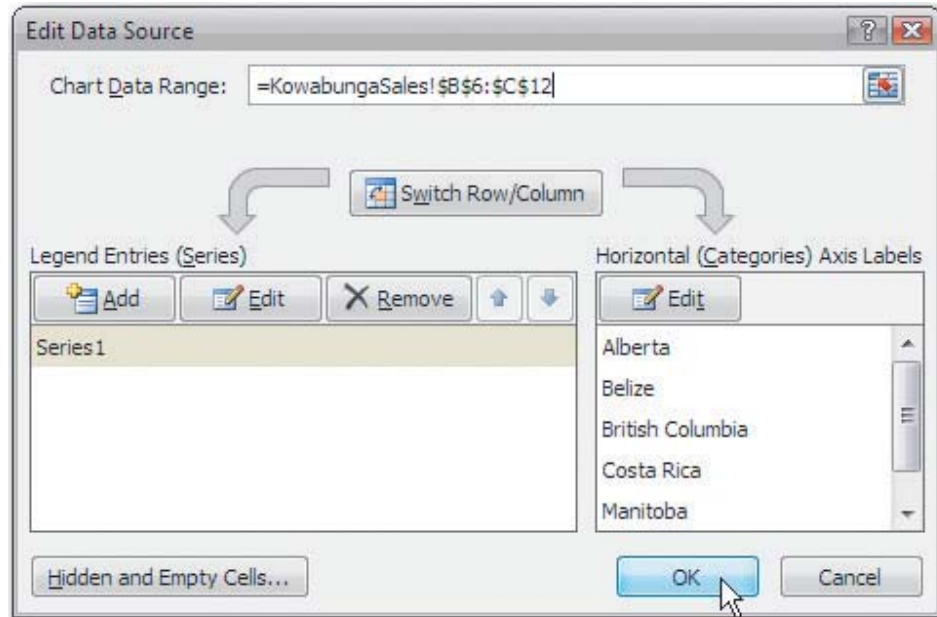
Figure 9-14
Adding a data point
9-15.xlsx
KowabungaSales
sheet



- Click the **Chart1** tab.
- Right-click the white chart background. Choose **Select Data**. The Select Data Source dialog box opens on top of the **KowabungaSales** tab with the current data range selected.
- In the **Chart data range** entry box, edit the address to show **\$C\$12** instead of **\$C\$11**. Click **OK**. The column chart is updated to include Ontario.



Figure 9-15
 Edit Data Source
 dialog box
 9-15.xlsx
 KowabungaSales
 sheet



REVIEW

The dialog box collapses as you drag. It expands when you release the mouse button.

10. Click the **BarChart** tab. Right-click the white chart background.
11. Choose **Select Data**. Move the dialog box so that you can see the range.
12. Click cell B6 and drag to select cells B6:C12. Click **OK**. There is now an Ontario bar.

13. Insert a row at row 10 on the **KowabungaSales** sheet.
14. Key **Great Britain** in cell B10 and **250000** in cell C10. This data point is within the existing data range for the charts.
15. Click each sheet tab to see the Great Britain data.



NOTE

A pie chart has only one series.

Exercise 9-18 ADD AND RENAME DATA SERIES

If you add a second product to the data, you can then create a second series for the column and bar charts.

