CHAPTER 10
Graphics and Visual Aids

10.1 Using Graphics and Visual Aids

10.2 Developing Graphics
Lucia Lu has acted as her team’s spokesperson for the past six months. Each month she gives her team’s progress report on a major computer project to the company’s top management. Today, as she leaves the meeting, she remembers the day she first volunteered to give the report for the team. She did not intend to become the team’s spokesperson. Lucia intended to take her turn and then let others take their turns.

Now Lucia finds herself with an unwritten job responsibility—official team spokesperson. In fact, after her first presentation, no one ever raised a question about who would give the monthly presentation—it would be Lucia. Whenever the team raises a question about the content of the monthly progress report, they always look to Lucia for the answer.

Lucia thinks she is doing a good job when giving the information on the project. However, she is not quite sure that she is doing as well as she would like. The handout she prepares for her presentation each month is full of important numbers and statistics. When giving the oral presentation, she follows the handout.

Because she has worked with the numbers during the month, Lucia is very familiar with them by the time she presents them in the meeting. She is concerned, though, by the vacant look she has observed in many audience members during the part of her report in which she gives the numbers and statistics.

Lucia decides that between now and next month’s meeting, she will try to find a better way to present the numbers and statistics of the progress report.

Questions

1. Why do audience members often lose interest when a great deal of numbers and statistical data are included in a report?

2. What would you recommend to Lucia to improve the way she presents numbers and statistics?

3. How might Lucia apply the Chinese proverb, “One showing is worth a hundred sayings”?
The Importance of Graphics and Visual Aids

Many people remember information they see much longer and better than information they hear. For this reason, using graphics and other visual aids can help you improve your communications. These aids provide a visual image related to the words in a message.

The meaning of the terms graphic and visual aid overlap in general usage. A visual aid is any object, picture, drawing, map, poster, chart, or other image that helps the audience or reader understand data or concepts. A visual aid should provide an image that stimulates thought and interest. The term graphic is more narrow in scope. In this chapter, graphic will be used to mean a table or a chart. A graphic can be an efficient means of presenting large amounts of data. Communicators are using more visual aids than in the past for these reasons:

- Audiences expect messages to be delivered in clear, easy-to-understand, and visually stimulating ways. For example, few people return to an Internet site that contains only text. Magazines that have no photographs are not very popular.
- Creating and using visual aids is easier than ever before. Several software programs include features that allow you to create colorful, easy-to-understand graphics. These programs also allow you to insert visual aids into reports and letters or to use them in electronic slides.
- Communicators improve their chances of keeping the audience's attention when they use graphics and other visual aids. Important points can be made with visual aids.

OBJECTIVES

After completing Section 10.1, you should be able to:
1. Explain the importance of using graphics and visual aids.
2. Describe how to place and identify graphics and visual aids in documents.
3. Identify appropriate visual aids for specific uses.

Key Point

Using graphics and other visual aids can help improve your communications.

check point 1

1. Why is it important to use graphics and other visual aids in the communication process?
2. Give five examples of visual aids.

Check your answers in Appendix C.
Use of Visual Aids in Documents

When you use visual aids in documents, you should identify them and place them in an appropriate location. Doing so will ensure that the reader gains as much benefit from them as possible.

Placing Visual Aids

A visual aid, such as a chart or photo, can be placed in the body of a document. Graphics, such as tables or charts, are sometimes placed in an appendix. However, if the graphic is not important enough to be placed in the body of a document, it may not be important enough to be included at all. Place a visual aid in a document where the reader would prefer and most benefit from its placement. When a visual aid relates to a major point being presented, place it in the body of the document. If the purpose of a table or chart is to provide details that only some readers would need, place it in an appendix.

When you place a graphic within a document, include a reference to the graphic before the graphic appears. Make the reference to the graphic flow smoothly into your discussion, as illustrated in the following examples.

As Figure 4 illustrates, the demand for plumbers has increased 7 percent in each of the past two years.

Whenever the data you use in a graphic comes from another source, include a source line with the graphic as shown in Figure 10.
When a graphic is placed in an appendix, mention the graphic in an appropriate place in the body of a document. The following example introduces a graphic in an appendix.

The demand for plumbers over the past two years has increased an average of 7 percent. (See Figure 4 in the Appendix for a comparison by region.)

When placing a graphic in the body of a document, place the graphic on the same page as its reference, if possible. When that placement is not possible, place the graphic on the next page following its first reference. Avoid dividing a graphic between pages. Leave about one blank line (10 or 12 pts.) of space before and after a graphic in a document, such as a letter, memo, or report. Figure 10-1 shows a table in a report.

