

Center for Teaching & Learning

Microsoft Excel 1: The Basics

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NOTE: These instructions are only applicable to non-web based applications.

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Opening Excel

This guide is designed to introduce you to using Microsoft Excel if you're unfamiliar with any major aspect of it. The lessons in this guide will lead you through the fundamentals of creating and working with Excel spreadsheets.

Today's Excel spreadsheet isn't just for financial professionals. Microsoft Excel offers intuitive tools that make it easy to access, connect, and analyze critical data—regardless of your profession. The first step in learning to use your new software is to start (or in computer parlance: launch) the Excel Program.

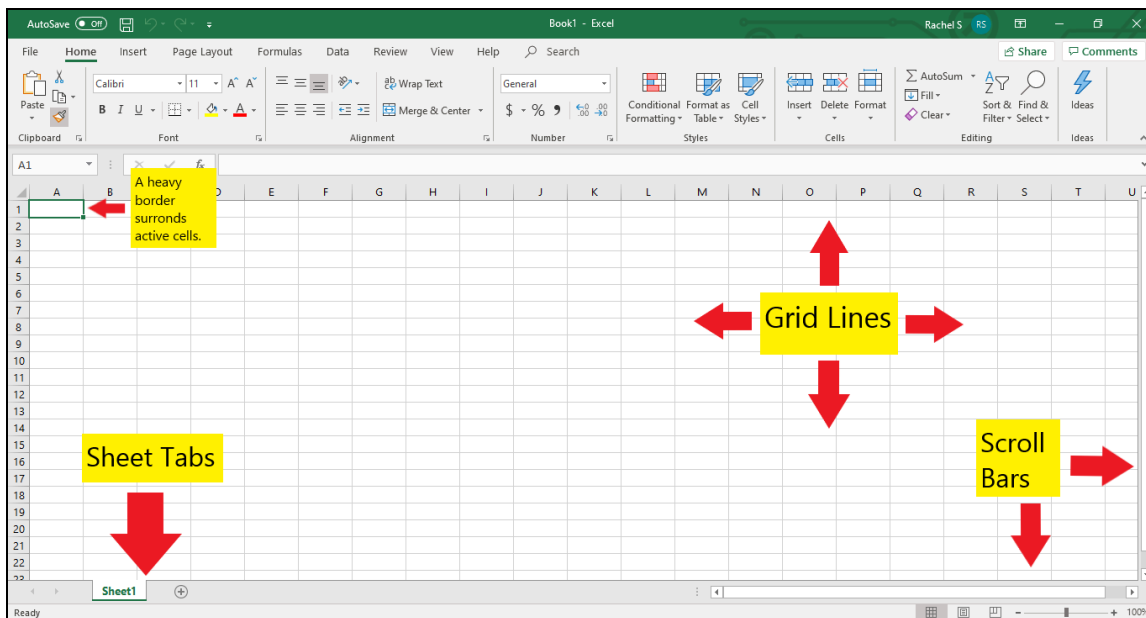
Launch Excel:

1. Click the Windows **Start** button; this will bring up a set of choices in a menu.
2. Click **Programs**. Another menu will appear to the right.
3. Locate and click **Microsoft Office** and another menu will appear on the right.
4. Locate and click **Microsoft Office Excel**. You have now launched Excel.

When Excel starts, it creates a new blank workbook, called **Book 1**. The **Workbook** is similar to a notebook. Inside you have sheets, each of which is called a **worksheet**. Each worksheet has a name that appears on a **sheet tab** at the bottom of the workbook.

Components of Excel

When you first open Microsoft Excel, you'll see the basic components.



The Ribbon

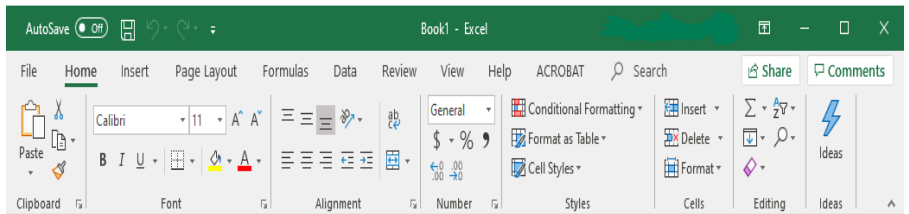
There are three basic components to the Ribbon:

1. **Tabs:** There are ten of them across the top. Each represents core tasks you do in Excel.

2. **Groups:** Each tab has groups that show related items together.

3. **Commands:** A command is a button, a box to enter information, or a menu.

