

Microsoft Excel XP Introduction

Brighton District Library – July 2009

What is Excel?

A spreadsheet is the computer equivalent of a paper ledger sheet. It consists of a grid made from columns and rows. It is an environment that can make number manipulation easy and *somewhat* painless.

<i>paper ledger</i>	
<i>car loan</i>	<i>\$12,000</i>
<i>interest</i>	<i>9.6%</i>
<i># of payments</i>	<i>60</i>
<i>monthly payment</i>	<i>\$252.61</i>

	A	B	C
1	computer ledger		
2			
3	car loan		\$12,000.00
4	interest		9.60%
5	# of payments		60
6			
7	Monthly Pmt.		\$252.61

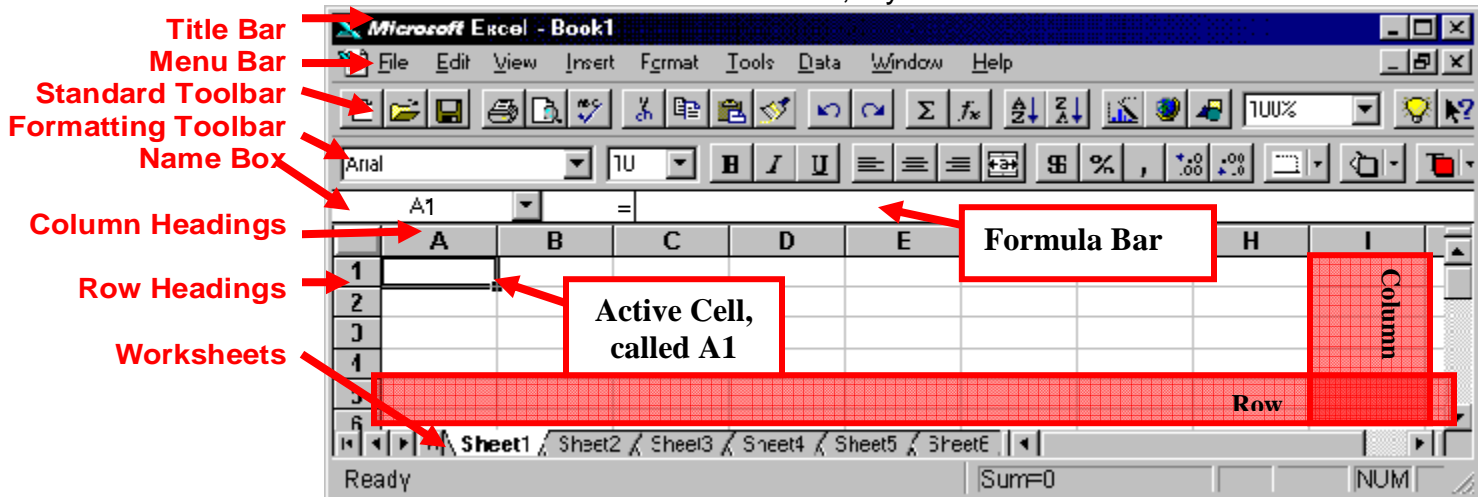
The math that goes on behind the scenes on the paper ledger can be overwhelming. If you change the loan amount, you will have to start the math all over again (from scratch).

For practical purposes, spreadsheets are used for planning and tracking budgets, tallying expenses, performing financial analysis.

Spreadsheet programs are great for putting non-numeric data lists into rows/columns, such as a membership or mailing list, because it's very easy to sort.

Application Window

When you load Excel, you should see the application window at the top of the screen and a document window below. You can maximize both of these windows, if you want.



The application window area contains five rows or lines of command menus which can be used to act upon the information found in the document window. These command menus display command words and graphic icons. These menus include the *title bar* (at the very top) followed by the *menu*

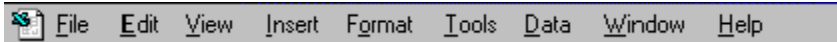
bar, the *Standard toolbar*, the *Formatting toolbar*, the *Formula bar*, and the *Status bar*. The function of each of these is as follows:

Title Bar



Displays the name of the application, "Microsoft Excel." The control menu box is on the far left and the minimize/maximize or restore buttons on the far right. These are standard Windows features, and you can consult the Windows manual for additional information.

Menu Bar



Displays the main level commands. These commands can be executed with a click of the left mouse button; then additional command options are presented in pull-down menus. The commands **FILE**, **EDIT**, **VIEW**, **WINDOW** and **HELP** are common menu options found in other Windows applications.