1. On the **KowabungaSales** sheet, key **KowOwow** in cell D4.
2. Key the following values in cells D6:D13:

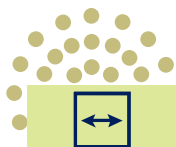
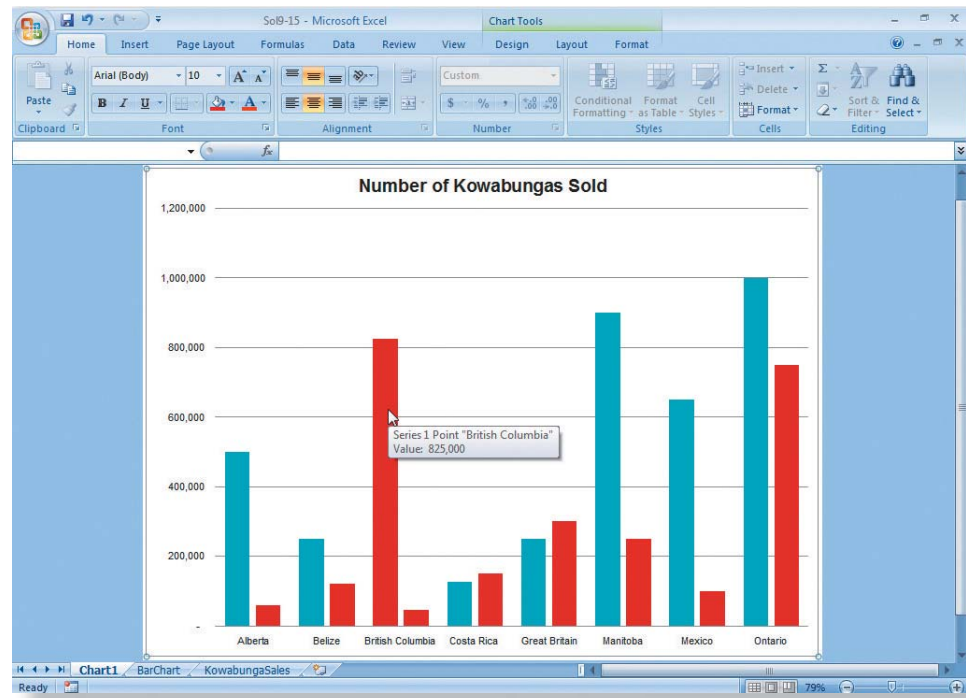
D6	60000
D7	120000
D8	45000
D9	150000
D10	300000
D11	250000
D12	100000
D13	750000

EX-242

UNIT 3 Enhancing Worksheet Appearance

3. Format the label and values to match the rest of the worksheet.
4. Click the **Chart1** tab. Right-click the white chart background and choose **Select Data**.
5. In the **Chart data range** entry box, edit the address to show **\$B\$6:\$d\$13**. Click **OK**. The column chart now shows two columns for each province/country, one for each product. The British Columbia data has a different color scheme due to your earlier change. Your colors may be different from the text figures.

Figure 9-16
Adding a data series
9-15.xlsx
KowabungaSales
sheet



REVIEW

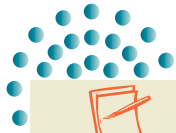
Hover over a column to determine which one represents "Series 1."

6. Right-click any column for **Series 1** (Kowabunga). Choose **Select Data**.
7. Click **Series 1** in the Legend Entries list and click **Edit**.
8. Key **Kowabunga** and click **OK**.
9. Click **Series 2** in the list and click **Edit**. Key **KowOwow** and click **OK**.
10. Click **OK** again. Hover over several columns to view the series' names.
11. Right-click the **Kowabunga** column for British Columbia. Choose **Reset to Match Style**.
12. Click the white background.
13. On the **Chart Tools Design** tab, choose **Style 6**.



Exercise 9-19 DELETE DATA POINTS AND A DATA SERIES

1. Click the **KowabungaSales** tab.
2. Delete rows 8 and 9. The pie chart is updated.
3. Click the **BarChart** tab. Click the **Chart1** tab. The British Columbia and Costa Rica data is removed from all charts.
4. Click the **KowabungaSales** tab.
5. Delete cells D6:D11. This is an entire data series.
6. Click the **Chart1** tab. The second column (KowOwows) is gone, but the category labels appear out of alignment with the columns.
7. Right-click any column and choose **Select Data**. KowOwow is still listed as a series.
8. Click **KowOwow** in the Legend Entries list and click **Remove**.
9. Click **OK**.



NOTE



You can delete any chart object or the entire chart by selecting it and pressing **Delete**.

OBJECTIVE 5

Using Images, Gradients, and Textures for a Data Series

You can change from a solid color to a gradient or an image for columns, bars, pie slices, and other chart objects. Gradients and textures can be used to better distinguish bars, columns, or slices on a black-and-white printer. Images allow you to show a picture to represent the data.

You can insert an image, a gradient, or a texture by selecting the chart object and:

- Clicking the Shape Fill button  on the Chart Tools Format tab.
- Clicking the Format Selection button  on the Chart Tools Format tab or the Chart Tools Layout tab.
- Right-clicking the object and choosing Format Data Series or Format Data Point.

Exercise 9-20 USE AN IMAGE FOR A DATA SERIES



If you want to use an image in a bar or column chart, it looks best if you use a two-dimensional chart rather than 3-D.

