

Microsoft EXCEL Training
- For MAC Users -
Level 1

Introduction

In this introductory course to Excel, participants will explore Excel activities that go beyond the basic. After successful completion of this session, participants can expect to have the skills required to work efficiently in an existing worksheet and to also create new worksheets from a template and from scratch.

Topics Include

- Create a basic worksheet by entering text, values, and formulas.
- Change the appearance of worksheet data by using a variety of formatting techniques.
- Create formulas by using some of Excel's built-in functions.
- Filter and sort Excel data.
- Plan, create and modify charts.
- Prepare a document for printing by using a variety of printing options.

Prerequisite

Comfortable with Windows 7, or OSX

Platform

Windows, OSX

Software

Microsoft Excel 2013, Microsoft Excel 2010 (Windows)

Microsoft Excel 2011 (MAC)

Instructor

Anna Neagu – Application Support Consultant

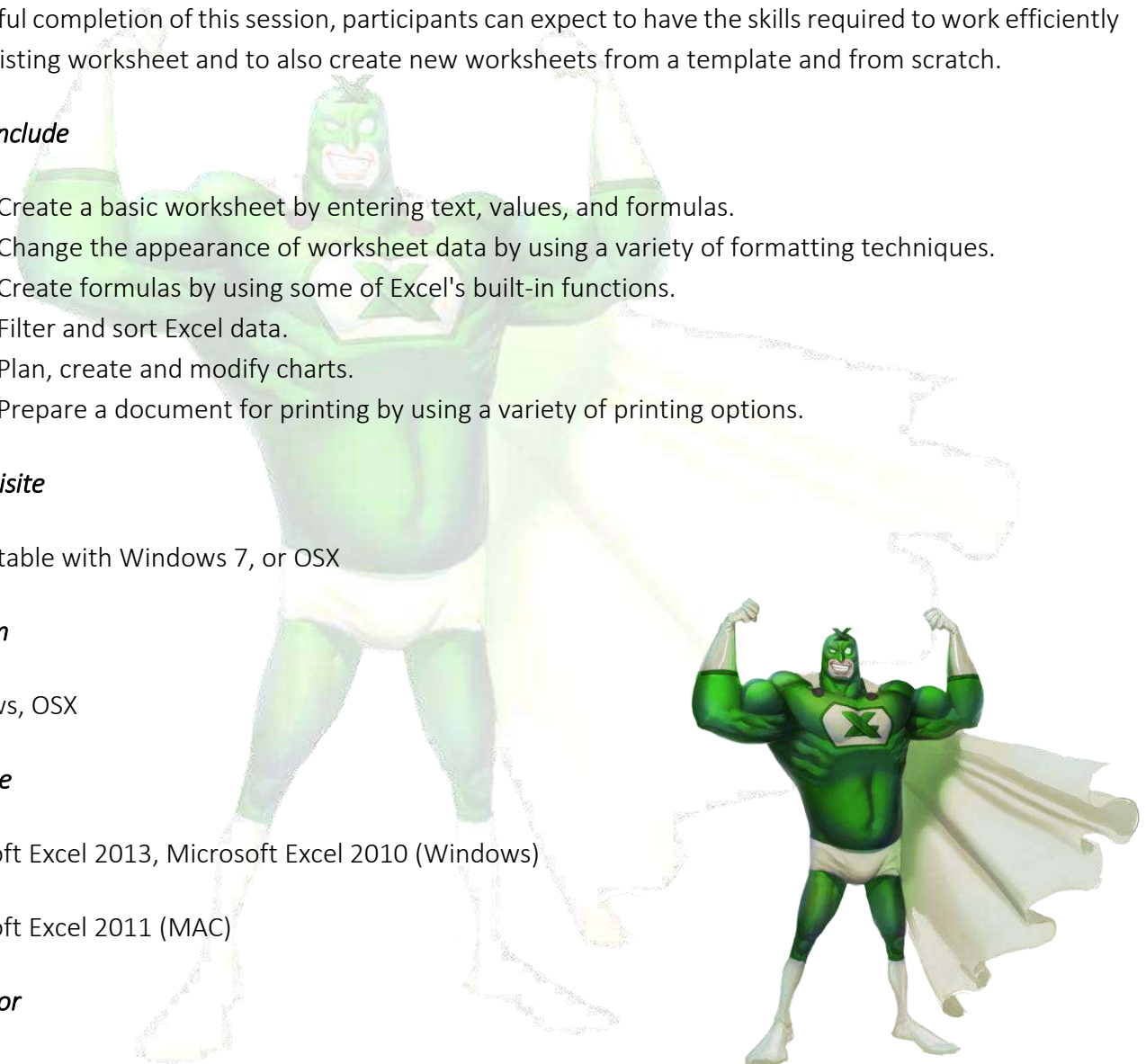


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1. Opening Excel