Toolbars



There are two toolbars which will normally display--the Standard toolbar and the Formatting toolbar. The toolbars have graphic buttons which can be clicked on with the mouse to perform an action or bring up another set of menus. The actions performed by the toolbar buttons are also found in the menu bar/pull-down menus. Buttons are popular with Excel users because they give a quick way to perform an action but it is not **NECESSARY** to use them. Because the buttons duplicate menu items, there are often several ways to "perform an action." If you put your mouse pointer on top of a button, its *ToolTip* (name) will pop up.

If two toolbars are not displaying, click on **VIEW** on the menu bar, then Toolbars. A list of the toolbars appears. Click on the box in front of the toolbar name to display it.

A few of the toolbar buttons we will use in Lesson 1 (a full list appears in Appendix A & B):

-  New Workbook (results in a blank document)
-  Open (workbook/file)
-  Save (workbook/file)
-  Print
-  AutoSum (to add up numbers in a row or column)
-  Undo (un-does the last editing action)

Formula Bar



This is the last line before the document window. It displays information entered (or about to be entered) in a cell and gives the address location of that cell. Cell editing can also be done on this formula bar. The active cell position is indicated on the far left end of the Formula bar. (More about this later).


Worksheet Tabs and Scrolling Buttons

Tabs appear at the bottom of the document window with names of Sheet1, Sheet2, Sheet3, etc. (Refer to the diagram above.) You can go to another sheet by clicking on a different tab. Also, the scrolling buttons appear to the left of the tabs; they allow you to scroll more quickly through the sheets.

TRY IT!

1. Start Excel
2. Move the mouse pointer over the worksheet. The pointer displays as a white plus sign.
3. Click in cell **A1** and type number **38**
4. Press the **Tab** key.
 - *The number (value 38) appears in that cell and moves to B1. You can press **Tab** to move to the next cell to the right, or press **Enter** to move to the next cell down.*
5. Type the number **62** and press the **Enter** key
6. The value **62** appears in cell **B1** and cell **A2** becomes the *active cell*.

Complete a Simple Addition Formula

1. Highlight cells A1 and B1
2. Click the AutoSum key 
3. *The result of the formula, 100, appears in the cell C1!*
4. Click on C1 to see the formula =SUM(A1:B1)

Changing Data in a Cell

See what happens when you change the data in a referenced cell:

1. Click in cell **A1**
2. Type **138**, and press the **Tab** key
 - *If you select a cell that already has data, typing replaces existing data. The result in cell C1 changes to 200.*
3. Double-click cell **B1** or select cell **B1** and press the **F2** key.
 - *The insertion point appears in the cell so you can edit the data. You can position the insertion point using the cursor movement keys.*
4. Change the number to **162** and press **Enter**.
 - *The result of the formula, 300, appears in cell C1.*

TIP: You can also edit data by selecting the desired cell and then clicking in the Formula bar. Any data in the cell is then displayed in the Formula bar and you can edit the data in the Formula bar.

Entering Values and Labels

Data Types	Examples	Descriptions
LABEL	Name or Wage or Days	Anything that is just text with no numerical value. Use to identify the contents of the values, a worksheet title or other identifying text. Labels are left-aligned within the cell by default.
VALUE	5 or 3.75 or -7.4	Anything that can be used in a formula: numbers, dates, and results of formulas. When you begin typing in a cell with a number, period or \$, Excel treats the entry as a value. Values are right-aligned within the cell by default. If they have decimals, they are aligned with the decimal.

TIP:

- If your labels are sequential (ie: months)
 - After entering the first label, place your mouse cross on the small black square (called a “handle”) in the lower right corner of the completed cell (the large white cross becomes a smaller black cross.)
 - Hold down the left mouse button and drag across or downward as far as necessary to sequentially add additional labels.
- When entering a value (ie: 2006) it is treated as a number, and will simply repeat if you try to drag it.
 - You can turn it into a text label by adding an apostrophe (') before the label ('2006) and then drag the number.
 - Alternatively, you can enter values in to the first two cells, select both cells, and drag across the page. This will extend the series established by the first two cells.

In this example the labels are:

- computer ledger
- car loan
- interest
- # of payments
- Monthly Pmt.

