

# Microsoft Excel 2010



**EASTMAN**  
SCHOOL OF MUSIC  
UNIVERSITY *of* ROCHESTER

## Contents

Microsoft Office Interface .....	4
File Ribbon Tab .....	5
Microsoft Office Quick Access Toolbar.....	6
Appearance of Microsoft Excel.....	7
Creating a New Workbook .....	8
Opening a Workbook.....	8
Saving a Workbook.....	9
Home Tab - Styling your Workbook .....	10
Font Formatting.....	10
Cut/Paste Cell .....	10
Copy/Paste Cell.....	10
Cell Formatting .....	10
Find & Replace.....	10
Insert Tab - Inserting Objects .....	11
Headers and Footers .....	11
Symbols .....	11
Pictures.....	11
Charts.....	12
Links.....	13
Page Layout Tab - Workbook Layout.....	14
Page Setup.....	14
Viewing Gridlines & Headings .....	14
Formulas Tab .....	15
Formulas.....	15
Linking Worksheets .....	15
Basic Functions .....	16
Relative, Absolute, and Mixed Referencing .....	17
Data Tab.....	18
Get External Data .....	18
Sort & Filter .....	18
Review Tab .....	19
Proofing .....	19

Comments .....	19
Tracking Changes.....	19
View Tab .....	20
Workbook Views.....	20
Show .....	20
Zoom.....	20
Window .....	20

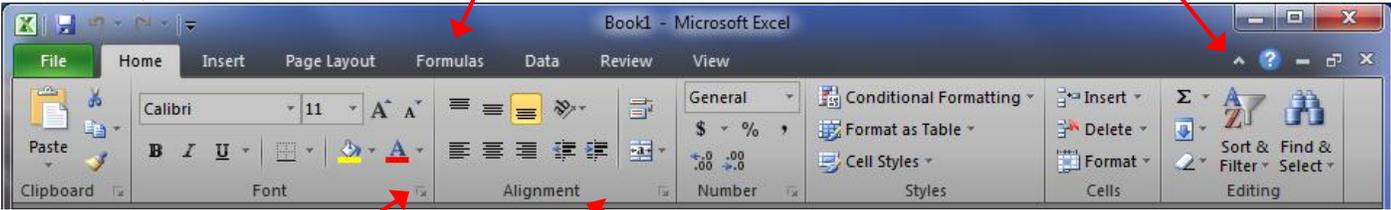
# Microsoft Office Interface

Microsoft Office 2010 improves the ribbon interface that was introduced in Microsoft Office 2007. The Microsoft Office Ribbon is a set of tools that are grouped together in a related set of tabs.

**Quick Access Toolbar**  
Tools shown here are always visible. You can add your favorite tools to this toolbar.

**Ribbon Tabs**  
Click any tab on the ribbon to display the tools that are related to that task.

**Hide the Ribbon**  
Click this icon to minimize the ribbon and provide more work space.



**Dialog Box Launchers**  
Dialog box launcher icons next to any ribbon group label can be clicked to open a dialog box with more options for that group.

**Ribbon Groups**  
Each ribbon tab contains groups, and each group contains a set of related tools. Here, the **Alignment** group on the **Home** tab contains tools for how text should be aligned within the workbook cells.

Tools on each ribbon tab are further organized into logical groups called ribbon groups. In the example below, Formulas is the active tab of the Ribbon and all functions that can be included in an Excel formula can be found in the Function Library group of the Formulas tab.



## File Ribbon Tab

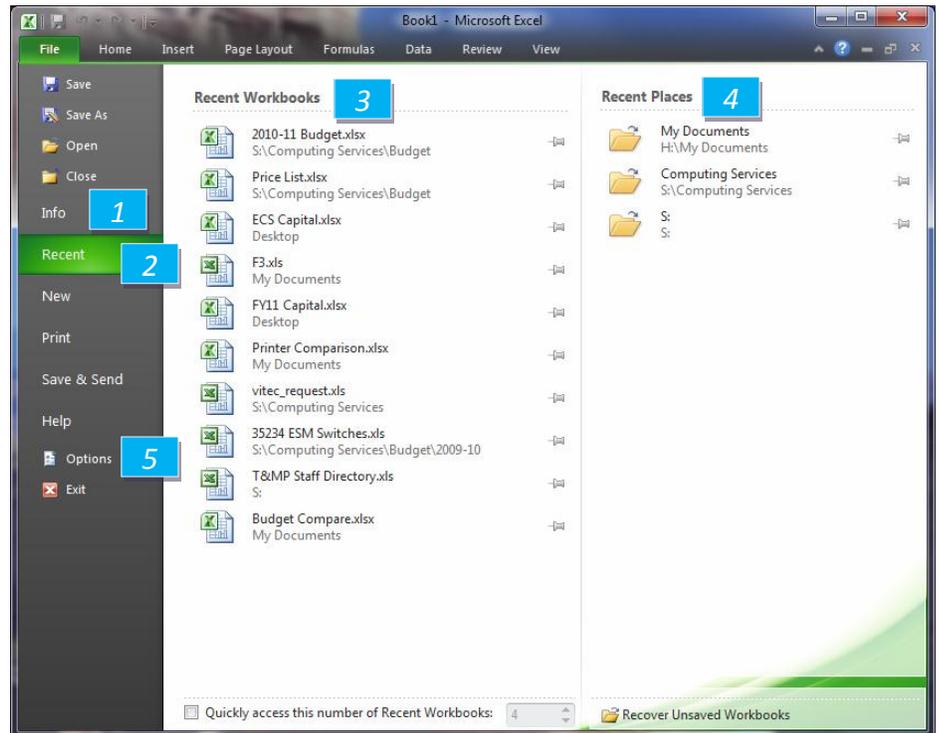


The Microsoft Office Button that was introduced in Microsoft Office 2007 and was found in the upper-left corner of Microsoft Excel 2007 has been replaced with a **File** tab on the ribbon in Microsoft Office 2010. Clicking on

**File** will open a full screen menu that allows Excel workbooks to be created, saved, deleted, moved, and printed. Selecting the **File** tab when a saved workbook (Excel file) is open will default to the *Info* view {1}. This view displays the properties of the file, such as the file size and the creation, modification, and printing dates of the file.

