

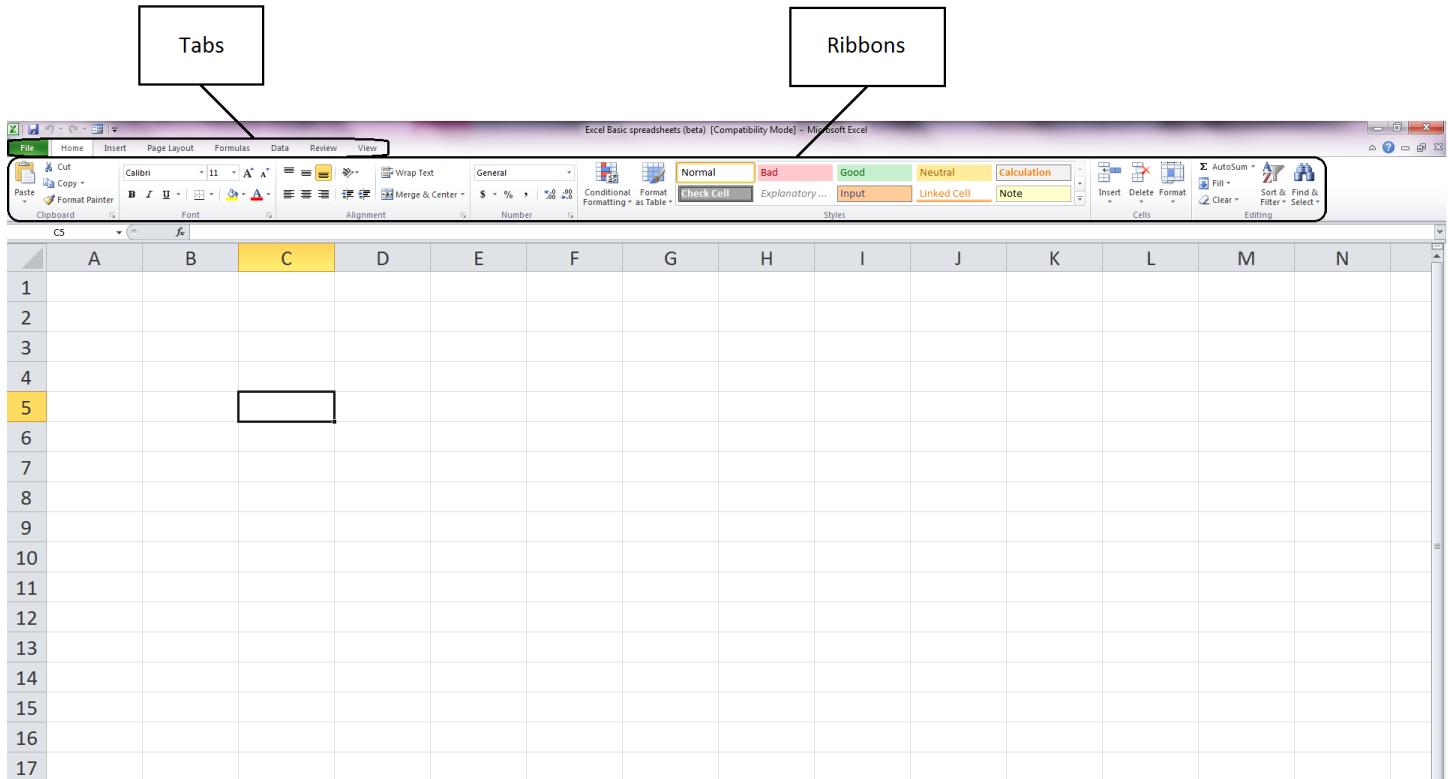
# Excel Basic

## Uses for Excel

- Number Crunching
- Creating Charts and Tables
- Organizing Lists and Data

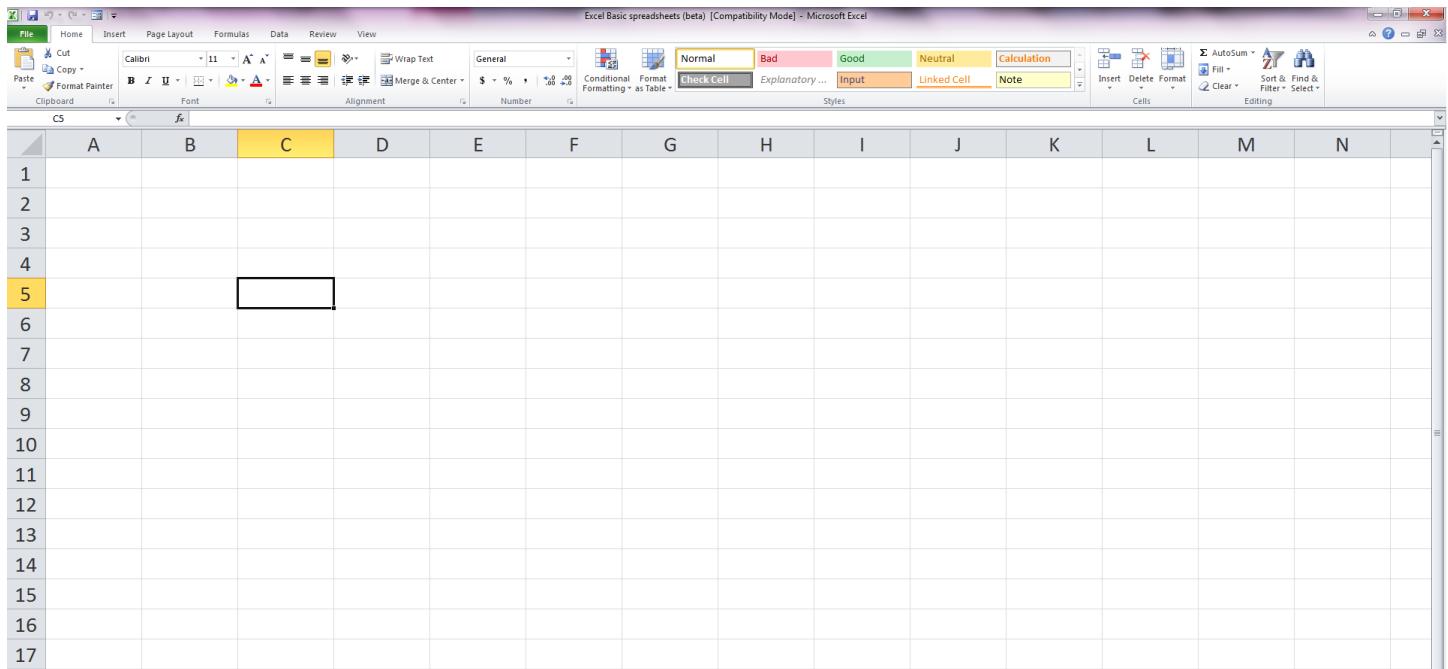
## Menu Organization

Excel 2010 uses tabs and ribbons to organize the menu options.

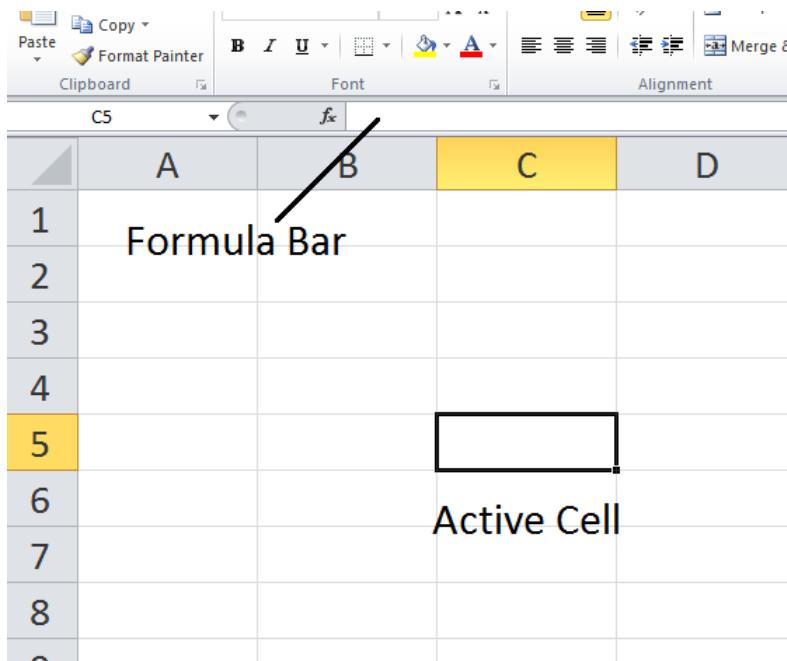


Many of the same functions you are used to seeing in Microsoft Word are also present in Excel. At the top of the screen you'll notice the ribbons for "File", "Home," and "Insert". You can switch between ribbons to do different things.

## Layout and Cells



An Excel spreadsheet is a grid of “cells” and is organized into rows and columns. The rows are arranged in number order, and columns are assigned letters. Each cell has a unique “cell reference” – a way to identify that cell. Cell references are simply where the columns and rows meet.



Here the currently selected or “active” cell is C5. The black borders show you which cell is the active cell, and the name box in the top left corner displays the cell reference of that cell.

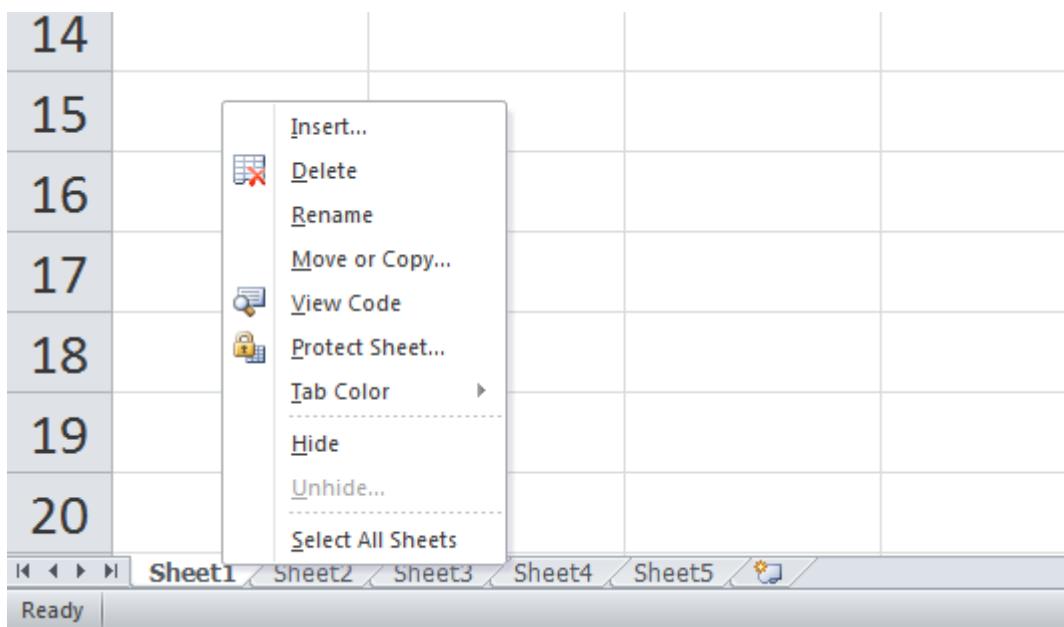
## Navigating and Entering Data

There are a number of ways to navigate your spreadsheet. You can use the mouse and single click the cell you'd like to work in. You can also use the "tab" key to advance the active cell one column to the right. You can use the "enter" key to advance the active cell one row down. You can also use the direction keys to move your active cell around your spreadsheet.