Using Windows 7

1. Click on the **Start** Button.
2. In the Search Program and Files box type **Excel**.
3. Click on **Excel 2013** from the Program results.
4. The Microsoft Excel 2013 program will open.

Using Windows 8

1. Press the **Windows** key on the keyboard.
2. Type **Excel**.
3. Click on **Excel 2013** under the Apps results.

Using iOS 7

1. Click on **Launchpad**.
2. Select Microsoft Excel.

2. Getting Started

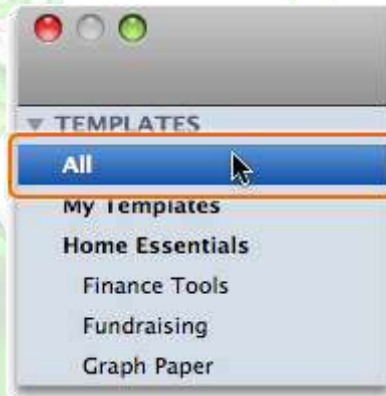
In Excel, you create and save data in a workbook. You can start with a blank workbook, an existing saved workbook, or a template. When you open Excel, the Excel Workbook Gallery opens. It provides a variety of template choices and quick access to recent workbooks.


Let's use the Excel Workbook Gallery to open a blank workbook.

1. If you have not already opened Excel, on the **Dock**, click **Excel**.

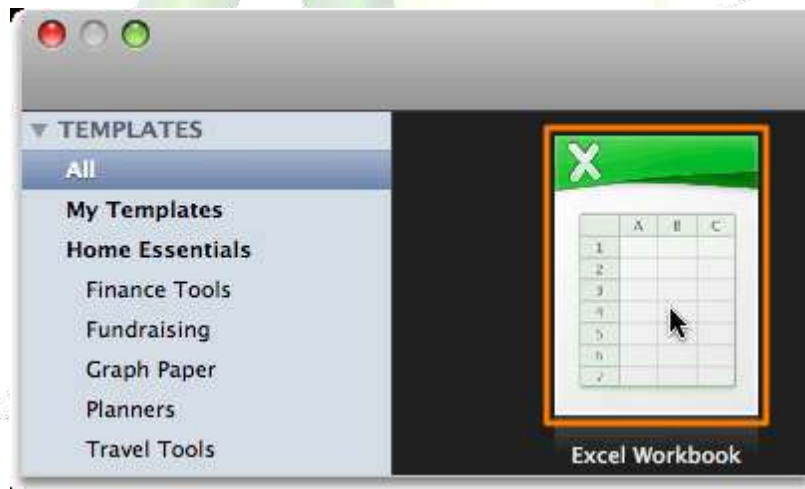



2. In the Excel Workbook Gallery, under Templates, click All.

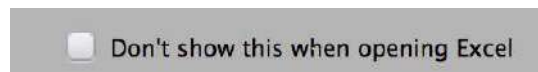


 TIP: If you don't see the Workbook Gallery, quit and then reopen Excel.