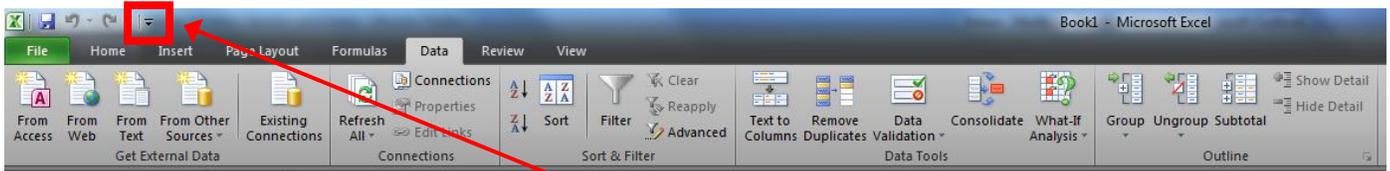
When the **File** tab is selected upon opening Excel, it will default to the *Recent* view {2}. The view displays recently opened workbooks {3} along with recently used file locations {4}.

Selecting *Options* {5} opens the Excel Options menu in which the settings of Microsoft Excel 2010 can be configured. Settings include configurations with formulas, proofing options, ribbon customization, and the Quick Access toolbar.

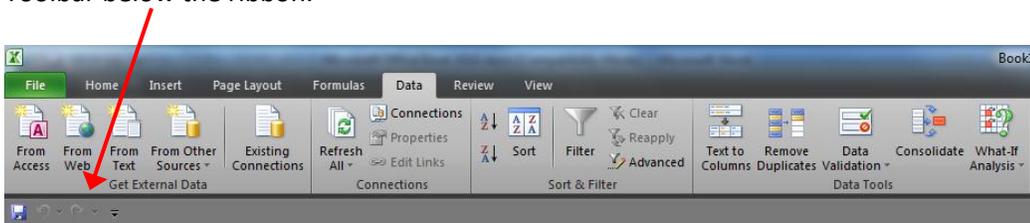


## Microsoft Office Quick Access Toolbar

The Microsoft Office Quick Access Toolbar allows for a customizable toolbar displaying a set of commands independent of the tab on the Ribbon that is currently displayed.



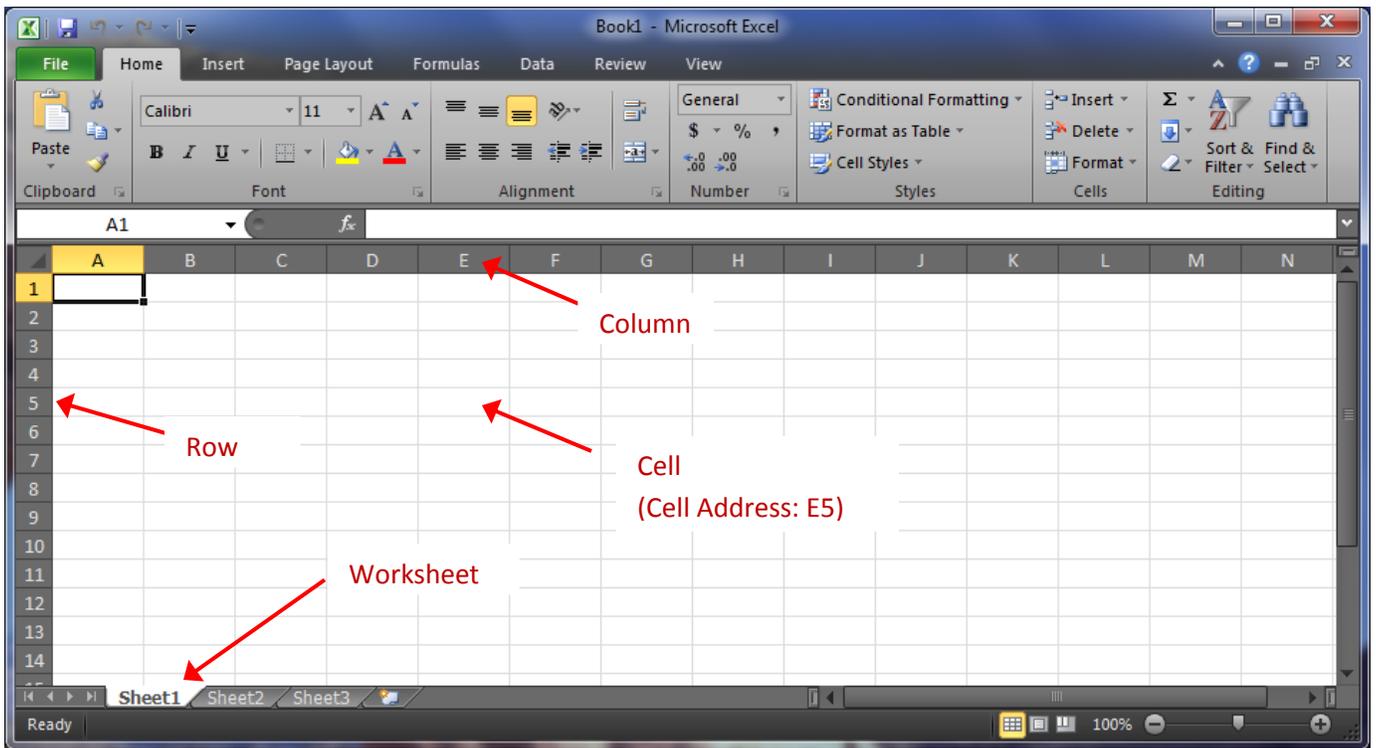
To customize the Quick Access Toolbar, click the down arrow to the right of the commands. A popup menu will appear with available commands. Click on the command to add it to the Quick Access Toolbar. If you don't see the command you want in the popup menu, select **More Commands** from the menu. This will open a new window that will allow you to select from all available Office commands. You will also find the option to display the Quick Access Toolbar below the ribbon.



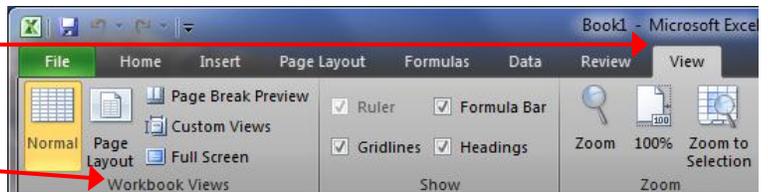
# Appearance of Microsoft Excel

Microsoft Excel allows you to create spreadsheets much like paper ledgers that can perform automatic calculations. Each Excel file is a **workbook** that can hold many **worksheets**. The worksheet is a grid of **columns** (designated by letters) and **rows** (designated by numbers). The letters and numbers of the columns and rows (called **labels**) are displayed in buttons across the top and left side of the worksheet. The intersection of a column and a row is called a **cell**. Each cell on the spreadsheet has a **cell address** that is the column letter and the row number. Cells can contain text, numbers, or mathematical formulas.