The principal commands in Excel are gathered on the first tab, the **Home** tab. The commands on this tab are those that Microsoft has identified as the most commonly used when people do basic tasks with worksheets.



For example, the **Paste**, **Cut**, **Copy** and **Format Painter** commands are arranged first on the **Home** tab, in the **Clipboard** group. Font formatting commands are next, in the **Font** group. Commands to center text or align text to the left or right are in the **Alignment** group, number formats are in the **Number** group, cell style and formatting are in the **Styles** group, commands to insert and delete cells, rows, columns, and worksheets are in the **Cells** group, sort and filter command, find and select command, clear and fill are in the **Editing** group.

Groups pull together all the commands you're likely to need for a particular type of task, and throughout the task they remain on display and readily available, instead of being hidden in menus. These vital commands are visible above your workspace.

Here's an example of the convenience: If you want text displayed on multiple lines in a cell, you don't have to click a command on a menu, click a tab in a dialog box, and then click an option in the dialog box. You just click the **Wrap Text** button in the **Alignment** group, on the **Home** tab.

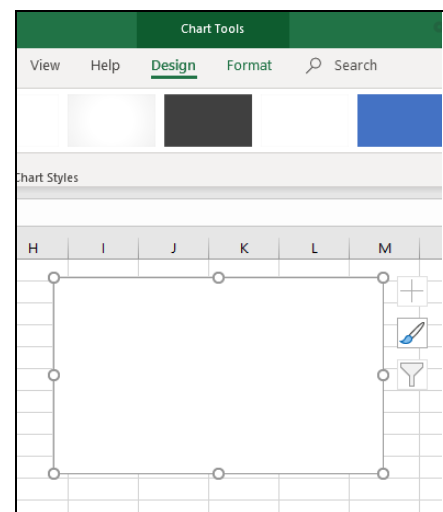
Contextual Tabs

The commands on the Ribbon are the ones you use the most. This means some less used tabs will only appear if you need them (these are called “Contextual Tabs”).

For example, if you don't have a chart in your worksheet, the commands to work with charts aren't necessary.

But after you create a chart, the Chart Tools appear, with two tabs: **Chart Design** and **Format**. On these tabs, you'll find the commands you need to work with the chart. The Ribbon responds to your action.

Use the **Chart Design** tab to change the chart type or to move the chart location and the **Format** tab to add fill colors or to change line styles.

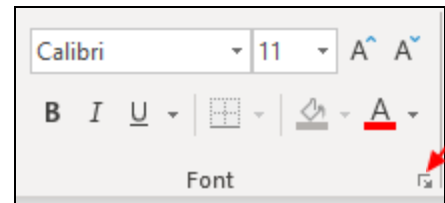


When you complete the chart, click outside the chart area. The Chart Tools go away. To get them back, click inside the chart. Then the tabs reappear.

So don't worry if you don't see all the commands you need at all times. Take the first steps. Then the commands you need will be at hand.

Dialog Box Launcher

When you see the arrow (called the Dialog Box Launcher) in the lower-right corner of a group, there are more options available for the group. Click the arrow, and you'll see a dialog box or a task pane. For example, on the **Home** tab, in the Font group, you have all the commands that are used the most to make font changes: commands to change the font, to change the size, and to make the font bold, italic, or underlined. Click on the Dialog box launcher to see more options for font changes, such as effects which include Strikethrough, Superscript, and Subscript.

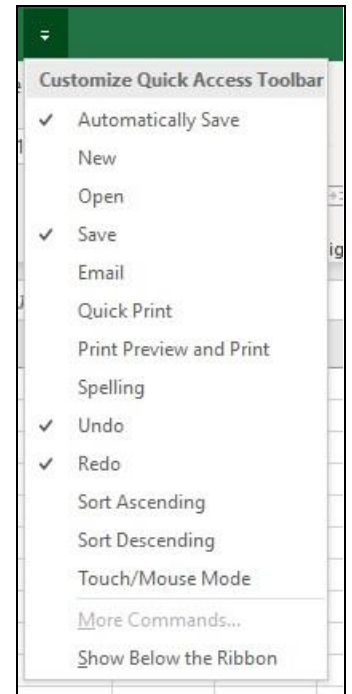


Quick Access Toolbar

If you often use commands that are not as quickly available as you would like, you can easily add them to the Quick Access Toolbar, which is above the Ribbon when you first start Excel. On that toolbar, commands are always visible and near at hand.

For example, if you use AutoFilter every day, and you don't want to have to click the Data tab to access the Filter command each time, you can add **"Filter"** to the Quick Access Toolbar.

