Excel: Introduction to Spreadsheets

Learn about cells, columns, rows, AutoSum, simple formulas and page setup features.

The primary purpose of a spreadsheet is to perform mathematical calculations. Although Excel can do many other things, its core strength is calculations.

Columns are labeled with letters of the alphabet. A B C D etc. There are 16,000 columns. The last column is XFD.

Rows are labeled with numbers. There are more than 1 million rows—1,048,576 rows to be exact.

Cells are the rectangles in the spreadsheet. Each cell has a **name** based on its intersection of column and row: Always *column letter* first, then, *row number*. The cell in the upper left corner is **A1**.

The Formula Bar indicates the contents of the active cell.
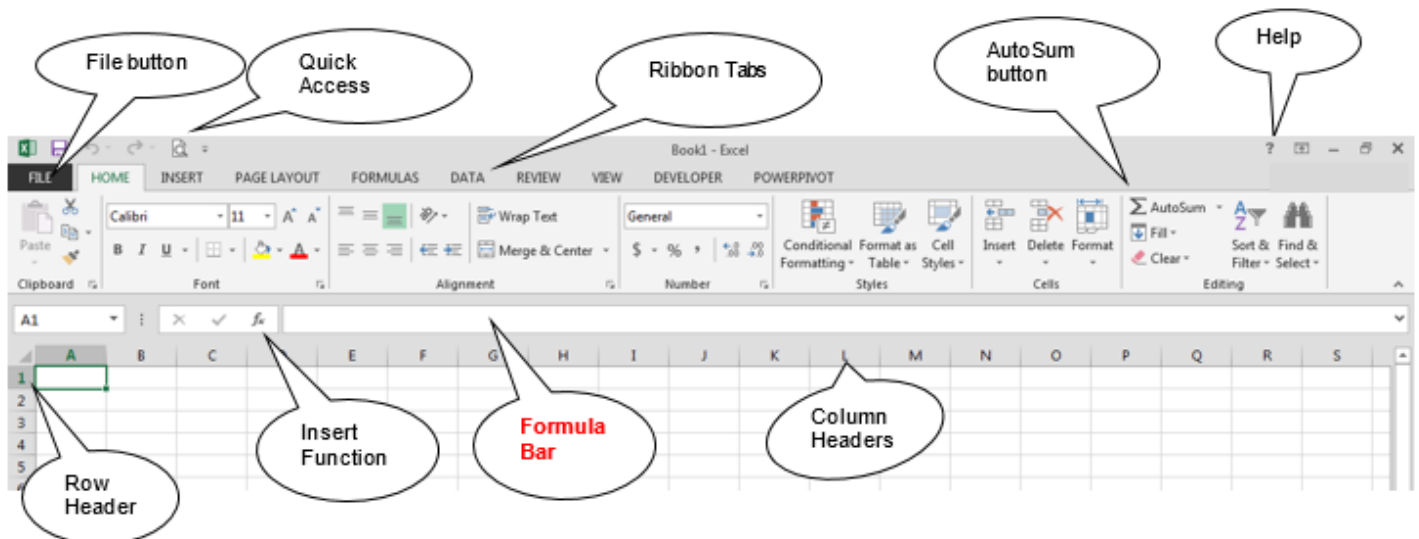
Cells may contain numbers, text, or formulas. A formula always starts with an = .
The other operators are:
+ addition   **-** subtraction ***** multiplication   **/** division   **^** exponent

Simple addition looks like: =A1+B1   OR   =SUM(A1:B1)

A simple average looks like: =(A1+B1)/2   OR   =AVERAGE(A1:B1)

Functions: The words SUM and AVERAGE are called functions. They are shortcuts to entering (or even knowing) the actual formula. To see a list of all the available functions, click on the **Insert Function** button *ƒx* on the left side of the Formula Bar.

There is a mathematical order of precedence rule that requires us to calculate in the following order: ① Calculations in parentheses
② Exponents
③ Multiplication and Division
④ Addition and Subtraction

You can use a mnemonic to help you remember the order:
 Please *(parentheses)* **e**xcuse *(exponents)* **m**y *(multiplication)* **d**ear *(division)* **A**unt *(addition)* **S**ally *(subtraction).*
Example: **=3+4*5**. Is the answer 35 or 23?