After opening Microsoft Excel, you will be taken to a blank workbook and see the following screen.



The default view in Microsoft Excel 2010 is **Normal**, allowing the workbook to display as many rows and columns as will fit on the screen. The workbook view can be changed by selecting the **View** tab on the ribbon and selecting one of the other Layout options from the **Workbook Views** logical group.



You can also change the **Workbook View** by clicking the view icons along the bottom of Microsoft Excel.



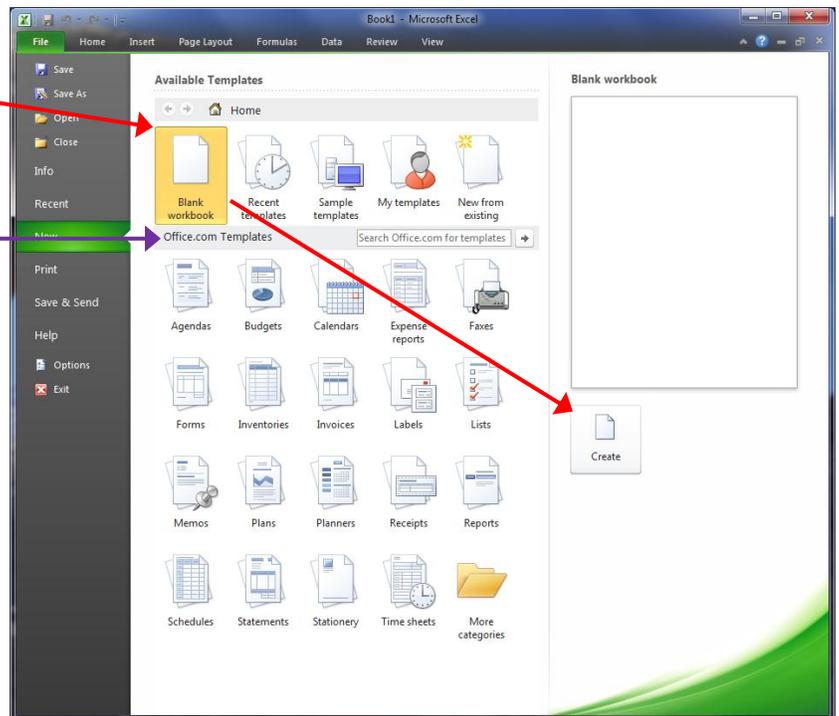
To change the zoom of the document, click the – or + icons or drag the slider along the bottom of Microsoft Excel.

## Creating a New Workbook

To begin a new workbook, click the File tab and then click **New**. The **New Workbook** window will appear, giving you various options to create a new workbook.

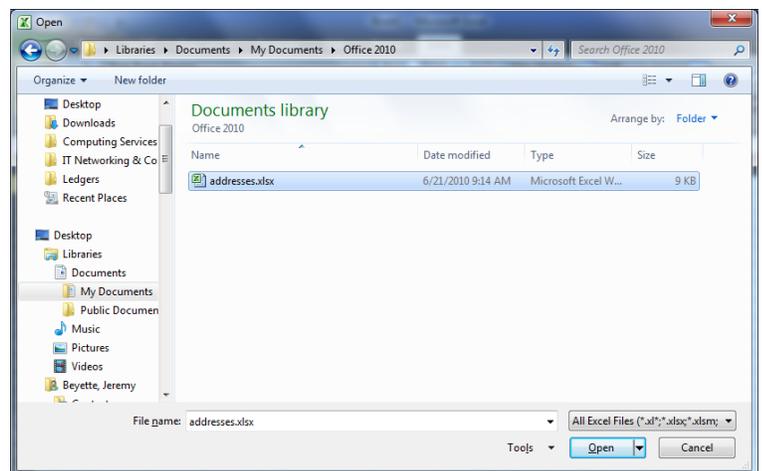
You can start from a blank workbook by selecting **Blank Workbook** (this is selected by default) and then clicking **Create**.

You can also create a new workbook from a pre-existing template in one of the categories under the **Office.com Templates** section.



## Opening a Workbook

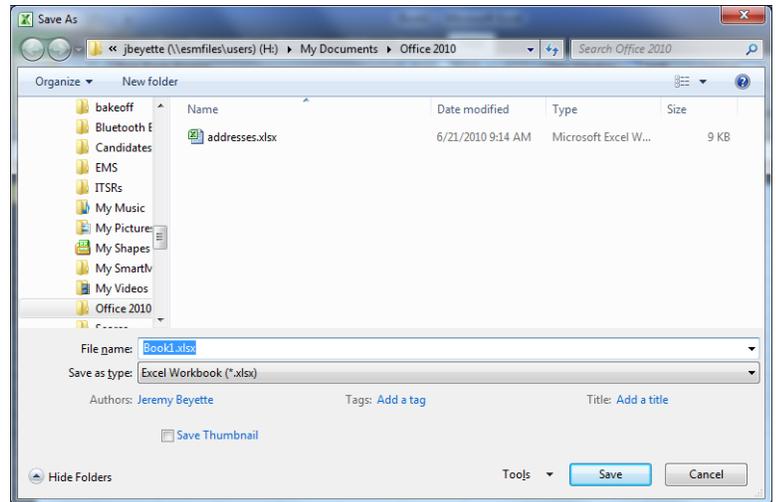
To open an existing workbook, click the File tab and then click **Open**. The **Open** window will appear. Select the location where you saved the file, then click the file name from the list and click the Open button. You can also double click on the file from the list to open the workbook.



## Saving a Workbook

To save a workbook, click the File tab and then click **Save**. If this is a new workbook that you are saving for the first time, the **Save As** dialog box will open up. Select the location where you would like the file to be saved, enter a File name and then click the Save button. The default file format is the Excel Workbook (\*.xlsx) file format. This file format ensures that all workbook formatting is saved and will be available the next time the file is open. Note that .xlsx files are unable to be opened within Excel 2003 and earlier. If the workbook needs to be shared with a computer with Excel 2003 or earlier, change the 'Save as type' to Excel 97-2003 Workbook (\*.xls). Note that the .xls file type removes certain types of formatting (such as certain color options).