To do that, click on the Dropdown icon, and then click More Commands and select icons to Add to Quick Access.

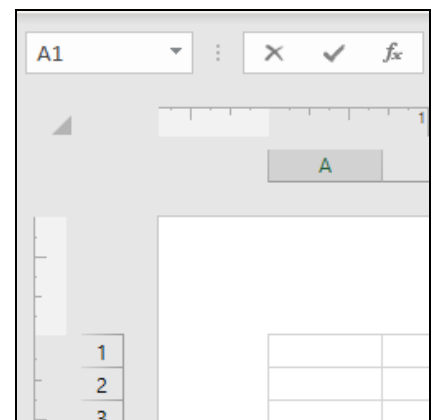


To remove a button from that toolbar, click the button on the toolbar, and then click Remove from Quick Access Toolbar.

The New Page Layout View

1. Column headings.
2. Row headings.
3. Margin rulers.

To see the new view, click Page Layout View on the bar on the bottom of the screen, it is on the right of the window. Or click the View tool to View tab on the Ribbon, and then click Page Layout View in the Workbook Views group.



In Page Layout view there are page margins at the top, sides, and bottom of the worksheet, and a bit of space between worksheets. Rulers at the top and side help you adjust margins. You can turn the rulers on and off as you need them (click Ruler in the Show/Hide group on the View tab). With this view, you don't need to print preview to make adjustments to your worksheet before you print.

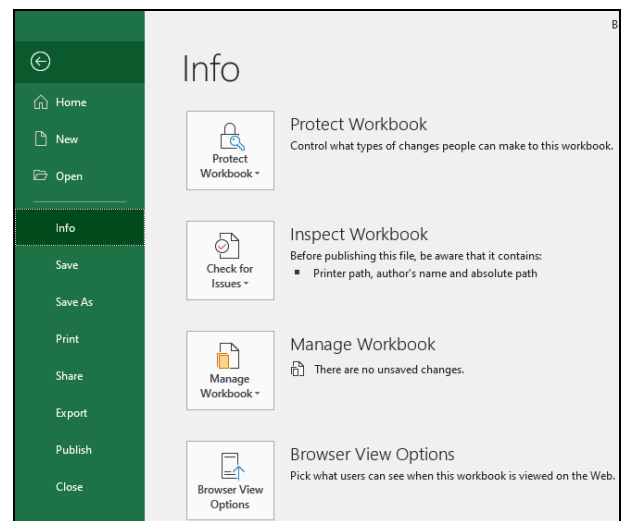
You can see each sheet in a workbook in the view that works best for that sheet. Just select a view on the View toolbar or in the Workbook Views group on the View tab, for each worksheet. Normal view and Page Break preview are both there.

File Tab

You'll have no problem opening an existing workbook created in a previous version of Excel. Click the **File** Button in the upper-left corner of the window. There you'll get the same commands you've used in the past to open and save your workbooks.

Here is where you'll find the program settings that control things like turning the R1C1 reference style on or off, or showing the Formula Bar in the program window. Click **Options** at the bottom of the menu to access the options.

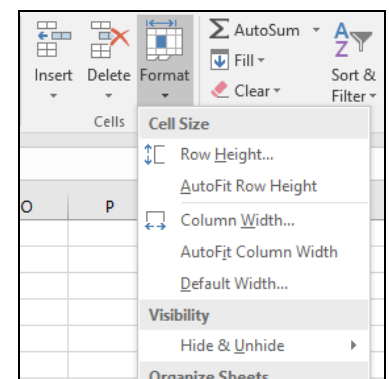
In previous versions of Excel, you could set such options in the Options dialog box, opened from the Tools menu. Now many of those options are here, where they are more visible, and conveniently close at hand when you start work on old files or new ones.



Formatting Cells

Formatting is the process of changing the appearance of your workbook. A properly formatted workbook can be easier to read, appear more professional, and help draw attention to important points. The Home tab is where you will find bold, underline, highlight, etc. Practice formatting in the worksheet you have just created.

If you add data to a cell and if you need to adjust the column width to fit the data, in the Cells group, click the **arrow** on Format, and then in the list that appears click **AutoFit Column Width**.



The **Format** button is located in the **Cells** group on the **Home** tab. Here you can change row or column heights, hide or unhide parts of a workbook, organize the worksheets in your workbook, and protect and

lock worksheets and cells.

Selecting **Format Cells** at the bottom of the dropdown menu will open up the Format Cells dialog box that you used in Excel.