	A	B	C
1		computer ledger	
2			
3		car loan	\$12,000.00
4		interest	9.60%
5		# of payments	60
6			
7		Monthly Pmt.	\$252.61

In this example the values are:

- \$12,000
- 9.6%
- 60

TRY IT!

1. Select cell **A4**, type **Cost**, and press **Enter**.
 - *The word is left-aligned, indicating that the cell contains a label.*
2. In cell **A5**, enter **3855**, and press **Enter**.
 - *The number is right aligned, indicating that the cell contains a value.*
3. Select cell **B4** and enter **Price**
4. Select cell **B5** and enter **2588**
5. Select cell **C4** and enter Profit
6. Your spreadsheet should look like this one:

	138	162	
		300	
Cost	Price	Profit	
3855	2588		

Copy a Formula

- It is easier to copy a formula rather than individually creating one.
 - When you copy a formula, Excel changes the cell references appropriately.
1. With cell **C5** selected, enter the following formula: **=a5-b5** and then press enter.
 - *The result 1267 appears in cell C5*
 2. Select cell **A6** and enter **2979**
 3. Select cell **B6** and enter **1823**
 4. Select cell **C5**
 5. Click the **Copy** button or press **Ctrl+C**
 - *A blinking rectangle surrounds the copied cell.*
 6. Click cell **C6** to select it.
 7. Click the **Paste** button or press **Ctrl+V** and then press **Enter**.
 - *If you click the Paste button or press Ctrl+V, you can continue to paste the formula into additional cells. If you press the Enter key, the formula no longer is on the clipboard and cannot be pasted. If the blinking rectangle remains after pasting, press **Enter** or **Esc**.*

Select a Range of Cells

- When you want to work with more than one cell, you select a group of cells or a range. For many spreadsheet tasks, it will be easier to work with cells in a group. For example you may want to copy an entire row or format the total row or column in a budget worksheet.
- A range of cells is usually a rectangle identified by the cells in its upper-left corner and lower right corner, separated by a colon. The notation **B2:F5** means the rectangle of cells from column B, row 2 to column F, row 5 is selected. The selected cells will be grey.
- To select a range of adjacent cells:
 - With the mouse: click the first cell in the upper-left corner. Hold down the mouse button and drag to the lower-right corner. All cells in that range will be selected.
 - With the keyboard: click the first cell you want to select. Hold down the **Shift** key and use the **arrow** keys to select the range.
- To select a group of non-adjacent cells:
 - Hold down the **Ctrl** key and, using a mouse, select each range you want to include.
- To select an entire row or column click on the row number or the column letter
- To select the entire worksheet, click the grey cell above row 1, left of column A.

- To unselect just click on an empty cell

Quick Fix: If you accidentally make mistakes clicking and move things around, the **Undo** button will to move it back.

TRY IT!

We're going to make a little more complicated spreadsheet to use for the rest of this lesson:

1. Create this spreadsheet:

	A	B	C	D	E	F	G	H	I	J	K	L
1	LUNCH EXPENDITURES											
2												
3	WEEK	MON	TUES	WED	THURS	FRI	TOT FOR WEEK					
4	2-Oct											
5	9-Oct											
6	17-Oct											
7	23-Oct											
8												
9	TOT FOR DAY									GRAND TOTAL		
10												

Note: when putting in the dates, if you just type 10/2, 10/9, etc. Excel will automatically change the text to 2-Oct.

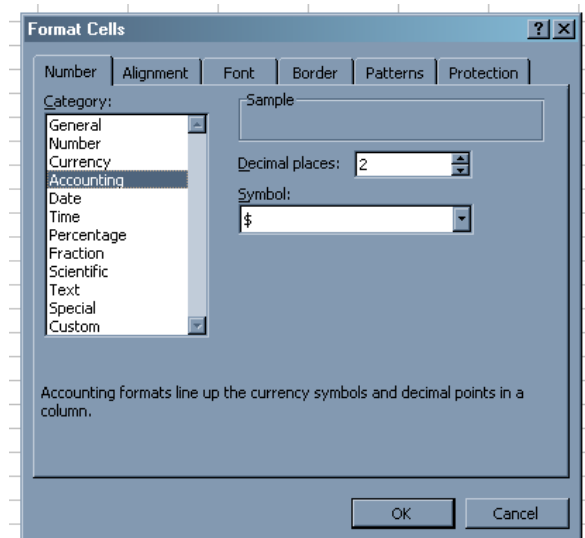
- To center and merge text in a range of cells:
 - Select the range A1: I1.
 - Click on the “Center and Merge” button in the formatting toolbar.
The title will be centered on the spreadsheet.
 - Click on the “B” in the Format Toolbar
The title text will be bold.