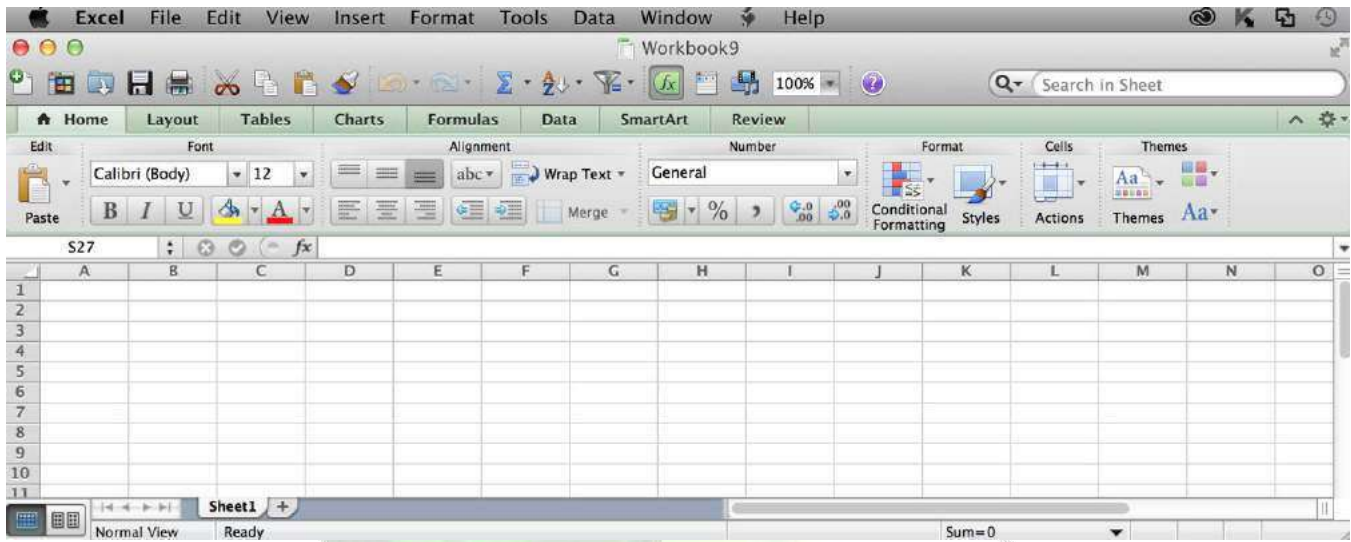
3. Double click on the Excel Workbook.



 TIP: To always start with a blank document when you open Excel, select the *Don't show this when opening Excel* check box.



4. Notice that a blank workbook appears.



- ✎ **TIP:** To create a new blank workbook at any time in Excel, on the **File** menu, click **New Workbook** (also written as File > New Workbook in this tutorial).
- ✎ **TIP:** To show the Excel Workbook Gallery at any time while using Excel, click **File > New from Template**.

