

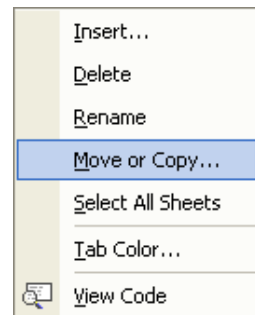


# Advanced Excel

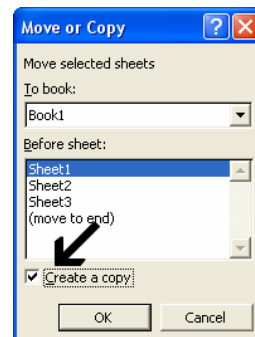
## Multiple Worksheets

Each new Excel workbook starts with three worksheets, although you can have anywhere from one worksheet to hundreds of worksheets per workbook. To switch among the worksheets, click on the worksheet tabs at the bottom of the window.

In order to help you manage multiple worksheets, Microsoft Excel allows you to add, delete, rename, color code, move, and copy them. To do so, right-click on a worksheet tab to bring up the shortcut menu shown to the right.



- **Insert...** – Add a new blank worksheet to the workbook. In the Insert dialog box, make sure the Worksheet icon is selected, then click OK. The new worksheet will appear to the left of the selected worksheet.
- **Delete** – Permanently remove a worksheet from the workbook.
- **Rename** – Change the name of a worksheet. After selecting the command, type in the new name and press Enter. Choose a name that represents the information in the worksheet.
- **Move or Copy...** – Move a worksheet to another workbook or change its position within the current workbook. To make a copy instead, check the "Create a copy" box. (As a shortcut, you can also quickly move worksheets by clicking and dragging.)
- **Tab Color...** – Change the color of a worksheet's tab to make it stand out.



## Sharing Data

When writing formulas, Microsoft Excel allows you to easily use data appearing in one worksheet in another by adding the worksheet's name to the address of the cell the data is in. For example, to add cell D16 in worksheet "Sheet1" to cell D16 in worksheet "Sheet2," the formula would be: =Sheet1!D16+Sheet2!D16.

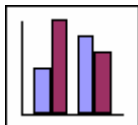
**HINT:** When sharing data among worksheets, there is no need to type worksheet names or cell addresses. For the example above, start the formula with an equal sign, switch to "Sheet1," click on cell D16, type a plus sign, switch to "Sheet2," click on cell D16, then press the Enter key to complete the formula.

# Charts and Graphs

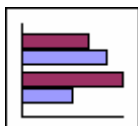


Microsoft Excel lets you turn your raw data into a variety of charts and graphs. Using this feature, you can visually summarize numerical information and display any trends or patterns that are present. Charts and graphs can help make your data more meaningful and easier to understand.

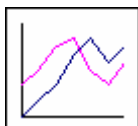
When you create a chart or graph, you will have a number of types and styles to choose from. Make sure to choose the chart type that best displays your data. These are the most commonly used types of charts:



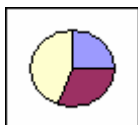
**Column** – Column charts are made up of vertical bars representing multiple sets of data. They are most often used to show how amounts have changed over time.



**Bar** – Bar charts are made up of horizontal bars representing multiple sets of data. They are most often used to compare various amounts at a fixed point in time.



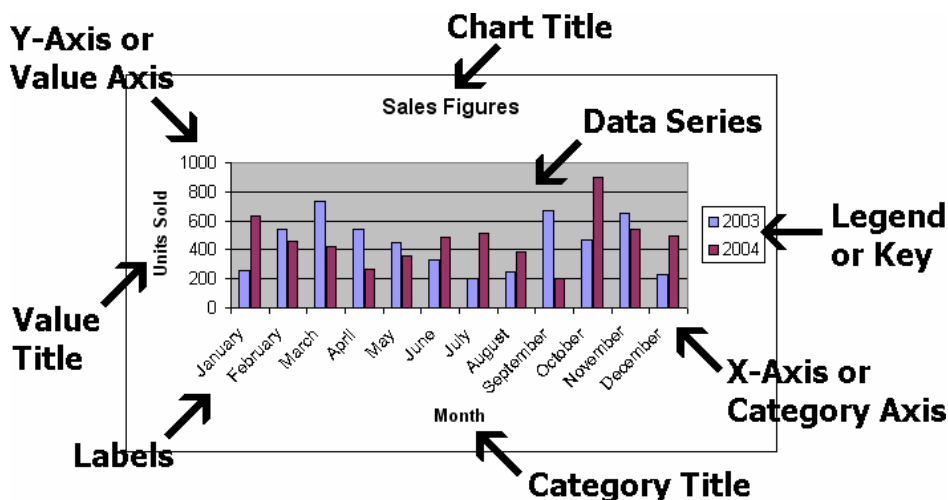
**Line** – Line charts are made up of lines representing multiple sets of data. They are most often used to show changes over time and are good for emphasizing trends.