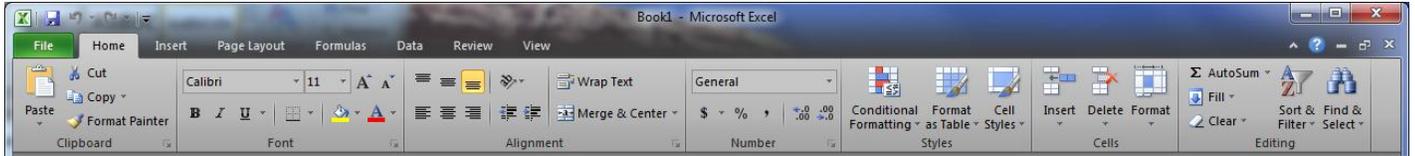
If you have previously saved the workbook, clicking **Save** under the File ribbon tab will save changes to the existing file.



If you prefer to have your changes saved to a different file, click the File tab and then click **Save As**.

In addition to saving as a .xls and .xlsx, Excel 2010 has the ability to save directly to a PDF file. To save an Excel workbook as a PDF, click the File tab, then click **Save & Send**. Click on **Create PDF/XPS Document** and then click **Create PDF/XPS**. Select the location where you would like the file to be saved, enter a File name, ensure 'Save as type' is set to PDF (\*.pdf) and then click the Publish button. Note: The workbook should also be saved as an Excel file as it's not possible to edit the PDF document from within Microsoft Excel.

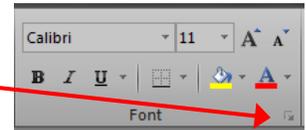
# Home Tab - Styling your Workbook



This tab can be used to style your workbook, including the formatting of fonts and cells.

## Font Formatting

Select the cell(s) you want to format and then select the font, size, style, and color under the Font group. For additional font options, click the **Format Cells: Font** icon.



Additionally, when you highlight a section of text, a faded menu will appear with font formatting options. Moving your mouse over this popup menu will bring it in focus and allow you to select basic formatting options.

## Cut/Paste Cell

Highlight the cell you wish to move, click on **Cut** under the Clipboard group, move your cursor to the desired cell, and click on **Paste** under the Clipboard group.

## Copy/Paste Cell

Highlight the cell you wish to copy, click on **Copy** under the Clipboard group, move your cursor to the desired cell, and click on **Paste** under the Clipboard group.

## Cell Formatting

Cell formatting options are available under the alignment, number, styles, and cell groups.

The Alignment group allows the vertical and horizontal alignment of each cell to be set along with the direction of text. For example, the orientation button can be used to angle the text in a cell.

The Number group sets options for the type of number in a cell, such as a percentage or financial figure.

Clicking on the Cell Styles button under the Styles group will allow you to pick a pre-defined cell style.

The Cells group allows cells, rows, and columns to be inserted or deleted. In addition, this group allows you to set the column width or row heights.

## Find & Replace

A word or phrase can be found within your workbook by using the Find command. Select Find & Select under the Editing group, click Find, enter the word or phrase in the "Find what" box and click the **Find Next** button.

A word or phrase can be replaced with another using the Replace command. Select Find & Select under the Editing group, click Replace, enter the word or phrase that you want replaced in the "Find what" box and enter the word or phrase that should replace the existing word or phrase in the "Replace with" box.

# Insert Tab - Inserting Objects



This tab can be used to insert various types of objects, including pivot tables, tables, illustrations, charts, links, headers & footers, text, and symbols.

## Headers and Footers

To have a consistent header or footer on each page of a workbook, click on **Header & Footer** from the Text group.

Once you add a header or footer, you will see a Header & Footer Tools Design tab on the ribbon.



The Header & Footer Tools Design tab contains the options related to the header and footer sections of a workbook.

The Header & Footer group provides the ability to select a predefined header or footer.

The Header & Footer Elements group provides the ability to insert various header and footer elements, such as page numbers, date, time, file path, file name, sheet name, and pictures.

The Navigation group will allow you to jump to either the header or footer.

The Options group provides options for how the header and footer should be displayed on each page of the workbook.

## Symbols

Symbols that aren't found on a normal keyboard can be added to Microsoft Excel workbooks by selecting Symbol from the Text group. A list of commonly used symbols will display. Click on one of the symbols in the list and then click the Insert button.

## Pictures

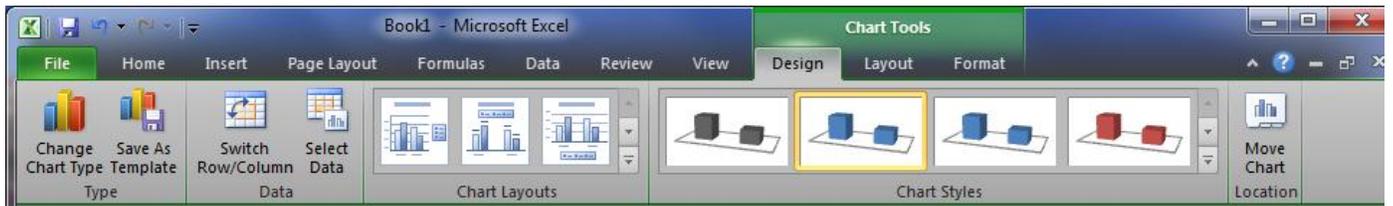
Place your cursor where the picture is to be inserted and then select **Picture** from the Illustrations group. Navigate to the directory where the picture is located, click the file name and then click the Insert button.

# Charts

To create a chart, enter your data in a worksheet and then click the type of chart you want under the Charts group. The following data to the right is going to be used as an example.

Color	People who prefer
Red	51
Orange	36
Yellow	19
Green	47
Blue	78
Purple	23

Once a chart is selected from the charts group, three new tabs, **Design**, **Layout**, & **Format**, will appear on the ribbon, grouped together under Chart Tools.