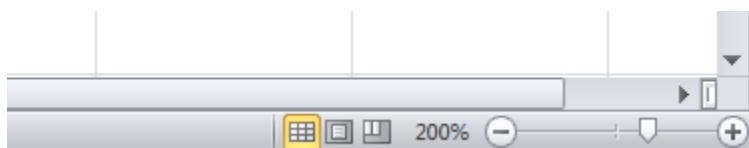
To enter data into Excel select the cell where you'd like to enter information and begin typing. If you prefer, you can also select the cell where you'd like to enter data and then type it into the formula bar at the top of the screen, though this is mostly used for formulas. Note that if you want to *edit* the information in a cell you have to double click that cell, because if you single click on a cell that's already filled and begin typing you will instead replace what is already in there.

## Worksheets

As you use Excel you may wish to separate your data into multiple worksheets. Worksheets are like separate pages in a notebook. You have tabs at the bottom of your screen that will allow you to navigate between worksheets. By default you will be given 3 worksheets (labeled 1, 2, and 3).



You can add, delete, rename, move, copy, color-code, etc. your worksheets by right-clicking on the tab you wish to edit. That will bring up a small menu with all your tab options.

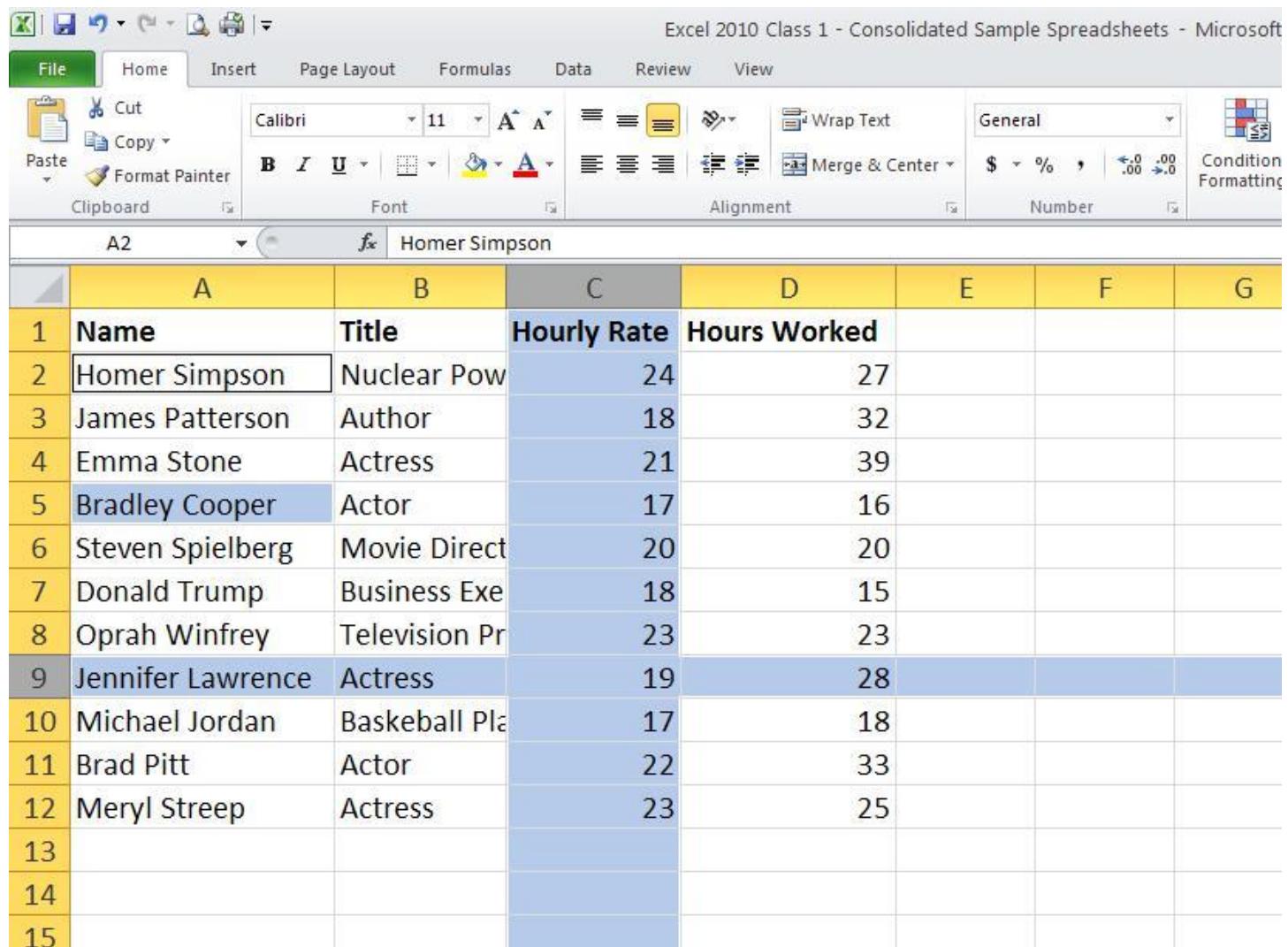


You can zoom in or out of your spreadsheet using the slider control in the lower right of the spreadsheet.

## Selecting Cells, Rows, and Columns

Highlighting is an important skill that is used frequently in Excel worksheets. Highlighting in Excel works the same way as highlighting in Word, PowerPoint, or other Microsoft products. To highlight in Excel, you click and drag in order to select a given cell and/or area.

You can also highlight entire rows or columns. Do that by clicking on either the column letter or row number. Select multiple columns by clicking and dragging across multiple column letters or by holding down “Shift” and selecting the first and last column in your desired range.



The screenshot shows a Microsoft Excel 2010 window with the title "Excel 2010 Class 1 - Consolidated Sample Spreadsheets - Microsoft Excel". The ribbon menu is visible at the top, showing tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The Home tab is selected. Below the ribbon, there are several toolbars: Clipboard (with Paste, Cut, Copy, Format Painter), Font (with Calibri font, size 11, bold, italic, underline, and color options), Alignment (with horizontal alignment buttons like Left, Center, Right, and Wrap Text), and Number (with currency, percentage, and decimal separators). The active cell is A2, containing the text "Homer Simpson". The spreadsheet contains the following data:

	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked			
2	Homer Simpson	Nuclear Pow	24	27			
3	James Patterson	Author	18	32			
4	Emma Stone	Actress	21	39			
5	Bradley Cooper	Actor	17	16			
6	Steven Spielberg	Movie Direct	20	20			
7	Donald Trump	Business Exe	18	15			
8	Oprah Winfrey	Television Pr	23	23			
9	Jennifer Lawrence	Actress	19	28			
10	Michael Jordan	Baskeball Pla	17	18			
11	Brad Pitt	Actor	22	33			
12	Meryl Streep	Actress	23	25			
13							
14							
15							

Holding down “Ctrl” allows you to select noncontiguous columns, rows, or cells.

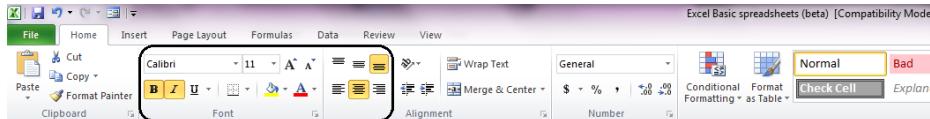
## Formatting Font and Alignment

The tools for changing the formatting of your worksheet can be found on the Home ribbon. If you are familiar with Microsoft Word 2010, you will recognize many of the same options, plus some additional features unique to Excel 2010.



	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked		
2	Homer Simpson	Nuclear Powe	24	27		
3	James Patterson	Author	18	32		
4	Emma Stone	Actress	21	39		
5	Bradley Cooper	Actor	17	16		
6	Steven Spielberg	Movie Direct	20	20		
7	Donald Trump	Business Exec	18	15		
8	Oprah Winfrey	Television Pro	23	23		
9	Jennifer Lawrence	Actress	19	28		
10	Michael Jordan	Baskeball Pla	17	18		
11	Brad Pitt	Actor	22	33		
12	Meryl Streep	Actress	23	25		
13						

Some of the available formatting options are font style, font size, bold, underline, fill color, letter color, and cell borders. You can also adjust the position of text within the cells, centering data vertically or horizontally, left justifying, right justifying, wrapping text, etc. In this example, the heading row has been selected and various formatting changes have been applied:



	A	B	C	D	E	F
1	<b>Name</b>	<b>Title</b>	<b>Hourly Rate</b>	<b>Hours Worked</b>		
2	Homer Simpson	Nuclear Powe	24	27		
3	James Patterson	Author	18	32		
4	Emma Stone	Actress	21	39		
5	Bradley Cooper	Actor	17	16		
6	Steven Spielberg	Movie Direct	20	20		
7	Donald Trump	Business Exec	18	15		
8	Oprah Winfrey	Television Pro	23	23		
9	Jennifer Lawrence	Actress	19	28		
10	Michael Jordan	Baskeball Pla	17	18		
11	Brad Pitt	Actor	22	33		
12	Meryl Streep	Actress	23	25		
13						

## Cell Formatting

The screenshot shows a Microsoft Excel spreadsheet titled "Excel Basic spreadsheets (beta) [Compatibility Mode]". The ribbon at the top has "File", "Home", "Insert", "Page Layout", and "Formulas" tabs. The "Home" tab is selected. The font section of the ribbon shows "Calibri" and "11". The formula bar shows "D13" and "fx". The status bar at the bottom says "General" and "Number". A callout box with a black border and arrow points to the vertical line between columns B and C, with the text "Click and drag (or double click) here to widen column B". The main table has columns A through F. Columns A, C, and D are bolded. Column D is highlighted with a yellow background. The data in the table is as follows:

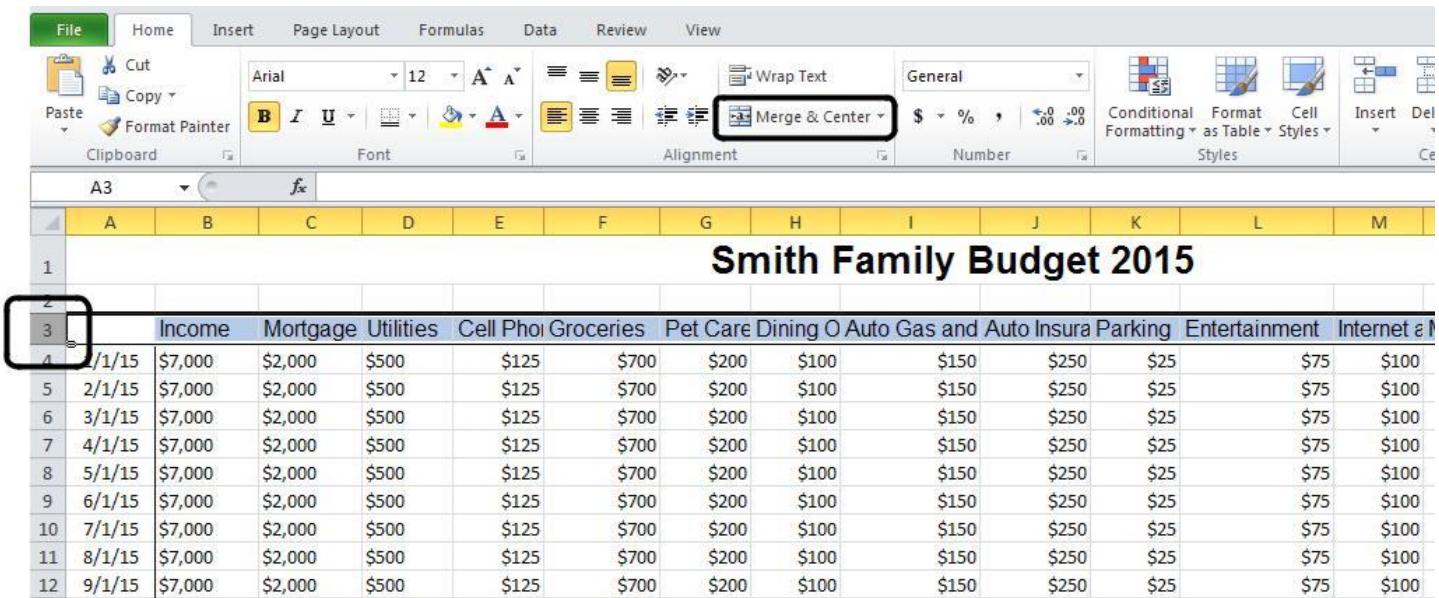
	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked		
2	Homer Simpson	Nuclear Power	24	27		
3	James Patterson	Author	18	32		
4	Emma Stone	Actress	21	39		
5	Bradley Cooper	Actor	17	16		
6	Steven Spielberg	Movie Direct	20	20		
7	Donald Trump	Business Exec	18	15		
8	Oprah Winfrey	Television Pro	23	23		
9	Jennifer Lawrence	Actress	19	28		
10	Michael Jordan	Baskeball Pla	17	18		
11	Brad Pitt	Actor	22	33		
12	Meryl Streep	Actress	23	25		
13						
14						

If the data you enter is too long for the cell, you can use the mouse to alter the width of your columns or the height of your rows to accommodate the text. To change the width of a cell, place your mouse pointer on the division between the column letters, click and drag the cell until the width is acceptable. Another option is to double click on the division between the two columns. This will auto fit the column to fit the text.

## Wrapping Text

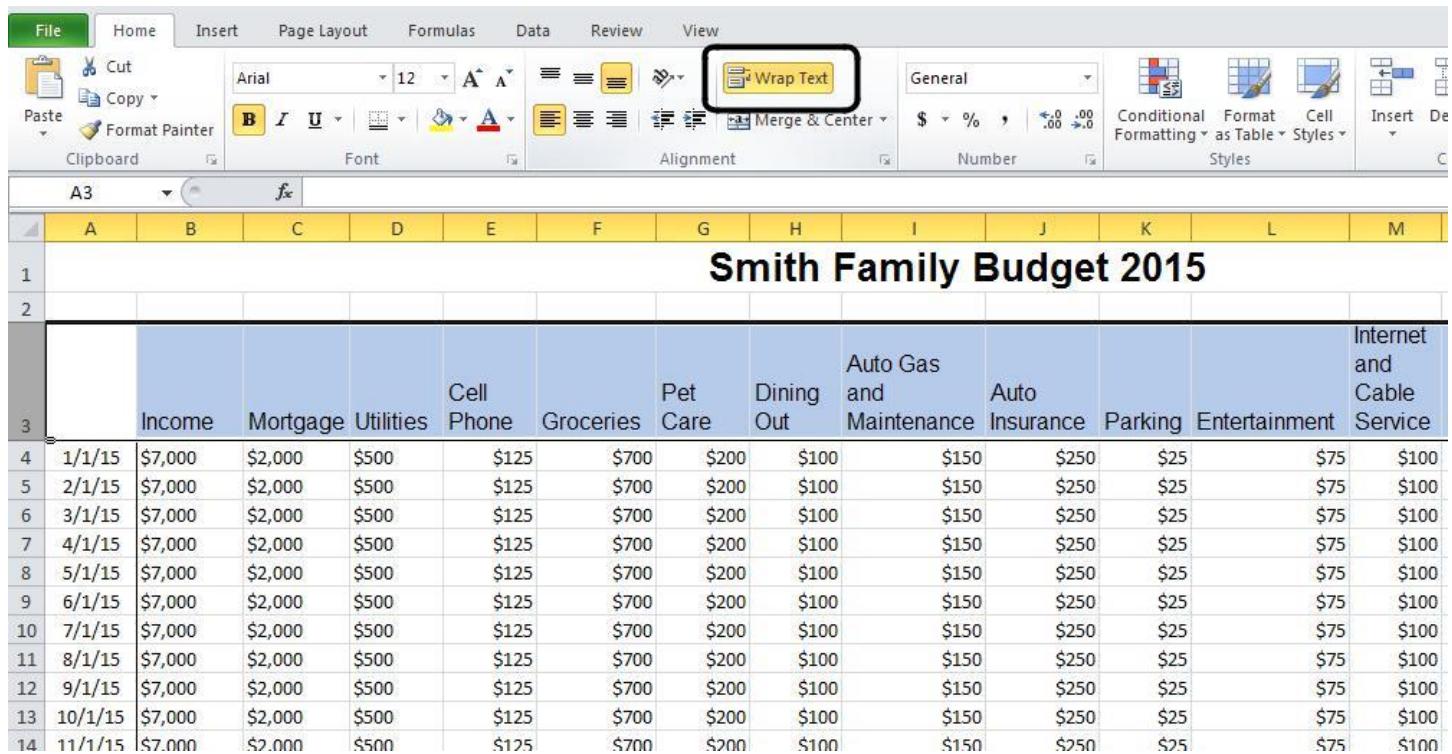
Text Wrapping allows you to fit all of your text in one cell. By default, text in Excel that is longer than the cell will overlap into the cells next to it, truncating the text. Wrapping tells Excel that instead of going into the next column, wrap the text around within the cell (making the row height increase.)

Start by selecting the cell(s) you wish to edit. In this example, select Row 3. Then, click “Wrap Text.”



	A	B	C	D	E	F	G	H	I	J	K	L	M	
1	Smith Family Budget 2015													
2	Income	Mortgage	Utilities	Cell Phone	Groceries	Pet Care	Dining Out	O	Auto Gas	and Auto	Insura	Parking	Entertainment	Internet a
3	1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
4	2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
5	3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
6	4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
7	5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
8	6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
9	7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
10	8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
11	9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
12	10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
13	11/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
14														

The column headings now all fit within the width of their cells.



	A	B	C	D	E	F	G	H	I	J	K	L	M	
1	Smith Family Budget 2015													
2	Income	Mortgage	Utilities	Cell Phone	Groceries	Pet Care	Dining Out	O	Auto Gas	and Maintenance	Auto Insurance	Parking	Entertainment	Internet and Cable Service
3	1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
4	2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
5	3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
6	4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
7	5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
8	6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
9	7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
10	8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
11	9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
12	10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
13	11/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	
14														

## Merge and Center

In addition to centering data within a cell, Excel 2010 also allows you to center text across multiple columns using the Merge & Center option. This is ideal for centering a heading across a spreadsheet.

Begin by highlighting your text, including any empty cells you want your text to be centered across. In this case cells A1 through Q1.

	Income	Mortgage	Utilities	Cell Phone	Groceries	Pet Care	Dining Out	Auto Gas	Auto Insurance	Parking	Entertainment	Internet	Medical	Misc. Expenses	Vacation	Savings
1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
11/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
12/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
1/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
2/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
3/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
4/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
5/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	

Click on Merge & Center. This will remove your gridlines and center your cells across the text you highlighted.

	Income	Mortgage	Utilities	Cell Phone	Groceries	Pet Care	Dining Out	Auto Gas	Auto Insurance	Parking	Entertainment	Internet	Medical	Misc. Expenses	Vacation	Savings
1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
11/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
12/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25	\$75	\$100	\$75	\$75	\$75	
1/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
2/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
3/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
4/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	
5/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50	\$100	\$125	\$100	\$100	\$100	

## Copying and Pasting

Copying and pasting data in Excel 2010 is a lot like copying and pasting in other Microsoft programs. Right click on the cell you wish to copy and paste and select “Copy.” Select the cell you wish to paste to, then right click to view your paste and “paste special” options.

A screenshot of Microsoft Excel 2010 showing a table of名人 (Famous People) data. The table has columns for Name, Title, Hourly Rate, and Hours Worked. The cell containing 'Hourly Rate' in row 12 is selected. A context menu is open over this cell, with 'Copy' highlighted. Other options visible in the menu include Cut, Paste Options, Paste Special..., Insert..., Delete..., Clear Contents, Filter, Sort, Insert Comment, Format Cells..., Pick From Drop-down List..., Define Name..., and Hyperlink... .