**Pie** – Pie charts are made up of “slices” representing a single set of data. They are most often used to show how parts relate to the whole.

Don't be afraid to experiment to find the chart that will work best for each situation.

The main components that make up a typical chart are labeled here:



## Creating a Chart

The easiest way to turn your data into a chart or graph is to run the Chart Wizard, which walks you through all of the steps necessary to create a chart. Before you create your chart, it is best to arrange your data into standard table format (shown below) if it's not that way already.



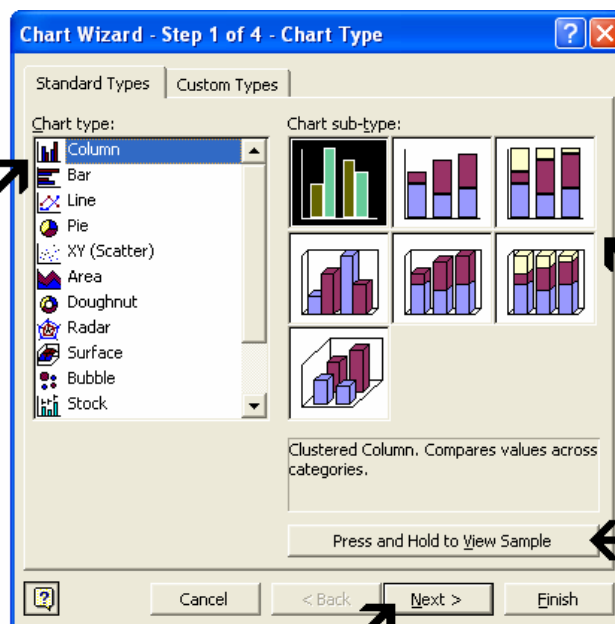
To use the Chart Wizard, follow these steps:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		January	February	March	April	May	June	July	August	September	October	November	December
2	2003	253	543	734	539	452	328	205	245	674	465	654	233
3	2004	635	456	422	264	356	489	511	381	198	899	543	491
4													

**1. Select all of the cells that contain data you wish to include in the chart. Include any column or row labels.**

**2. Click on the Chart Wizard icon (  ), located on the Standard Toolbar.**

**3. Choose the type of chart you want to create.**




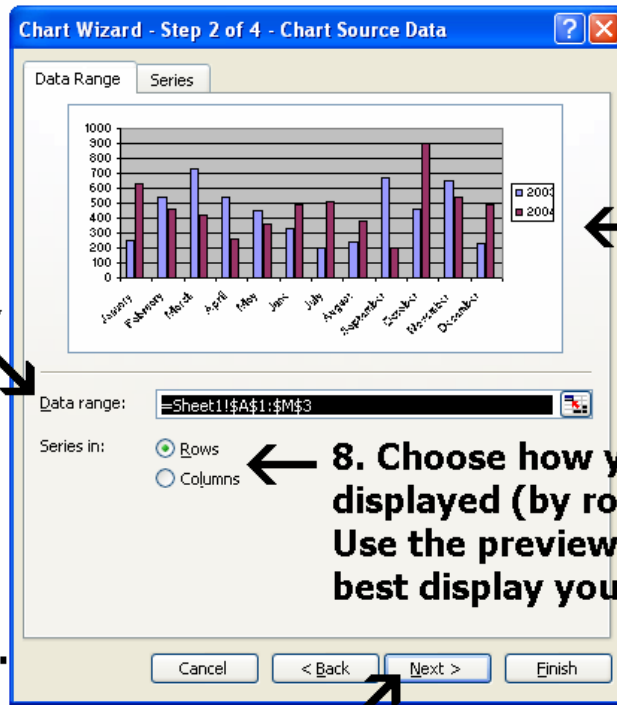
**4. Choose a style or "sub-type" of chart.**

**5. Click on this button to see a preview of your chart with the type and style chosen.**

**6. Click on the Next button to continue.**

**TIP:** If you have already selected which cells to include, at this point you can click on the Finish button instead of the Next button to close the Chart Wizard and create a chart with the default settings.