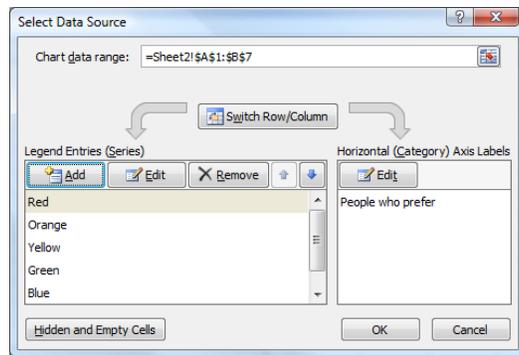
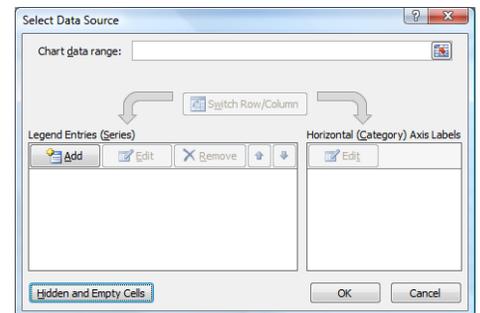


The Chart Tools Design tab is used to setup a chart.

First, you need to set your data source by clicking **Select Data** under the Data group.

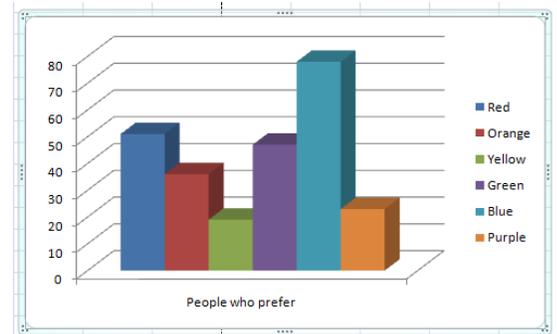
A *Select Data Source* window will appear in which you can add your chart data range.

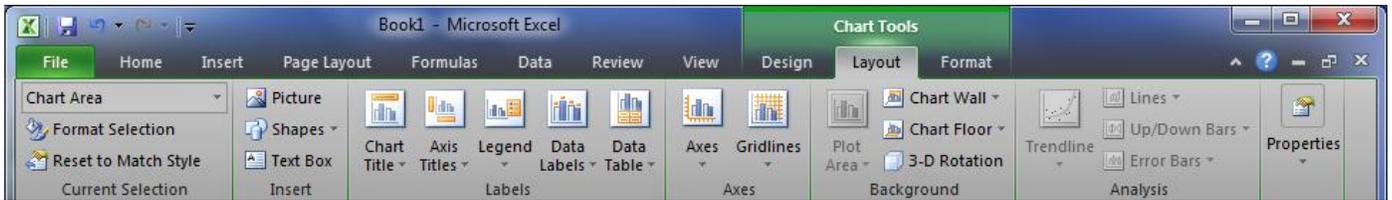
Highlight the cells you want to appear in the chart (which will then display in the select data source text box).



Using the data set as shown above, we now have the data range set for our chart. You can now specify how you want your legend and axis labels to appear. In the example to the left, the legend will display the colors and the axis label will display as "People who prefer". If you click the **Switch Row/Column** button, it will swap the legend and axis labels (for example, "People who prefer" would now be on the legend and the names of the colors would appear on the axis.) Once you have the data source set, click the OK button. The example displays the following graph:

Now that the chart has been created, the design chart tools tab can be used to change the chart to a different type of chart, change the layout of the chart or apply a chart style.





The Chart Tools Layout tab is used to set labels for the title, axes, legends, and data labels on the chart. It can also be used to set axes options, add backgrounds, and add trendlines.

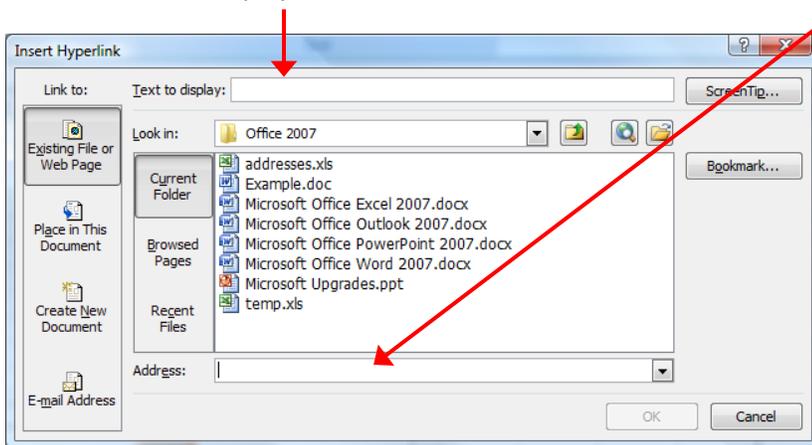


The Chart Tools Format tab is used to apply formatting options to the chart, such as selecting a predefined style for the shape or manually setting fill, outline, and effects options for shapes.

## Links

Links to websites or other locations within an Excel workbook can be created by using the Links group.

To include a link to a website, select **Hyperlink** from the Links group. Enter the text that should be displayed in the cell in the *Text to display:* text box and the web site address in the *Address:* text box and then click OK.



# Page Layout Tab - Workbook Layout

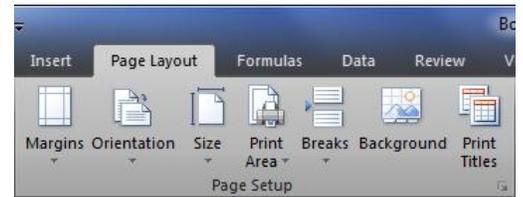


This tab can be used to set layout options for an Excel workbook.

## Page Setup

The Page Setup group contains the options that are used to setup the layout of your page, such as margins and actual size of the page.

To set the margin for your worksheet, click on Margins and then select from the list of pre-defined margins or click Custom Margins to enter your own margins.

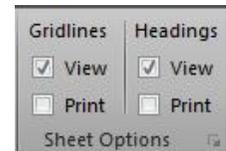


To change the page orientation of your worksheet, click on Orientation and then select Portrait or Landscape.

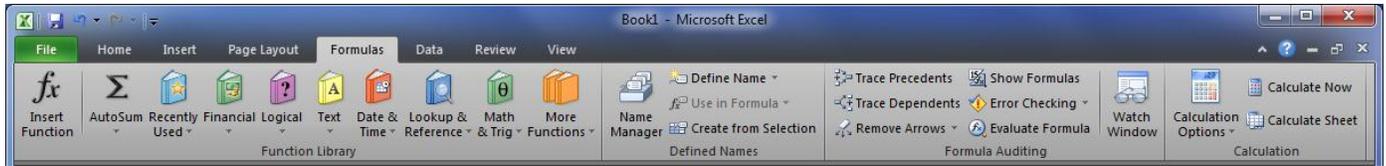
To change the paper size, click on Size and then select from the list of pre-defined paper sizes or click More Paper Sizes to enter a customized size.

