

---

## Activity 2

# Basic Computer Skills– Charts and Graphs

### Overview:

This activity provides experience in performing some basic computer skills in a charts and graphs program. The skills covered are entering data into spreadsheet files and creating a pie chart, line graph, and column graph.

### Activity Objective:


Develop and interpret charts and graphs.

**Activity Sheet:** AS 2.1 Basic Computer Skills–Charts and Graphs

### Scoring Guide:

SG 2.1 Basic Computer Skills–Charts and Graphs

### Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon  are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.
2. This activity provides step-by-step procedures for creating charts and graphs in Microsoft Excel. If you are using another program, some of the commands and/or features may be different.
3. Familiarize yourself with the basic computer skills that are part of this activity and the spreadsheet program that the students will be using. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.
4. Discuss SG 2.1 and review the requirements of the activity with students.

Activity Length: 100 min.

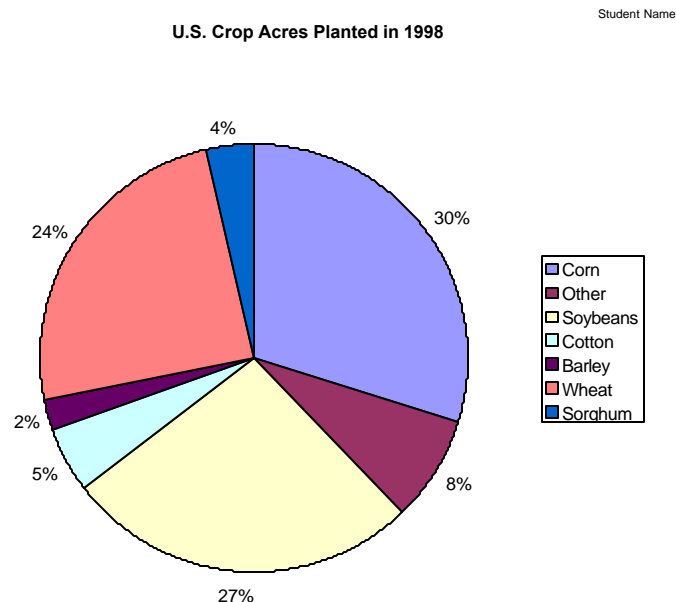
### Discussion Questions:

1. What are the benefits of being able to create charts and graphs on a computer?
  - Charts and graphs created on a computer are considered the norm in the professional world because they are a quick and easy way to effectively illustrate data.
  - Graphs created on a computer can communicate a large amount of information in a short period of time and they are neat and easy to read.