1. Click the **BarChart** tab. Select the chart and then click the **Chart Tools Design** tab.

 **Objective 5 Assignment:** Exercises 9-31 (Lesson Applications) and 9-36 (On Your Own) can be assigned after completing Objective 5.



Students need the Kowabunga image file.

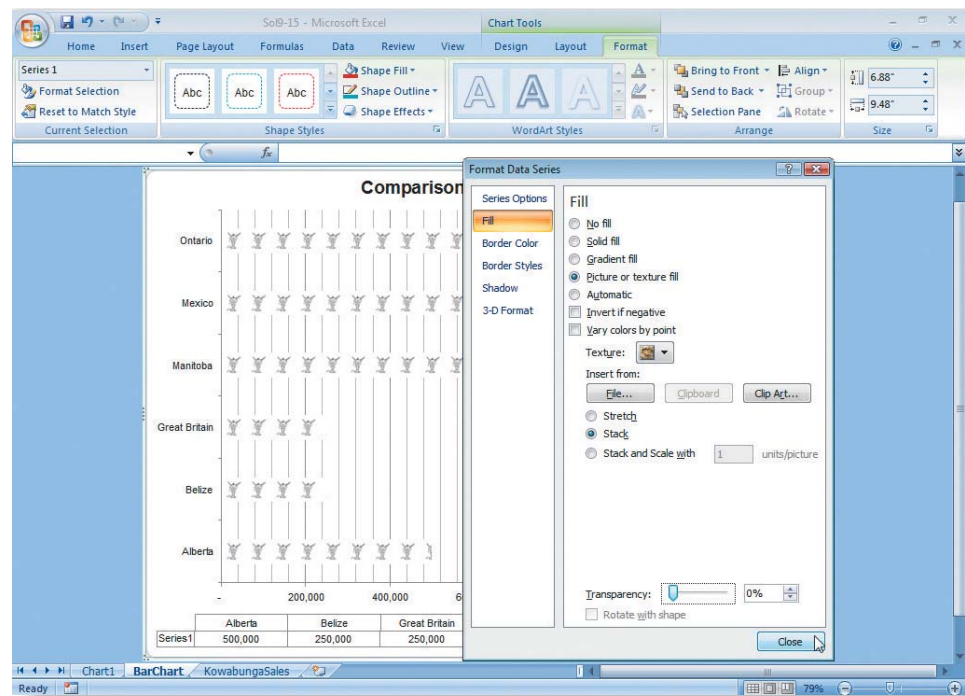
EX-244

UNIT 3 Enhancing Worksheet Appearance



2. Click the Change Chart Type button . The Change Chart Type dialog box lists all the available types.
3. In the **Bar** group, choose **Clustered Bar** (first icon, first row) to change the chart to a two-dimensional chart. Click **OK**.
4. Click any bar in the chart. All the bars show selection handles.
5. Click the **Chart Tools Format** tab. Click the Format Selection button . The Format Data Series dialog box opens.
6. On the **Fill** pane, choose **Picture or texture fill**.
7. In the **Insert from** group, click **File**.
8. Navigate to the folder with **Kowabunga** to find the image.
9. Choose **Kowabunga** and click **Insert**. The picture is inserted in the bars and stretched to fit the length of the bar. Move the dialog box to see.
10. In the dialog box, click to select **Stack**. The image is scaled to fit and repeat across the bars.