	A	B	C	D	E	F	G	H
1	Name	Title	Hourly Rate	Hours Worked				
2	Homer Simpson	Nuclear Power	24					
3	James Patterson	Author	18					
4	Emma Stone	Actress	21					
5	Bradley Cooper	Actor	17					
6	Steven Spielberg	Movie Director	20					
7	Donald Trump	Business Executive	18					
8	Oprah Winfrey	Television Personality	23					
9	Jennifer Lawrence	Actress	19					
10	Michael Jordan	Basketball Player	17					
11	Brad Pitt	Actor	22					
12	Meryl Streep	Actress	23					
13								

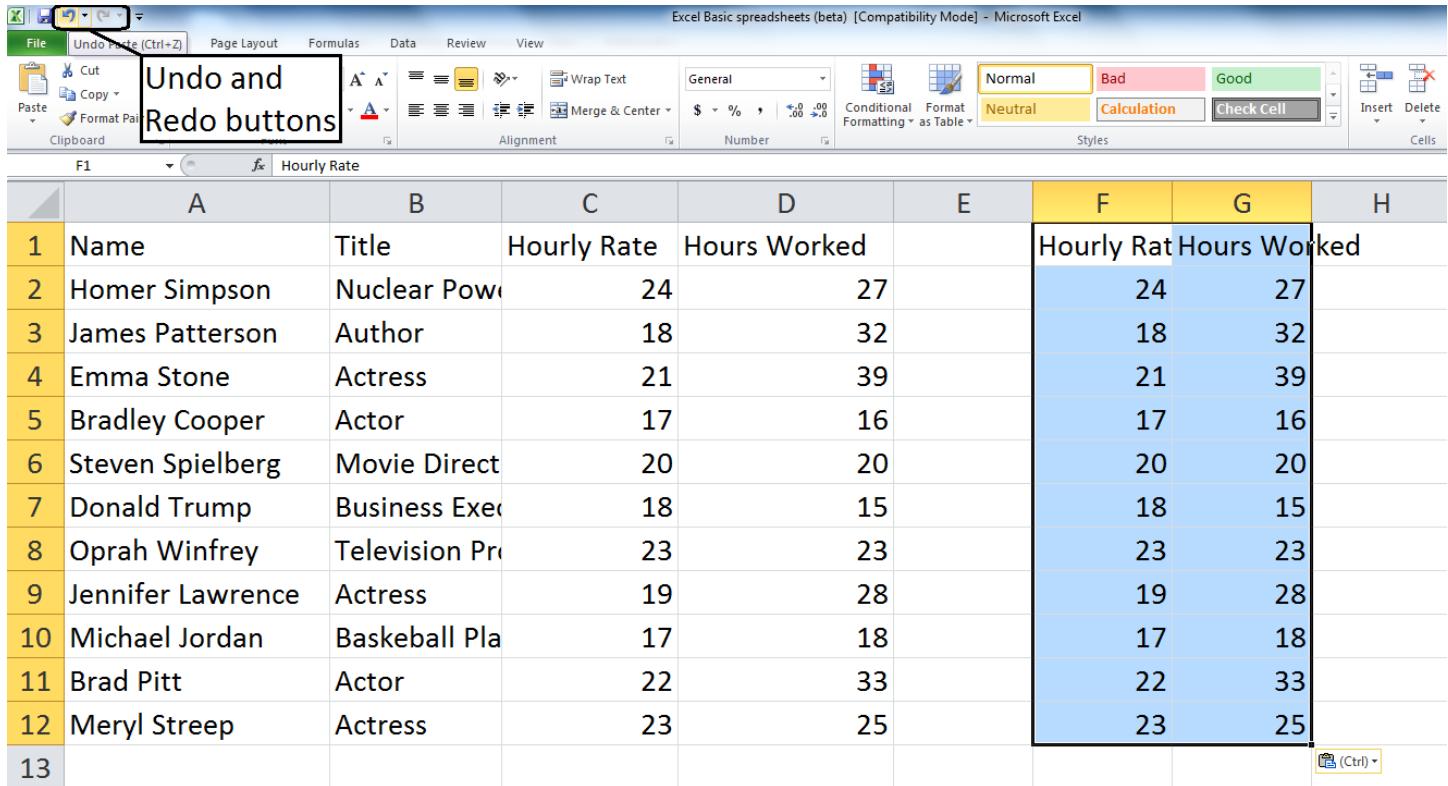
In most cases the regular paste option will work just fine. You can also copy and paste by using the Ctrl-C and Ctrl-V shortcuts. Ctrl-C executes a copy command, and Ctrl-V executes a paste command. You can also cut and paste instead of copying and pasting. This will move whatever you cut to the designated location instead of creating another copy of it there. The shortcut for the “Cut” command is Ctrl-X.

A screenshot of Microsoft Excel 2010 showing the same table of名人 (Famous People) data. The cell containing 'Hourly Rate' in row 12 is selected. A context menu is open over this cell, with 'Paste' highlighted. Other options visible in the menu include Cut, Copy, Paste Options, Paste Special..., Insert..., Delete..., Clear Contents, Filter, Sort, Insert Comment, Format Cells..., Pick From Drop-down List..., Define Name..., and Hyperlink... .

	A	B	C	D	E	F	G	H
1	Name	Title	Hourly Rate	Hours Worked				
2	Homer Simpson	Nuclear Power	24	27		24	27	
3	James Patterson	Author	18	32		18	32	
4	Emma Stone	Actress	21	39		21	39	
5	Bradley Cooper	Actor	17	16		17	16	
6	Steven Spielberg	Movie Director	20	20		20	20	
7	Donald Trump	Business Executive	18	15		18	15	
8	Oprah Winfrey	Television Personality	23	23		23	23	
9	Jennifer Lawrence	Actress	19	28		19	28	
10	Michael Jordan	Basketball Player	17	18		17	18	
11	Brad Pitt	Actor	22	33		22	33	
12	Meryl Streep	Actress	23	25		23	25	
13								

## Undo and Redo

One useful Excel feature that you may find yourself using a lot is the “Undo” command. If you accidentally make a change to your worksheet or enter something that you decide you don’t want, you can click the counterclockwise arrow button at the top left of your screen to rewind your latest action. The shortcut for this is Ctrl-Z.



The screenshot shows a Microsoft Excel window titled "Basic spreadsheets (beta) [Compatibility Mode] - Microsoft Excel". The ribbon menu bar includes File, Undo (highlighted), Redo (next to Undo), Page Layout, Formulas, Data, Review, and View. Below the ribbon is a toolbar with various icons for Cut, Copy, Paste, Format Painter, and Clipboard. The main worksheet area contains a table with 13 rows of data. The columns are labeled A through H. The first few rows show data for celebrities like Homer Simpson, James Patterson, Emma Stone, etc. The last row is empty. The table has a blue border around the data range. The status bar at the bottom right shows "(Ctrl) ⌘".

	A	B	C	D	E	F	G	H
1	Name	Title	Hourly Rate	Hours Worked		Hourly Rat	Hours Worked	
2	Homer Simpson	Nuclear Pow	24	27		24	27	
3	James Patterson	Author	18	32		18	32	
4	Emma Stone	Actress	21	39		21	39	
5	Bradley Cooper	Actor	17	16		17	16	
6	Steven Spielberg	Movie Direct	20	20		20	20	
7	Donald Trump	Business Exec	18	15		18	15	
8	Oprah Winfrey	Television Pro	23	23		23	23	
9	Jennifer Lawrence	Actress	19	28		19	28	
10	Michael Jordan	Basketball Pla	17	18		17	18	
11	Brad Pitt	Actor	22	33		22	33	
12	Meryl Streep	Actress	23	25		23	25	
13								

If you undo something and decide that you liked it better the way before, you can cancel the undo by clicking the clockwise arrow Redo button next to the Undo button. The shortcut for Redo is Ctrl-Y.

## Adding and Deleting Columns and Rows

Adding or Deleting columns and rows to your spreadsheet is easy. To add a column: click the heading of the column to the right (or row below) of where you want to insert a new column. Right-click the selected column and click insert.

The screenshot shows a Microsoft Excel spreadsheet with data in columns A through H. Column B is highlighted with a blue selection bar. A context menu is open over the first cell of column B, with 'Insert' highlighted. The menu also includes options like Cut, Copy, Paste Options, Delete, Clear Contents, Format Cells, Column Width..., Hide, and Unhide. A callout box contains three explanatory text blocks:

- After highlighting column B, right click with your mouse. You will see this menu to insert a new column.
- The new column will appear to the left of the column you highlighted.
- When inserting rows, new rows will appear above the row you highlighted.

	A	B	C	D	E	F	G	H
1	Name	Title	Hourly Rate	Hours Worked				
2	Homer Simpson	Nuclear Power	24	27				
3	James Patterson	Author	8	32				
4	Emma Stone	Actress	21	39				
5	Bradley Cooper	Actor	17	16				
6	Steven Spielberg	Movie Direct	20	20				
7	Donald Trump	Business Exec	18	15				
8	Oprah Winfrey	Television Pro	23	23				
9	Jennifer Lawrence	Actress	19	28				
10	Michael Jordan	Basketball Pla	17	18				
11	Brad Pitt	Actor	22	33				
12	Meryl Streep	Actress	23	25				
13								

The screenshot shows the same Microsoft Excel spreadsheet after a new column has been inserted. The original column B data has shifted to the right, and a new column A has been added to the left. The data now spans columns A through G.

	A	B	C	D	E	F	G	H
1	Name	Title	Hourly Rate	Hours Worked				
2	Homer Simpson	Nuclear Power	24	27				
3	James Patterson	Author	18	32				
4	Emma Stone	Actress	21	39				
5	Bradley Cooper	Actor	17	16				
6	Steven Spielberg	Movie Direct	20	20				
7	Donald Trump	Business Exec	18	15				
8	Oprah Winfrey	Television Pro	23	23				
9	Jennifer Lawrence	Actress	19	28				
10	Michael Jordan	Basketball Pla	17	18				
11	Brad Pitt	Actor	22	33				
12	Meryl Streep	Actress	23	25				
13								

To delete a column or row, select the column or row, right-click, and select delete. Note: using the "Delete" key on the keyboard will only delete the row or column's contents, not the row or column itself.

## Deleting Cells and Data

Deleting cells and data can sometimes be tricky. Pay attention to the options carefully and remember to use your undo button if you need to!

To delete just the data in the cells (not the cells themselves) click the cells or range you want to delete. Pressing the “Delete” key will erase the data in the cells. Or, you can highlight the cells you want to delete, right click with your mouse and choose “Clear Contents.” Both methods will only remove the data in the cells.

A screenshot of Microsoft Excel showing a table of data. Cell D6 is selected and highlighted with a yellow border. A context menu is open over this cell, showing options like Cut, Copy, Paste Options, Delete, and Clear Contents. The 'Clear Contents' option is highlighted with a yellow background. The table has columns labeled A through G and rows numbered 1 to 13. Column D contains numerical values: 24, 27, 18, 32, 21, 39, 17, 16, 20, 15, 18, 23, 19, 17, 16, 22, 23, 21, 25.

	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked			
2	Homer Simpson	Nuclear Power	24	27			
3	James Patterson	Author	18	32			
4	Emma Stone	Actress	21	39			
5	Bradley Cooper	Actor	17	16			
6	Steven Spielberg	Movie Direct	20	21			
7	Donald Trump	Business Exec	18	15			
8	Oprah Winfrey	Television Pro	23	18			
9	Jennifer Lawrence	Actress	19	19			
10	Michael Jordan	Baskeball Pla	17	17			
11	Brad Pitt	Actor	22	33			
12	Meryl Streep	Actress	23	23			
13							

A screenshot of Microsoft Excel showing the same table as the previous image, but with the data in cell D6 removed. The cell is now empty and contains no visible text or numbers. The rest of the table remains unchanged.

	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked			
2	Homer Simpson	Nuclear Power	24	27			
3	James Patterson	Author	18	32			
4	Emma Stone	Actress	21	39			
5	Bradley Cooper	Actor	17	16			
6	Steven Spielberg	Movie Direct	20	21			
7	Donald Trump	Business Exec	18	18			
8	Oprah Winfrey	Television Pro	23	23			
9	Jennifer Lawrence	Actress	19	19			
10	Michael Jordan	Baskeball Pla	17	17			
11	Brad Pitt	Actor	22	22			
12	Meryl Streep	Actress	23	23			
13							

You can also delete the highlighted cells themselves by right clicking on them and clicking “delete.” This will ask you how you want to fill in the empty space. In this example we are shifting the cells below the cells we deleted to where the highlighted cells were located before.