- Click on row 3 and bold the text
- Click on column A and bold the text
- Click on “Grand Total” and bold the text

Now let's change the format of the numbers we're going to enter:

- Select range B4:G9
- Choose Format>Cells. Click on the Number tab.
- Explore the options for formatting numbers
 - Choose Accounting category, 2 decimal places, and \$ symbol.

Every number you enter in these skills will be formatted with these characteristics.



Let's put in the numbers we're going to work with:

	A	B	C	D	E	F	G	H
1	LUNCH EXPENDITURES							
2								
3	WEEK	MON	TUES	WED	THURS	FRI	TOT FOR WEEK	
4	2-Oct	\$ 6.48	\$ 5.22	\$ 6.48	\$ 7.59	\$ 3.60		
5	9-Oct	\$ 6.48	\$ 6.48	\$ 4.00	\$ 6.72	\$ 4.98		
6	17-Oct	\$ 6.48	\$ 10.69	\$ 3.75	\$ 6.48	\$ 2.34		
7	23-Oct	\$ 6.48	\$ 6.48	\$ 7.59	\$ 4.50	\$ 12.00		
8								
9	TOT FOR DAY							GRAND TOTAL
10								

9. Type in the numbers above.

Question: The numbers \$6.48 shows up very often in this spreadsheet. What would be the easiest way to put in that number?

10. **Save** the workbook to the desktop as "excel practice."

Use the SUM Function

- You can create a formula for adding cells B3 through B7 by entering:

=B3+B4+B5+B6+B7

- If a large number of cells are to be added, it is faster to use Excel's SUM function
- The SUM function lets you specify the cells to be added as shown below:

=SUM(B3:B7)

SUM is the most commonly used function.

- Excel has many functions. All functions must be typed in this format (also called syntax):
 - Begin with an equal sign.
 - Followed by the function name
 - The group of cells affected by the function



TRY IT!

- Select cell **B9**
- Type in the following formula: **=SUM(B4:B7).**
- Press **Enter**.
The results appear in cell B9
- Save** the workbook to the desktop.

Use AutoSum

Rather than type in the SUM formula, you can use the AutoSum feature. This feature quickly creates a SUM function, estimating which range you want to sum.


TRY IT!

1. Select cell **C9**.
2. Click the **AutoSum** button. 
Because the selected text is at the bottom of a column, Excel assumes you want to total the column.
3. Press **Enter** to accept the proposed formula.
4. Select cell **G4**.
5. Click the **AutoSum** button. 
6. Press **Enter** to accept the proposed formula again.

Copying Formulas

While AutoSum and SUM are excellent tools, sometimes you have many columns or rows to put a formula in. To transfer the formula to many cells, try the two methods below.

TRY IT!

1. **Copy** the formula in G5 to G6:G7 as outlined below:
 - a. Select cell **G4**, click the AutoSum key .
 - b. Click the **Copy** button
 - c. Select the range **G5:G7**
 - d. Press **Enter**
 - e. If the **clipboard** appears, click the **Close** button.

*NOTE: If you click the Paste button or press Ctrl+V, you can continue to paste the formula into additional cells. If you press the Enter key, the formula no longer is on the clipboard and cannot be pasted. If the blinking rectangle remains after pasting, press **Enter** or **Esc**.*

2. Use **Fill** to copy the formula from C9 to D9:G9.
 - a. Select cell **C9**.
 - b. Hold down your left mouse button and drag your mouse to add D9:G9 to your selection.
 - c. Click on Edit > Fill > Right (or enter Ctrl + R) . This makes the formula in C9 fill the cells from D9:G9

Your spreadsheet should look like this:

	A	B	C	D	E	F	G	H
4	2-Oct	\$ 6.48	\$ 5.22	\$ 6.48	\$ 7.59	\$ 3.60	\$ 29.37	
5	9-Oct	\$ 6.48	\$ 6.48	\$ 4.00	\$ 6.72	\$ 4.98	\$ 28.66	
6	17-Oct	\$ 6.48	\$ 10.69	\$ 3.75	\$ 6.48	\$ 2.34	\$ 29.74	
7	23-Oct	\$ 6.48	\$ 6.48	\$ 7.59	\$ 4.50	\$ 12.00	\$ 37.05	
8								
9	TOT FOR DAY	\$ 25.92	\$ 28.87	\$ 21.82	\$ 25.29	\$ 22.92	\$ 124.82	GRAND TOTAL

Working with Lists

Excel is a wonderful tool for creating lists. In Excel you can sort your lists by the values or labels of one column or three columns. Once your data is in Excel, it can also be used for mail merge purposes: printing mailing labels or envelopes, printing names from the spreadsheet to a form letter, etc.