Photographs and clip art can be placed in documents to add interest or help illustrate a point. Clip art is a drawing or image that has been saved as an electronic file. For example, a flyer that announces a company picnic might contain clip art of a park, food, or a picnic basket. Clip art is available with word processing programs, in collections, and on the Internet. Some clip art is free and can be used in personal or business documents. Other clip art may be used for a fee. Be sure to check the use restrictions for clip art you find on the Internet that is listed as free. Free use may be limited to personal documents.

Ethics

Follow all copyright restrictions when using clip art. Using clip art without proper permission is unethical.

Figure 10-1 A table can be used to summarize data in a document.

<table>
<thead>
<tr>
<th>Region</th>
<th>Sales in Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>1,596</td>
</tr>
<tr>
<td>Northeast</td>
<td>2,200</td>
</tr>
<tr>
<td>Central</td>
<td>2,584</td>
</tr>
<tr>
<td>West</td>
<td>3,215</td>
</tr>
<tr>
<td>South</td>
<td>3,506</td>
</tr>
<tr>
<td>Total Sales</td>
<td>13,101</td>
</tr>
</tbody>
</table>
A reference statement often is not needed for photos or clip art. However, the image should be placed near the related text. A reference to the image can be made in the text if including the statement helps make a point.

**Identifying Visual Aids**

When several graphics or other visual aids are placed in a document, a numbering system is needed to identify each one. Giving each graphic a title helps readers understand the images. When the image or data used to create an image comes from another source, a source line is used. The source line tells where the data came from and gives credit to the creator or owner of the data.

**Numbering System**

When a document has only one graphic, no numbering system is needed. When a document has more than one graphic, a numbering system is necessary. Choose a numbering system and be consistent with the format throughout the document. For example, you may choose to identify all graphics as *Figures* and number them throughout. Another option is to use two designations. You might use the term *Table* for graphics that are in table format and the term *Figure* for graphics that are charts.

When a document contains only one section or chapter, number the figures consecutively (Figure 1, Figure 2, Table 1, Table 2, etc.). When there is more than one section or chapter, use a system such as *Figure 1.1, Figure 1.2* for the first section; *Figure 2.1, Figure 2.2* for the second section; etc. The number is usually placed along with a title above or below the graphic.

**Titles for Visual Aids**

A title should briefly describe a graphic. The title should contain enough information for the reader to understand the graphic aid without having to read an explanation in the text. However, the title should not be too long. The title may be shown in all uppercase letters or in uppercase and lowercase.

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**NET Bookmark**

Several Web sites provide free clip art that can be used in documents. Go to a search engine such as Google™. A link to Google is provided on the Web site for this book that is shown below. Search for *free clip art*. Go to one of the sites in the search results.

1. What type of clip art is provided on the site?
2. Review the site to see how the clip art provided here may be used. What, if any, restrictions are placed on how the clip art may be used?

[www.cengage.com/school/bcomm/buscomm](www.cengage.com/school/bcomm/buscomm)

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**Key Point**

Use a numbering system and titles to identify graphics when more than one appears in a document.
Key Point
When using data or graphics from secondary research, be sure you have permission to use the data or graphic.

Source Lines
When you have created the data and graphic (you are the original source), you do not need to include a source line. Whenever you obtain material from another source, you must include a source line. The line includes the word source followed by a colon and the source of the data or graphic. A figure and source line are shown in Figure 10-2. If the information is copyrighted, be sure you have permission to use the data or graphic.

Figure 10-2 A source line identifies the creator of data or a visual aid.

1. Where should graphics be placed within the text of a document?
2. Describe three ways to identify or provide information about graphics in a document.
   Check your answers in Appendix C.
Choosing the Correct Visual Aid

To choose the most appropriate graphic or visual aid, you must identify what you want your receiver to understand. You must identify an objective and choose a graphic or other visual aid that is best suited for that purpose. The types of graphics and other visual aids covered in this chapter and the strength of each are presented briefly in the following list. You will learn about creating some of these visual aids in the next section.

- **Tables.** Tables show exact figures or present detailed information in an organized, easy-to-follow format.
- **Organization charts.** Organization charts show lines of authority and relationships among employees or job positions.
- **Flowcharts.** Flowcharts illustrate the steps in a procedure or process. Different shapes are used in indicate types of activities in some charts.

**Key Point**

To choose the most appropriate graphic or visual aid, identify an objective you want to achieve with the visual aid.