This screenshot shows a Microsoft Excel spreadsheet titled "Excel Basic spreadsheets (beta) [Compatibility Mode] - Microsoft Excel". The spreadsheet contains a table with columns A through G. Row 6, specifically cell D6, is highlighted with a yellow background. A context menu is open over this cell, listing options such as Cut, Copy, Paste Options, Delete, and Clear Contents. The "Delete" option is highlighted with a yellow background. The rest of the spreadsheet shows data for various individuals with their names, titles, hourly rates, and hours worked.

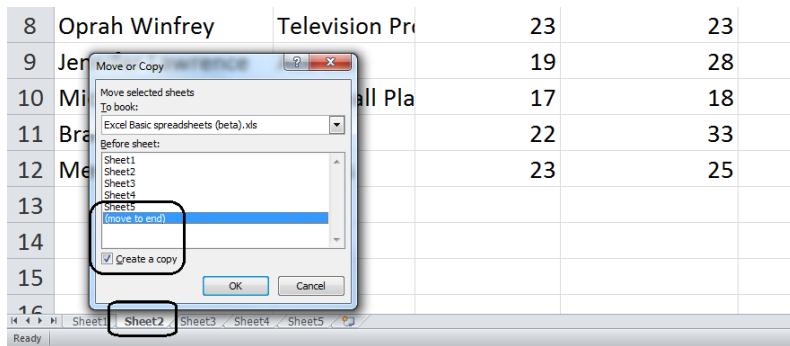
	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked			
2	Homer Simpson	Nuclear Power	24	27			
3	James Patterson	Author	18	32			
4	Emma Stone	Actress	21	39			
5	Bradley Cooper	Actor	17	16			
6	Steven Spielberg	Movie Director	20				
7	Donald Trump	Business Executive	18				
8	Oprah Winfrey	Television Producer	23				
9	Jennifer Lawrence	Actress	19				
10	Michael Jordan	Basketball Player	17				
11	Brad Pitt	Actor	22				
12	Meryl Streep	Actress	23				
13							

This screenshot shows the same Microsoft Excel spreadsheet after the deletion of cell D6. The table structure remains the same, but the data has shifted. The cell previously occupied by "20" now contains "25". The other cells in the row have shifted to fill the gaps left by the deleted cell. The context menu from the previous screenshot is no longer visible.

	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked			
2	Homer Simpson	Nuclear Power	24	27			
3	James Patterson	Author	18	32			
4	Emma Stone	Actress	21	39			
5	Bradley Cooper	Actor	17	16			
6	Steven Spielberg	Movie Director	20	25			
7	Donald Trump	Business Executive	18				
8	Oprah Winfrey	Television Producer	23				
9	Jennifer Lawrence	Actress	19				
10	Michael Jordan	Basketball Player	17				
11	Brad Pitt	Actor	22				
12	Meryl Streep	Actress	23				
13							

## Copying a Spreadsheet

After spending a considerable amount of time creating and adjusting your spreadsheet, you might find it useful to copy the completed spreadsheet to another tab or workbook so that you do not have to recreate it from scratch the next time you need to make a similar spreadsheet. Right click the bottom tab of your spreadsheet and click “Move or Copy”



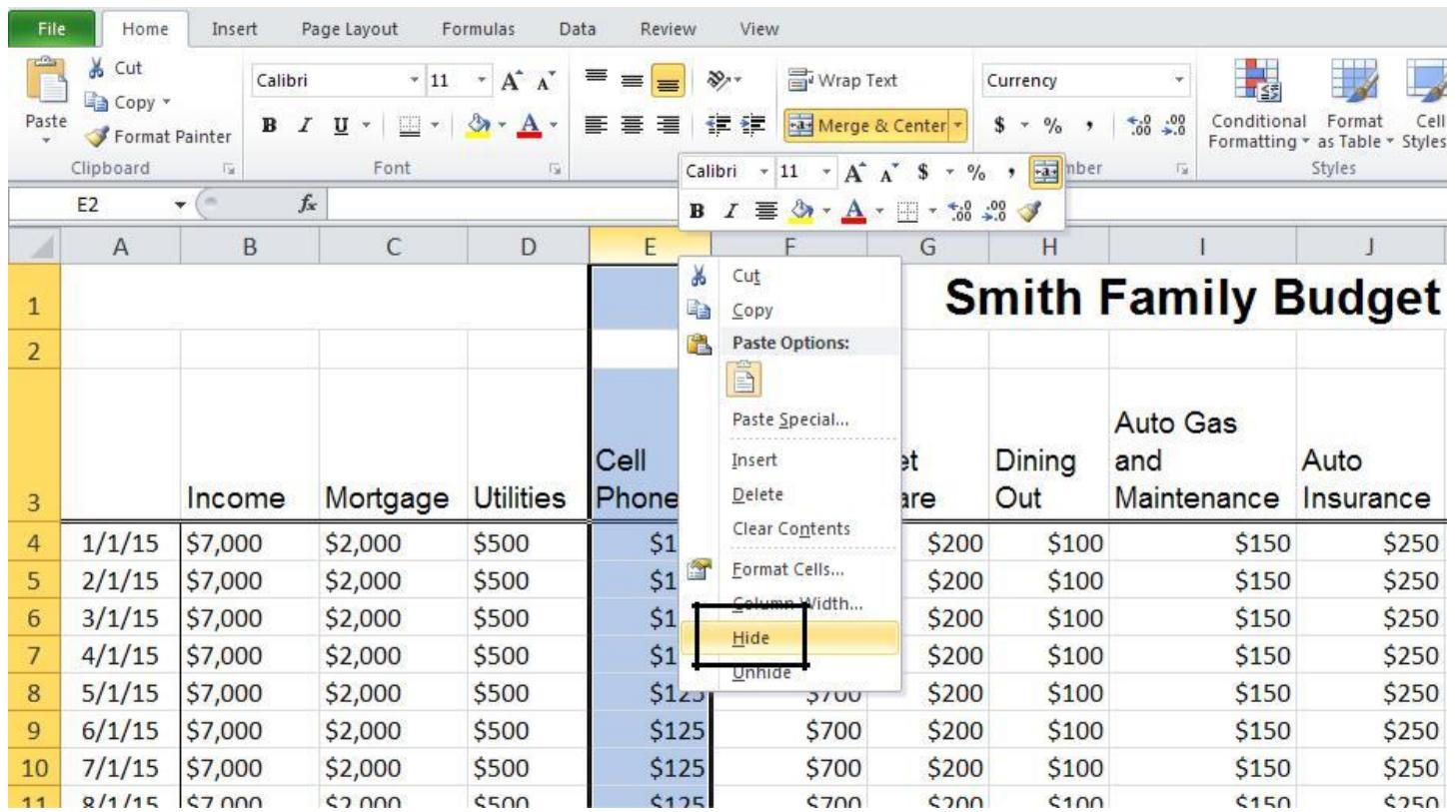
You can move your spreadsheet to another workbook or simply to another tab in your current workbook. Don't forget to check "Create a copy."

1	Name	Title	Hourly Rate	Hours Worked
2	Homer Simpson	Nuclear Power	24	27
3	James Patterson	Author	18	32
4	Emma Stone	Actress	21	39
5	Bradley Cooper	Actor	17	16
6	Steven Spielberg	Movie Director	20	20
7	Donald Trump	Business Executive	18	15
8	Oprah Winfrey	Television Personality	23	23
9	Jennifer Lawrence	Actress	19	28
10	Michael Jordan	Basketball Player	17	18
11	Brad Pitt	Actor	22	33
12	Meryl Streep	Actress	23	25
13				
14				
15				
16	Move or Copy			
	Move selected sheets			
	To book:	Excel Basic spreadsheets (beta).xls		
	Before sheet:	Sheet1		
	Sheet1			
	Sheet2			
	Sheet3			
	Sheet4			
	Sheets			
	(move to end)			
	<input checked="" type="checkbox"/> Create a copy			
	OK			Cancel

Click OK and you will notice that an exact duplicate has been created. Now you can use the duplicate spreadsheet as a template for a new spreadsheet.

## Hiding and Unhiding Columns or Rows

If you have a large spreadsheet that has a lot of rows and columns of data, sometimes it is helpful to temporarily hide the rows or columns that you are not using at the moment. To hide a column, for instance, you can select the letter at the top of the column, right click, and select “Hide.”



A screenshot of Microsoft Excel showing a budget spreadsheet titled "Smith Family Budget". The spreadsheet includes columns for Income, Mortgage, Utilities, Cell Phone, Pet Care, Dining Out, Auto Gas and Maintenance, Auto Insurance, and Entertainment. Column E, labeled "Cell Phone", is currently hidden. A context menu is open over the header of column E, with the "Hide" option highlighted.

1	A	B	C	D	E	F	G	H	I	J
2										
3	Income	Mortgage	Utilities	Cell Phone	Pet Care	Dining Out	Auto Gas and Maintenance	Auto Insurance		
4	1/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
5	2/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
6	3/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
7	4/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
8	5/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
9	6/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
10	7/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	
11	8/1/15	\$7,000	\$2,000	\$500	\$125	\$200	\$100	\$150	\$250	

In this example, column E has been hidden. In its place, you will see a dark black vertical line reminding you that information is hidden.



A screenshot of Microsoft Excel showing the same budget spreadsheet after column E has been unhidden. The "Smith Family Budget 2015" title is present, and all columns are visible again, including the previously hidden "Cell Phone" column.

1	A	B	C	D	F	G	H	I	J	K	L
2											
3	Income	Mortgage	Utilities	Groceries	Pet Care	Dining Out	Auto Gas and Maintenance	Auto Insurance	Parking	Entertain	
4	1/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
5	2/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
6	3/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
7	4/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
8	5/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
9	6/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
10	7/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
11	8/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	
12	9/1/15	\$7,000	\$2,000	\$500	\$700	\$200	\$100	\$150	\$250	\$25	

When you wish to unhide the column, simply highlight the columns on either side of the hidden column, right click, and select "Unhide."

A screenshot of Microsoft Excel showing a context menu open over a hidden column. The menu options include Cut, Copy, Paste Options..., Insert, Delete, Clear Contents, Format Cells..., Column Width..., Hide, and Unhide. The 'Unhide' option is highlighted with a yellow box.