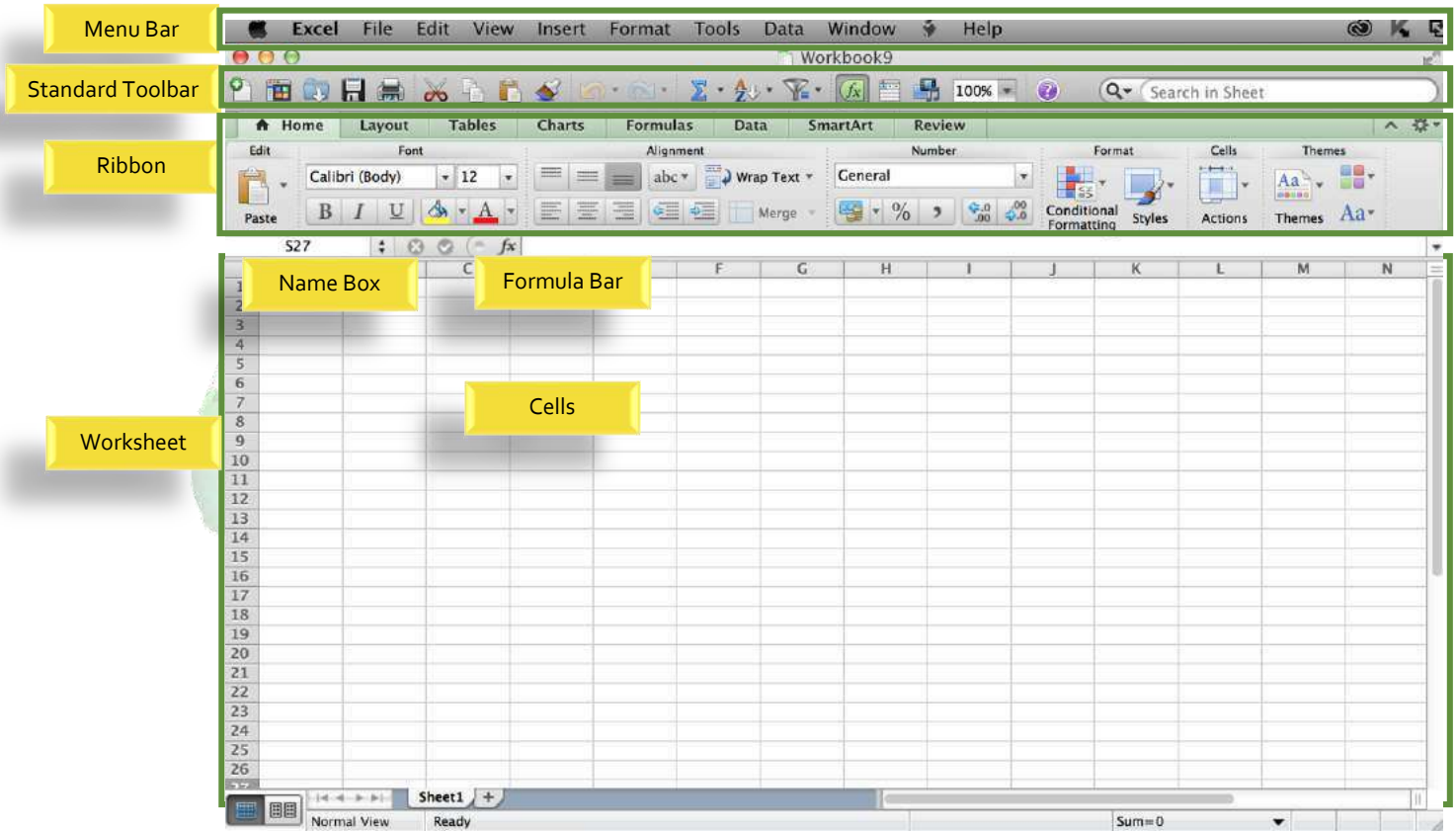
2.1. The Excel Interface

After starting Excel, you will see two windows - one within the other. The outer window is the **Application Window** and the inner window is the **Workbook Window**. When maximized, the Excel Workbook Window blends in with the Application Window.

After completing this module, you should be able to:

- Identify the components of the Application Window.
- Identify the components of the Workbook Window.

Let's take a look at some of the Excel user interface elements.



2.1.1. The Application Window

The Application Window provides the space for your worksheets and workbook elements such as charts. The components of the Application Window are described below.

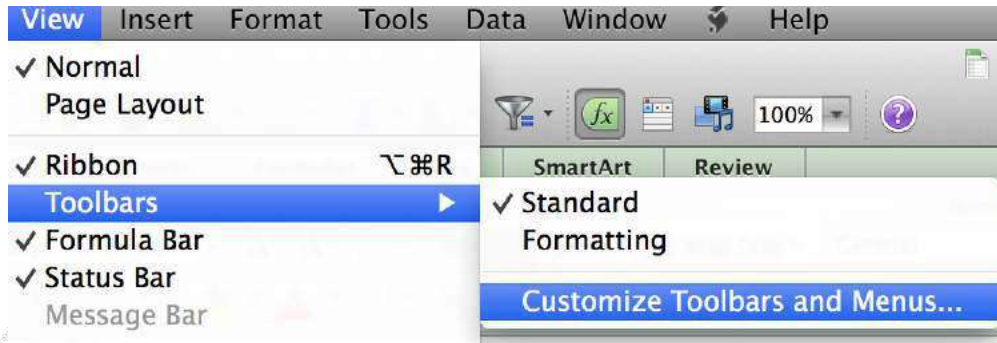
□ The Standard Toolbar

The **Standard Toolbar** lets you access common **commands** no matter which tab is selected.