Figure 9-17
Inserting a picture
9-15.xlsx
BarChart sheet



11. Click **Close**.

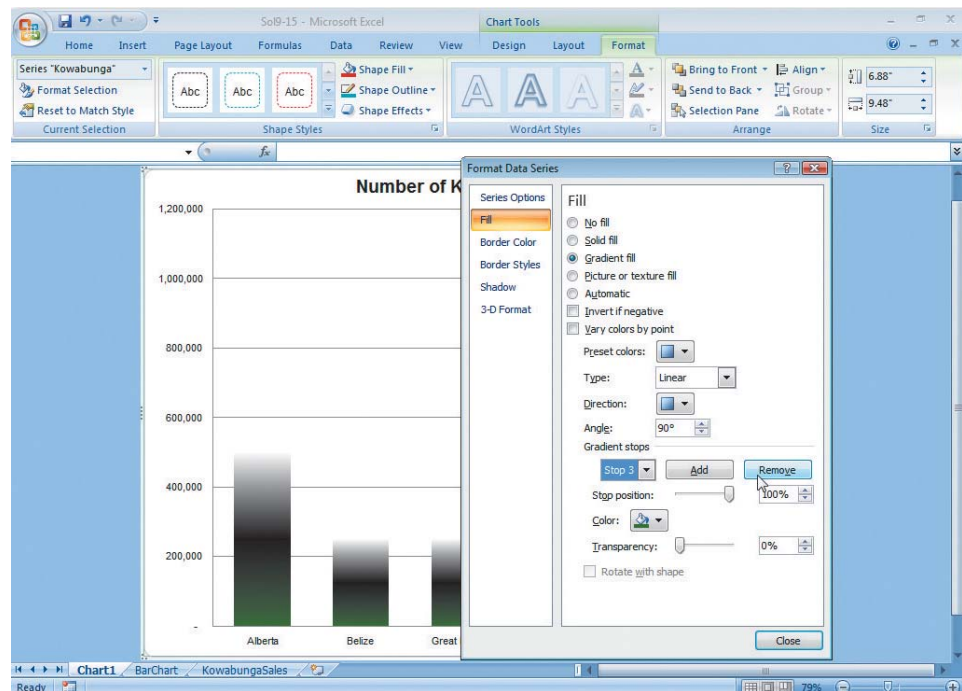
Exercise 9-21 USE A GRADIENT FOR A DATA SERIES

A *gradient* is a blend of colors. A gradient can give a special effect to bars, columns, or pie slices in a chart. In Excel, you can build blends that use one, two, or more colors, or you can choose from preset gradients.

1

1. Click the **Chart1** tab.
2. Right-click any column and choose **Format Data Series**.
3. On the **Fill** pane, choose **Gradient fill**. The dialog box updates to show the related options.
4. Click the arrow for **Preset colors**. A gallery of preset color blends opens.
5. Find and click **Moss** (first tile, third row). Click **Close**.
6. Right-click any column again and choose **Format Data Series**. Click **Fill**.
7. In the **Gradient stops** group, verify that **Stop 1** is current. A *stop* is a color in a gradient and refers to a position on a color scale.
8. Click the arrow for **Color** and choose **White, Background 1**.
9. Click the arrow next to **Stop 1** and choose **Stop 2**. This will be your second color.
10. Click the arrow for **Color** and choose **Black, Text 1**.
11. Click the arrow next to **Stop 2** and choose **Stop 3**. This is a third color from the **Moss** gradient.

Figure 9-18
Building a gradient fill
9-15.xlsx
BarChart sheet



1

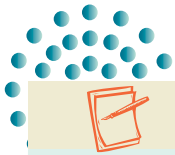
The Gradient group includes presets and options for building gradients with several colors. Encourage students to experiment.



Excel Classroom
Presentation 9.

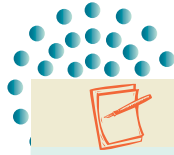
EX-246

UNIT 3 Enhancing Worksheet Appearance

**NOTE**

The Direction choices depend on the Type of gradient.

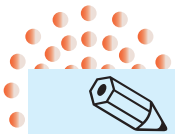
12. Click **Remove** to use only two colors (two stops).
13. Click the arrow for **Direction**. Several variations of the way in which the colors blend are shown in a gallery.
14. Find and choose **Linear Up**.
15. Click **Close**.

**NOTE**

If you're using a black-and-white printer, colorful gradients print as shades of gray.

