

LESSON 3

Adding Graphics to Worksheets

Enhancing your workbooks with graphics may help you illustrate the worksheet theme and call attention to important details. In this lesson, you will locate picture sources and then insert photos and clip art on worksheets. You will draw shapes using Excel's large gallery of drawing tools and move, size, rotate, and add styles to images. With SmartArt, you will create text charts that visually

demonstrate a process or relationship.

LESSON OBJECTIVES

After studying this lesson, you will be able to:

- Use keywords to locate clip art in picture collections
- Insert and modify pictures and clip art on worksheets
- Draw, modify, and add text to shapes
- Customize SmartArt to convey ideas, processes, and data relationships

LESSON TIMING

- Concepts/Hands-On: 1 hr 00 min
- Concepts Review: 15 min
- Total: 1 hr 15 min

CASE STUDY: ANALYZING SALES PERFORMANCE

Recently promoted to an administrative marketing position, David Nguyen is eager to begin his first project. His company, Sports World, sells sports equipment and clothing in retail stores in several large U.S. cities. The marketing vice president is concerned that the current year's sales are not as strong as the previous year's. David has been asked to present several sales performance worksheets at a management strategy meeting. The data and charts already have been entered into the workbook. David thinks that adding some graphics will highlight and connect the key points of his presentation. You will add graphics to several worksheets while applying some principles of good design. You will work with the graphics shown in the following illustration, including a picture file and a shape containing text.

Using Illustrations with Excel

You can dress up your worksheets using the professionally designed clip art provided with Office 2007. You may also insert your own pictures, such as a company logo or a scanned picture.

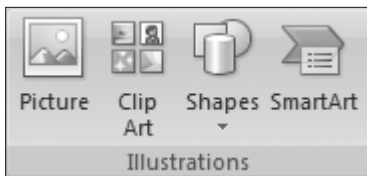
Design Principles

Graphics are fun to create, but that should not be the reason that you add them to a workbook. Before you add art, review the following generally accepted design rules:


- Each graphic should have a purpose, such as to call attention to an important number, summarize data, or contribute to the worksheet theme.
- Graphics should enhance and not distract or clutter the worksheet.
- The image colors, size, alignment, and other formatting should contribute toward a balanced appearance with other worksheet objects.
- Copyright law prohibits the use of many images for commercial use without permission. However, there are also websites featuring copyright-free art. The clip art that comes with Excel is also free to use as long as you don't try to resell the clip art itself.

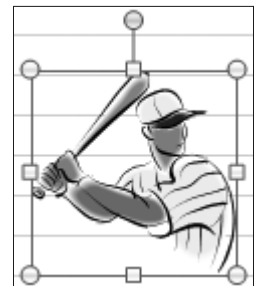
The Illustrations Group on the Ribbon

To place a graphic on the worksheet, start with one of the tools in the Illustrations group on the Insert Ribbon.



Inserting Pictures and Clip Art

The Picture  command adds an image saved as a file. Sources may include a digital camera, scanner, and purchased images. The Clip Art command adds a drawing or photo from a gallery of images available in Office 2007. You may adjust several image characteristics, including the location, colors, and brightness. You may apply effects, such as a picture frame or blurred edges. Immediately after it is inserted, the picture or clip art image displays with sizing handles and a rotation lever, as shown in the following illustration.





An inserted clip art image or picture displays sizing handles and a rotation lever.

Inserting a Picture from a File

After you choose the Picture command from the Ribbon, Excel displays the Insert Picture dialog box, similar to the Open dialog box for workbooks. Navigate to the folder containing the desired picture and select its file. A variety of image file formats, including JPEG and TIFF, are compatible with Excel.



Hands-On 3.1 Insert a Picture

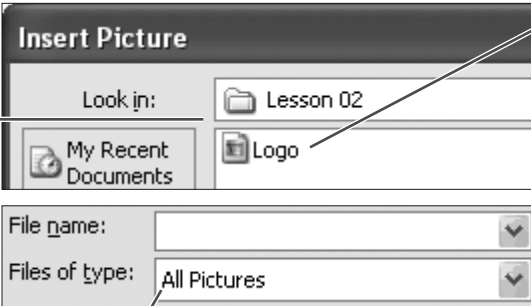
1. Open the Sports World Sales workbook from the Lesson 03 folder in your file storage location.
2. Maximize  the window.
3. Display the By Dept worksheet.
4. Display the By Market worksheet.
5. Select cell B14, and choose Insert→Illustrations→Picture  from the Ribbon.

A Navigate to the Lesson 02 folder in your file storage location.

B Notice that none of the Excel workbook files appear because the Files of Type box is set to All Pictures.


C Select the Logo file. (The icon might appear different from this one.)

D Click Insert.



6. Save  the changes to your workbook.

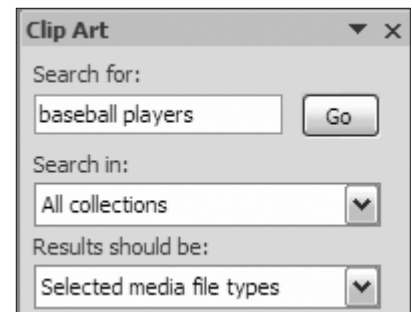
Inserting Clip Art

The Clip Art  command on the Insert Ribbon displays the Clip Art task pane. This pane lets you search for clip art using keywords. Every clip art image provided with Office 2007 has a number of keywords associated with it that describe the image. For example, a baseball player image may be located using keywords such as *baseball players*, *sports*, and *athletes*.