	A	B	C	D	F	G	H	I	J	K	L
1											
2											
3	Income	Mortgage		Utilities	Groceries						
4	1/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
5	2/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
6	3/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
7	4/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
8	5/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
9	6/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
10	7/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
11	8/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75
12	9/1/15	\$7,000	\$2,000	\$500			\$100	\$150	\$250	\$25	\$75

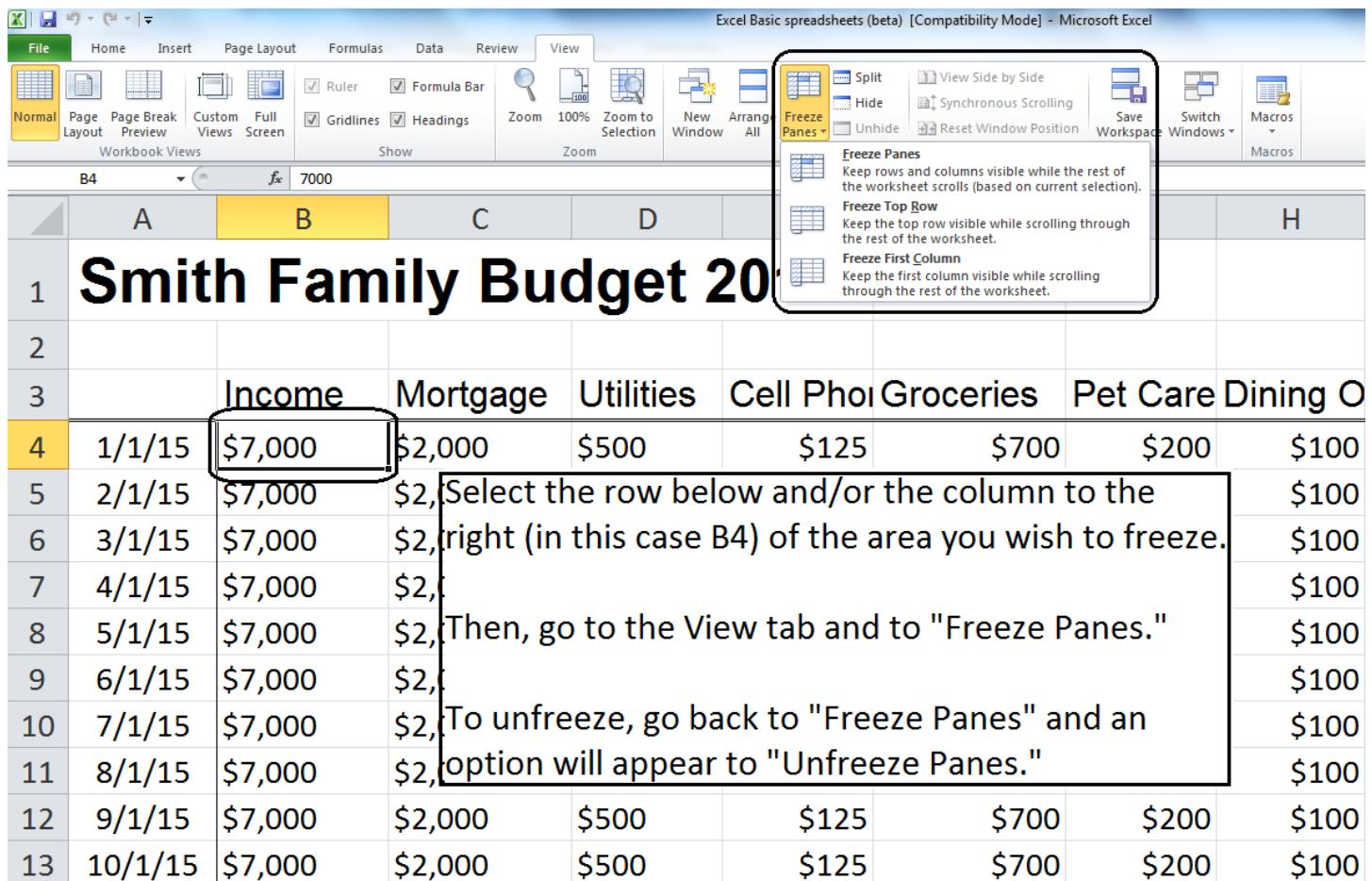
The hidden column is now visible.

A screenshot of Microsoft Excel showing the same budget table after the hidden column has been unhidden. The context menu is no longer open, and the 'Unhide' option is no longer present in the list.

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3	Income	Mortgage		Utilities	Cell Phone	Groceries	Pet Care	Dining Out	Auto Gas and Maintenance	Auto Insurance	Parking
4	1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
5	2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
6	3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
7	4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
8	5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
9	6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
10	7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
11	8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
12	9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
13	10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
14	11/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
15	12/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100	\$150	\$250	\$25
16	1/1/16	\$7,500	\$2,000	\$550	\$150	\$725	\$225	\$125	\$175	\$275	\$50

## Freezing Columns or Rows

You can freeze a portion of your spreadsheet, such as your headings, so that if you scroll down or to the right your column and row headings will remain visible at all times.



Smith Family Budget 2015

	Income	Mortgage	Utilities	Cell Phone	Groceries	Pet Care	Dining Out	
4	1/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
5	2/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
6	3/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
7	4/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
8	5/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
9	6/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
10	7/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
11	8/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
12	9/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100
13	10/1/15	\$7,000	\$2,000	\$500	\$125	\$700	\$200	\$100

## Formulas

Formulas are what you use to perform calculations within your Excel spreadsheets.

### Formula Structure:

Excel formulas work a little differently than you may be used to. Usually, you'd expect to see a formula that looks like this:  $2+2=4$ . When using Excel, the “=” always comes first. This is your way of telling Excel that you are using a formula and not just typing text. Anything after the “=” is recognized as part of the formula. You always type your formula in the cell you want your answer to be in.

### Mathematical Operators:

- + Addition
- Subtraction
- \*
- / Division

### Referencing Cells:

Although you can enter specific values in your Excel formulas, you can also easily reference data in specific cells. So, instead of your equation being  $=2+2$ , it could read  $=A1+B1$ . It is often preferable to use cell references instead of numbers so that if you have to go back and change the numbers in your data set, your formulas will automatically adjust to the change.

In our spreadsheet, if you wanted to find the answer to “Total” for column B or “Morning” this is what your formula would look like:  $=B4+B5+B6+B7+B8+B9+B10+B11+B12+B13+B14$

Number of Questions at the Reference Desk					
	Date	Morning	Afternoon	Evening	
4	5-May	12	29	27	
5	6-May	18	35	35	
6	7-May	34	44	26	
7	8-May	15	29	47	
8	9-May	28	33	42	
9	10-May	17	41	38	
10	11-May	32	39	52	
11	12-May	26	27	32	
12	13-May	29	28	51	
13	14-May	25	46	22	
14	15-May	13	34	42	
15					
16	Total	$=B4+B5+B6+B7+B8+B9+B10+B11+B12+B13+B14$			
17	Maximum				
18	Average				
19					

After you've added up the cell references from B4 to B14, hit the 'enter' key to have Excel total up the included values. Luckily, you can shorten this long formula by using one of Excel's built-in functions.

## **Basic Functions**

### **Function Elements:**

Because functions are a type of formula, they must also start with an “=”.

Functions are different in that they each have a name. For example, the name of the function for addition is “sum.” You can type functions directly into your worksheet or you can use the Insert Function dialogue box to help you construct functions.

### **Structure:**

Functions use arguments to indicate the cell addresses you want the function to calculate. The arguments (cell references or cell addresses) are contained in parentheses. You can use commas to separate the arguments, or you can use a range.

### **Using a Range:**

A range is an easier way of entering a series of cell addresses into a formula. Let’s demonstrate using a range by finding the total for column C:

-Start with “=”

-Since we are adding the column, we need the function for addition, which is “sum”. Type “sum” after your “=”.

-Open your parentheses.

-Enter your range. You could enter the references individually separated by a comma, but using a range is an easier way to include your references. Start with C4. Click and drag your mouse pointer from C4 all the way to C14. Take a look at your function. Excel should’ve inserted “C4:C14”. That is a range. The range starts with C4 and ends with C14. The “:” in between should be read as “through.” Thus, this forms an equation that says: “EXCEL...add C4 through C14.”

-Don’t forget to close your parentheses!

	VLOOKUP	X ✓ f <sub>x</sub>	=sum(C4:C14)		
1	A	B	C	D	E
<b>Number of Questions at the Reference Desk</b>					
2	Date	Morning	Afternoon	Evening	
3	5-May	12	29	27	
4	6-May	18	35	35	
5	7-May	34	44	26	
6	8-May	15	29	47	
7	9-May	28	33	42	
8	10-May	17	41	38	
9	11-May	32	39	52	
10	12-May	26	27	32	
11	13-May	29	28	51	
12	14-May	25	46	22	
13	15-May	13	34	42	
14	Total	249	=sum(C4:C14)		
15	Maximum				
16	Average				
17					
18					
19					
20					
21					

Find the answers for Maximum and Average for columns C and D by using the right function.

Click here for the function dialog box

## AutoFunctions

Excel makes using functions even easier with automatic functions. AutoFuctions do all the work for you!

File	Home	Insert	Page Layout	Formulas	Data	Review	View	
Paste	Cut	Copy	Format Painter	Font	Alignment	Number	Styles	Cells
Clipboard								
<b>Number of Questions at the Reference Desk</b>								
1	Date	Morning	Afternoon	Evening				
2	5-May	12	29	27				
3	6-May	18	35	35				
4	7-May	34	44	26				
5	8-May	15	29	47				
6	9-May	28	33	42				
7	10-May	17	41	38				
8	11-May	32	39	52				
9	12-May	26	27	32				
10	13-May	29	28	51				
11	14-May	25	46	22				
12	15-May	13	34	42				
13	Total	249	385	=sum(D4:D14)				
14	Maximum							
15	Average							
16								
17								
18								
19								
20								
21								

Pay attention to what AutoSum selects for your range. Make sure it is correct!

If it isn't, simply click and drag to include the correct range.

You can use AutoFunctions for many different functions in Excel (AutoMinimum, AutoMaximum, AutoAverage, etc.)

This is what your finished spreadsheet should look like:

	A	B	C	D	E
1					
3	<b>Date</b>	<b>Morning</b>	<b>Afternoon</b>	<b>Evening</b>	
4	5-May	12	29	27	
5	6-May	18	35	35	
6	7-May	34	44	26	
7	8-May	15	29	47	
8	9-May	28	33	42	
9	10-May	17	41	38	
10	11-May	32	39	52	
11	12-May	26	27	32	
12	13-May	29	28	51	
13	14-May	25	46	22	
14	15-May	13	34	42	
15					
16	<b>Total</b>	249	385	414	
17	<b>Maximum</b>	34	46	52	
18	<b>Average</b>	23	35	38	
19					
20					
21					

## AutoFill

When you make a cell active in the worksheet a small fill handle appears in the lower-right corner of the cell. You can use the fill handle to create an AutoFill series. This will work with text, dates, numbers, years, and other types of data.

AutoFill the dates in this spreadsheet by placing your mouse pointer over the small square located in the bottom-right of the active cell. Your pointer will turn into a black plus sign when you've placed it properly. Double click or click and hold your left mouse button and drag downwards as Excel fills in your dates.

The screenshot shows two side-by-side Excel spreadsheets. Both have the same header: 'Number of Questions at the Reference Desk' and columns for Date, Morning, Afternoon, and Evening. In the first spreadsheet, the Date column has values from 5-May to 14-May. The cell for 15-May is selected, and its value is '15-May'. The second spreadsheet shows the result of AutoFilling: the Date column now contains dates from 5-May to 14-May, and the cell for 15-May has a small blue plus sign fill handle in its bottom-right corner, indicating it's ready for further AutoFill.