Exercise 9-22 USE A TEXTURE FOR A DATA POINT

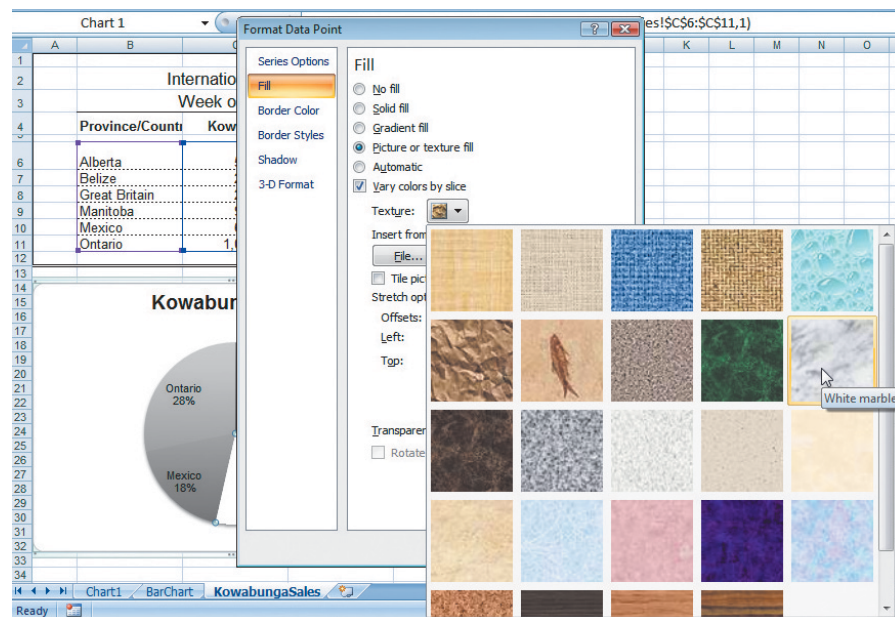
A *texture* is a background that appears as a grainy, nonsmooth surface.


**TIP**

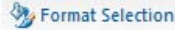
Point at the slice, not the data label within the slice.

1. Click the **KowabungaSales** tab.
2. Click the pie to select it. Click the Manitoba slice to select that slice only.
3. Right-click the slice and choose **Format Data Point**.
4. On the **Fill** pane, choose **Picture or texture fill**.
5. Click the arrow with **Texture**. A gallery of available textures opens. Notice that textures look similar to marble, wood, or canvas.

Figure 9-19
Using a texture as fill
9-15.xlsx
KowabungaSales
sheet



6. Hover over several texture tiles. A description appears with the name.
7. Choose **White marble**. Click **Close**.
8. Select only the Ontario slice. Click the **Chart Tools Format** tab and then click the Format Selection button .
9. On the **Fill** pane, choose **Picture or texture fill**.
10. Click the arrow with **Texture** and choose a different texture. Click **Close**.
11. Click a cell in the worksheet. Save your workbook as *[your initials]9-22* in your folder.
12. Close the workbook.

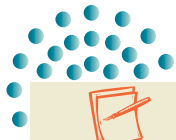


OBJECTIVE 6

Creating a Combination Chart

A *combination chart* is a single chart that uses more than one chart type or different number scales. A combination chart has at least two series or sets of values. Some combination charts use the same chart type for each series, but a secondary number scale. A *secondary axis* is a set of axis values that is different from the first (primary) set.


Exercise 9-23 CREATE A CHART WITH TWO CHART TYPES



NOTE

The formulas in columns D and E multiply the price by the number sold.



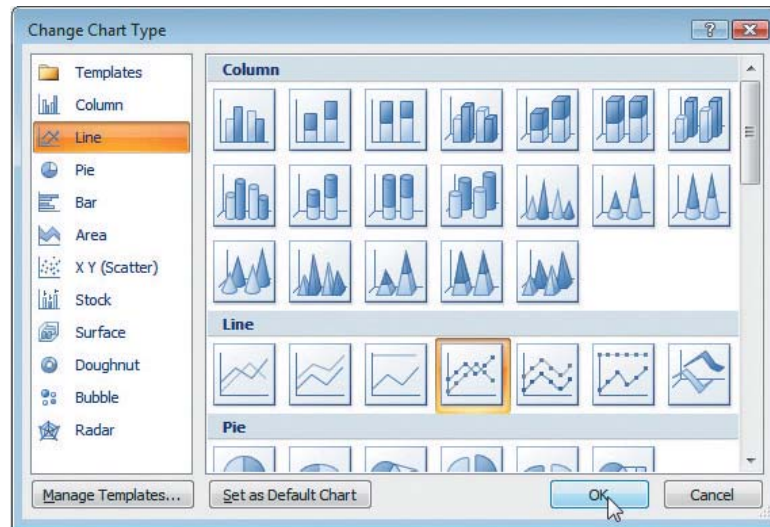
1. Open **ComboChart**.
2. Select cells A4:C9 and press **[F11]**. A new chart sheet is inserted and plots two products.
3. On the **Chart Tools Design** tab, click the Select Data button .
4. Choose **Series 1** in the Legend Entries list and click **Edit**.
5. Key **Kowabunga** and click **OK**.
6. Edit **Series 2** to display **KowOwow** and click **OK**.
7. Click **OK** again. The legend is updated.
8. Right-click any Kowabunga bar and choose **Change Series Chart Type**.
9. In the **Line** category, choose **Line with Markers**. Click **OK**. The Kowabunga series is now a line chart.