Clip Art Collections

The clip art that comes with Excel is from essentially two different sources. You may limit the search to only the Office Collections on disk or the Web Collections on the Microsoft website.

- **My Collections & Office Collections**—These are clip art images stored on your hard drive. These collections are quite limited.
- **Web Collections**—Almost all of the available clip art is stored on the Internet and only available when you have an Internet connection.



The Clip Art task pane lets you search Excel's large clip art collections.

Clip Art Types

Clip art comes in four different media types. However, only two of these types actually work with Excel. You may limit a clip art search to specific media types.

- **Clip Art**—These are drawings in a variety of designs and colors.
- **Photographs**—These are images from a camera.
- **Movies**—These are simple animations. They do not work in Excel, looking like clip art pictures instead. (These movies do work in other Office applications such as PowerPoint.)
- **Sounds**—These are brief audio clips. Sound clips do not work in Excel but do work in some other Office applications.



Hands-On 3.2 Insert Clip Art

1. Display the Analysis worksheet in the Sports World Sales workbook, and select cell C6.
2. Choose Insert→Illustrations→Clip Art  from the Ribbon.
3. Follow these steps to conduct a search:

A Type the keyword **baseball players** in the Search For box.

B Display the Search In menu.

C Place a checkmark next to **Everywhere**, if not already checked.

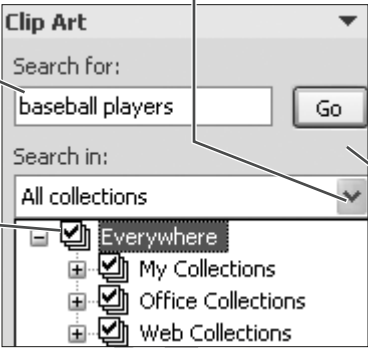
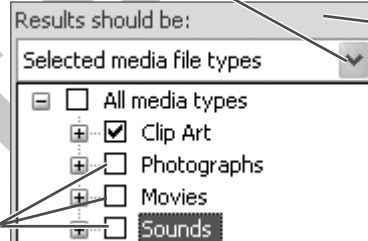
D Click on a shaded area of the task pane to collapse the menu.

E Display the Results Should Be menu.

F Remove the checkmarks from **Photographs**, **Movies**, and **Sounds**. (This limits the search to clip art items only.)

G Click on a shaded area of the task pane to collapse the menu.

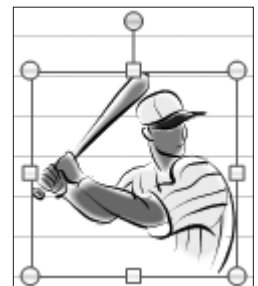
H Click **Go**.

4. Scroll through the clips that appear and click the one shown at right.
5. Close the Clip Art task pane when you are finished.

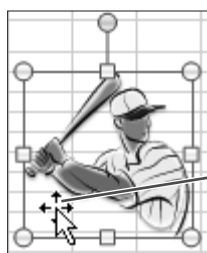
Clip Art 

6. Save  the changes to your workbook.



Moving, Sizing, and Rotating Images

When you select a picture or clip art image, sizing handles and a rotation handle appear. You can size, move, and rotate a selected object as described in the following illustration.



Handles on the outside of the selected image allow you to change its size and shape.

This move pointer appears when you drag from the middle of the image.



The Rotation handle allows you to rotate the image.



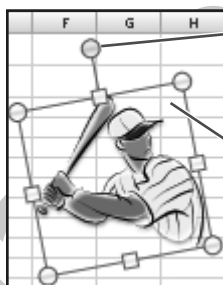
Hands-On 3.3 Move, Rotate, and Size Images

1. Follow these steps to move, rotate, and size the baseball player clip art image in the Analysis worksheet of the Sports World Sales workbook:




A If the resizing handles do not display, click the object to select it.

B Drag the lower-right corner handle diagonally up and to the left to shrink the image.



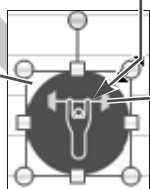
C To rotate, drag the circle in the rotation handle to the left. (If your image is different, you may need to rotate to the right.)

D Point anywhere in the image except on a resizing handle and drag to move so that the top of the image is near the top of cell F3. Then tap the arrow keys several times to nudge the image in small increments.

2. Select the baseball player image and tap **Delete**.
3. Undo  the delete.
4. Display the By Market worksheet.
5. Follow these steps to size, move, and duplicate the image:

A Select the picture to display its handles.


B Drag the upper-right corner handle diagonally down and to the left to shrink the image.



C Point anywhere in the image except on a handle and drag to move so that the picture fits on cells A2 and A3. If necessary, resize again. Tap the arrow keys several times to nudge the image in small increments.

D Click outside the picture to deselect it.

6. Select the picture, use **Ctrl** + **C** to copy, and then deselect the picture.
7. Display the By Dept worksheet, select cell A2, and use **Ctrl** + **V** to paste.