	A4	f <sub>x</sub>	5/5/2011		A4	f <sub>x</sub>	5/5/2011				
1	A	B	C	D	E	A	B	C	D	E	
2											
3	Date	Morning	Afternoon	Evening		Date	Morning	Afternoon	Evening		
4	5-May	12	29	27		4	5-May	12	29	27	
5		18	35	35		5	6-May	18	35	35	
6		34	44	26		6	7-May	34	44	26	
7		15	29	47		7	8-May	15	29	47	
8		28	33	42		8	9-May	28	33	42	
9		17	41	38		9	10-May	17	41	38	
10		32	39	52		10	11-May	32	39	52	
11		26	27	32		11	12-May	26	27	32	
12		29	28	51		12	13-May	29	28	51	
13		25	46	22		13	14-May	25	46	22	
14		13	34	42		14	15-May	13	34	42	
15		15-May				15					
16	Total					16	Total				
17	Maximum					17	Maximum				
18	Average					18	Average				
19						19					
20											

Once Excel has AutoFilled the dates, you will notice there is now a smart tag with additional AutoFill options. This will allow you to change what Excel displays (maybe you wanted the dates listed by months instead of days, for example).

If you start with the first few numbers in a number sequence, AutoFill can finish the sequence so that you don't have to fill out the rest of it. You can also use AutoFill to quickly copy a piece of data to multiple cells by selecting the cell you wish to copy and dragging it down. Likewise, you can quickly copy a formula to multiple cells.

## Relative Cell References vs. Absolute Cell References

When Excel performs the AutoFill function, it will by default adjust the cell references in the formula as it moves down each row of data calculations:

	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed
2	Homer Simpson	Nuclear Powerplant Technician	24	27	=C2*D2	
3	James Patterson	Author	18	32		
4	Emma Stone	Actress	21	39		
5	Bradley Cooper	Actor	17	16		
6	Steven Spielberg	Movie Director	20	20		
7	Donald Trump	Business Executive	18	15		
8	Oprah Winfrey	Television Producer	23	23		
9	Jennifer Lawrence	Actress	19	28		
10	Michael Jordan	Baskeball Player (retired)	17	18		
11	Brad Pitt	Actor	22	33		
12	Meryl Streep	Actress	23	25		
13						
14	Tax Rate		0.25	Total Salaries Owed		\$0.00
15						

Notice that after AutoFilling the Salary Owed column, the cell references in each number's formula changes to correctly reflect the different rows. Because the cell references in each number's formula changes, these are called "relative cell references."

	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed
2	Homer Simpson	Nuclear Powerplant Technician	24	27	648	
3	James Patterson	Author	18	32	576	
4	Emma Stone	Actress	21	39	819	
5	Bradley Cooper	Actor	17	16	=C5*D5	
6	Steven Spielberg	Movie Director	20	20	400	
7	Donald Trump	Business Executive	18	15	270	
8	Oprah Winfrey	Television Producer	23	23	529	
9	Jennifer Lawrence	Actress	19	28	532	
10	Michael Jordan	Baskeball Player (retired)	17	18	306	
11	Brad Pitt	Actor	22	33	726	
12	Meryl Streep	Actress	23	25	575	
13						
14	Tax Rate		0.25	Total Salaries Owed		\$5,381.00
15						

Sometimes, however, you will want all formulas in a column to refer to a fixed number; such is the case when calculating taxes, since the same tax rate applies to each row. By referring to this fixed number, you can easily change the tax rate later and have the change automatically apply to the entire column without having to make changes to each formula.

	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed
2	Homer Simpson	Nuclear Powerplant Technician		24	27	648
3	James Patterson	Author		18	32	576
4	Emma Stone	Actress		21	39	819
5	Bradley Cooper	Actor		17	16	272
6	Steven Spielberg	Movie Director		20	20	400
7	Donald Trump	Business Executive		18	15	270
8	Oprah Winfrey	Television Producer		23	23	529
9	Jennifer Lawrence	Actress		19	28	532
10	Michael Jordan	Baskeball Player (retired)		17	18	306
11	Brad Pitt	Actor		22	33	726
12	Meryl Streep	Actress		23	25	575
13						
14	Tax Rate	0.25			Total Salaries Owed	\$5,653.00
15						
16						

In this example, an absolute cell reference has been created for the tax rate in cell B14. In creating the first formula in column F, dollar signs (\$) have been placed in front of the column letter and row number of the absolute cell reference. These dollar signs tell Excel to reference the exact same cell for the tax rate when AutoFilling the rest of the column.

	A	B	C	D	E	F	G
1	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed	
2	Homer Simpson	Nuclear Powerplant Technician		24	27	648	162
3	James Patterson	Author		18	32	576	144
4	Emma Stone	Actress		21	39	819	205
5	Bradley Cooper	Actor		17	16	272	=E5*\$B\$14
6	Steven Spielberg	Movie Director		20	20	400	100
7	Donald Trump	Business Executive		18	15	270	68
8	Oprah Winfrey	Television Producer		23	23	529	132
9	Jennifer Lawrence	Actress		19	28	532	133
10	Michael Jordan	Baskeball Player (retired)		17	18	306	77
11	Brad Pitt	Actor		22	33	726	182
12	Meryl Streep	Actress		23	25	575	144
13							
14	Tax Rate	0.25			Total Salaries Owed	\$5,653.00	
15							
16							

If you want to change the tax rate in the future, changing the tax rate number in cell B14 will now automatically apply the change to all formulas in column F.

## Copying Formulas

Be careful when copying and pasting formulas. If you copy one or more formulas and then right click on a cell to paste the formulas (without using the Ctrl-V shortcut), you will see options besides a standard paste such as paste values, paste formulas, and transposed paste. If you select paste values, this will only copy the values that result from your original formulas instead of the formulas themselves. If you instead copy and paste formulas, you may have to adjust the cell references in the formulas so that they are pointing at the right cells.

## Formatting Numbers

Since Excel is designed for number crunching, it is frequently necessary to format numbers in order to tell Excel whether you are dealing with currency, percentages, decimals, whole numbers, etc. These, plus other number formatting options, can also be found on the Home ribbon.

The screenshot shows a Microsoft Excel 2010 spreadsheet titled "Excel 2010 Class 1 - Consolidated Sample Spreadsheets - Microsoft Excel". The Home ribbon is visible at the top. A context menu is open over cell B14, which contains the value "25%". The "Format Cells" dialog box is displayed in the foreground, centered over the menu. The "Number" tab is selected in the dialog. The "Category" dropdown is set to "Percentage", and the "Decimal places" input field is set to 0. A callout box highlights the "Percentage" category in the list. The main spreadsheet area shows a table with columns: Name, Title, Hourly Rate, Hours Worked, Salary Owed, Taxes Owed, and Net Pay. Row 14 is highlighted, and cell B14 contains "25%".

	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed	Net Pay
1	Homer Simpson	Nuclear Powerplant Technician	24	27	648		
2	James Patterson	Author	18	32	576		
3	Emma Stone	Actress	21	39	819		
4	Bradley Cooper	Actor	17	15	273		
5	Steven Spielberg	Movie Director					
6	Donald Trump	Business Executive					
7	Oprah Winfrey	Television Producer					
8	Jennifer Lawrence	Actress					
9	Michael Jordan	Basketball Player (retired)					
10	Brad Pitt	Actor					
11	Meryl Streep	Actress					
12							
13							
14	Tax Rate		25%				
15							
16							
17							
18							
19							
20							
21							
22							

In this example the tax rate of 0.25 was highlighted, then the % button was selected on the ribbon, converting the decimal to a percentage. You can also change the formatting by selecting the cell, right clicking the mouse, selecting the number category you want, and, if needed, adjust the number of decimal places. Click OK.

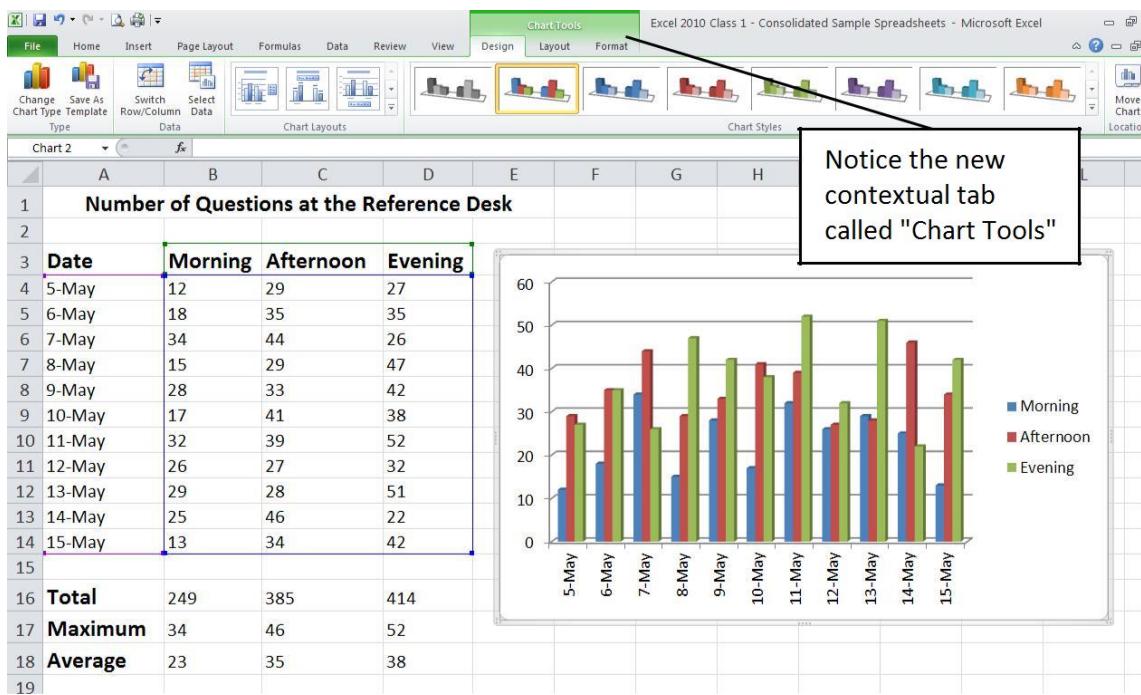
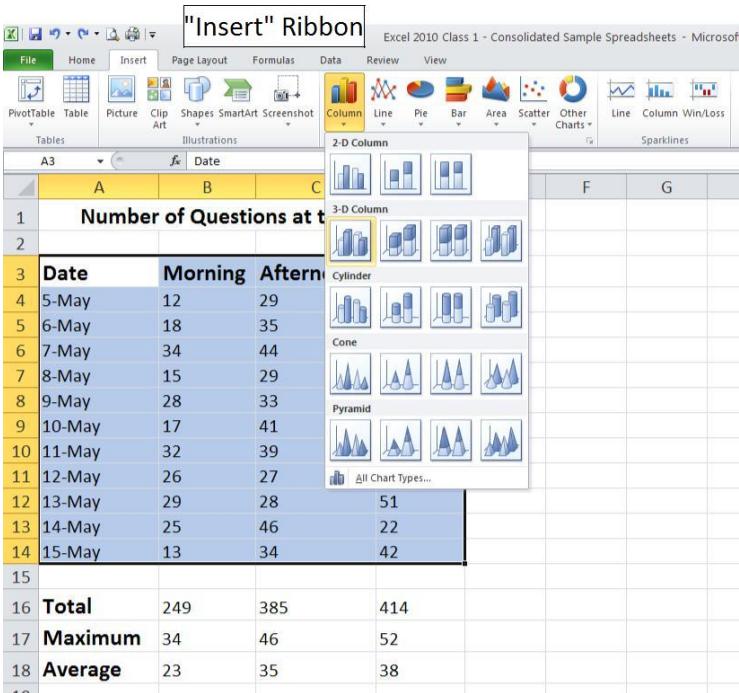
These same methods can be used to apply other changes to the numbers on your spreadsheet. In this example pay rates, salaries, and taxes have been formatted to include dollar signs and two decimal places per number. You will notice that right clicking and selecting the formatting menu allows you to adjust the decimal places and also gives you options for choosing how you want negative numbers to appear: with a negative symbol, in parentheses, in red, etc.