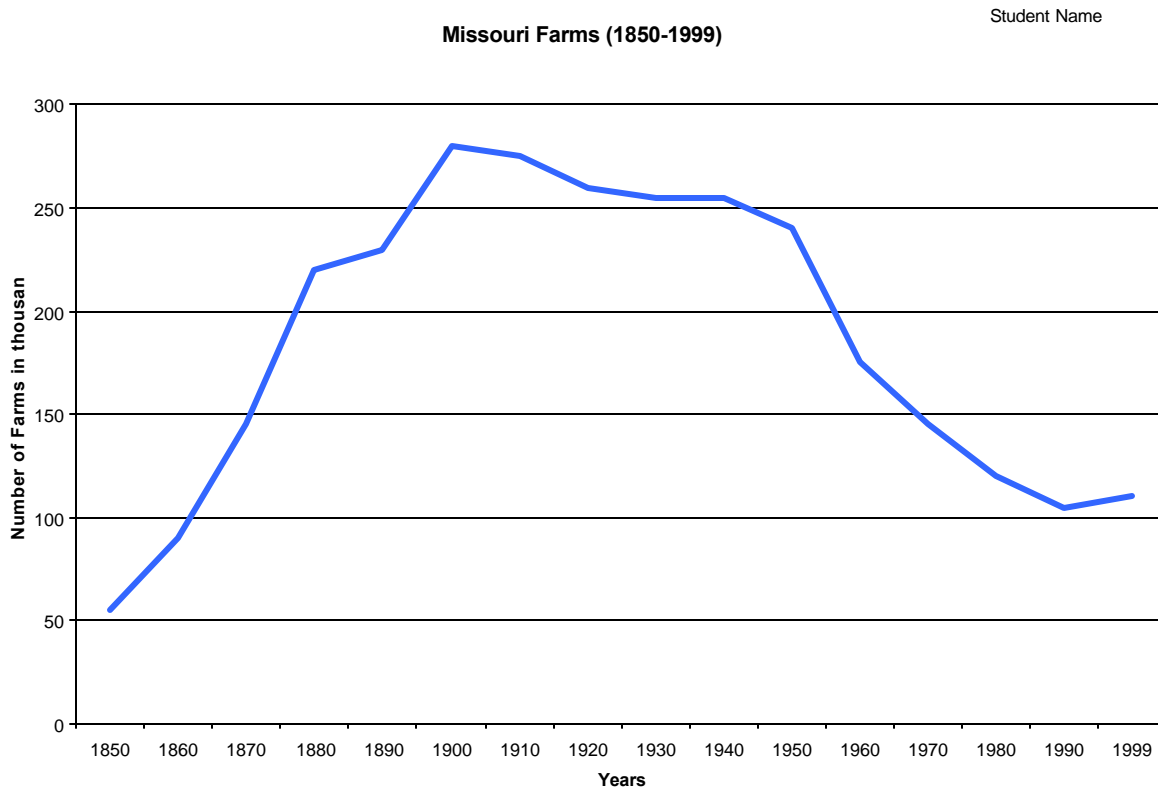
- 
2. What are the advantages of practicing basic computer skills and trying out a program's features?
    - The more you work in the program and try the features, the more comfortable you will become at using them.
    - When you use the trial-and-error approach, you will usually find something that works. You can always use the *Help* feature for the program when you need assistance.
  3. What can you determine from the pie chart, line graph, and column graph that you created?
    - From the pie chart, you can readily see that the three crops planted on the most acres in the United States are corn, soybeans, and wheat. The least acres are planted in barley.
    - From the line graph, you can see the declining trend in the number of farms in Missouri since 1900. It also shows that from 1990 to 1999 there has been a slight increase in the number of farms.
    - From the column graph, you can see that over 35% of farms have between 50 and 179 acres. It also shows that a majority of farms (65%) have 50 to 499 acres of land.

**Assessment:**

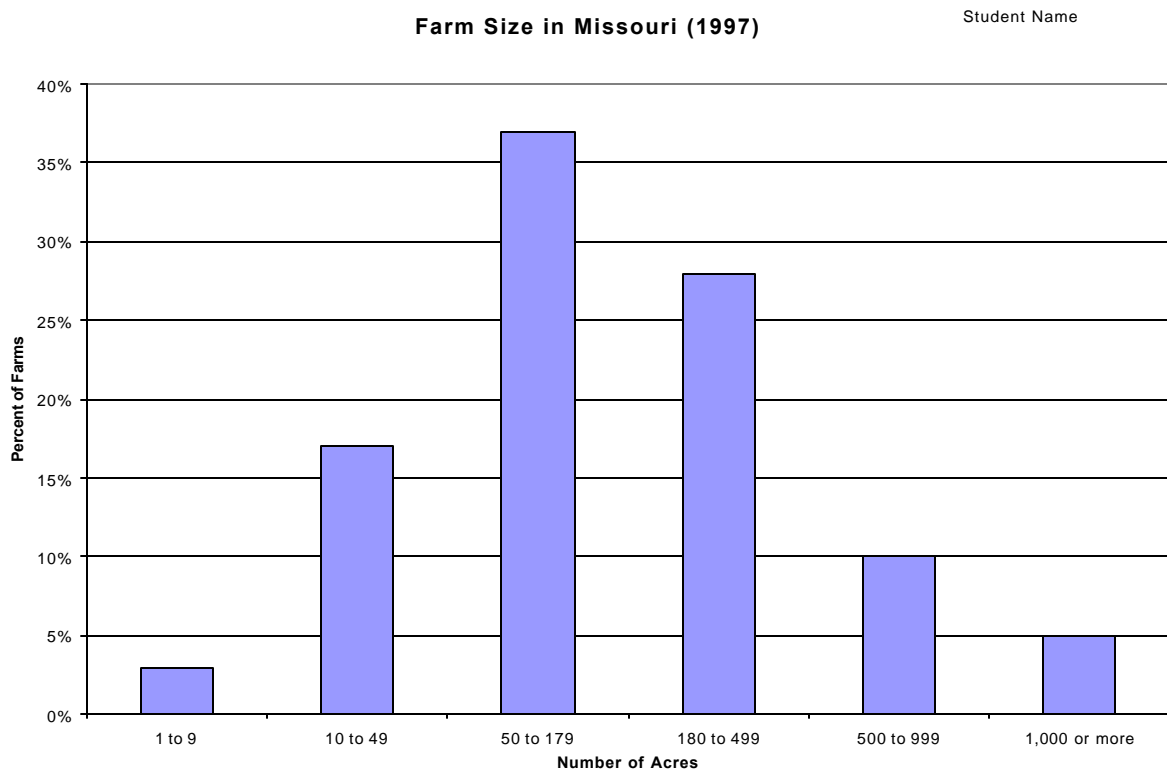
Collect the floppy disks, charts, and graphs. Grade the students based on SG 2.1. See Figures 2.1 through 2.3 for the completed chart and graphs. To see the chart and graphs in color, open the files on the *Computer Lab Activities in Agriculture* CD-ROM.