8. Move the picture, if necessary, so that it fits attractively on cells A2 and A3.
9. Deselect the picture.
10. Save  the changes to your workbook.

Scaling and Cropping Images

When you select an image, various Picture Tools become available on the Ribbon. To adjust most characteristics, you will use the Format Ribbon.

Scaling

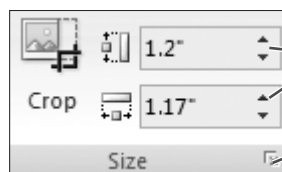
Scaling a picture reduces its overall size to a percentage of its original size. The effect is equal to having dragged a corner handle on the object. You can scale more precisely, however, by typing a number of inches in the Ribbon or using the spinner arrows to increase or decrease the scale in increments.



A picture at its original size



The picture scaled to 50 percent of its original size




Changing the height or width also changes the other dimension in the same proportion.

This button launches the Size and Properties dialog box.

The cropping and scaling options in the Format Ribbon

Cropping

 If you want to use part of a picture or clip art image, you may use the Crop command. The object remains the same size, and you drag the handles inward to cut off one or more edges of the image.

The mouse pointer displays as the cropping tool.



The picture ready to be cropped

Drag a corner handle or side handle in toward the center.



The picture after cropping each of its four sides


The Size and Properties Dialog Box

You may launch the Size and Properties dialog box from the Format Ribbon to set a number of options precisely when you need the same measurements for multiple objects or prefer not to use the mouse. You may set the height, width, rotation, scale percentage, and crop dimensions. The object's original size also is listed.





The Size tab of the Size and Properties dialog box

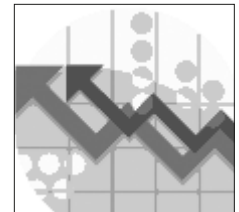
Resetting an Image

 If you want to start over, you may reset the image to its original characteristics by choosing Reset Picture on the Format Ribbon or the Reset command in the Size and Properties dialog box. Use Undo to reverse only the previous change.

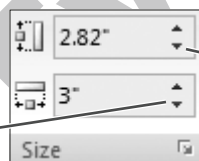


Hands-On 3.4 Scale and Crop an Image


1. Display the Analysis worksheet in the Sports World Sales workbook.
2. Choose Insert→Illustrations→Clip Art  from the Ribbon.
3. In the Clip Art task pane, type **profit** as the keyword. Under Search In, set Everywhere. Set the Results Should Be option so that only Clip Art has a checkmark, and click Go.
4. Scroll through the results and drag the image shown to the right from the Clip Art task pane to cell B12. If this image is not available, select an appropriate image for the worksheet.
5. Close  the Clip Art task pane.
6. If the profit image does not display sizing handles, select the image.
7. Choose the Format Ribbon if it is not already displayed.
8. Follow these steps to scale the image using the Ribbon:

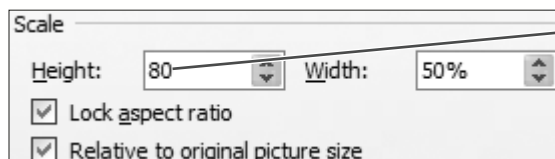


A In the Size group on the Format Ribbon, click the ▼ spinner for Shape Width several times.



B In the Size group on the Format Ribbon, click the ▼ spinner for Shape Height several times. Notice that either command scales both the width and the height together.

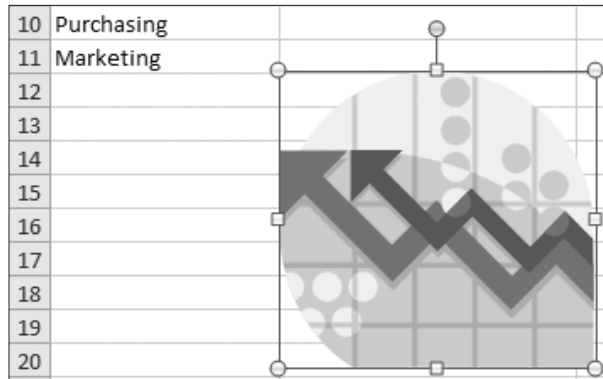
9. In the Size group on the Format Ribbon, click the dialog box launcher  button.
10. Follow these steps to scale the profit image using the Size and Properties dialog box:



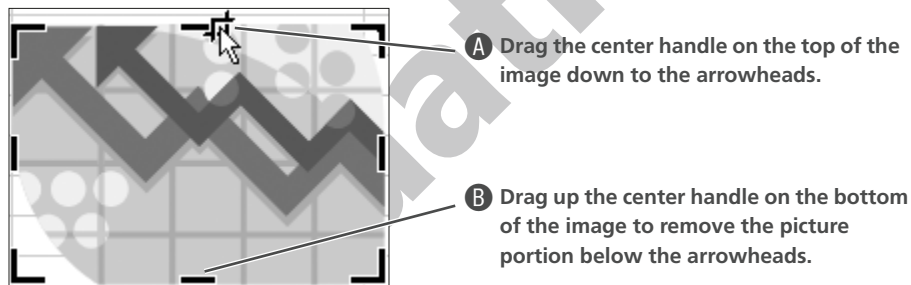
A In the Scale section (not the Size and Rotate section), drag to select the current height and type 80. Although the Width displays at its original percentage, notice that the Lock Aspect Ratio is turned on. The width will adjust in proportion to the height.