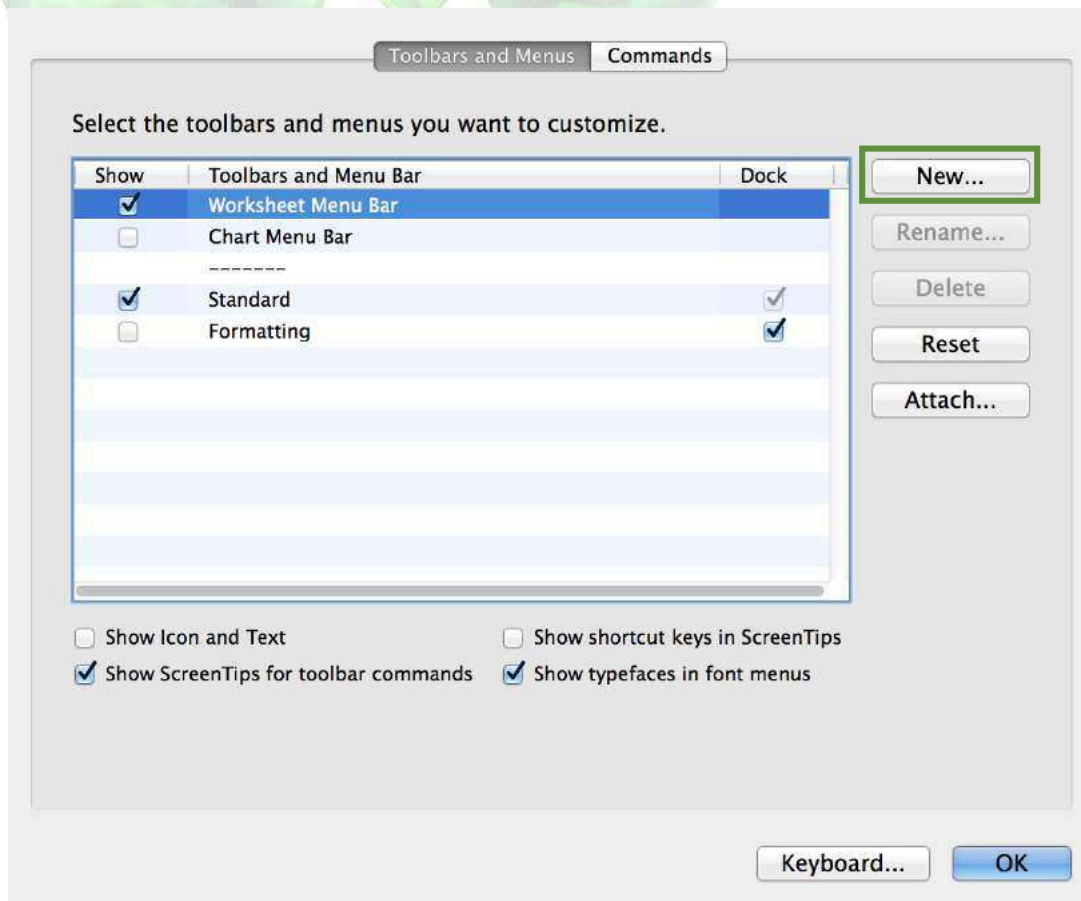
By default, it includes the **Save**, **Undo**, and **Repeat** commands. You can add other commands depending on your preference.