Objective 6 Assignment:
Exercise 9-29 (Skills Review) can be assigned after completing Objective 6.

EX-248

UNIT 3 Enhancing Worksheet Appearance

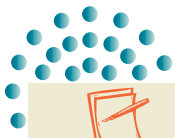
Figure 9-20
Changing the chart
type for a data series
ComboChart.xlsx
Chart1 sheet



10. Right-click the line and choose **Format Data Series**.
11. On the **Line Style** pane, set the **Width** to **2 pt**.
12. On the **Line Color** pane, choose **Black Text 1** as the **Color**.
13. On the **Marker Options** pane, choose **Built-in**. Set the **Size** to **10**. Click **Close**.
14. Click the white chart background. The markers should be the same color as the line.
15. Right-click the line and choose **Format Data Series**. On the **Marker Fill** pane, choose **Solid fill**. Then set the color to match the line color.
16. On the **Marker Line Color** pane, choose **Solid fill** and the same color. Click **Close**.
17. Save the workbook as *[your initials]9-23*.

Exercise 9-24 BUILD A CHART WITH TWO SERIES


You can show the dollar sales and the number of items sold on the same chart. These values will be two different series on the chart.




NOTE

Ranges for a chart need not be contiguous. Use **Ctrl** to select noncontiguous ranges.



1. Click the **KowabungaSales** tab.
2. Select cells A4:A9, C4:C9, and E4:E9. This represents the number of KowOwows sold and the sales dollars.
3. Click the **Insert** tab. Choose a **Clustered Column** 2-D chart.
4. Click the **Move Chart** button  and place the chart on its own sheet. There are two series, one for the product and one for the dollars. Both series use the same value axis, so the dollar column is disproportionately taller.

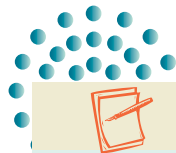
5. Right-click the legend and choose **Select Data**.
6. Change **Series 1** to display **Number Sold**.
7. Change **Series 2** to **Dollar Sales** and click **OK**. Click **OK** again.
8. On the **Chart Tools Layout** tab, click the Chart Title button . Choose **Above Chart**.
9. Edit the placeholder to show **Units and Dollars**.



Exercise 9-25 ADD A SECONDARY AXIS

Because the values are very different, you should use two axes on the chart, one for the number of items and one for the dollar amounts. To use a secondary axis, use different chart types for each data series.

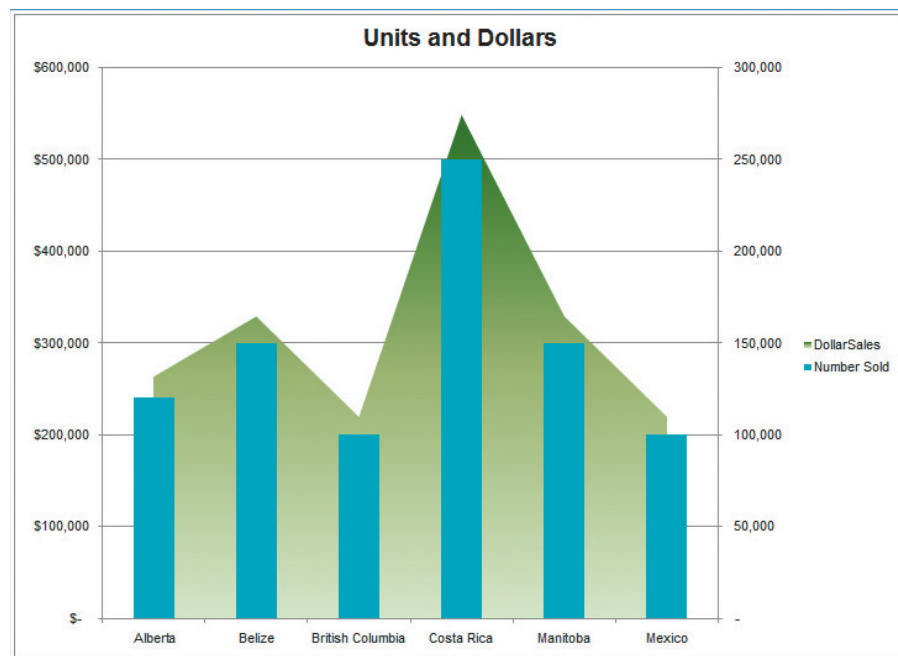
1. Right-click any Dollar Sales column and choose **Change Series Chart Type**.
2. In the **Area** category, choose **Area**. Click **OK**.
3. Right-click somewhere in the area and choose **Format Data Series**.
4. On the **Fill** pane, choose **Gradient fill**. Click the arrow with **Preset colors** and choose **Moss**. Click **Close**.
5. Right-click a Number Sold column and choose **Format Data Series**.
6. On the **Series Options** pane, choose **Secondary axis**. The selected series will be plotted on a separate value axis. Click **Close**.