Format Painter

You will find Format Painter in the Clipboard group on the **Home** tab. Format Painter will help you quickly copy things such as borders, fills, text formats, or number formats) and apply that formatting to other cells. Click a cell that has the formatting that you want to copy.

Do one of the following:

1. To copy the formatting to a single cell or range of cells, click **Format Painter**, and then drag the mouse pointer across the cell or range of cells that you want to format.
2. To copy the formatting to several cells or ranges of cells, click and highlight the list of cells you want to copy the formatting from, click **Format Painter**, and then drag the mouse pointer across each cell or range of cells that you want to format.



TIP: To copy the width of one column to a second column, select the heading of the first column, click **Format Painter**, and then click the heading of the column that you want to apply the column width to.

Clear Cell Contents or Formats

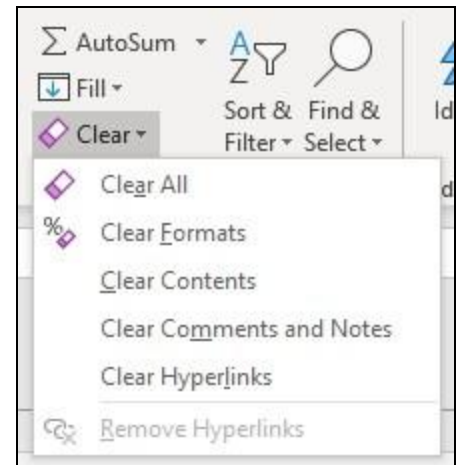
You can clear cells to remove the cell contents (formulas and data), formats (including number formats, conditional formats, and borders), and any attached comments. The cleared cells remain as blank or unformatted cells on the worksheet.

1. Select the cells, rows, or columns that you want to clear.

Note: To cancel a selection of rows or columns, click any cell on the worksheet.

2. In the Editing group, point to Clear, and then do one of the following:

- To clear everything that is contained in the selected cells, click **All**.
- To clear only the formats that are applied to the cells, click **Formats**.
- To clear only the contents, leaving any formats and comments in place, click **Contents**.
- To clear any comments that are attached to the selected cells, click **Comments**.



IMPORTANT: If you click a cell and then press **DELETE** or **BACKSPACE**, Excel clears the cell contents but does not remove comments or cell formats. If you clear a cell, the value of the cleared cell is 0 and a formula that refers to that cell receives a value of 0.

Formatting Tips

The row titles will stand out better if they are in bold type. You click the column with the titles and then, on the **Home** tab, in the Font group, you click **Bold**.

While the titles are still selected, you decide to change their color and their size, to make them stand out even more.

In the Font group, you click the **arrow** on Font Color, and you see many more colors to choose from than before in Excel. You can see how the title will look in different colors by pointing at any color and waiting a moment. This preview means that you don't have to make a selection to see the color, and then undo your selection if it's not what you want. When you see a color you like, click it.

To change the font size, you can either click the **Increase Font Size** button, or you can click the arrow beside the Font Size box to see a list of sizes (this method gives you the same live preview as for font colors).

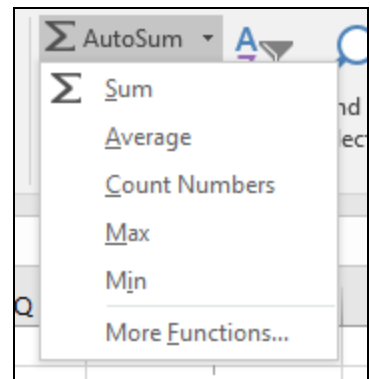
While the titles are still selected, you decide to center them in the cells. In the Alignment group, you click the **Center** button, and that's done.

AutoSum

AutoSum is a function in excel that automatically adds from a selected range of cells. To do this, all you need is the **AutoSum** button. On the **Home** tab, it's in the Editing group.

The AutoSum button can do more than add. Click the **down arrow** next to the **AutoSum** button.

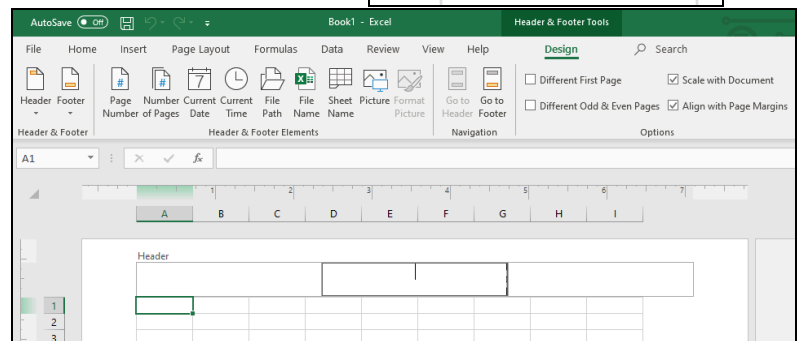
Then click any of the functions on the list that appears: **Average, Count Numbers, Max, or Min**. If you click **More Functions**, Excel opens the Insert Function dialog box where you can choose from all of the Excel functions. Or click the **Formulas** tab and check out the **Function Library** and **Calculation groups**.