*Figure 2.1 - U.S. crop acres pie chart*



*Figure 2.2 - Missouri farms line graph*



*Figure 2.3 - Farm sizes column graph*

---

**Additional Activities:**

1. Have the students try some different formatting of the charts and graphs that they created such as changing the font size, style, and format (e.g., bold, italic, underlined) and changing the colors or size of the charts and graphs. Have them use the zoom function to view the charts and graphs at different percentages. Show them that when formatting, it's useful to zoom in on text and when reviewing the finished product, it's helpful to zoom out and see the whole page.
2. Have students find other information that they could put into a chart or graph. They could graph membership statistics for the FFA chapter over the past 5 to 10 years, the amount of fruit that was sold for the chapter fund-raiser, etc.

**Credits:**

Missouri Agricultural Statistics Service.

<<http://agebb.missouri.edu/mass/indepth/corn/uscrop.htm>> April 18, 2001.

*Quick Facts From the Missouri Census of Agriculture.* National Agricultural Statistics Service, U.S. Department of Agriculture, 1999.

*2000 Missouri Farm Facts.*

<<http://agebb.missouri.edu/mass/farmfact/inc-pri/land/number.htm>> April 18, 2001.

## Student Activity Sheet


### Basic Computer Skills—Charts and Graphs

Name \_\_\_\_\_

**Student Objective:**

Develop and interpret charts and graphs.

**Equipment and Materials:**

- Computer
- Excel (spreadsheet program)
- Floppy disk
- SG 2.1 Basic Computer Skills—Charts and Graphs Scoring Guide 
- Printer

**Procedure:**

1. Refer to SG 2.1 for the tasks you will be graded on.
2. Read the following scenario.

Megan Sanders, your boss, has some data that she would like you to make into charts and graphs for a presentation she is doing. She asks that you make one pie chart, one line graph, and one column graph.

Note: The following procedures are done using Microsoft Excel. If you are using another program, some of the commands and/or features may be different.