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**Reading Charts**

Employees often need to read charts found in reports or other documents. Understanding the parts of a chart can help you interpret the chart correctly.

A pie chart is used to show the relationship of a part to a whole. For example, a pie chart could be used to show the sales in each region as part of the total sales. The pieces in a pie chart are often shown as percentages. It is important to remember that the values for the pieces should add up to 100 percent or a total number that is given.

Column, bar, and line charts (also called graphs) are used to show a comparison of different items or of the same item over time. These charts have a value axis and a category axis. The value axis shows a number scale. The category axis shows the items being compared. It is important to read the scale as well as look at the columns, bars, or lines to understand a chart.

The chart may have a legend. A chart **legend** identifies the items the columns, bars, or lines represent.

Open the Word file CH10 Reading from the student data files. Follow the directions provided to read charts and answer questions about them.
Key Point
Use charts for the correct purpose. Pie charts show the relationship of one part to a whole. Bar charts show a comparison of amounts.

- **Pie charts.** Pie charts show how the parts of a whole are distributed.

- **Line charts.** Line charts show changes in amounts over time.

- **Bar charts.** Bar charts show a comparison of amounts. Bars extend from left to right in a bar chart. Items or categories being compared are placed on the vertical axis. Values are placed on the horizontal axis.

- **Column charts.** Column charts show a comparison of amounts. Columns extend vertically from bottom to top in a column chart. Items or categories being compared are placed on the horizontal axis. Values are placed on the vertical axis. Some programs and documents call both bar and column charts *bar charts*.

- **Maps.** Maps show geographic regions such as cities, states, or countries.

- **Photographs.** Photographs, also called pictures, show a realistic view of an item, person, or place. Using a digital camera provides photographs in electronic format than can easily be placed in documents.

- **Drawings.** Drawings are clip art or line art images that add interest or show specific details of an object.

Check point 3

1. What type of graphic shows lines of authority and relationships among employees in a company?

2. What type of graphic shows geographic regions such as cities, states, or countries?

3. What type of graphic shows the steps in a procedure or process?

Check your answers in Appendix C.
Section 10.1 **Applications**

**A. Choose Visual Aids**
Identify the type of visual aid that would be appropriate for each situation described.

1. A chart to compare yearly sales in Texas for the past four years
2. An image to place on an invitation to a holiday luncheon
3. A chart to illustrate the steps in processing an order
4. A chart to show changes in amounts of overtime worked over the past six months for three departments
5. An image that shows the geographic region where the company has offices
6. An image that shows the lines of authority and relationships among employees in the Manufacturing Department
7. A realistic view of our new office building
8. A chart that shows the percentage of returned goods for each department
9. A graphic that shows prices for items in the new product line in an organized, easy-to-follow format

**B. Research Visual Aids**

1. Work with a classmate to complete this application.
2. Access the Internet. Use a search engine to find an article or report that uses charts, tables, maps, or other visual aids (other than photos). For example, you might search using the keywords *population growth chart* or *baseball stats*.
3. Record the name of the Web site and the article or page name.
4. Describe the visual aids that are used.
5. Are the visual aids used effectively? Why or why not?
Creating Graphics Electronically

Computer programs allow users to create and edit professional-looking graphics. The programs are easy to use and can be learned quickly. Word processing programs, such as *Microsoft Word*, come with clip art that can be used in documents. *Word* also provides a gallery of Table Styles that aids users in creating attractive tables. Figure 10-3 shows the Table Styles and a formatted table.

Spreadsheet programs, such as *Microsoft Excel*®, provide an easy way to create various kinds of charts. Charts created in one program can often be placed into documents created in other programs. For example, a chart created in *Excel* can be pasted into a *Word* document.

Some computer programs are designed specifically for creating and editing photos and graphics. *CorelDRAW*® Graphics Suite, *Adobe Photoshop*®, and *Fireworks*® are examples of these programs. More time is required to learn how to use these programs than to learn the graphics features of word processing or spreadsheet programs. However, these programs have advanced
features that allow users to be very creative. Presentation software, such as Microsoft PowerPoint®, allows users to create charts, insert clip art and photos, and select various designs for electronic slides. You will learn more about using visual aids on electronic slides in Chapter 13.

**Tables**

A *table* is an arrangement of data organized in rows and columns. Rows extend horizontally across the table. Columns extend vertically. Tables are a valuable visual aid in reports and other documents because they show data in a way that is easy to understand. Tables can be created in word processing or spreadsheet programs.

Formats for tables vary. Use a format that makes the data easy to read and understand. Some general guidelines for creating an effective table are listed below. Refer to Figure 10-4 for a table illustration.