Adding Headers & Footers

As a finishing touch, suppose you decide to add headers and footers to the worksheet, to make it clear to everyone what the data is about.

Go to the **Insert** tab and click on **Header & Footer in the Text** group. If this option is not available to you, type in "Header and Footer" into the search bar at the top center of the screen to add it. The screen **Header & Footer Tools** will



display below to assist in editing the header or footer.

Another way you can do this is by going to **Page Layout** view. Click the **View** tab, and then click **Page Layout** in the **Workbook Views** group.

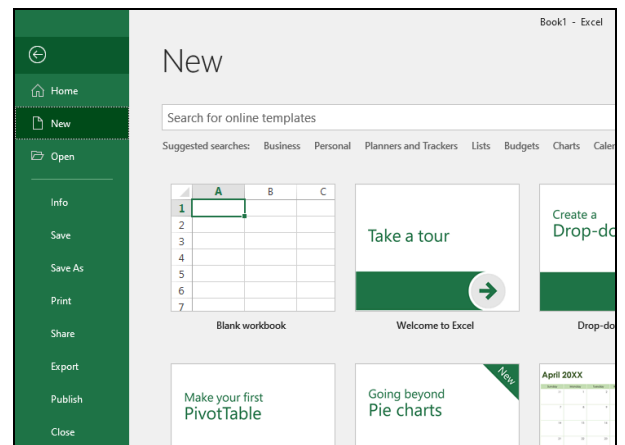
It is very easy to add headers and footers in Page Layout view. Instead of opening a dialog box to add a header, just click in the area at the top of the page that says add header.

As soon as you do, the **Header & Footer Tools** tab appears on the Ribbon. This has all the commands to work with headers and footers (ex. Using different headers/footers on Odd & Even pages).

For the header on this report, type in your desired title. As soon as you click the worksheet, the Header & Footer Tab and tools go away until you need them again. To get them back, in Page Layout view, click in the header or footer area again.

Microsoft Templates

When you click the **File** Button and then click **New**, the Available Templates window opens. At the top of the window, you can select either a new blank workbook or different templates. Below are different template categories for templates installed with Excel 2010.



Navigate between Worksheets

To move to other Worksheets, you can click their tab with the mouse at the bottom of the screen (Sheet1, Sheet 2, or Sheet 3) or use the **Ctrl** key with the Page Up and Page Down keys to move sequentially up or down through the worksheets.

Insert, Move, & Rename Worksheets

Worksheets are much like pages within a book; you peruse through them like you flip the pages of a book. There are several ways to move and copy worksheets. Right click on the sheet tab and choose **Move or Copy**. Select a new position in the workbook for the worksheet or click the **Create a copy** checkbox and Excel will paste a copy of that worksheet in the workbook. The same shortcut menu for the sheet tab also gives you the option to insert, delete, or rename a worksheet.

Navigation Keystrokes

Keystroke	Action
↑, ↓, ←, →	Moves the active cell up, down, right, or left one cell
Enter	Moves the active cell down one cell
Tab	Move the active cell to the right one cell
Page Up	Moves the active cell up one full screen
Page Down	Moves the active cell down one full screen
Home	Moves the current cell to column A of the active row
Ctrl + Home	Moves the current cell A1
F5 (Function Key)	Opens the “Go To” dialog box in which you can enter the cell address of the cell you wish to make active

Select & Move Worksheet Cells

To select a large area of cells, click the first cell in the range, press and hold the **Shift** key, and then click the last cell in the range. Once you have selected a range of cells, you may move the cells within the worksheet by clicking and dragging the selection from its current location to its new one.

To do this, bring your cursor to the side of the selection. When your cursor turns into 4 arrows pointing in opposite directions click and hold on to the mouse and drag wherever you want to locate it and let go of the mouse.

By pressing and holding the **Ctrl** key as you drag, Excel will leave the original selection in its place and paste a copy of the selection in the new location. To move between workbooks, use the **Alt** key while dragging the selection.