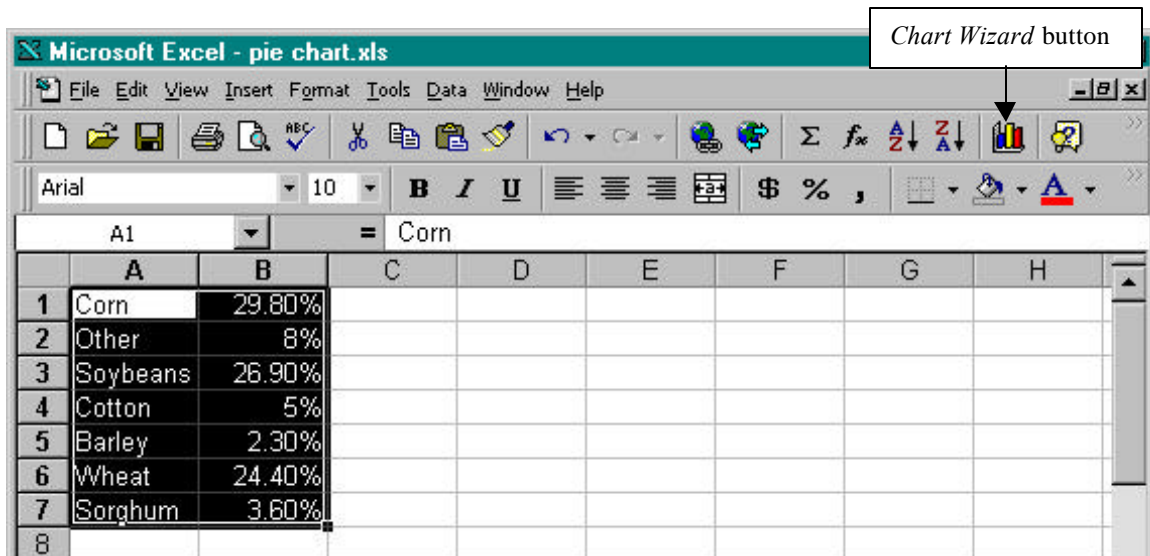
Pie Chart

3. Use the following data to create a pie chart. Ms. Sanders says the data represents the U.S. crop acres planted for 1998.

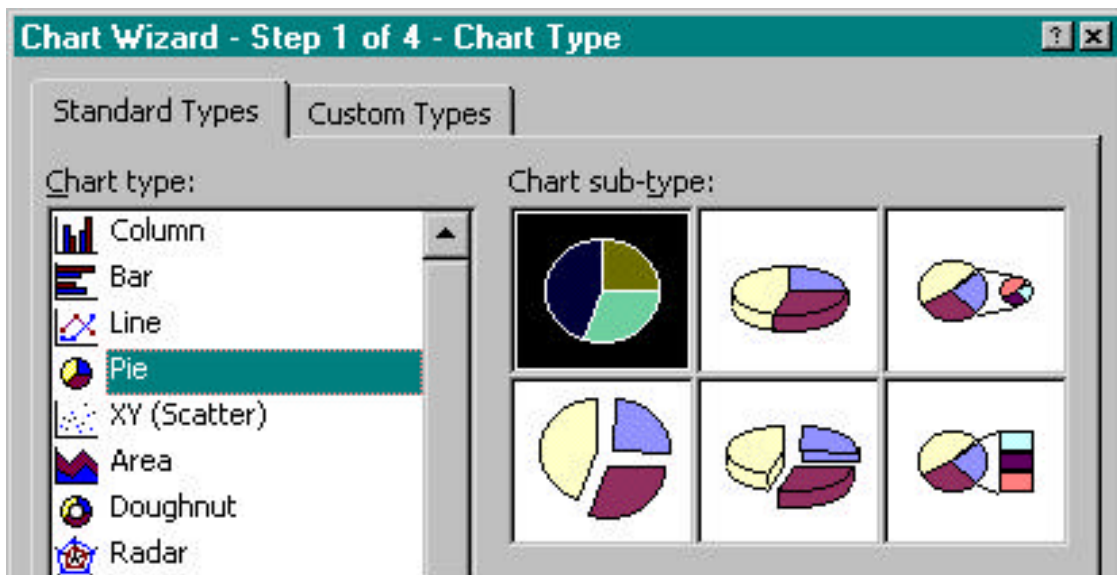
Corn 29.8%	Barley 2.3%
Other 8.0%	Wheat 24.4%
Soybeans 26.9%	Sorghum 3.6%
Cotton 5.0%	

4. Open an Excel spreadsheet. In column A, type the seven crops listed above. In column B, type the corresponding percentages for each crop.
5. Save the file as “pie chart” to a floppy disk or a location your instructor specifies.

6. Select the cells that contain the data for the chart.
7. Click the *Chart Wizard* button on the tool bar. The *Chart Wizard* window will appear.