Since we have no parentheses and no exponents, we must multiply 4*5 first, then add 3. The answer is 23. Examples of formulas with answers:

| =(3+4)*5 | = | 35 | 1+2+3/3 | = | 4 |
| =3+(4*5) | = | 23 | (1+2+3)/3 | = | 2 |
| =3+4*5 | = | 23 | | | |

To make our numbers look appropriate, we need to format them. From the **Home** tab, click on the small down arrow in the lower right corner of the **Number Group**.
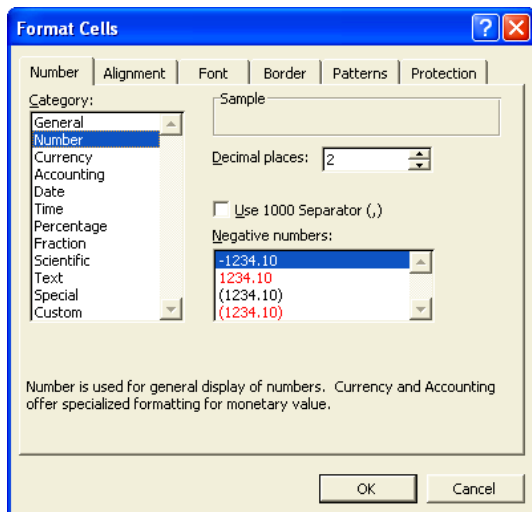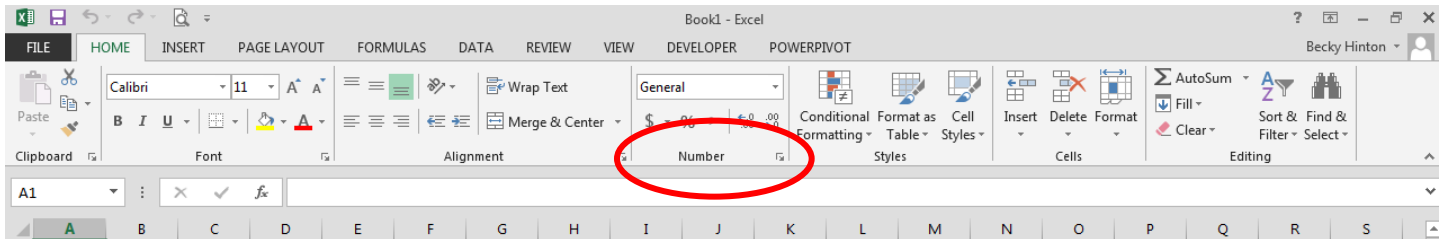
The default **General** format aligns numbers on the right side of the cell and text on the left. In order to have decimal places or a 1000 separator, we need to choose the **Number** format and indicate how we want a number to display. To display currency, percentages, fractions, dates or time, choose the appropriate number format. If none of the pre-selected number formats are quite right, you can design your own under the **Custom** category.

Notice that there are many other cell format tabs across the top of the Format Cells dialog box.