Range Selection Techniques:

To Select	Do This
A single cell	Click the cell, or press the arrow keys to move to the cell.



A range (range: Two or more cells on a sheet. The cells in a range can be adjacent or nonadjacent.) of cells	Click the first cell in the range, and then drag to the last cell, or hold down SHIFT while you press the arrow keys to extend the selection.
A large range of cells	Click the first cell in the range, and then hold down SHIFT while you click the last cell in the range. You can scroll to make the last cell visible.
All cells on a worksheet	Click the Select All button. To select the entire worksheet, you can also press CTRL+A.
Non-adjacent Cells	Select the first cell or range of cells, and then hold down CTRL while you select the other cells or ranges. Note: You cannot cancel the selection of a cell or range of cells in a nonadjacent selection without canceling the entire selection.
Cells to the last used cell on the worksheet (lower-right corner)	Select the first cell, and then press CTRL+SHIFT+END to extend the selection of cells to the last used cell on the worksheet (lower-right corner).
Cells to the beginning of the worksheet	Select the first cell, and then press CTRL+SHIFT+HOME to extend the selection of cells to the beginning of the worksheet.
An entire row or column	Click the row or column heading. Note: If the row or column contains data, CTRL+SHIFT+ARROW KEY selects the row or column to the last used cell. Pressing CTRL+SHIFT+ARROW KEY a second time selects the entire row or column.
Cancel a selection	Click any cell on the worksheet.

Modifying Cells

Understanding Text, Values, & Formulas

Information entered into cells is categorized as text, values, or formulas. Values must be numbers, though they can be formatted to appear on the screen as currency or as a percentage.

Editing Cells & Entering Expressions

You can edit a cell by selecting the cell and then clicking in the formulas bar or by double-clicking the cell; double-clicking the cell will place your cursor inside that cell, allowing you to edit directly inside the

cell.

Telephone numbers or social security numbers that contain other characters (like a dash or parentheses) are treated as text and cannot be used in calculations. Arithmetic operators (such as +, -, /, and *) are used in formulas.

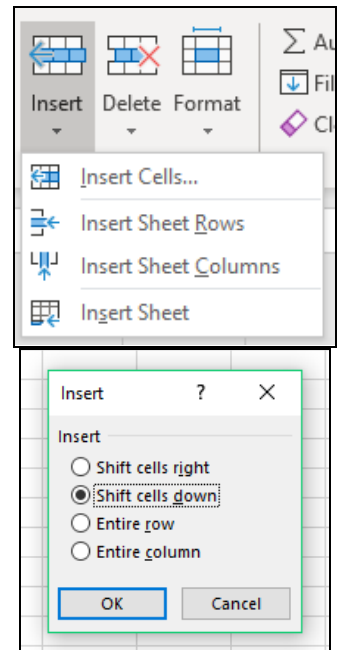
Inserting Worksheet Rows & Columns

Adding rows and columns is very simple. On the **Home** tab in the Cells group, click the **down arrow** under the **Insert** command.

From here you can insert cells, rows, and columns simply by clicking on the appropriate command.

You can also use the Insert dialog box. This figure depicts the Insert dialog box, which appears when you select a range of cells, right click on the selection, and then choose **Insert** from the shortcut menu.

Selecting one of these options controls what happens to existing cells when the new row or column is inserted. You can tell Excel whether to adjust your formulas accordingly with the change (this is called cell referencing, which we will go over in a later section).



Delete Worksheet Rows & Columns

To delete cells, rows, or columns, select the **Home** tab, then from the Cells group select **Insert or Delete**.

You can also right click on a heading or a selection of cells and choose **Delete** from the shortcut menu.

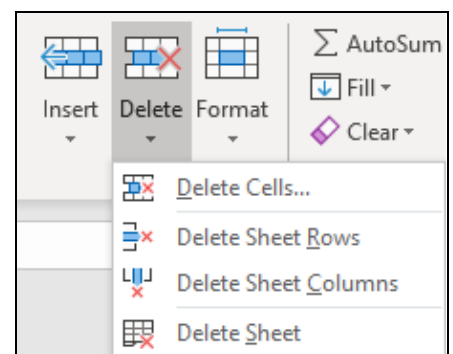
Clearing, as opposed to deleting, does not alter the structure of the worksheet or shift un-cleared data cells. When you want to clear a cell or range of cells, choose **Clear** from the **Editing** group in the **Home** tab.

What can be confusing about this process is that you can use the **Delete** key to clear cells, but it does not remove them from the worksheet as you might expect.