**7. If you didn't select any data before running the Chart Wizard, select the cells now. Either move the dialog box to the side or collapse it by clicking on .**

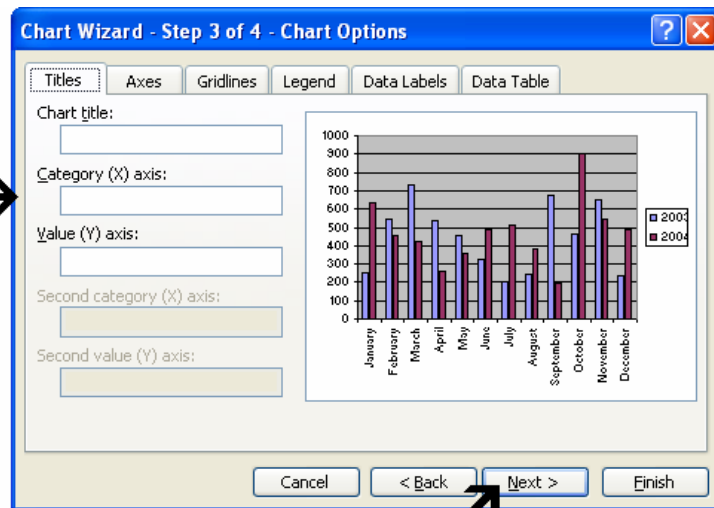


**Preview of how your chart will look**

**8. Choose how your data will be displayed (by row or column of cells). Use the preview to see which way will best display your data.**

**9. Click on the Next button to continue.**

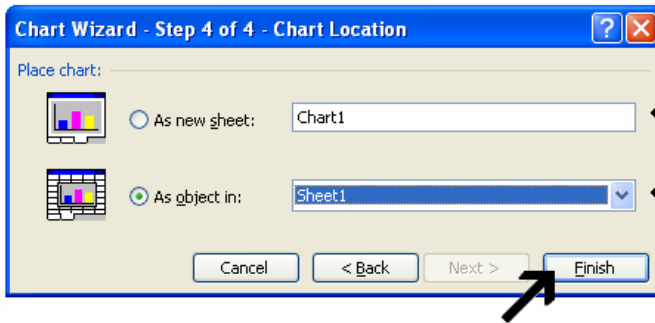
**10. Type in titles for the chart, the x-axis, and the y-axis (if you would like). The preview will change as you add titles.**



**11. Click on the Next button to continue.**

Before clicking the Next button, you can choose some other settings by clicking on the other tabs in the Chart Options dialog box:

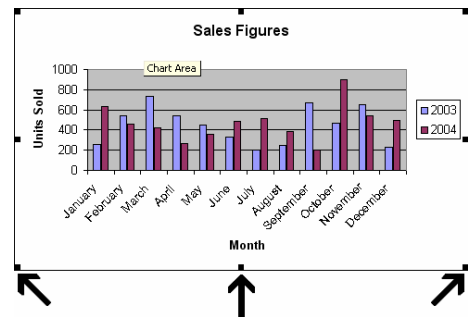
- Axes – Remove or add the x-axis or y-axis.
- Gridlines – Add or remove major and minor gridlines along the x-axis or y-axis.
- Legend – Remove or change the position of the legend.
- Data Labels – Add labels within the data series.
- Data Table – Place a table of all charted data below the chart.



**12. Set the chart's location, either as a new sheet or in an existing sheet. If you choose to make the chart a new sheet, you can type a name for the new sheet now (default is "Chart1").**

**13. Click on the Finish button to close the Chart Wizard and create your chart.**

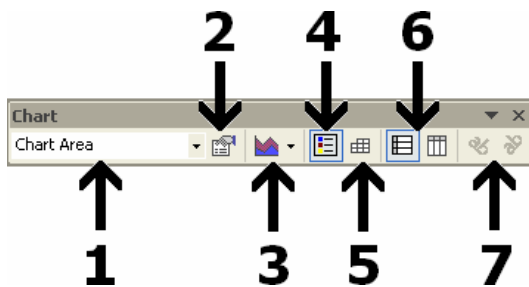
When you finish the Chart Wizard, your chart will appear in the location you specified. If you choose to place the chart in an existing sheet, handles will appear around the new chart, as shown to the right. These allow you to resize the chart if you wish. You can also move the chart to a new place in the worksheet by clicking on the chart and dragging it to a new location.



If you ever wish to delete a chart from a worksheet, simply select it by clicking on it and press the Delete key on the keyboard. If you chose to make the chart a new sheet, delete the entire sheet as discussed on Page 1 of this handout.