To set up your page, Click on the **File Button**. Click on **Print**. On the left, find settings to modify. On the right, find a Print Preview. Click on **Page Setup** make additional adjustments. Click on the arrow in the upper left corner to return to the spreadsheet.
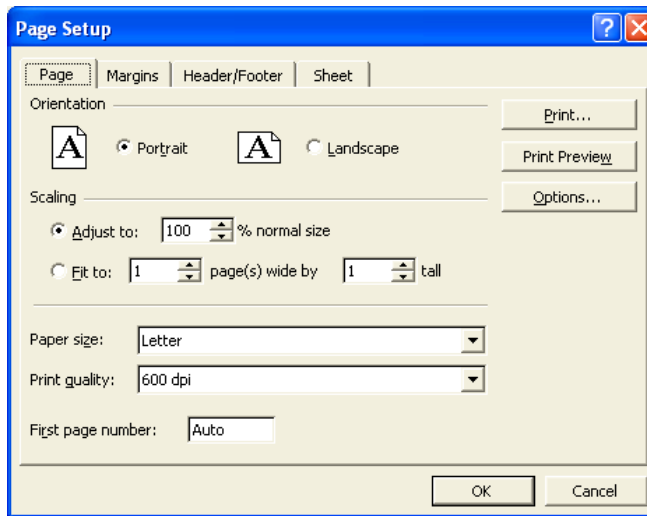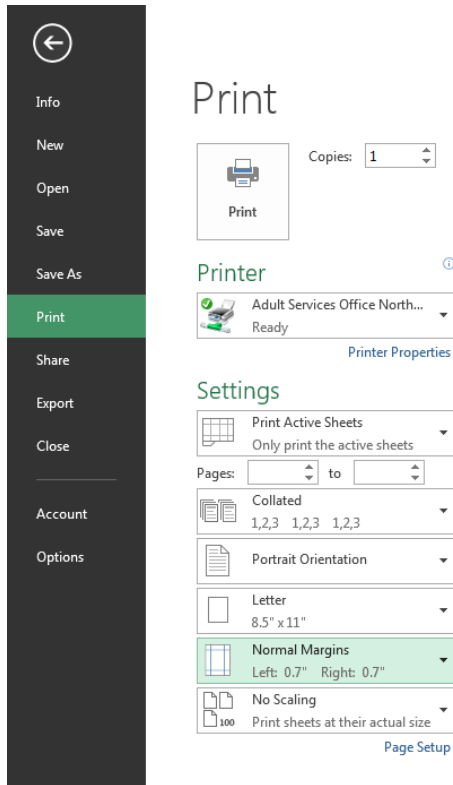
The **Page** tab allows you to change orientation and to "shrink to fit" the selected area of your spreadsheet.

The **Margin** tab allows you to change the margins. It also allows you to center the selected spreadsheet horizontally and/or vertically on the page.

The **Header/Footer** tab allows you to use standard headers or footers or design your own.

The **Sheet** tab has several useful functions. To get gridlines to print automatically, check mark the **Gridlines** option. If you like to use color in the worksheet but want to print in black and white, click on the **Black and White** check box.
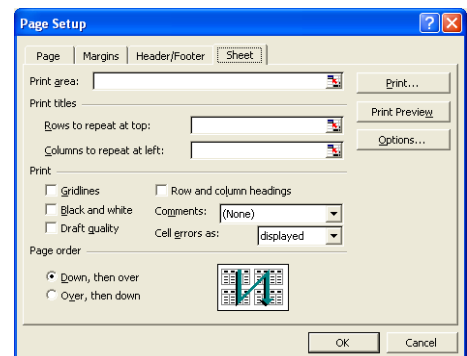
Selecting areas of the spreadsheet allow you to make changes.
To select a column, click on the column heading (e.g. A)
To select a row, click on the row number (e.g. 1)
To select the entire spreadsheet, click on the plain gray square to the left of Column A and above Row 1.

Other ways to select cells include:
Using shift + arrow keys.
Using shift + mouse clicking or using control + mouse clicking.
Dragging the mouse

Sample Excel worksheet

|	A	B	C	D	E
1		2012	2013	Difference	Average
2	January	140.23	150.7		
3		125.76	154.3		
4		100.98	125.75		
5		75.12	88.9		
6		50.1	60.22		
7		40.3	42.78		
8		48.98	125.45		
9		125.9	155.67		
10		56.7	110.4		
11		65.77	66.4		
12		85.6	86.3		
13		89	100		
14	Total				

1. Type *January* in cell **A2**. Use the **fill handle** to create the other months of the year. The fill handle looks like a small black square in the lower right corner of the active cell. When you put the mouse pointer on the small black box, a black plus sign **+** appears. Click and hold down the left mouse button and drag down the next 11 cells.

2. Enter the other row labels and column labels. Type some costs. All the other columns will be calculated with formulas.

3. **AutoSum** is a quick way to get totals. Click on the cell where you want the sum to appear. In the example above, click in **B14**. Then click on the AutoSum icon - Σ - on the Home tab. Adjust the dotted lines to include the cells you want in the sum or change the formula in the Formula Bar. Do the same in cell **C14**.