Resize Worksheet Rows & Columns

There are a number of methods for altering row height and column width using the mouse or menus:

1. Click the dividing line on the column or row (located at the top of all the cells, the "lines")



between A, B, C, etc.), and drag the dividing line to change the width of the column or height of the row

2. Double-click the border of a column heading, and the column will increase in width to match the length of the longest entry in the column

Widths are expressed either in terms of the number of characters or the number of screen pixels.

Entering Data into a Worksheet

Now that you know how to move around within Excel and manipulate existing data, you will learn how to enter and edit data into a worksheet. There are three basic types of information you can enter into a worksheet: text, values, and formulas. Remember that numbers using other characters in them (such as a dash or parentheses) are treated as text and cannot be used in calculations.

Enter the following text into cells A1 and A2:

A1: Extreme Blading

A2: Second Quarter Sales

G3							
	A	B	C	D	E	F	G
1	Extreme Blading						
2	Second Quarter Sales						
3		Direct mail	Outlets	Telesales	Web	Total	

In cell B3, enter the text Direct Mail. Press the Right Arrow key to move to cell C3. Enter the text Outlets. Repeating these steps, enter the following text – Telesales, Web, and Total – in cells D3, E3, and F3.

Enter the remainder of the Second Quarter Sales information. Your worksheet should look like the one on the right.

Using the AutoSum Function (Home tab, Editing group), calculate the total Extreme Blading's Direct Sales.

B8							
	A	B	C	D	E	F	
1	Extreme Blading						
2	Second Quarter Sales						
3		Direct mail	Outlets	Telesales	Web	Total	
4	Inline Skates	123	111	201	391		
5	Quad Skate	124	112	202	392		
6	Custom Skates	125	113	203	393		
7	Accessories	126	114	204	394		
8	Total	498					

Copy a Formula to Adjacent Cells

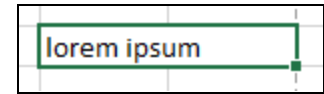
With cell B8 active, point to the fill handle (the lower right hand corner of the active cell). Drag the fill handle to select the destination area, C8:E8.

Release the mouse or press **Enter**. The formula is copied to the selected cells.

The next step will be to format the Worksheet. Formatting in Excel uses much of the same techniques as formatting in Word or PowerPoint.

Merge or Split cells

Merging two or more adjacent horizontal or vertical cells makes the cells become one large cell displayed across multiple columns or rows. The contents of one of the cells appear in the center of the merged cell.



You can split a merged cell into separate cells again but you cannot split a single cell that has not been merged.

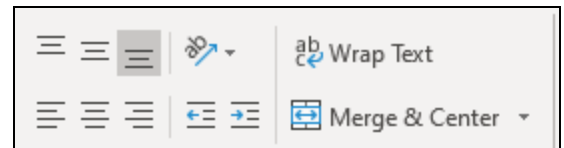
Merge Adjacent Cells

Select two or more adjacent cells that you want to merge.



IMPORTANT: Make sure that the data that you want to display in the merged cell is in the upper-left cell of the selected range. Only the data in the upper-left cell will remain in the merged cell. Data in all of the other cells of the selected range will be deleted.

On the **Home** tab, in the Alignment group, click **Merge & Center**. The cells will be merged in a row or column, and the cell contents will be centered in the merged cell. To merge cells without centering, click the arrow next to **Merge and Center**, and then click **Merge Across** or **Merge Cells**.



If the **Merge and Center** button is unavailable, the selected cells may be in editing mode. To cancel editing mode, press **ENTER**.

Split a Merged Cell

Select the merged cell. When you select a merged cell, the Merge and Center button also appears selected in the Alignment group on the **Home** tab. To split the merged cell, click **Merge and Center**. The contents of the merged cell will appear in the upper-left cell of the range of split cells.

Combining & Splitting Contents

Combine the Contents of Multiple Cells

You can use a formula with the ampersand (&) operator to combine text from multiple cells into one cell.

1. Select the cell in which you want to combine the contents of other cells.
2. To start the formula, type in **=**
3. Select the first cell that contains the text that you want to combine, type **&** **"&"**, select the first cell you want to combine text from, type **&** **"&"** and then select the next cell that contains the text that you want to combine.

To combine the contents of more than two cells, continue selecting cells, making sure to type "&" between selections. If you don't want to add a space between combined text, type & instead of "&" "&. To insert a comma, type "&", "& (with a comma followed by a space between the quotation marks).

4. To finalize the formula, type)
5. To see the results of the formula, press **ENTER**.



IMPORTANT: The formula inserts a space between the first and last cells by using a space enclosed within quotation marks. Use quotation marks to include any literal text — text that does not change — in the result.