NOTE

Some chart types cannot be combined. Excel displays a message if you choose charts that cannot be combined.

Figure 9-21
Using a secondary
axis in a chart
9-23.xlsx
Chart2 sheet



7. Right-click the legend and choose **Format Legend**.
8. On the **Legend Options** pane, choose **Bottom** and click **Close**.
9. Save the workbook as *[your initials]9-25*. Close the workbook.

Using Online Help



In addition to charts, you can use many types of images and graphics in a worksheet. Unlike charts, SmartArt graphics and shapes are usually not based on worksheet data.

USE HELP TO LEARN ABOUT GRAPHICS

1. In a new workbook, press **[F1]**.
2. Find and review topics about using SmartArt Graphics in a worksheet. Then find topics about shapes.
3. Close the Help window when you are finished reading about graphics and shapes.

Lesson 9 Summary



- Charts can be objects in a worksheet, or they can be separate chart sheets.
- A chart is linked to the data that it is plotting. If the data is edited, the chart reflects the changes.
- A chart includes many individual elements that can be formatted and edited.
- Right-click a chart element to see its shortcut menu.
- Charts show data series, which are the chart's values. A pie chart can have only one series, but other types of charts can show multiple data series.
- You can make many chart changes directly on the chart.
- If you select data and press **[F11]**, Excel creates an automatic column chart sheet.
- Excel's standard types of business charts include bar, column, line, and pie charts.
- Move a chart by selecting it and dragging it. Size a chart by dragging one of its selection handles.
- After a chart is created, you can add a data point or an entire series to it.
- Although charts typically use solid color for columns, slices, and bars, you can use images, textures, or gradients to add visual appeal to your charts.










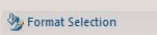

Encourage students to follow the steps in "Using Online Help" (with a blank document open). Software companies are increasingly using their Help programs—rather than paper-based documentation—to train users and assist in answering questions.



Encourage students to use the Lesson Summary to review the important concepts in this lesson.

- You can apply effects to the shapes used in a chart to include shadows, glows, bevels, and more.
- A combination chart has at least two series and uses different chart types for each series.
- Some combination charts use a single chart type with a secondary axis because the series values are disproportionate.

1

LESSON 9		Command Summary	
Feature	Button	Task Path	Keyboard
Axis, add		Chart Tools Layout, Axes	
Axis, format		Chart Tools Format, Current Selection	Ctrl + 1
Axis titles, add		Chart Tools Format, Labels	
Chart object, create		Insert, Charts	Alt + F1
Chart sheet, create		Insert, Charts	F11
Chart title, add		Chart Tools Layout, Labels	
Chart type		Chart Tools Design, Type	
Data labels, add		Chart Tools Layout, Labels	
Data labels, format		Chart Tools Format, Current Selection	Ctrl + 1
Data series, edit		Chart Tools Design, Data	
Data series, format		Chart Tools Format, Current Selection	Ctrl + 1
Data table, add		Chart Tools Layout, Labels	
Legend, add		Chart Tools Layout, Labels	
Legend, format		Chart Tools Format, Current Selection	Ctrl + 1
Move chart		Chart Tools Design, Location	
Selection pane		Chart Tools Format, Arrange	

1

Point out that the Command Summary lists a variety of ways to accomplish a specific task. Students can decide which method they prefer to use for a specific purpose.