- Number tables if more than one table appears in a report. For example, key *Table 1* above the table title.
- Use a title for the table that is clear and concise. Key the title in bold, all capital letters and center it over the table.
- Use column headings to label the columns. Center the headings over the columns or match the alignment of the text or numbers in the columns.

**Key Point**

A table shows data arranged in rows and columns. Tables make data easy to read.

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**Figure 10-4 Table**

<table>
<thead>
<tr>
<th>Year</th>
<th>Wins</th>
<th>Losses</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>94</td>
<td>68</td>
<td>4,271,083</td>
</tr>
<tr>
<td>2006</td>
<td>97</td>
<td>65</td>
<td>4,243,780</td>
</tr>
<tr>
<td>2005</td>
<td>95</td>
<td>67</td>
<td>4,090,440</td>
</tr>
<tr>
<td>2004</td>
<td>101</td>
<td>61</td>
<td>3,775,294</td>
</tr>
<tr>
<td>2003</td>
<td>101</td>
<td>61</td>
<td>3,465,600</td>
</tr>
<tr>
<td>2002</td>
<td>103</td>
<td>58</td>
<td>3,465,807</td>
</tr>
<tr>
<td>2001</td>
<td>95</td>
<td>65</td>
<td>3,264,847</td>
</tr>
<tr>
<td>2000</td>
<td>87</td>
<td>74</td>
<td>3,227,657</td>
</tr>
<tr>
<td></td>
<td>773</td>
<td>519</td>
<td>29,804,508</td>
</tr>
</tbody>
</table>

Ethics

Using data without giving credit to the source is unethical. Include a source note to show where data in a table comes from when the data is not original.

- Align columns of text at the left. Align columns of numbers at the right or at the decimal point if the numbers have decimals.
- Place a single line, also called a rule, under the last number when two or more numbers are calculated. Place a double rule under numbers that are totals or final amounts.
- Include a source note for tables to show the source of the data. If the data are your original numbers, a source note is not needed.

Check your answers in Appendix C.

1. Why are tables a valuable visual aid for reports and other documents?
2. Name two types of programs that can be used to create tables.
3. What goal should be kept in mind when selecting a format for a table?
   Check your answers in Appendix C.

Charts

In business documents, several types of charts are commonly used. Organization charts and flowcharts are often included in company manuals. Pie charts, line charts, and bar charts are used in reports, memos, and oral presentations.

Organization Charts

An organization chart shows the relationships of employees, positions, and departments. It shows lines of authority and communication in a company. The chart can show the entire company or only one section or department. Figure 10-5 on page 375 illustrates an organization chart. The boxes in the chart may list position titles or employee names and position titles. In general, the higher the level of the box in the chart, the higher the level of authority that position has within the organization.

The solid lines between boxes show lines of authority and formal communication. Dotted lines can be used to show positions that are not part of a line of authority. For example, a president of a company may have an assistant and a secretary. In the chart, those two positions are placed below the level of president and above the level of vice presidents. However, those two positions are not above the vice presidents in authority.
Flowcharts

A flowchart is a step-by-step diagram of a procedure or process. The flowchart allows the user to see the order in which the steps must be completed. For example, suppose a new procedure is described in eight paragraphs of text. Reading a flowchart that shows each step of the procedure would help employees follow the steps. Figure 10-6 on page 376 is a flowchart that shows the procedure for processing an order.

Tables and charts can be presented in either portrait or landscape orientation. In portrait orientation, the short edge of the image is at the top. Letters and memos are created using portrait orientation. The chart in Figure 10-5 uses portrait orientation. In landscape orientation, the long edge of the image is at the top. Wide tables and advertising flyers are often created using landscape orientation. The chart in Figure 10-6 uses landscape orientation. You should choose the orientation that works best to display the table or chart.

Key Point
A flowchart is used to show the steps in a procedure or process.
Pie Charts

A **pie chart** shows how the parts of a whole are distributed and how the parts relate to one another. Figure 10-7 on page 377 shows two pie charts. Often, the parts are shown as percentages. A pie chart can clearly present data, such as sales or earnings by company regions or departments.

A pie chart is suitable for displaying data when there are a small number of parts. When you make a pie chart, arrange the data in some logical order. You could arrange sales percentages by region numbers as shown in Figure 10-7. This method would be a good way to show data if you also have a pie chart that shows earnings by region. This arrangement would make it easy to compare data from the two charts. You might place the data (and pie sections) in order from largest to smallest. This order would be good for looking at attendance records for seminars given during one year.