To customize the Standard Toolbar

1. From the Menu bar, choose **View** menu and select **Toolbars**.
2. Click **Customize Toolbars and Menus**.



3. The Customize Toolbars and Menus dialog appears.



3. On the Toolbars and Menus tab, click the **New** button.
4. The Add a Toolbar dialog opens.
5. **Type a name** for your new toolbar and click **OK**. A very small box with an empty space on it appears onscreen. This small box is your new toolbar.

- Click the **Commands tab** of the Customize Menus and Toolbars dialog, choose any of the categories from the list on the left, **drag commands** to the new toolbar, and click **OK** to close the Customize Toolbars and Menus dialog.



- Your new toolbar appears in the toolbars list.

❑ The Ribbon

Excel 2011 uses a **tabbed Ribbon system** instead of traditional menus. The **Ribbon** contains **multiple tabs**, each with several **groups of commands**. You will use these tabs to perform the most **common tasks** in Excel.

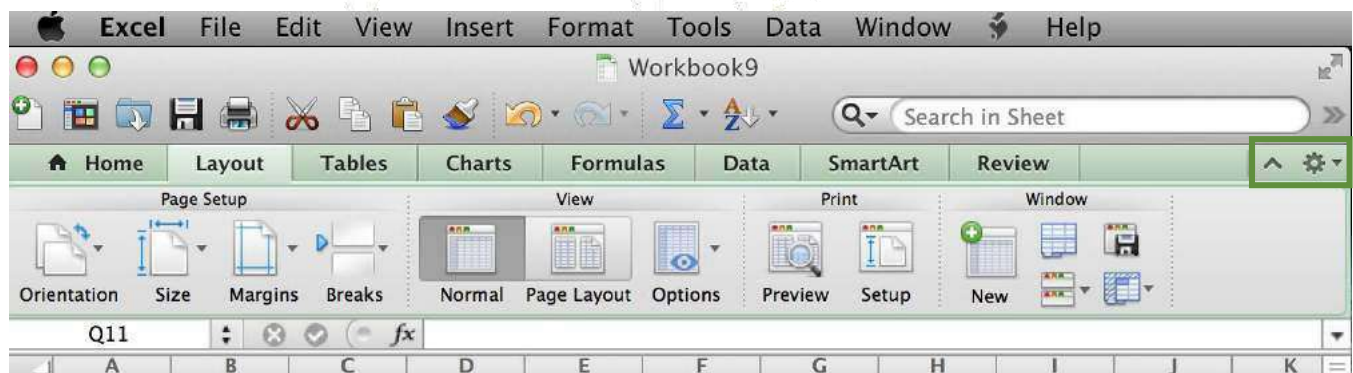
To minimize and maximize the Ribbon


The Ribbon is designed to respond to your current task, but you can choose to **minimize** it if you find that it takes up too much screen space.

- To hide the ribbon while you work, on the right side of the ribbon, click arrow in the upper right corner of the Ribbon.
- To **show the Ribbon**, click again the **arrow** at the top of screen.

To Customize the Ribbon in Excel 2011

You can customize the Ribbon by clicking the wheel at the right edge of the Ribbon.



-  **TIP:** Another way to access the same dialog is through **Excel Menu**, select **Preferences**, then click the **Ribbon** button.

The Ribbon dialog has the following options:

- Turn on the Ribbon:** When selecting, the Ribbon is on and this is the default setting. To turn the Ribbon off, deselect this setting.
- Expand Ribbon When Document Opens:** When selected, the entire Ribbon is visible when opening a file. When deselected, only the Ribbon tabs are displayed when a document opens. If you choose this option and then want to see the entire expanded Ribbon, just click any of the Ribbon tabs visible.
- Hide Group Titles:** This turns off the display of group names in the Ribbon tabs, which may give you a little more screen estate.
- Appearance:** Choose between either the application theme or graphite. The application theme is different for each Office 2011 application. In Word 2011, it's called Word Blue.
- Show or Hide Tabs, or Drag them into the Order You Prefer:** Select or deselect tabs and groups. Drag items in this box to re-order the Ribbon.
- Description:** As you move your mouse over command buttons and controls, a description dynamically appears in the panel.