TRY IT!

Open mailinglist.xls on the desktop by double-clicking on it.

1. **Resize columns** by highlighting the columns that have data in them along the column headers (A, B, C) and then putting your cursor on the last column with data. Double click on the icon with arrows pointing both ways
2. **Sort the columns** by going to **Data > Sort** and choosing your options.

	A	B	C	D	E	F	G
1	First N	Last N	Street / City	State	Zip		
2	Ann	Wong	2108 Jo Metar	DC	08817-	638	
3	Winifre	Brewer	1757 W Troy	PA	48098		
4	Valerie	Reitzel	10100 F Whitb	MI	48116		
5	Toni	Archer	18333 V South	MI	48076		
6	Terri	Bennio	434 N. F Bever	NJ	48025		
7	Susan	R	740 Linc Bloor	MI	48197		
8	Susan	Krochn	617 Abt Coppe	MI	48451		
9	Sue	Baldwir	1830 Ce Troy	MI	48084		
10	Sidney	Smith	18491 S Lathr	MI	48076		
11	Shirley	Hartung	506 Tho Bangc	MI	18013		
12	Sara	Bermar	36619 N Clinto	ON, C	48038		
13	Sandra	Tucker	21209 C South	MI	48116		
14	Sandie	Snyder	179 Aug Royal	MI	48116		
15	Saman	Chont	4524 Hs Fowle	MI	48843		
16	Sally	Archda	2627 Tir Bright	MI	48114		
17	Ruth	Madder	649 Bro Narbe	MI	19072		
18	Rosear	Cook	1140 NeBright	MI	48114		
19	Renato	Brandie	830 Spr Ypsile	PA	48382		
20	Reiser	Stepha	3090 N. Linder	MI	76502		
21	Reid	Griggs	10257 C Bright	MI	48114		
22	Rachel	Miriani	8135 Ki Detroi	MI	48230		
23	Patrici	Scott	7754 W Comn	MI	48228		

Print a Worksheet

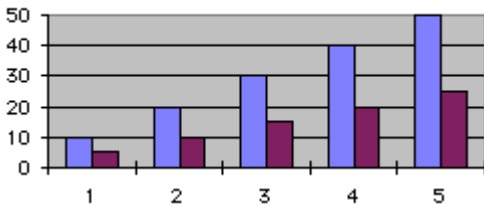
There are many options to printing in Excel. You can print a worksheet with or without column and row numbers. You can also print with or without the lines that form the cells (called **gridlines**). Sometimes your worksheet will run into multiple pages and is not readable or prints cells that have no content. You can control many aspects of printing a worksheet. We'll practice a few.

TRY IT!

1. Click on **View > Page Break View** to see how the printed pages would be divided. The dotted line is where a new page would print. You can move the page breaks around by hovering your cursor above the solid blue lines and dragging them right or left, up or down.
2. Define the range of cells you want to print with **Set Print Area**
 - a. Select the area you want to print.
 - b. Click on **File > Print Area > Set Print Area**
This is the only part of this spreadsheet will print. So if you want to only print Monday's expenses, you can select only that for your Print Area.
3. Click on **File > Page Setup**. This is where you control many aspects of the printed spreadsheet
 - a. Under the **Page tab** you can make these changes:
 - i. Portrait vs landscape layout
 - ii. Change how many pages the spreadsheet will use. This will enlarge or make smaller the text of the spreadsheet to take up the space you indicate.
 - iii. Change your paper size
 - b. Under the Margins tab you can make these changes:
 - i. The width of the margins
 - ii. Centering of the spreadsheet on the page
 - c. Under the Sheet tab you can make these changes:
 - i. What part of the spreadsheet you print
 - ii. On a multiple page spreadsheet, you can have the title and column headers print on every page.
 - iii. Add **gridlines** between cells (makes it much easier to read).
 - iv. Add row and column headings to print the numbers and letters that identify the rows and columns.
4. After making your selections in Page Setup, click on **OK**.
5. Click on **File > Print Preview** or the **Print Preview button**. This will let you see what will actually be printed. If you don't like it you can go into Page Setup at the top of the page and change your settings.
6. Once you're satisfied, click the **Print** button.
7. Click **OK** to print the spreadsheet.
8. Close the workbook.