Include a specific, clear title when creating a pie chart. The title should contain enough information for the reader to understand the pie chart without having to read an explanation in the text. Use a chart legend to show the name of each piece or label the pieces. You can also label the pieces to show values.
Line Charts

A line chart shows changes in quantity or value over time. This type of chart is often used to show ups and downs or trends over a period of time. In charts that show trends, the category (horizontal) axis is used to show the time or quantity measured. The value (vertical) axis is used to show amounts.

A single-line chart shows the movement of only one quantity or value over time. Shading or coloring may be used to add emphasis to the single-line chart. This type of chart is also called an area chart.

A multiple-line chart shows the movement of two or more quantities or values over time. In this type of chart, you can choose a different line style or color for each category. Use a legend to identify what each line represents, as shown in Figure 10-8 on page 378. You can also label points on the lines to show values.

Key Point

A line chart may show values for only one set of data or for two or more sets of data.

check point

1. What type of data is shown in an organization chart?
2. What is the purpose of a flowchart?
3. In what order should data be arranged in a pie chart?

Check your answers in Appendix C.
Bar and Column Charts

Bar charts and column charts are used to compare different groups of data to each other through the use of bars or columns that represent each group. The length of the bars or columns relate directly to their value. In a bar chart, bars extend from left to right. Items or categories being compared are placed on the vertical axis. Values are placed on the horizontal axis as shown in Figure 10-9 on page 379.

In a column chart, columns extend vertically from the bottom to the top of the chart. Items or categories being compared are placed on the horizontal axis. Values are placed on the vertical axis as shown in Figure 10-9. Some programs and documents call both bar and column charts bar charts or bar graphs.

A simple bar or column chart compares only one set of data. The width or height of the bar or column indicates quantity. Bar and column charts can also compare two or more sets of data. Different colors can be used for the different sets of data to make reading the chart easy. A legend identifies what each color represents. Limit the number of data sets used in one chart. Comparing more than four sets of data in one chart makes the chart too cluttered and difficult to read. If the chart will be placed on an electronic slide, use colors for the bars or columns that contrast well with each other and the chart background color. You may need to adjust the font size for titles or captions in the chart to make them easy to read.
Figure 10-9 Bar Chart and Column Chart

**BAR CHART**

**SALES BY REGION**

<table>
<thead>
<tr>
<th>Year</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>25</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>2007</td>
<td>28</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>2008</td>
<td>23</td>
<td>25</td>
<td>28</td>
</tr>
</tbody>
</table>

Dollars in Thousands

**COLUMN CHART**

**SALES BY REGION**

<table>
<thead>
<tr>
<th>Year</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>25</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>2007</td>
<td>28</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>2008</td>
<td>23</td>
<td>25</td>
<td>28</td>
</tr>
</tbody>
</table>

Dollars in Thousands
Charts That Mislead

Generally, writers use charts that represent data clearly. However, readers who do not look at charts carefully can be misled. Misleading charts may result when the writer is careless or not skilled in creating charts. Misleading charts can also be used on purpose to influence readers. This practice is unethical.

Compare the two charts show below. They illustrate the same data. In these two charts, the vertical axis shows the number of people who attended a conference. The horizontal axis shows the five years for which attendance figures were provided.

Look at the heights of the columns in the chart on the left. The difference in the heights of the columns might give the impression that nearly four times as many people attended in 2008 than in 2004. This change would be an increase of 400 percent. However, notice that the scale starts at 350. The chart on the right provides a clearer picture of the increase in attendance. The scale begins at 0 rather than 350. The actual increase is 50 percent over the five-year period, not 400 percent.

Some readers only skim a document, giving more attention to the graphics than to the written text. Graphics often have more impact on the reader than the related text does. Be careful to create graphics that give readers a clear and accurate picture of the data.
Other Visual Aids

In addition to tables and charts, other types of visual aids can enhance documents. The visual aids discussed here are maps, photographs, and drawings.

Maps

A map shows geographic relationships. A map is especially useful when your audience may not be familiar with the geographic areas being discussed. A map, as shown in Figure 10-10, communicates information in an easy-to-grasp, interesting format. This map is from the National Atlas Web site, which provides several types of maps. The maps can be used for personal, school, and business documents.

Figure 10-10  Map of Kentucky Congressional Districts


1. What type of chart is used to show ups and downs or trends over a period of time?
2. How is a column chart different from a bar chart?