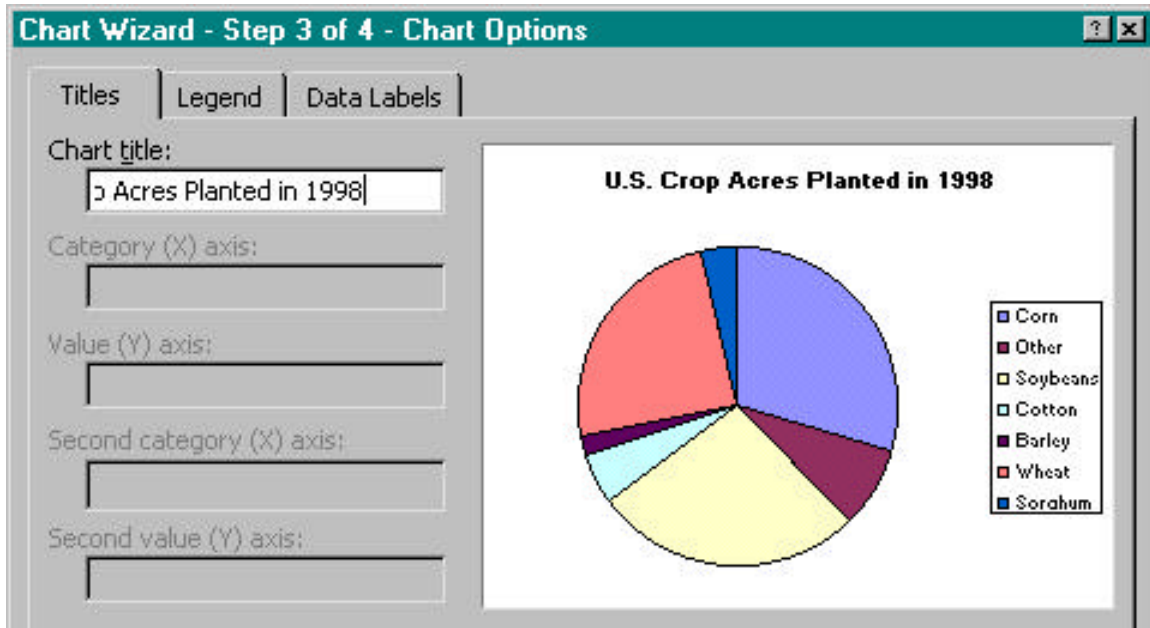


8. On the *Standard Types* tab, select "Pie" for the *Chart type* and select the complete pie (first circle, left-hand side, on the top row) for the *Chart sub-type*. Then click the *Next* button.

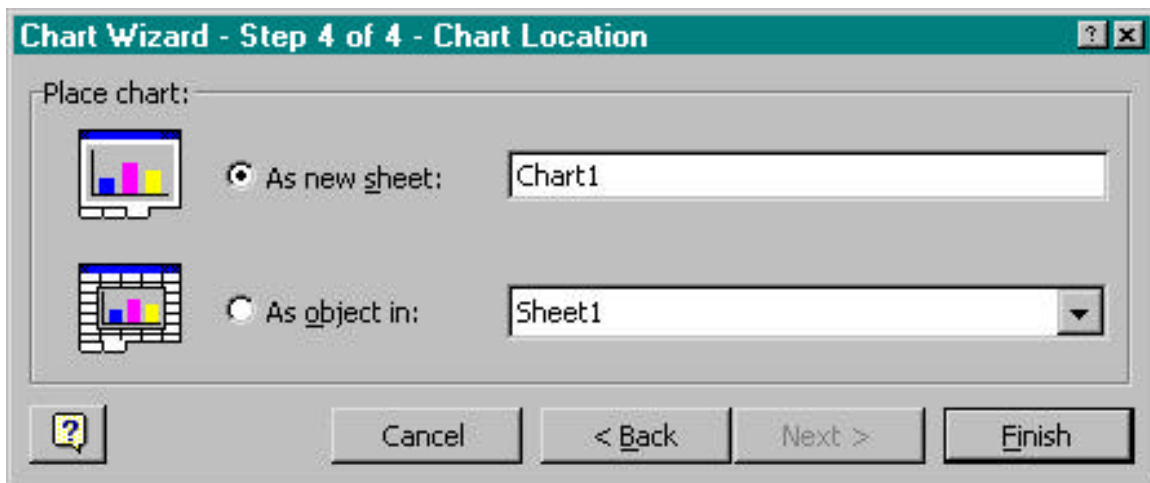


9. Click *Next* again at the *Chart Source Data* step to display the *Chart Options* step.

10. On the *Titles* tab, type the title (U.S. Crop Acres Planted in 1998) in the *Chart title* field. On the *Data Labels* tab, select the *Show percent* radio button and then click the *Next* button.



11. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The pie chart will appear on your screen.



Note: If changes are needed, try clicking on the area on the chart you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.

12. Type your name at the top of the document and save the file. Then print and close the file.

---

## Line Graph

13. Next your boss wants you to create a line graph for her with the following data. She says the data is the number of farms in Missouri from 1850 to 1999.

Year	Number of Farms (in thousands)	Year	Number of Farms (in thousands)
1850	55	1930	255
1860	90	1940	255
1870	145	1950	240
1880	220	1960	175
1890	230	1970	145
1900	280	1980	120
1910	275	1990	105
1920	260	1999	110

14. Open an Excel spreadsheet. In column A, type the 16 years listed above. In column B, type the corresponding number of farms for each year.
15. Save the file as “line graph” to a floppy disk or a location your instructor specifies.
16. Select all of the data in column B and click the *Chart Wizard* button on the tool bar.
17. On the *Standard Types* tab, select “Line” for the *Chart type* and select the first line graph, left side, on the top row. Then click the *Next* button.
18. At the *Chart Source Data* step, click on the *Series* tab. Position your cursor in the *Category (x) axis labels* field. Then go to your spreadsheet and select all of the data in column A. This will assign the years as labels for the x-axis. These labels should appear on your screen. Click the *Next* button.
19. At the *Chart Options* step, select the *Titles* tab and type “Farms in Missouri (1850-1999)” in the *Chart title* field. Type “Years” in the *Category (X) axis* field and “Number of Farms in thousands” in the *Value (Y) axis* field.
20. Select the *Legend* tab and remove the check mark from the *Show legend* box. (The legend is unnecessary because there is only one line on the graph.) Click the *Next* button.
21. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The line graph will appear on your screen.

Note: If changes are needed, try clicking on the area you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.



22. Type your name at the top of the document and save the file. Then print and close the file.

### Column Graph

23. Your boss has one last chart she would like you to create. She would like the following Missouri farm data put into a column graph. She tells you that the data is for 1997.

Number of Acres	Percent of Farms
1 to 9	3%
10 to 49	17%
50 to 179	37%
180 to 499	28%
500 to 999	10%
1000 or more	5%

24. In column A of a new spreadsheet, type in the six ranges of acres listed above. In column B, type the percent of farms that correspond with each range.
25. Highlight the data in columns A and B and click the *Chart Wizard* button on the tool bar.
26. On the *Standard Types* tab, select “Column” for the *Chart type* and select the first column graph, left side, on the top row. Then click the *Next* button.
27. At the *Chart Source Data* step, check to make sure that the x- and y-axes are labeled correctly. Click the *Next* button.
28. At the *Chart Options* step, select the *Titles* tab and type “Farm Size in Missouri (1997)” in the *Chart title* field. Type “Number of Acres” in the *Category (X) axis* field and “Percent of Farms” in the *Value (Y) axis* field.
29. Select the *Legend* tab and remove the check mark from the *Show legend* box. (The legend is unnecessary because there is only one item on the graph.) Click the *Next* button.
30. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The column graph will appear on your screen.

Note: If changes are needed, try clicking on the area you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.

31. Type your name at the top of the document and save the file. Then print and close the file.

**Basic Computer Skills—Charts and Graphs Scoring Guide**

Name \_\_\_\_\_

**Successfully performed the following tasks:****Two points for each  
item checked**Pie Chart

Entered data correctly in spreadsheet

\_\_\_\_\_

Named file correctly

\_\_\_\_\_

Followed steps to create a pie chart

\_\_\_\_\_

Labeled chart correctly

\_\_\_\_\_

Line Graph

Entered data correctly in spreadsheet

\_\_\_\_\_

Named file correctly

\_\_\_\_\_

Followed steps to create a line graph

\_\_\_\_\_

Labeled graph correctly

\_\_\_\_\_

Column Graph

Entered data correctly in spreadsheet

\_\_\_\_\_

Named file correctly

\_\_\_\_\_

Followed steps to create a column graph

\_\_\_\_\_

Labeled graph correctly

\_\_\_\_\_

**Total points out of 24**

\_\_\_\_\_