B Tap **Enter** or choose Close to exit the dialog box.

11. Right-click the profit image and choose Size and Properties from the pop-up (or context) menu.
12. In the Size and Properties dialog box, edit the scale width to **50** and tap **Enter**. If you are using a different image than the one shown, use an appropriate percentage.



13. If the profit image does not display sizing handles, select the image.
14. Choose Format→Size→Crop  from the Ribbon.
15. Follow these steps to crop the image:

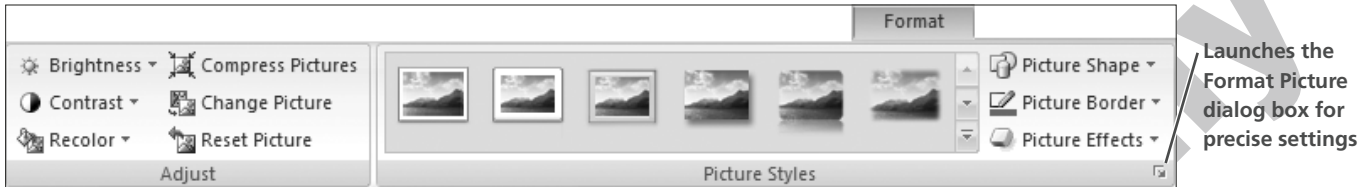


16. Experiment with the cropping handles until you are satisfied with the image. If needed, scale the image larger or smaller so that it balances well with other objects on the worksheet.
17. With the profit image selected, choose Format→Adjust→Reset Picture  from the Ribbon.
18. Undo  the reset.
19. Click outside the image to deselect it.
20. Save  the changes to your workbook.

Adjusting Images and Special Effects

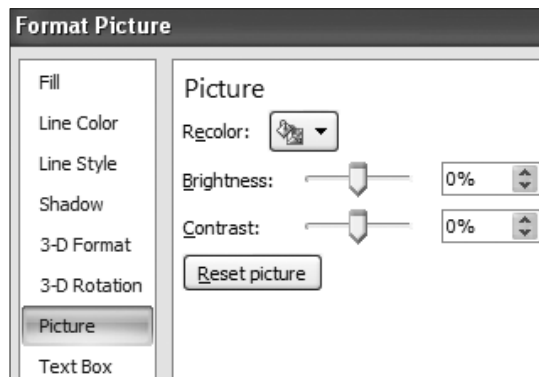
2007
new!

The Format menu for Picture Tools contains some options new to Office 2007. The brightness, contrast, and recolor options change the image differently than in previous Excel versions. The Picture Styles group includes options to frame an image or apply a reflection. With the Picture Effects you may angle, bevel, shadow, or reflect the image for a 3-D appearance. You may preview the effect of any option to the selected image by passing the mouse pointer over the choices on the Ribbon.



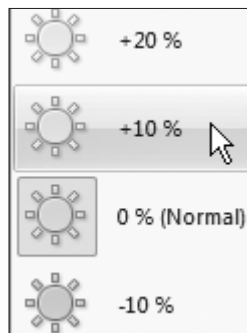
The Adjust group and Picture Styles group on the Format menu display when a clip art or picture image is selected.


The dialog box launcher in the Picture Styles group of the Format Ribbon displays the Format Picture dialog box, where you may set some options more precisely than you can with the options available on the menus. For example, you may set a contrast of 12%.

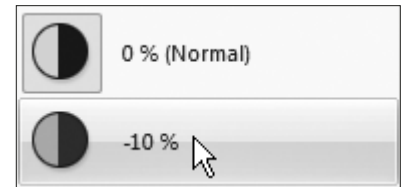



Hands-On 3.5 Adjust Images and Apply Special Effects

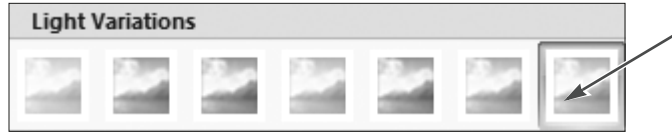
1. Display the Analysis worksheet of the Sports World Sales workbook.
2. Select the profit picture.
3. Choose Format→Adjust→Brightness  menu ▼ from the Ribbon, trace down to each menu item to preview the effect on the image, and then choose +10%.



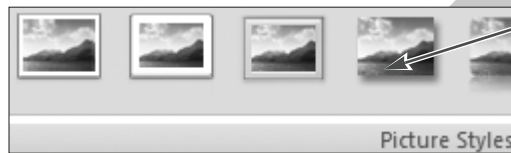
4. Choose Format→Adjust→Contrast  menu ▼ from the Ribbon, trace down to each menu item to preview its effect, and then choose -10%.




5. Choose Format→Adjust→Recolor  menu ▼ from the Ribbon, point to each menu item to preview its effect, and then choose Accent Color 6 Light, the last option under Light Variations.