The screenshot shows a Microsoft Excel 2010 spreadsheet titled "Excel 2010 Class 1 - Consolidated Sample Spreadsheets - Microsoft Excel". The ribbon tabs are visible at the top, and the "Home" tab is selected. The formula bar shows "Taxes Owed". A context menu is open over the "Taxes Owed" column, with the "Format" option selected, which has brought up the "Format Cells" dialog box. The "Number" tab is selected in the dialog box. The "Category" dropdown shows "Currency" is selected. The "Decimal places" input field is set to 2. The "Symbol" dropdown shows "\$" is selected. The "Negative numbers" dropdown shows four options: "#1,234.10", "\$1,234.10", "(\$1,234.10)", and "(\$1,234.10)" (in red). The main spreadsheet area displays data for several employees, including Homer Simpson, James Patterson, and Emma Stone, along with their titles, hourly rates, hours worked, salary owed, and taxes owed. The "Salary Owed" and "Taxes Owed" columns are highlighted in blue. The "Total Salaries Owed" cell (F15) contains the value \$5,653.00.

	A	B	C	D	E	F
1	Name	Title	Hourly Rate	Hours Worked	Salary Owed	Taxes Owed
2	Homer Simpson	Nuclear Powerplant Technician	\$24.00	27	\$648.00	\$162.00
3	James Patterson	Author	\$18.00	32	\$576.00	\$144.00
4	Emma Stone	Actress	\$21.00	39	\$819.00	\$204.75
5			\$17.00	16	\$272.00	\$68.00
6			\$20.00	20	\$400.00	\$100.00
7			\$18.00	15	\$270.00	\$67.50
8			\$23.00	23	\$529.00	\$132.25
9			\$19.00	28	\$532.00	\$133.00
10			\$17.00	18	\$306.00	\$76.50
11			\$22.00	33	\$726.00	\$181.50
12			\$23.00	25	\$575.00	\$143.75
13					Total Salaries Owed	\$5,653.00
14						
15						
16						
17						
18						
19						
20						
21						

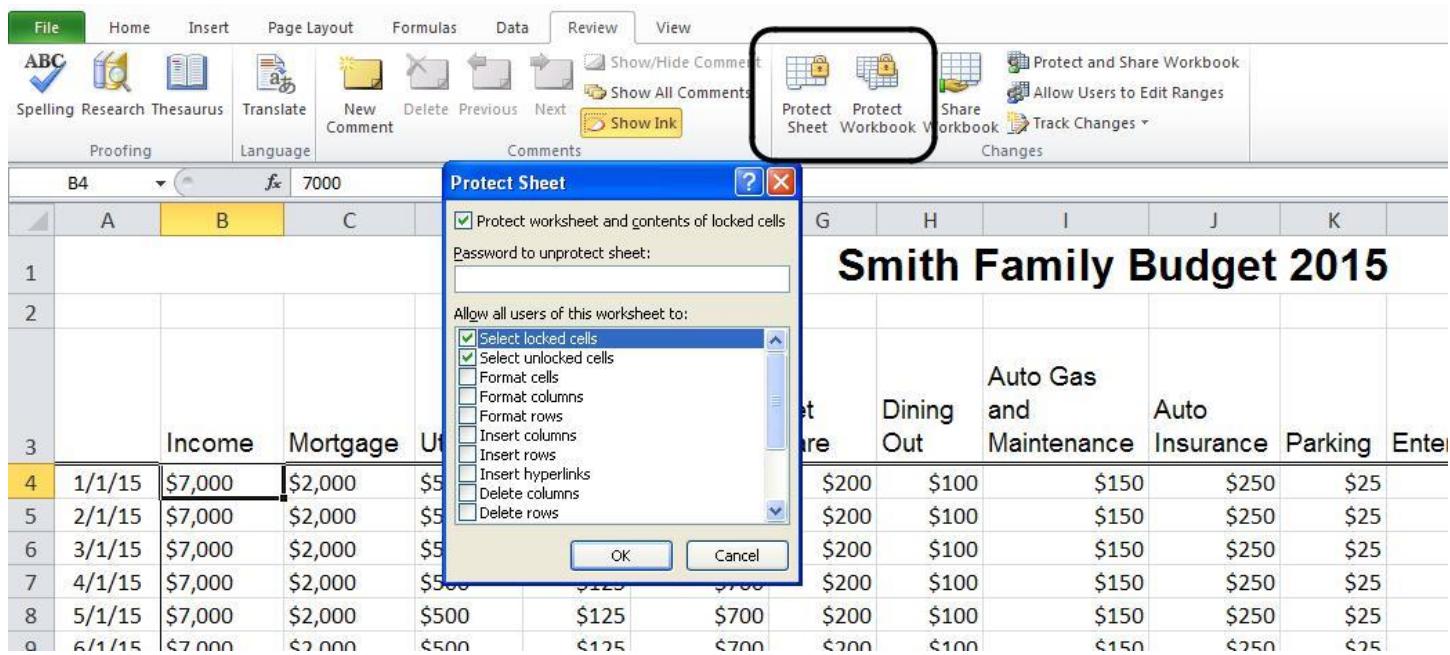
## Charts and Graphs

Making charts and graphs from Excel data is easy. Highlight the data you wish to include in your graph. Click on the “Insert” ribbon, then choose from a wide variety of chart types and sub-types. Not all chart types work for all types of data but it’s very easy to switch between different types of charts until you find the one that works the best.



## Protecting Your Spreadsheet

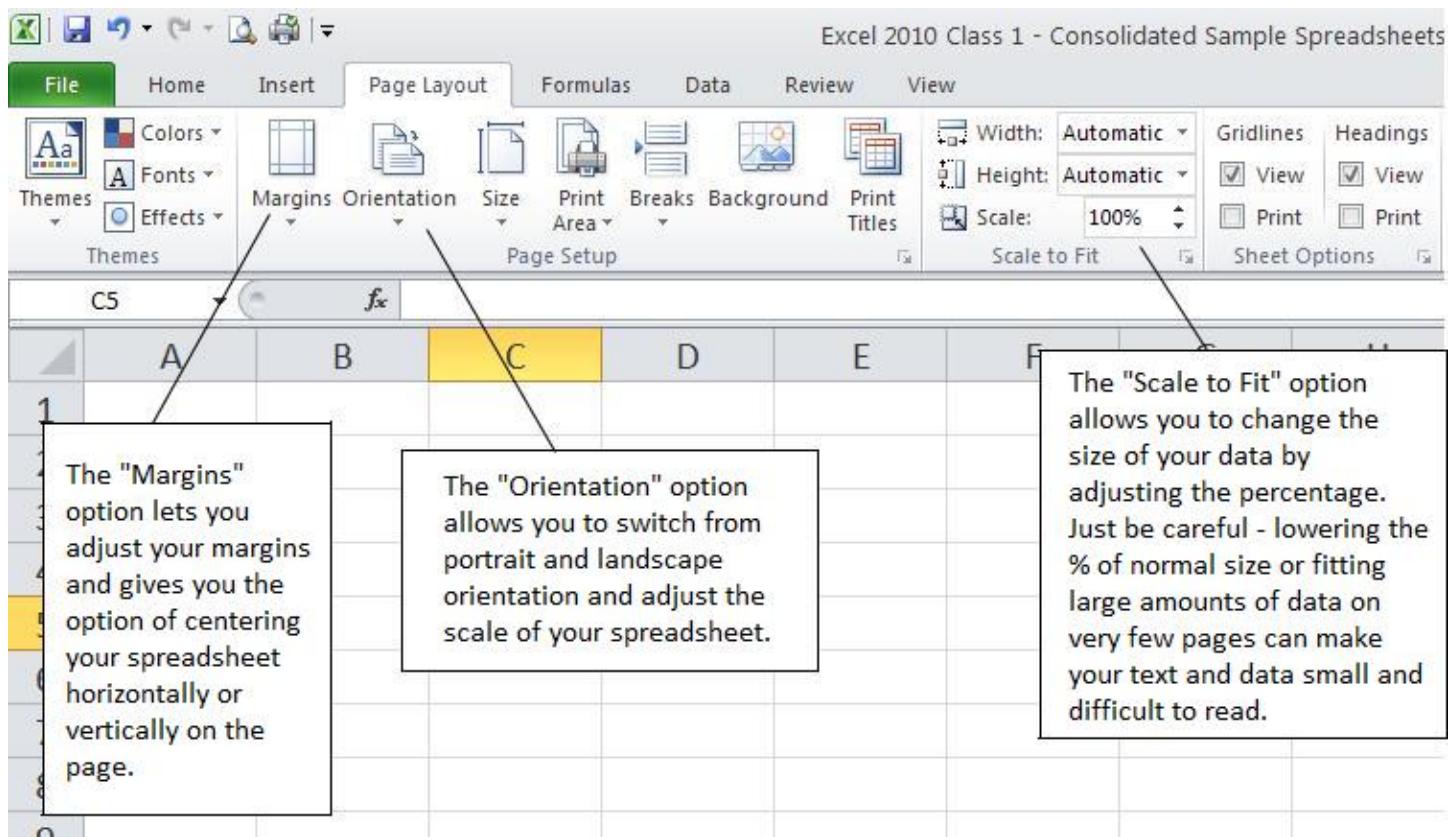
Protecting your Excel spreadsheets is a good idea if multiple people have access to the spreadsheet. You can protect a single worksheet or an entire workbook. Choose the Review Ribbon and you will then see the "Protect" options.



When you place protection on a spreadsheet or workbook you are making sure no data can be changed. You will need to create a password to turn off the protection. Make sure to remember your password because there is no way to look it up. To remove the protection, make sure you are in the Review Ribbon, click "Unprotect Sheet" and enter your password.

## Printing Options

Choosing the Page Layout ribbon allows you to set up how you would like your spreadsheet to look when you print it.



You can also select the paper size, set page breaks, and set a background color or image.

The "Sheet Options" can also be helpful when printing. You can choose to print the gridlines and headings (the column letters and row numbers) by checking the boxes for printing.