## Viewing Gridlines & Headings

The Sheet Options group contains the options to specify whether gridlines and headings are displayed when the workbook is being viewed or printed.



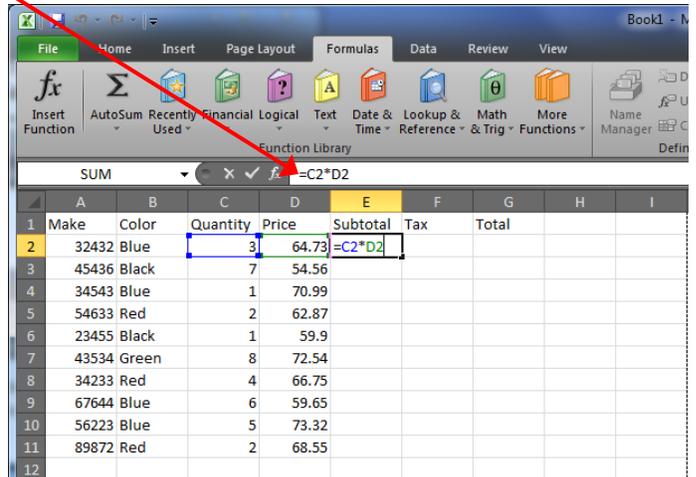
# Formulas Tab



This tab can be used to assist with adding functions to allow calculations to be performed in an Excel workbook. Formulas and functions are typed in the formula bar and are always preceded by an equal sign (=).

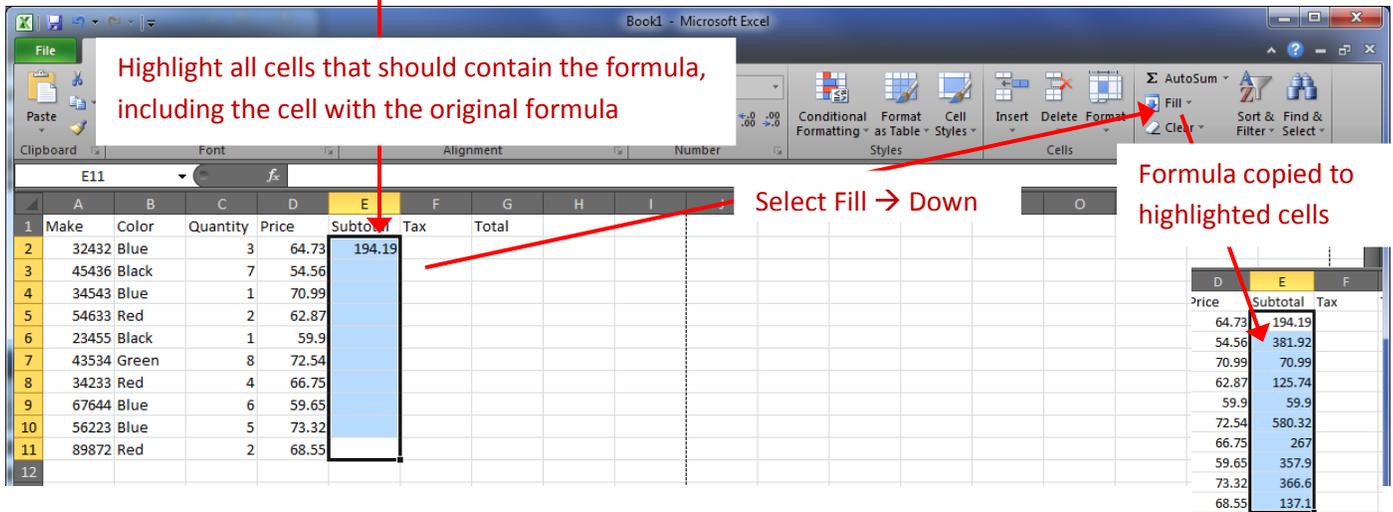
## Formulas

A formula is an equation that performs calculations on values in a sheet. For example, to create a formula in the sample sheet that will calculate the quantity times the price, select cell E5 and in the Formula Bar, type `=C5*D5`. This will ensure that cell E5 displays the total subtotal for the entire quantity.



After pressing Enter, the Subtotal will calculate.

Rather than typing in the same formula for all the subtotals, you can simply highlight all of the cells where that formula should be used, including the original cell that contains the formula, then select the Home tab and click Fill → Down under the Editing group.



The cells should all fill in with the correct formula. Now, if you change a price or quantity, the Subtotal will still be correct because you used the cell address rather than the value in the formula.

## Linking Worksheets

You may want to use the value from a cell in another worksheet within the same workbook in a formula. For example, the value of cell A1 in the current worksheet and cell A2 in the second worksheet can be added using the format "sheetname!celladdress". The formula for this example would be `=A1+Sheet2!A2` where the value of cell A1 in the current worksheet is added to the value of cell A2 in the worksheet named "Sheet2".

## Basic Functions

Functions can enhance formulas by allowing more complex calculations to be performed. For example, if you wanted to add the values of cells A1 through A9, you could type the formula **=A1+A2+A3+A4+A5+A6+A7+A8+A9**. While this method will work, it's very inefficient. Instead, the SUM function can be used by entering **=SUM(A1:A9)**.

The calculations performed by a function are done in a particular order, or structure. The structure of a function always begins with the equal sign (=), followed by the function name, an opening parenthesis, the arguments for the function separated by commas, and finally a closing parenthesis.