Check your answers in Appendix C.
Photographs

A photograph is used to provide a realistic view of a specific item or place. Photographs can make a document more appealing to read. Four sources of easy access to photographs are a digital camera, professional photograph collections available on CD-ROM, a scanner, and the World Wide Web.

- A digital camera stores images digitally (in a format a computer can use) rather than recording them on film. Once you take a picture, you can download the photograph to your computer or printer. You can edit the photograph and insert it into a document. You can print the document or print just the photograph.

- CD-ROM collections, such as *ClipArt&More 3.5 Million*, provide quality photographs. Some collections also include clip art, fonts, sound clips, and animations. Depending on the source of the photographs and how you are using them, you may have to pay a fee for their use.

- A scanner captures images from printed documents or objects. Photographs, posters, and magazine pages can be scanned. Some scanners come with software that lets you resize or modify a captured image. The image can be printed or inserted into a document.

- The World Wide Web is another excellent source of photographs. Many Web sites provide photographs that you may download for free. Other sites charge a fee for the photographs you use.

See Figure 10-11 for a photograph used to give a realistic view of people in a meeting.

Figure 10-11 Photographs add interest and realism to presentations.
Drawings

A drawing is useful for showing details or a procedure. Makers of bicycles, for example, provide consumers with detailed drawings. These drawings assist consumers in putting the bicycles together. A photograph of the assembled bicycle would not provide enough detail. Consumers would not be able to tell how to put the bicycle together properly.

The drawing in Figure 10-12 shows how to tie an underwriter’s knot. This type of knot is used in wiring a lamp. The drawing provides more detail about the procedure than a photograph showing the finished knot could provide. A specific, detailed drawing, such as the one shown in Figure 10-12, may need to be created especially for particular use.

Clip art files contain drawings that can be used in documents and on electronic slides. Many different images are available. Writers can often find an image that is appropriate for the document or slide and do not need to create new art.

Figure 10-12 A drawing can show details or steps in a process.
Tying an Underwriter’s Knot

check point 7

1. What type of visual aid shows geographic relationships?
2. What type of visual aid is used to provide a realistic view of a specific item or place?
3. Why is a drawing sometimes a more effective visual aid than a photograph?

Check your answers in Appendix C.
Section 10.2 Applications

A. Use Photographs or Clip Art
You have been asked to design a flyer that announces the annual company picnic.

1. Select a date for the picnic and a location. The location could be a city park, a water park, an amusement park, or other site in your area.

2. Create an attractive, full-page flyer that tells employees everything they need to know about the picnic. (Make up the details. Ask the five Ws to be sure all details are included.)

3. Include an appropriate photograph or clip art on the flyer.

4. Use landscape orientation for the flyer. Print the flyer on colored paper, if available.

5. Ask a classmate to review your flyer and offer suggestions for improvement. Make edits, proofread carefully, and correct all errors. Print a final copy of the flyer.

B. Create an Organization Chart
Create an organization chart for Jamison Company, using the details given below.

- The company president is Arthur Jamison.
- Three executives report directly to Mr. Jamison: Bill Wong, Vice President of Finance; Amy Wallace, Vice President of Manufacturing; and Alicia Diaz, Director of Human Resources.
- Bill Wray, Director of Accounting, and Tammy Chang, Budget Analyst, report to Bill Wong.
- Jack Greene, Plant Manager, and Wilson Jones, Maintenance Manager, report to Amy Wallace.
- Iris Diego, Training Specialist, and Anna Anderson, Benefits Manager, report to the Alicia Diaz.
- Georgia Rivers, Administrative Assistant, and Tom Brown, Secretary, report to Mr. Jamison.
10.1 Using Graphics and Visual Aids

- Using graphics and other visual aids can help improve communications.
- A visual aid is any object, picture, drawing, map, poster, chart, or other image that helps the audience or reader understand data or concepts.
- A visual aid, such as a chart or drawing, can be placed in the body of a document or in an appendix.
- When placing a graphic in the body of a document, include a reference to the graphic. Place the graphic on the same page as its reference, if possible.
- Use a numbering system and titles to identify graphics when more than one appears in a document. Whenever you obtain material for a graphic from another source, include a source line.
- To choose the most appropriate graphic or visual aid, consider what you want the receiver to understand.