4. In the column labeled **Difference**, we want to subtract the 2008 Total from the 2009 Total. Type the formula in cell **D2**. The formula will look like **=C2-B2**. Copy this formula in cells D3 through D14 by using the fill handle.

5. In the column labeled **% Change**, we want to put in a formula to figure percent. The formula will look like **=D2/B2** in cell E2. To copy this formula in all cells, use the fill handle. The result will be a decimal. Select the E column and click on the **%** sign in the Format toolbar. Use the Increase / Decrease Decimal buttons in the Format toolbar to increase or decrease precision.

6. In cell **F2**, in the column labeled **Average**, click on the *fx* (Insert Function button) and choose Average. Modify the cell range to **B2:C2** and click OK. The formula will look like **=AVERAGE(B2:C2)**. Copy the formula in cells E3 through E14. Or use AutoSum Σ . Click on the down arrow to the right of **AutoSum**. Choose **Average**. Be sure to adjust the formula. Copy the formula in cells E3 through E14.

Other ways to copy formulas include:

Select the cells where you want a formula. Type or select the formula or function—it will appear in the first selected cell. Hold down the Ctrl key and press the Enter key.
Click in the first cell where you want a formula. Type or select the formula or function. Press Enter. Click on the cell again. Click on Copy. Select the cells where you want the formula. Click on Paste.

To insert a blank row at the top of the sheet, click on the **1** in the row header. **Right click** on the 1 then left click on **Insert**.

Click on cell A1, type Electricity. Press enter. Select cells A1 through E1. Click on the **Merge & Center** button located on the **Home** ribbon in the **Alignment group**.
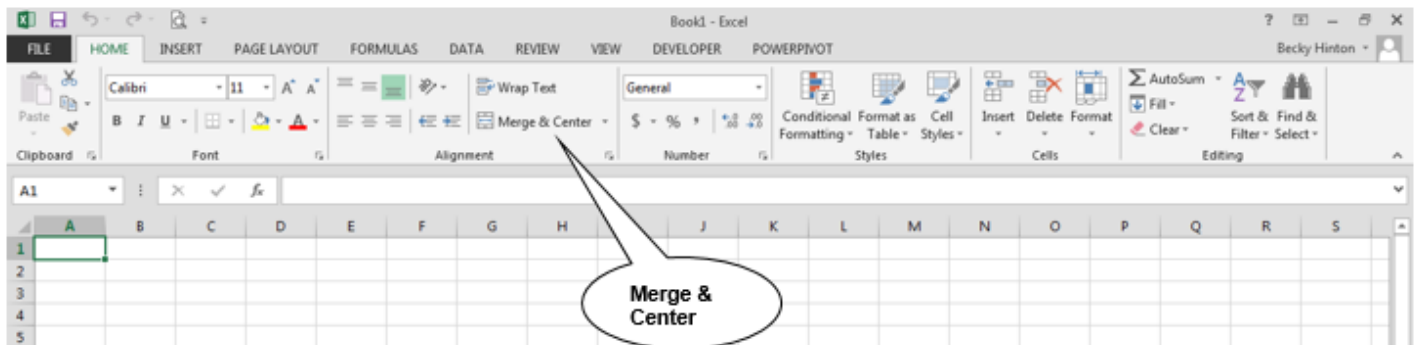
Electricity

	2012	2013	Difference	Average
January	100.99	97.34	-3.65	99.17
February	122.88	115.43	-7.45	119.16
March	113.71	102.80	-10.91	108.26
April	98.90	99.00	0.10	98.95
May	86.00	89.00	3.00	87.50
June	83.40	76.50	-6.90	79.95
July	90.12	88.20	-1.92	89.16
August	100.75	90.00	-10.75	95.38
September	54.70	75.00	20.30	64.85
October	60.80	71.50	10.70	66.15
November	88.50	92.90	4.40	90.70
December	110.35	99.64	-10.71	105.00
Total	$1,111.10	$1,097.31	-$13.79	$1,104.21