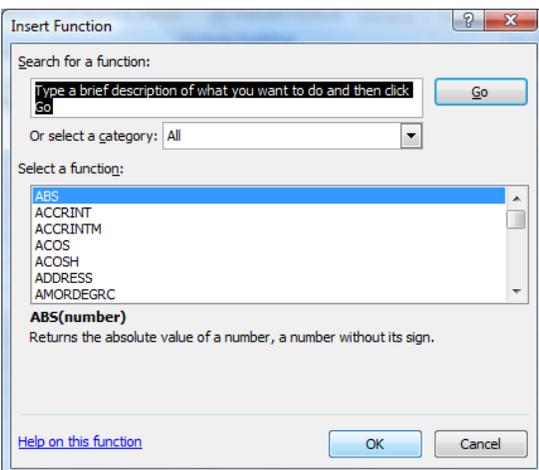
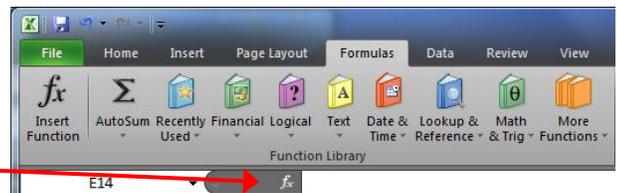
Here are some of the most commonly used functions within Excel:

Function	Example	Description
SUM	=SUM(A1:100)	Finds the sum of cells A1 through A100
AVERAGE	=AVERAGE(B1:B10)	Finds the average of cells B1 through B10
MAX	=MAX(C1:C100)	Returns the highest number from cells C1 through C100
MIN	=MIN(D1:D100)	Returns the lowest number from cells D1 through D100
TODAY	=TODAY()	Returns the current date (leave the parentheses empty)
IF	=IF(E1<100,"OK","Over Budget")	If condition (E1<100) is met, returns true ("OK"), or false ("Over Budget")

Functions can be added by selecting from among the function library icons on the ribbon. Select the cell that should contain the function and then select the function by clicking the function group type and selecting the particular function. For example, to add the average function, click AutoSum and then click Average. The function will be added to the cell and will automatically guess which cells should be included. If it selects the wrong cells, you can manually change the values by adjusting the formula within the formula bar.

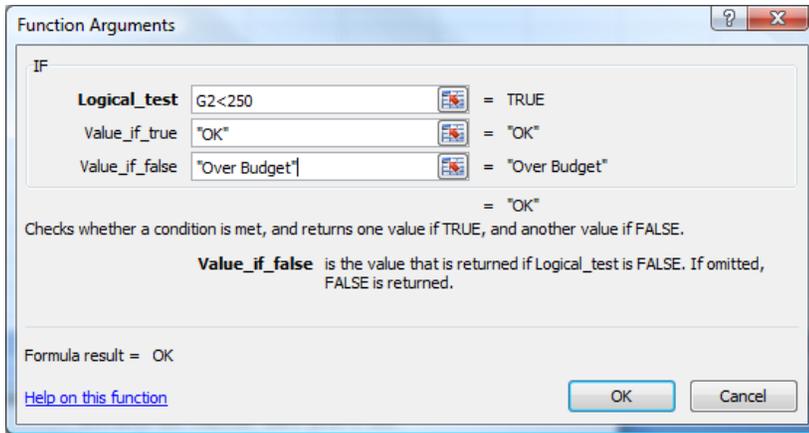


In addition to using the ribbon to insert functions, you can type the name of the function directly into the formula bar or use the Insert Function icon next to the formula bar.



Clicking the Insert Function icon will bring up an Insert Function window. This window provides the list of functions available in Excel, with a brief description of each. Choose the one that you want to use and click ok.

For example, if within our spreadsheet we want to determine if the price is within our budget or not, we can use the IF function. After choosing the IF function, a window appears. Next to *Logical\_test*, fill in the parameters in which you are going to be testing. In our case, we want to see if the total is under our budget of \$250. Therefore, we type G2<250, then under *Value\_if\_true* we write Ok and under *Value\_if\_false*, we write Over Budget.



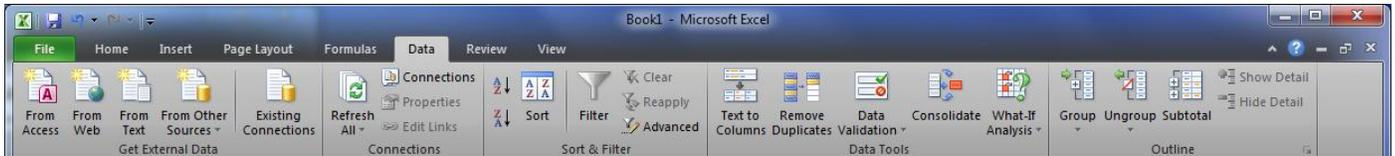
The image below shows the result for each row.

	A	B	C	D	E	F	G	H	I
1	Make	Color	Quantity	Price	Subtotal	Tax	Total		
2	32432	Blue	3	64.73	194.19	15.5352	209.7252	OK	
3	45436	Black	7	54.56	381.92	30.5536	412.4736	Over Budget	
4	34543	Blue	1	70.99	70.99	5.6792	76.6692	OK	
5	54633	Red	2	62.87	125.74	10.0592	135.7992	OK	
6	23455	Black	1	59.9	59.9	4.792	64.692	OK	
7	43534	Green	8	72.54	580.32	46.4256	626.7456	Over Budget	
8	34233	Red	4	66.75	267	21.36	288.36	Over Budget	
9	67644	Blue	6	59.65	357.9	28.632	386.532	Over Budget	
10	56223	Blue	5	73.32	366.6	29.328	395.928	Over Budget	
11	89872	Red	2	68.55	137.1	10.968	148.068	OK	
12									

## Relative, Absolute, and Mixed Referencing

Calling cells by just their column and row labels (such as "A1") is called **relative referencing**. When a formula contains relative referencing and it is copied from one cell to another, Excel does not create an exact copy of the formula. It will change cell addresses relative to the row and column that they are moved to. For example, if a simple addition formula in cell C1 " $=A1+B1$ " is copied to cell C2, the formula would change to " $=A2+B2$ " to reflect the new row. To prevent this change, cells must be called by **absolute referencing** and this is accomplished by placing dollar signs "\$" within the cell addresses in the formula. For example, to use absolute referencing with the above example, write the cell as  $=($A$1+$B$1)$  so that if cell C1 is copied, it will contain the values of A1 + B1 and not A2 + B2. **Mixed referencing** can also be used where only the row OR column is fixed. For example, in the formula " $=A$1+$B1$ ", the row of cell A1 is fixed and the column of cell B2 is fixed.

# Data Tab



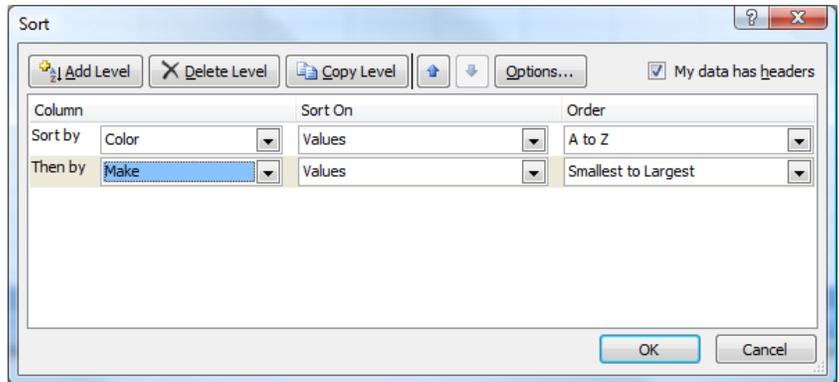
This tab is used for working with data, such as bringing in external data to a workbook, and sorting & filtering data.