6. Drag the profit image to a position near cell F13 so that it looks centered under the baseball player image.
7. Feel free to copy and paste the profit image, drag the duplicate to row 26, and experiment with the other options in the Brightness, Contrast, and Recolor menus.
8. Select the profit image in row 13.
9. Choose Format→Picture Styles→Drop Shadow Rectangle (the fourth choice from the left) from the Ribbon.

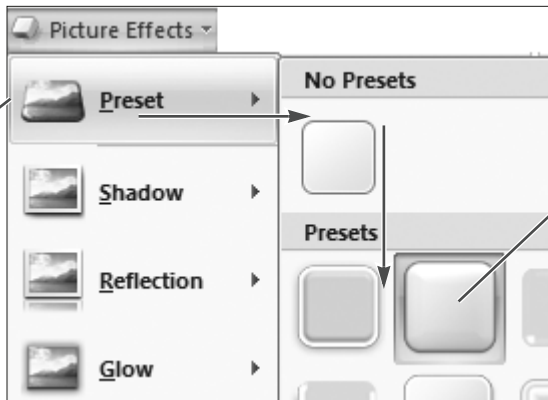


10. Choose Format→Picture Styles→More  menu ▼ from the Ribbon, point to some of the menu items to preview their effects, and then tap **[Esc]** to cancel without making a selection.
11. Select the baseball player image on cell F3.
12. Drag the scroll box in the horizontal scroll bar to the right so that the image will be visible as you display a menu.



13. Choose Format→Picture Styles→Picture Effects  menu ▼ from the Ribbon, and then follow these steps to choose a preset:

A Trace down to Preset, and then trace to the right to the Presets submenu.




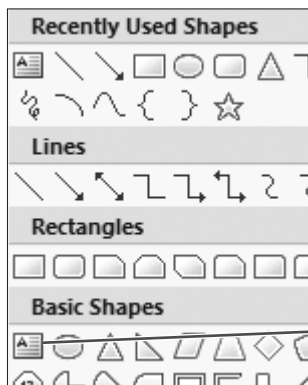
B Point to some choices on the submenu to preview their effects.

C Choose any one of the Presets that enhances the image.

14. Save  the changes to your workbook.

Getting into Shapes

 With the Office 2007 shape tools, you may draw lines, ovals, rectangles, arrows, and many other shapes. Lines and callouts containing text are particularly useful to emphasize areas of interest on worksheets and charts. The Shapes command is used to add these objects, and you may type text into any shape except lines, brackets, and braces. The following illustration highlights some categories on the Shapes menu.

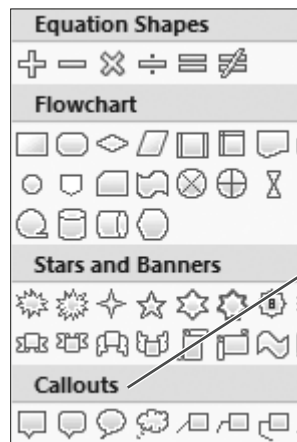


The Shapes menu

The first section includes shapes you used recently.

These tools allow you to draw straight and curved lines.

The Text Box tool creates text that is not anchored within a cell.



You may type text inside a callout to explain and point to an important worksheet item.

Inserting Shapes

To draw a shape, choose the desired tool on the Shapes menu and then either click or drag in the worksheet. Clicking creates a shape of a predefined size, and dragging allows you to customize the width and




Arrows drawn using the dragging method

height. You may use resizing handles on the shape or the Sizing commands on the Format Ribbon to change the size after drawing. You may type text within the shape after drawing or selecting it. After you create or select a shape, the Drawing Tools appear on the Ribbon. The Format Ribbon contains options to change the size, fill, and outline; add an effect; and insert more shapes.

Constraining Objects

You may hold down the **[Shift]** key to draw shapes that remain in equal proportion of width to height. A rectangle is constrained to a square, and an oval is constrained to a circle. You also may constrain lines to 90- or 45-degree angles.

Text Boxes

The Text Box  command creates a very useful object. Text boxes are slightly different from rectangle shapes, which display centered text. As you type in a text box, text is left aligned by default, and the text box lengthens automatically to display all the text. You may position a text box anywhere on a worksheet, even over worksheet entries, pictures, and other graphics.




A text box may be layered over a cell, picture, clip art, or shape.

Applying Shape Styles and Effects

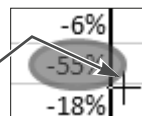
While a shape is selected, you may apply options from the Shape Styles group on the Format Ribbon. You may apply a predesigned outline and fill, or you may create a custom outline or fill. The Shape Effects menu contains options to angle, bevel, shadow, or reflect the image for a 3-D appearance.




Hands-On 3.6 Insert and Edit Shapes


1. Display the By Dept worksheet in the Sports World Sales workbook.
2. Choose Insert→Illustrations→Shapes menu ▼→Basic Shapes→Oval  from the Ribbon.
3. Follow these steps to draw an oval on cell D6:

- A** Position the mouse pointer slightly above and to the left of the number -55% and then drag down and right.



- B** Release the mouse button to end the oval.