10.2 Developing Graphics

- Computer programs allow users to create and edit professional-looking graphics.
- Tables are a valuable visual aid in reports and other documents because they show data in a way that is easy to understand.
- An organization chart shows the relationships of employees, positions, and departments.
- A flowchart is a step-by-step diagram of a procedure or process.
- A pie chart shows how the parts of a whole are distributed and how the parts relate to one another.
- A line chart shows changes in quantity or value over time.
- Bar charts and column charts are used to compare different groups of data to each other through the use of bars or columns that represent each group. The length of the bars or columns relate directly to their value.
- Maps, photographs, and drawings are visual aids that can enhance documents.
Vocabulary

Open the Word file CH10 Vocabulary from the student data files. Complete the exercise to review the vocabulary terms from this chapter.

- bar chart
- clip art
- column chart
- flowchart
- graphic
- landscape orientation
- legend
- line chart
- organization chart
- pie chart
- portrait orientation
- source line
- table
- visual aid

Critical Thinking Questions

1. Why is the placement of a graphic important? What happens if a writer places a graphic in a report before he or she makes a reference to it?
2. Why do graphics often have more impact on their receivers than the related text?
3. Why is it important to follow the use restrictions for clip art, photographs, and other visual aids that you buy or download?
4. What can you do to make your graphics easy to understand?
Chapter Applications

A. Report with Map
You have been asked to prepare a report that gives information about your congressional district. You will find and download a map to use in this report.

1. Access the Internet and go to the National Atlas Web site. A link to this site is provided on the Web site for this book. You can also search for National Atlas.
2. Go to the page that has printable maps. Select the link for congressional districts.
3. Select the link that allows you to view and print maps.
4. Select your state from the list, and then select your congressional district. Choose to preview the map to make sure you have selected the correct one.
5. With the preview map on the screen, right-click on the preview map and select Save Picture As.
6. Enter a filename. Enter a location where the image will be saved.
7. Select Bitmap for the file type. Click Save.
8. Key the beginning of page 2 of a report shown below. Insert the map picture where indicated. Place a source line under the image.
9. Proofread and correct all errors before printing the page.

The United States House of Representatives has 435 congressional districts. About 600,000 people are included in each district. Census Bureau data are used to set the number of congressional districts within each state. Congressional District (insert number) of (insert your state name) is shown below in Figure 1.

B. Pie Chart and Column Chart
Your coworker is creating a report related to the company’s order system. You have been asked to prepare two charts to place in the report.

1. Create a pie chart.
   • Use ORDER METHODS 20-- for the chart title. (Use the current year for the date.)
   • The percentages for each order method for the current year are:
     Internet       70%
     Telephone     20%
     U.S. Mail     10%
• Use a chart legend or label the pie chart pieces with the method name.
• Show the values for each pie chart piece.

2. Create a column chart that compares the order method values for this year with those from last year.
• For the chart title, use ORDER METHODS COMPARISON.
• The percentages for each order method for last year were:
  - Internet 55%
  - Telephone 25%
  - U.S. Mail 20%
• Use a chart legend and show the values for each column.

3. Print both charts.

C. Memo with Table

1. Key the following memo in correct format. Create a table to show the data clearly. Center the table and leave one blank line before and after the table.

2. Proofread and correct all errors.

To: All Employees
From: Anna Anderson, Benefits Manager
Date: October 20, 20--
Subject: Health Care Plan Enrollment

The open enrollment period for employee health care plans will be November 1 through December 15, 20--. The three plans that are available and their costs are shown in the table below. Details of the plans are in the attached pages.

<table>
<thead>
<tr>
<th>HEALTH CARE PLANS</th>
</tr>
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<tbody>
<tr>
<td>%</td>
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</tbody>
</table>

If you have any questions about the plans, contact me for more information. Complete and return the attached enrollment form by December 15 to ensure that your coverage will be active on January 1.

Attachments
D. Table and Charts
You need to include information about hospitals and their staff in a report.

1. The data for the hospitals are shown below. Create a table to show the data clearly. Use an appropriate title and column headings.

   Hyatt Charity Hospital has 80 nurse’s aides, 120 licensed vocational nurses (LVNs), 86 registered nurses (RNs), and 40 doctors.

   Parker Children’s Hospital has 86 nurse’s aides, 124 LVNs, 89 RNs, and 52 doctors.

   City Hospital has 94 nurse’s aides, 142 LVNs, 90 RNs, and 63 doctors.

2. Construct a multiple-line chart that shows the health care providers at those three hospitals.
   • Use an appropriate title.
   • Use a chart legend to identify each line.
   • Use a different color for each line.

3. Construct a bar chart that shows the health care providers at those three hospitals.
   • Use an appropriate title.
   • Use a chart legend to identify each bar.
   • Use a different color for each bar.
   • Show values for the bars.