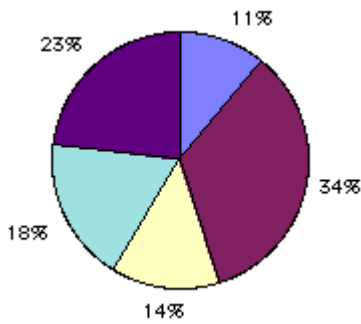
Making Charts and Graphs

Numbers can usually be represented to a larger audience in a picture format. Excel has a chart program built into its main program. The Chart Wizard will step you through questions that will (basically) draw many types of charts from the data that you have **selected**. The two most widely used are the bar chart and the pie chart. You can add legends, titles, and change many of the display variables.




The **BAR** Chart is usually used to display a change (growth or decline) over a time period. You can quickly compare the numbers of two different bar charts to each other.

The
you



PIE Chart is usually used to look at what makes up a **whole Something**. If you had a pie chart of where you spent your money could look at the percentages of dollars spent on food (or any other category).

These are the steps to making a chart using the chart wizard

1. Select the data in your spreadsheet that you want in the chart. It's usually easier to select both the data and the column and row headers. You will usually leave out totals.
2. Click on Insert>Chart or on the Chart icon in the toolbar 
3. Select the kind of chart you want to make
4. Click next
5. Look at the chart that is created and see if it captures your data
6. Give your chart a title, label on the x axis (horizontal) and y axis (vertical)
7. If you don't like the resulting chart, click on various elements to change them.

Appendix A: Standard Toolbar¹



1. **New:**
Create a new, blank spreadsheet
2. **Open:**
Open a previously saved spreadsheet
3. **Save:**
Save your current spreadsheet
4. **Permission:**
5. **Print:**
Prints the current document.
6. **Print Preview:**
Preview the potential print of the current document.
7. **Research:**
Microsoft has enabled Information Rights Management (IRM) within the new version of Excel, which can help protect sensitive documents from being copied or forwarded. Click this for more information and options.
8. **Copy:**
Copies the current selection to the clipboard, which can then be pasted elsewhere in the document.
9. **Paste:**
Takes the current clipboard contents and inserts them.
10. **Undo:**
Undoes the last action in the document, reverting “back” a step in time.
11. **Insert Hyperlink:**
Inserts a hyperlink to an Internet location.
12. **AutoSum:**
A drop-down menu of available mathematical operations to perform.
13. **Sort Ascending:**
Sorts the current selection in ascending order.
14. **Chart Wizard:**
Opens the “Chart Wizard,” which will walk you through the creation of a chart / diagram using the currently selected information.
15. **Microsoft Excel Help:**
Brings up the Excel Help window, which will allow you to type in a key-word for more information, or click anything on screen to directly bring up further information on that subject.
16. **More Options:**
There are a variety of extra options you can call or add to the toolbar, such as Spell Check, Sort Descending, Cut, Redo, etc. By clicking the triangle, you can access these options; at the same time, you can drag this toolbar outwards more to make more available space for these options directly on the toolbar.

¹ Rutgers Writing Program <http://getit.rutgers.edu/tutorials/excel/index2.html>
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Appendix B: Formatting Toolbar²:



1. **Font:**
Change the font of the selected cell(s)
2. **Size:**
Change the font size of the selection
3. **Bold:**
Put the selection in **bold** face
4. **Italics:**
Italicize the selection
5. **Underline:**
Underline the selection
6. **Align Left:**
Align the current selection to the left
7. **Center:**
Align the current selection to the center
8. **Align Right:**
Align the current selection to the right
9. **Merge & Center:**
Combine two selected cells into one new cell that spans the width of both and center the contents of this new cell
10. **Currency Style:**
Change the style in which currency is displayed
11. **Percent Style:**
Change the style in which percents are displayed
12. **Decrease Indent:**
Decrease the indent of a cell by approximately one character
13. **Border:**
Add or alter the style of borders to format a cell with
14. **Fill Color:**
Select a color to fill the background of a cell with
15. **Font Color:**
Select a color to apply to a selection of text

² Rutgers Writing Program <http://getit.rutgers.edu/tutorials/excel/index2.html>
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