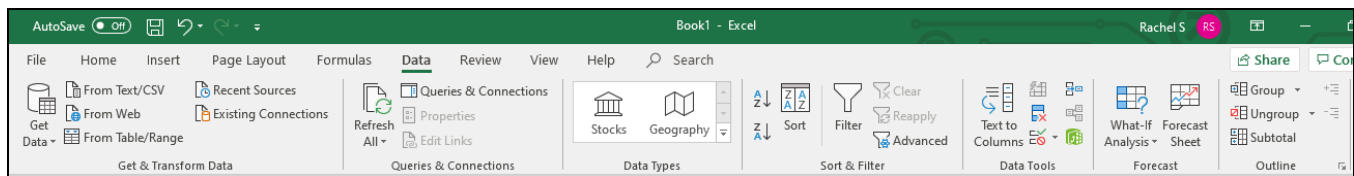
Split the Contents of a Cell across Multiple Cells

1. Select the cell, or entire column, that contains the text values that you want to distribute across other cells.

Note: A range can be any number of rows tall, but no more than one column wide. Maintain enough blank columns to the right of the selected column to prevent existing data from being overwritten by the data that will be distributed.

2. On the **Data** tab, in the **Data Tools** group, click **Text to Columns**.

3. Follow the instructions in the **Convert Text to Columns Wizard** to specify how you want to divide the text into columns.



For help with completing all the steps of the wizard, click [Help](#) in the **Convert to Text Columns**

Working with Older Versions

In Excel 2016, you can open files that were created in previous versions of Excel, from Excel 95 through Excel 2007.

But what if you're the first person in your office to have Excel 2016? What if you need to share files with departments that don't have Excel 2016 yet? You can all share workbooks with each other. Here's how:

Old files stay old unless you choose otherwise. If you open a file that was created in a previous version, when you save that file and any work you do in it, the automatic setting in the **Save As** dialog box is to save the file in the original version's format. If it started in Excel 2007, Excel 2016 saves it in the 2007 format unless you say otherwise.

Newer features warn you if you save a file as older. When you save a file in a previous version's format, if any 2016 features are not compatible with the previous version, a Compatibility Checker tells you so.

For example, if you apply color to a header in Excel 2016, and then save the file in Excel 97-2003 format, the Compatibility Checker will tell you that previous versions of Excel do not have color for headers and footers, and that the header will appear as plain text.

Important: When a new feature will not become available again if you save a file in an earlier format and then open it again in Excel 2016, the Compatibility Checker will warn you.

You can always copy newer files in newer format first. You can easily keep a 2016-format copy of the workbook. Just use **Save As** and tell Excel you want an Excel Workbook (*.xlsx). That copy of the file will contain all the Excel 2016 features.

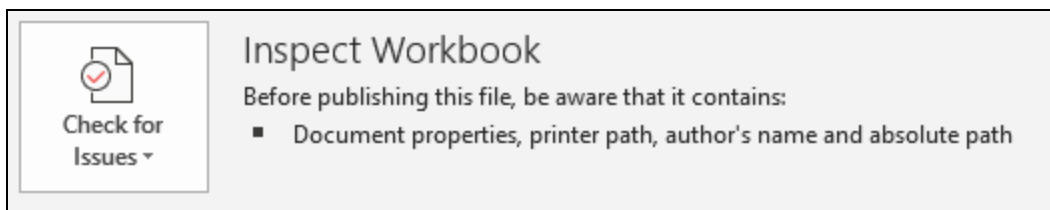
Share documents between versions by using a converter. If you create a file in 2016 and save it in 2016 format, your colleagues who have Excel versions 2000 through 2007 (and the latest patches and service packs) can work in your 2016 files. When they click on your document, they will be asked if they want to download a converter that will let them open your document.

If the technical details interest you: The Excel 2016 file format is based on XML (Extensible Markup Language) and embraces the Office Open XML Formats. This is the new file format for Microsoft Office Word 2016 and PowerPoint 2016 also.

Accessibility Checker

It is recommended that you do accessibility checks on all documents that are being used. When completing accessibility checks, you must do the following:

1. Select **File** on the Navigation toolbar
2. In the “Info” tab click **Check for Issues**



3. The screen will give you three options and you will select **Check Accessibility**
 - a. You will now see all inspection results located on the right side of your Excel worksheet(Figure 23)



IMPORTANT: It is highly recommended that you fix all accessibility errors within Excel before you publish to D2L or any other site.