4. Which of the two charts is better for displaying this data? Why?

E. Flowchart Symbols
When creating flowcharts, writers often use different shapes for different parts of a process. The shapes make understanding the flowchart easier.

1. Work with a classmate to complete this application. Access the Internet and go to a search engine. Search the Web using the keywords flowchart symbols.

2. Review several of the sites in the search results list to learn about flowchart symbols.

3. Create a table that shows the shape, name, and purpose of several flowchart symbols. (Flowchart symbols can be inserted into a Word table using the Insert, Shapes command.) Include a source line for the table data.

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Editing Activity

Open and edit the Word file CH10 Editing from the student data files. Correct all spelling, punctuation, and grammar errors.
Case Study

Profit Reporting

Thomas Carson is the vice president of the Electronics Division of a large company. One of his duties is to prepare a year-end report for company managers. The report summarizes sales income, costs, and profits for the year for his division. If the division meets its profit goals, Thomas will receive a 20 percent pay bonus.

Near the end of the year, Thomas began gathering data for the report. He found that the division was close to reaching its profit goals. To be sure the division would achieve its goal, Thomas instructed the Invoicing Department to bill for an order in December that would not be shipped until the first week of the next year. This placed the sales income for the order in the current year, allowing the division to reach its profit goal. However, the costs associated with the order will be recorded the following year when the order is shipped. This way of recording the sales and costs will make next year’s profits lower.

Thomas received his pay bonus, which was his immediate concern. His motto is “Deal with next year next year.”

1. Does the report Thomas prepared show a realistic picture of the division’s performance for the year? Why or why not?
2. Did Thomas behave ethically? Why or why not?
Communication for Education and Training

Chris Austin is the director of the Health and Wellness Education Department at a health-care facility. One of his main duties is to schedule 15 to 20 classes every quarter. Scheduling involves deciding what classes to offer. Once the classes have been selected, a timetable is worked out. Then, Chris must find qualified people to teach the courses. After matching instructors with courses and adjusting times, he finalizes the schedule. He also develops the promotional materials that go out to the community.

A recent brochure includes course descriptions, meeting times, and other necessary information. The classes will be held October through December. Chris placed the classes in a table. He used appropriate class titles, such as Heart Health, Family Growth, Childcare, Fitness, and Nutrition.

In the classrooms, several options are available for visual aids. Chris knows that the instructors are very knowledgeable about their topics. However, they seem to know little about using visual aids in teaching. He wants to schedule a one-hour training session. In this session, he will discuss using flip charts, overhead projectors with transparencies, and electronic slides.

1. Should visual aids be part of the presentation Chris gives? If so, how should he use them?

2. How important are graphics and other visual aids in the brochures Chris sends to people in the community?

3. How important are communication skills in a job such as the one Chris holds?
Chapter 10 Answers

Checkpoint 1
1. Using graphics and other visual aids in the communication process is important because visual aids help readers and listeners understand and remember information.
2. Examples of visual aids include objects, pictures, drawings, maps, posters, and charts.

Checkpoint 2
1. When placing a graphic in the body of a document, place the graphic on the same page as its reference, if possible. When that placement is not possible, place the graphic on the next page following its first reference.
2. A numbering system, titles, and source lines can be used to identify or provide information about graphics in a document.

Checkpoint 3
1. An organization chart shows lines of authority and relationships among employees in a company.
2. A map shows geographic regions such as cities, states, or countries.
3. A flowchart shows the steps in a procedure or process.

Checkpoint 4
1. Tables are a valuable visual aid in reports and other documents because they show data in a way that is easy to understand.
2. Tables can be created in word processing or spreadsheet programs.
3. The goal is to use a format for the table that makes the data easy to read and understand.

Checkpoint 5
1. An organization chart shows the relationships of employees, positions, and departments. It shows lines of authority and communication in a company.
2. The purpose of a flowchart is to show a step-by-step diagram of a procedure or process.
3. When you make a pie chart, arrange the data in some logical order. For example, by company department, by regions, or by amounts (highest to lowest).

**Checkpoint 6**

1. A line chart shows show ups and downs or trends over a period of time.

2. In a bar chart, bars extend from left to right. Items or categories being compared are placed on the vertical axis. Values are placed on the horizontal axis. In a column chart, columns extend vertically from the bottom to the top of the chart. Items or categories being compared are placed on the horizontal axis. Values are placed on the vertical axis.

**Checkpoint 7**

1. A map shows geographic relationships.

2. A photograph is used to provide a realistic view of a specific item or place.

3. A drawing is useful for showing details or a procedure that cannot be shown in a photograph.

This page contains answers for this chapter only.