### Editing Charts

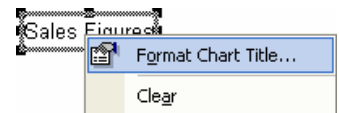
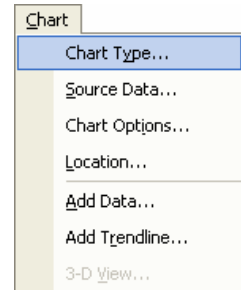
When a chart is selected, the Chart toolbar will be displayed on the screen. It provides options for making changes to existing charts, as labeled below:



1. Chart Objects – Choose the part of the chart you want to make changes to. To edit the entire chart, choose "Chart Area."
2. Format – After choosing a part of the chart, bring up a Format dialog box for that part.
3. Chart Type – Change the type of chart.
4. Legend – Add or remove the legend.
5. Data Table – Add or remove the data table.
6. By Row/By Column – Switch between displaying your data by rows or by columns of cells in the original data table.
7. Angle Clockwise/Angle Counterclockwise – Slant selected titles and labels.

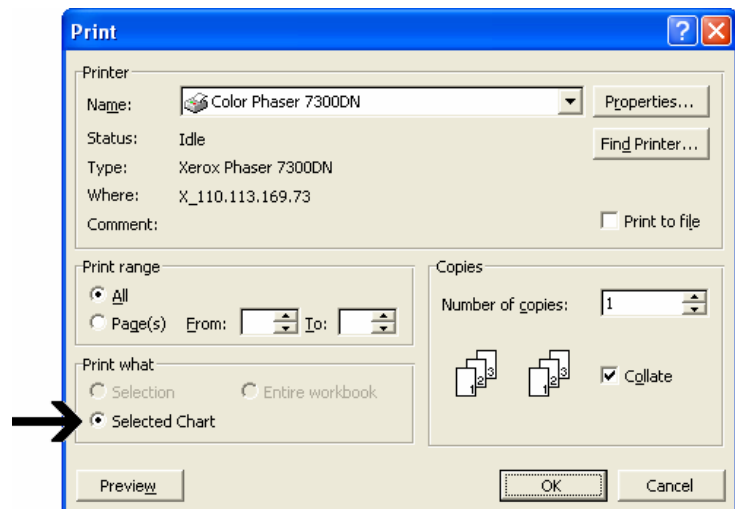
In addition to using the Chart toolbar as discussed on the previous page of this handout, you can use several other methods to edit an existing chart.

- Use the Chart menu: Shown to the right, the Chart menu lists commands specifically for use with charts. The first four commands (Chart Type..., Source Data..., Chart Options..., and Location...) correspond to the Chart Wizard's four steps. So even after you close the Chart Wizard and create your chart, you can use the Chart menu to make different selections later. To add new data to your chart, click on the Add Data... command and select the cells you wish to include.
- Double click on the chart or specific objects within the chart: Double clicking is a shortcut that brings up the same Format dialog box you would get by choosing a chart object and clicking on the Format icon on the Chart toolbar. For example, double click on a column to change its color, or double click on a title to change its font.
- Right click on the chart or specific objects within the chart: This brings up a shortcut menu with various editing options, including the Format dialog boxes and the Clear command, which allows you to delete an object. The shortcut menu for the chart title is shown to the right.



## Printing Charts

If you chose to make the chart a new sheet when you created it, you can print it by printing the sheet. If you chose to place the chart in an existing sheet, you can print the entire worksheet (including the chart) by printing the sheet, or you can print just the chart without any of the other data on the worksheet. Either way, always make sure to do a print preview first. To print just the chart, select it first by clicking on it, then choose the Print... command from the File menu. The Print dialog box, shown to the right, will automatically be set to print "Selected Chart" only.



There are special Page Setup options for printing charts. To access these options, select the chart, then choose the Page Setup... command from the File menu. In addition to changing paper size and orientation, margins, and header and footer, you can click on the Chart tab to change the size the chart will be when printed.

## Sorting Data



Microsoft Excel allows you to quickly sort data in columns alphabetically or numerically. This is especially useful if you are working with a database of information, like an address book or client list. There are two main sorting options:

1. Ascending order, in which text is displayed in alphabetical order (A to Z) and numbers are displayed from smallest to largest, or
2. Descending order, in which text is displayed in reverse alphabetical order (Z to A) and numbers are displayed from largest to smallest.