4. With the oval selected, choose Format→Shape Styles→Shape Fill  menu ▼→No Fill from the Ribbon.

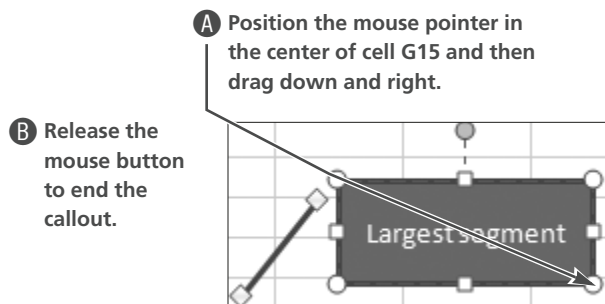
5. With the oval selected, choose Format→Shape Styles→Shape Outline  menu ▼ from the Ribbon, pause the mouse over various orange shades, and choose one that will call attention to the circled number.

-6%
-55%
-18%

6. Move and resize the oval to center it over the number.

7. Choose Insert→Illustrations→Shapes→Callouts→Line Callout 1  from the Ribbon.

8. Follow these steps to draw a callout on cell G15 in the By Dept worksheet:



A Position the mouse pointer in the center of cell G15 and then drag down and right.

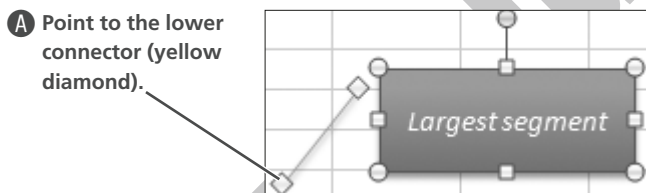
B Release the mouse button to end the callout.

C While the shape is still selected, right-click on the shape and choose *Italic* from the context menu. Type **Largest segment** but do not tap **Enter**.

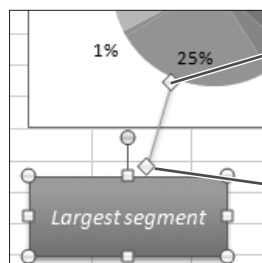
9. Drag a handle to resize the box so that the text fits on one line. If necessary, drag the callout box to move it slightly.

10. Choose Format→Shape Styles→More  menu ▼, trace down, and select Moderate Effect – Accent 6 (row 5, column 7).

11. Follow these steps to rotate and lengthen the callout line:



A Point to the lower connector (yellow diamond).



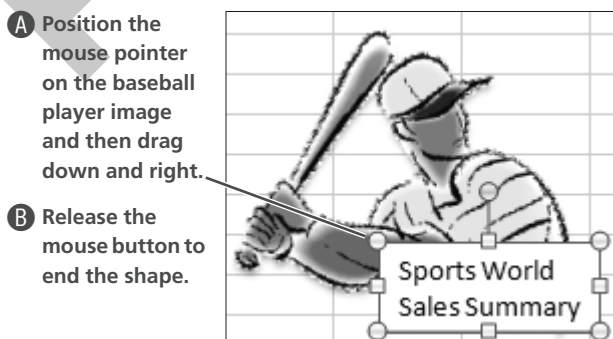
B Drag the connector up and to the right until the line points to the 25% pie slice.

C Drag the other connector to a position along the top of the callout box.

12. Display the Analysis worksheet in the workbook.

13. Choose Insert→Illustrations→Shapes→Basic Shapes→Text Box  from the Ribbon.

14. Follow these steps to draw a text box on the baseball player image:




A Position the mouse pointer on the baseball player image and then drag down and right.

B Release the mouse button to end the shape.

C With the shape still selected, type **Sports World Sales Summary** but do not tap **Enter**.

D If necessary, move and resize the shape so most of the baseball player is visible.

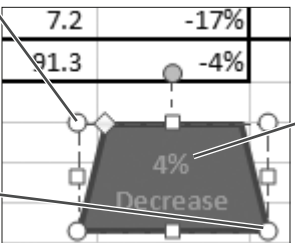
15. Click the By Market worksheet tab in the workbook.
16. Choose Insert→Illustrations→Shapes→Basic Shapes→Trapezoid  from the Ribbon.
17. Follow these steps to draw a trapezoid on cell D12:



A Position the mouse pointer slightly above and to the left of cell D12 and then drag down and right.

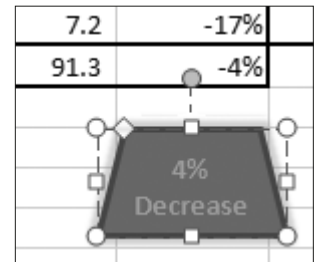
B Release the mouse button to end the shape.

C Right-click the shape and choose Bold from the Mini toolbar. Drop down the Font Color list and choose Orange, Accent 6 in the first row of Theme Colors. Type 4%, tap **Enter**, and type **Decrease**.

D If necessary, move and resize the shape so that it is centered on column D.