## Get External Data

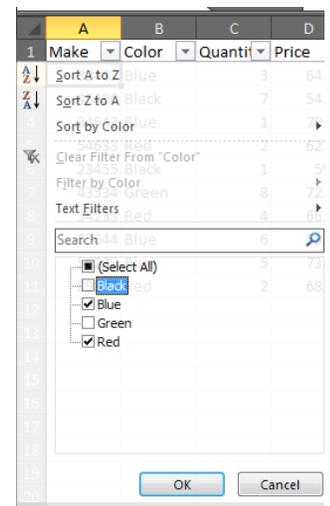
To add data to an Excel workbook from an external source, such as Access, the Web, Text, an SQL server or some other source, select the source under the Get External Data group.

## Sort & Filter

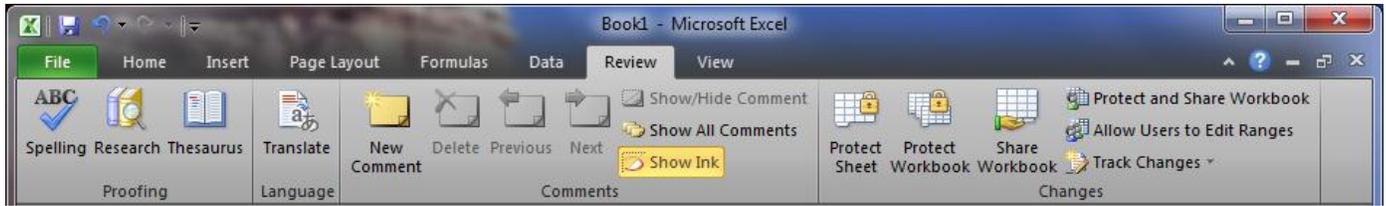
To sort data within an Excel workbook, highlight the data you want sorted and then click the Sort button under the Sort & Filter group. A Sort window will appear, giving you the ability to add the column you want to sort by and how the data should be sorted. In the following example, our data will be sorted by Color and then by Make. To add more than one sort criteria, click the Add Level button. To remove one of the sort criteria options, click the criteria you want removed and click the Delete Level button.



To apply a filter to data within an Excel workbook, select the cell you want to filter by and then click the Filter button under the Sort & Filter group. Click on the drop down icon in the column that you want to filter by and uncheck any values that you don't want included. Once you click the OK button, your data will be filtered and you will no longer see the data that you unchecked. To see the full list, click on the Filter button under the Sort & Filter group again and it will turn filtering off.



# Review Tab



This tab is used to review your workbook, including proofing the workbook, adding comments, and tracking changes.

## Proofing

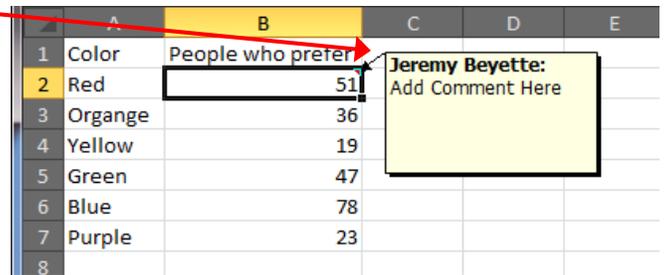
The Proofing group assists with proofing your workbook after it is finished.

Click the **Spelling** icon to check for spelling problems within the workbook.

Click the **Thesaurus** icon to open the Microsoft Thesaurus. If you highlight a word and then click the Thesaurus icon, the thesaurus will automatically look up the highlighted word.

## Comments

To insert a comment in a workbook, highlight the cell you want commented and then click **New Comment** under the Comments group. A comment box will appear to the right of your workbook where you can enter the comment. Each cell that has a comment associated with it will display a little red triangle in the upper-right hand corner of the cell. To display hidden comments, right-click on the cell and select Show/Hide Comments.



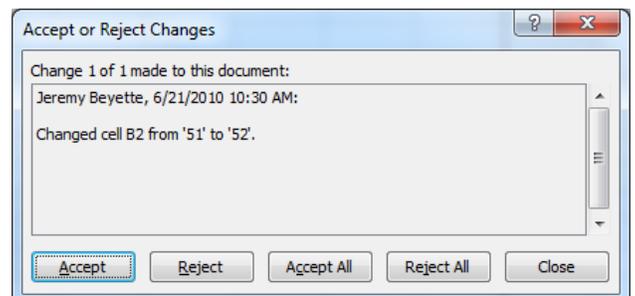
To remove the comment, click the comment box and then click **Delete** under the Comments group.

## Tracking Changes

Tracking changes can be a valuable tool if you are sharing an Excel workbook with someone else. If you turn track changes on and have someone else edit the worksheet, when they send it back, Excel will display the changes they made and allow you to accept or reject them.

To turn tracking changes on, click the Track Changes icon under the Changes group and then click Highlight Changes. A Highlight Changes window appears. Click *Track changes while editing. This also shares your workbook.* Any changes made to the cells in a workbook will display a black triangle in the upper-left hand corner of the cell.

To accept or reject a change, click a cell with a change and then click the Track Changes icon under the Changes group, followed by Accept/Reject changes. An *Accept or Reject Changes* wizard will appear, allowing you to specify whether the change should be accepted or rejected.



# View Tab



This tab is used to set how you want your workbook to be viewed while you are working on it.

## Workbook Views

The default view in Microsoft Excel 2010 is **Normal**, allowing the workbook to display as many rows and columns as will fit on the screen. The workbook view can be changed by selecting one of the other Layout options from the **Workbook Views** group.

## Show

The Show group allows different components of Excel to be displayed, including the ruler, gridlines, and formula bar.

## Zoom

With the Zoom group, the zoom level of the document can be set.

To change your zoom level, click the **Zoom** icon under the Zoom group.

## Window

If you are working with multiple Excel workbooks, you can switch between them by clicking the **Switch Windows** icon under the Window group or set them to be viewed side by side with the **View Side by Side** icon under the Window group.