To sort data in a worksheet, follow these steps:

	A	B
1	Last Name	First Name
2	Johnson	Ricky
3	Sellen	Louise
4	Smith	Miranda
5	Flanders	Abby
6	Wright	Howard
7	Mason	Bruce
8	Anderson	Janice
9	Zandt	Carlotta
10	Drake	Zachary
11	Edwards	Fran
12	Higgins	Lacy

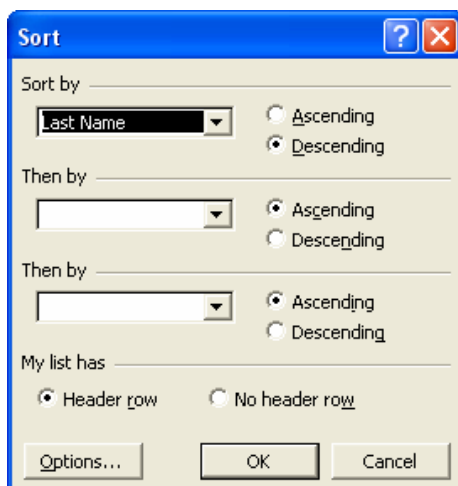
**1. Click on any cell (except the label cell) in the column of data you wish to sort by.**

**2. Click on either the Sort Ascending icon () or Sort Descending icon () , both found on the Standard Toolbar.**

When you sort by the data in one column, all of the data in the rest of the columns is sorted as well, so that the rows of data are kept together. Note that Excel leaves the cells with labels in place.

## Multiple Level Sorting

You can also sort a database by the data in more than one column at once. Begin by clicking one of the cells in the database. Then choose the Sort... command from the Data menu. You will see the Sort dialog box, shown here:



You may sort by up to three columns (or levels) of data at once. For example, you can sort by Last Name, then First Name, then State if you are working with an address book. Use the dropdown menus to choose which columns of data you wish to sort by, and select either ascending or descending order for each.

Microsoft Excel assumes you have a "header row," or a row with labels for each column of data. If your worksheet does not have a header row, make sure to change that setting.

## Glossary of Terms

<b>Alignment</b>	The position of text or numbers within a cell. Text and numbers can be aligned to the right-hand side of the cell or the left-hand side of the cell, as well as centered in the middle of the cell.
<b>Block</b>	Also called a range, refers to a group of adjacent cells.
<b>Chart</b>	A user-friendly, graphic representation of numeric and textual data. Sometimes called a graph.
<b>Clipboard</b>	A place where text and numbers are temporarily placed after being cut or copied so that they can then be pasted where desired.
<b>Copy</b>	A command that allows you to make an exact copy of selected text or numbers to be placed in another cell within the same worksheet or on any cell within another worksheet.
<b>Cut</b>	A command that allows you to remove selected text or numbers from a cell so that you can place them in a different cell within the same worksheet or on any cell within another worksheet.
<b>Database</b>	A file containing large amounts of information organized into records, which contain individual pieces of information entered into fields.
<b>Default</b>	A predefined setting that is built into a program and will be present each time that program is run unless an alternative setting is specified.
<b>Dialog Box</b>	A box that pops up when you select certain commands, allowing you to select options and provide the computer with information to do the task.
<b>Edit</b>	To add, delete, or change information in a worksheet.
<b>File Name</b>	The name assigned to a workbook either automatically by the computer or by the user when saved.
<b>Font</b>	The visual design of characters. Also called a "typeface."
<b>Format</b>	The way text and numbers appear in a cell, and the way cells appear in the worksheet.

<b>Gridlines</b>	Lines that define the borders of columns, rows, and cells. Unless the option is selected, they will not print.
<b>Labels</b>	Text placed in cells, usually at the beginning of rows and columns, to identify data content of other cells.
<b>Point Size</b>	The height of a character. 72 points = 1 inch.
<b>Rename</b>	To change the name of a saved workbook.
<b>Sort</b>	To change the order of cells to alphabetical, numerical, or some other predetermined, sequential order.
<b>Shortcut Menus</b>	Menus that appear when an object or text is right-clicked with the mouse. They allow you to perform common functions more quickly.
<b>Textual Numbers</b>	Numbers that are not meant to be part of calculations, such as zip codes and phone numbers.

## Further Reading Suggestions

These books and videos, available from the library, will help you learn more about the various versions of Microsoft Excel and how to use them. The version of Excel used at the library, Microsoft Excel 2002, may be different than the version you use on other computers at home, work, or school. Ask a librarian for more titles.

### Microsoft Excel 5

Microsoft Excel 5 for the Macintosh Step by Step by Catapult, Inc.

### Microsoft Excel 2000

Excel 2000 for Windows for Dummies by Greg Harvey  
Learning Excel 2000, Volume 1: Beginning (VHS)

### Microsoft Excel 2002

Absolute Beginner's Guide to Microsoft Excel 2002 by Joe Kraynak

### Microsoft Excel 2003

Excel Hacks by David E. Hawley  
Formulas and Functions with Microsoft Excel 2003 by Paul McFedries  
Microsoft Office Excel 2003 by John Cronan