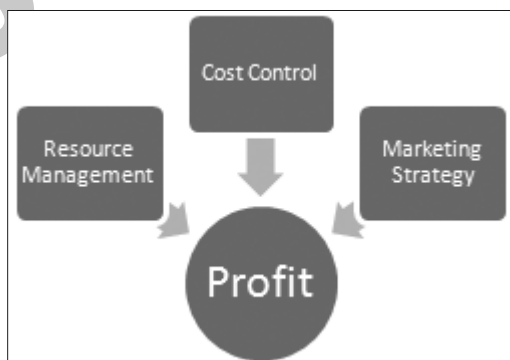
18. With the trapezoid selected, choose Format→Shape Styles→Shape Effects  menu ▼→ Glow from the Ribbon, trace right and down, preview each of the orange glow choices, and choose one.
19. Feel free to preview other Shape Effects. Copy and paste the trapezoid, move the duplicate to row 26, and choose Format→Shape Effects menu ▼→ No Glow from the Ribbon. Preview various effects from the Shape Effects menu.
20. Save  the changes to your workbook.



Introducing SmartArt

2007
new!

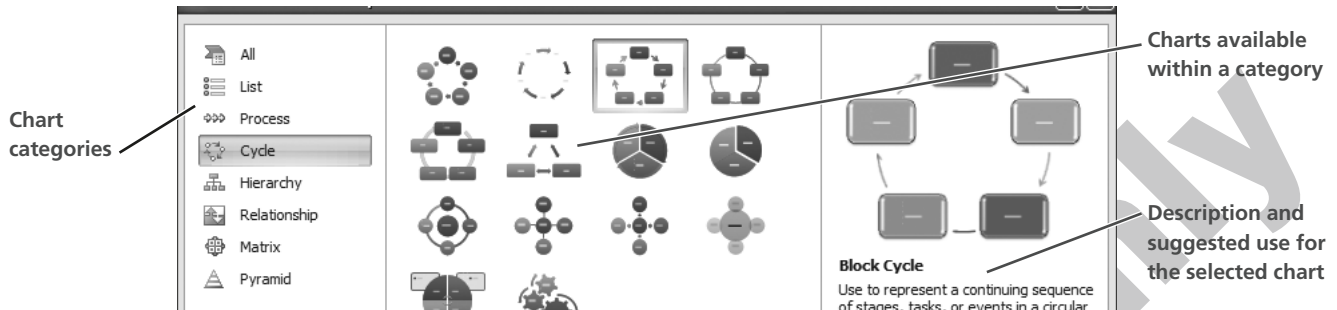
Office 2007 supplies a new illustration category named SmartArt . While you use line, column, and pie charts to summarize worksheet data, you will use SmartArt to present ideas. For example, David Nguyen will show several worksheets and charts to his executive team to outline areas of decreasing sales, but more important is the team's decision-making process to solve the problem. With SmartArt, David can illustrate a procedure, process, or decision tree. SmartArt includes charts to show relationships between ideas, an information cycle, and project workflow steps.



SmartArt conveys ideas using brief text phrases.

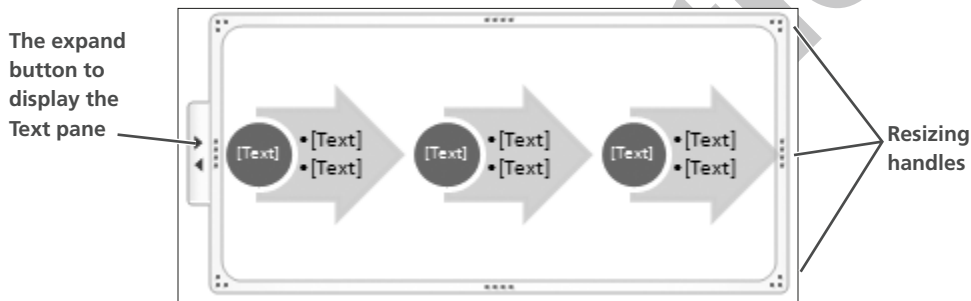
Using SmartArt

The Choose a SmartArt Graphic dialog box displays charts within categories. When you select a chart, its description displays to the right so that you may decide if it meets your presentation needs.

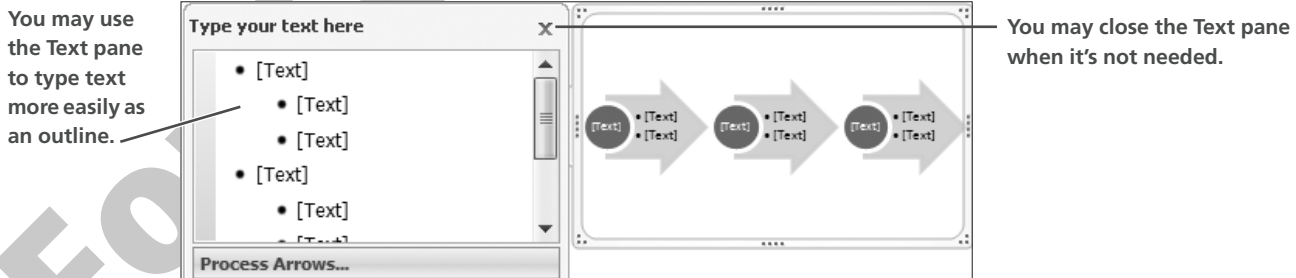


Adding Text to SmartArt

After a SmartArt chart is inserted on the worksheet, you may select one of its graphics and begin typing text into it. Depending on the chart type, you may prefer to display the Text pane and enter all text as an outline. You are not restricted to the number of levels that display in the initial chart. You may add or delete levels and type as many items within a level as needed.



A SmartArt chart




The Text pane open on a SmartArt chart

Formatting SmartArt

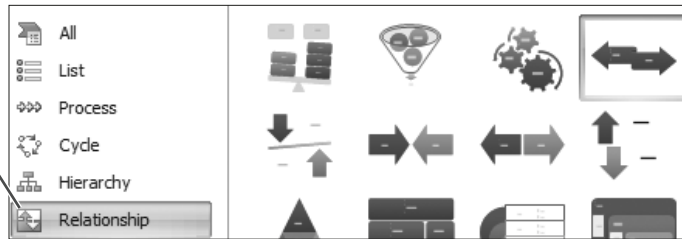
The SmartArt Tools display when a SmartArt graphic is selected. You may change the chart's layout, colors, and number of shapes on the Design Ribbon. There you also will find SmartArt Styles, which add shape fills, shadows, and 3-D effects with the click of a button. As with other options, you may preview by pausing the mouse pointer over the choices on the Ribbon.



Hands-On 3.7 Insert SmartArt

1. Display the Analysis worksheet in the Sports World Sales workbook.
2. Select any cell and tap **Home** to display column A.
3. Select cells B2:C2 and tap **Delete** to remove the labels.
4. Choose **Insert**→**Illustrations**→**SmartArt**  from the Ribbon.
5. Follow these steps to insert an arrow ribbon chart from the Choose a SmartArt Graphic dialog box:

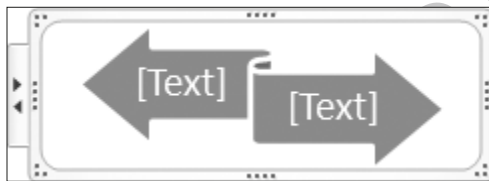
A Trace down and choose the Relationship category.



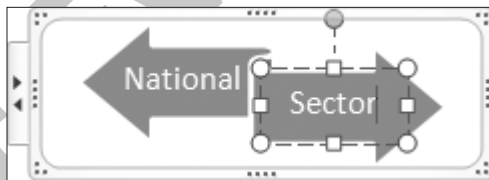
B Choose the Arrow Ribbon graphic (row 1, column 4). Read the description of the graphic.

C Click OK.

6. Choose **Design**→**SmartArt Styles**→**Change Colors**  menu ▼ from the Ribbon. Scroll down to Accent 6, preview several shades by pausing the mouse over them, and then select a shade appropriate for the worksheet.



7. Select the text box on the left if not already selected, type **National**, and do not tap **Enter**. Select the text box on the right, type **Sector**, and do not tap **Enter**.



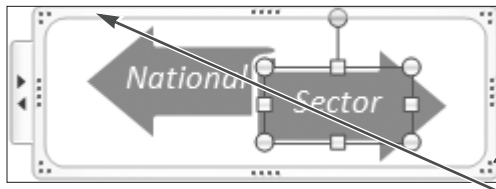
8. Follow these steps to change the text to italic:







A Click on the frame to select the entire graphic. Make certain that none of the arrow text boxes appear selected.

B Choose **Home**→**Font**→**Italic**  from the Ribbon.

9. Follow these steps to shrink the graphic and move it into position:



- A** Point to the lower-right corner resizing handle on the frame and drag up and left to make the entire graphic smaller. Make certain that you do not select the resizing handle of an object inside the frame.
- B** Drag the frame until the SmartArt is centered under the word *Analysis*.

10. If the SmartArt arrow ribbon does not display its frame, click anywhere in the graphic to select it.
11. Choose Design→SmartArt Styles→More  menu ▼ from the Ribbon. Preview by pausing the mouse on each choice under Best Match for Document, and then select one.
12. Undo  the style change.
13. Save  the changes and close  the workbook.



Concepts Review

True/False Questions

- | | | |
|---|------|-------|
| 1. You should follow copyright law when choosing images to insert in documents. | TRUE | FALSE |
| 2. The Picture command is used to insert clip art from the Office gallery. | TRUE | FALSE |
| 3. You may change the size of clip art images after they have been inserted. | TRUE | FALSE |
| 4. Scaling an object means to apply a special effect, such as a drop shadow. | TRUE | FALSE |
| 5. The Reset command will undo only the most recent change to an image. | TRUE | FALSE |
| 6. You may type text in a shape, such as a callout. | TRUE | FALSE |
| 7. A callout is created with one of the Shapes tools. | TRUE | FALSE |
| 8. A text box lengthens automatically as you type more text. | TRUE | FALSE |
| 9. SmartArt is used to add motion to a graphic. | TRUE | FALSE |
| 10. You may type text in SmartArt. | TRUE | FALSE |

Multiple Choice Questions

- | | |
|--|--|
| 1. Which term indicates the text that you type while searching for clip art?
a. Pictures
b. Images
c. Categories
d. Keywords | 3. Which term means cutting off one or more unnecessary edges of an image?
a. Scaling
b. Cropping
c. Resizing
d. Resetting |
| 2. Which handle maintains the proportion of height to width while you resize a graphic?
a. Corner
b. Top
c. Side
d. Bottom | 4. Which command allows you to draw lines and triangles?
a. Clip Art
b. Picture
c. Shapes
d. SmartArt |