In addition to using the Ribbon preferences, you can choose the **Customize Ribbon Tab Order** option from the pop-up menu.

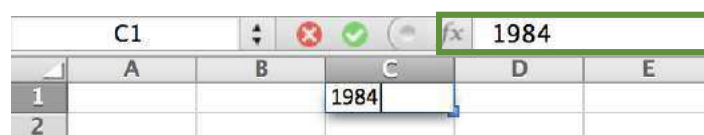


This option temporarily changes the appearance of the tabs and allows you to drag Ribbon tabs to change their order. Click the **Done** button when you're done rearranging the tabs. If you made changes that you don't like, click the Reset button to set the tab order to default.

The Formula Bar

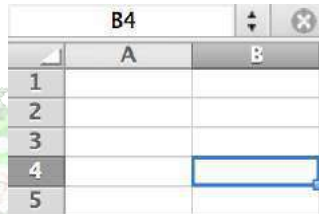
In the **formula bar**, you can enter or edit **data**, a **formula**, or a **function** that will appear in a specific cell.

In the image below, cell C1 is selected and 1984 is entered into the formula bar. Note how the data appears in both the formula bar and in cell C1.

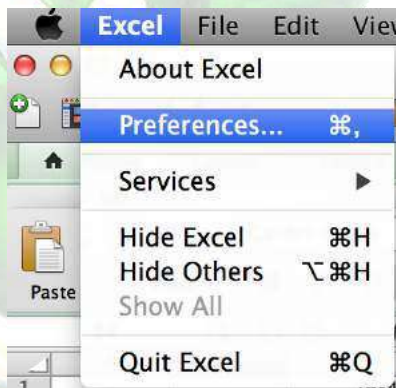


❑ The Name Box

The **Name box** displays the location, or "name" of a **selected cell**. In the image below, cell B4 is selected. Note that cell B4 is where column B and row 4 intersect.



❑ The Excel Menu / Preferences (Settings)



Choose Excel then click Preferences from the menu bar to display the **Preferences** dialog.



Here are some selected settings:

General:

- **Sheets in New Workbook:** The spinner sets the number of blank worksheets a new workbook will have by default.
- **Standard Font:** Choose a default font. Unless you have a compelling reason to change this, leave this as “body font,” which is roughly the same as the default font.
- **Preferred File Location:** Set the default location for Excel files.
- **Show This Number of Recent Documents:** Set the number of recently used workbooks shown in Excel's File menu by typing in a figure here. Recently used items in the File menu don't disappear after a month. This list is based on the quantity you set.

View:

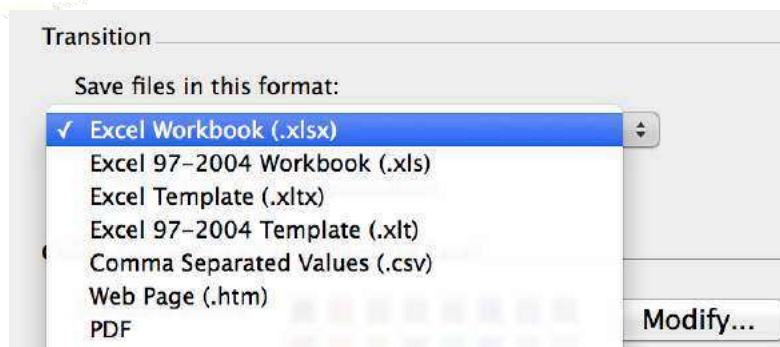
- **Comments:** Adjust how comments are displayed.
- **Show Formulas:** Display formulas instead of calculation values.
- **Show Zero Values:** Displays a 0 instead of an empty cell when selected.
- **Show Sheet Tabs:** Deselect to hide all the sheet tabs with the horizontal scroll bar. Selecting redisplay the scroll bar.

Edit:

- **Automatically convert date systems:** When selected, Excel automatically corrects for differences between the 1900 (Windows) and 1904 date systems (Mac) during copy and paste. The destination workbook's format is adopted.

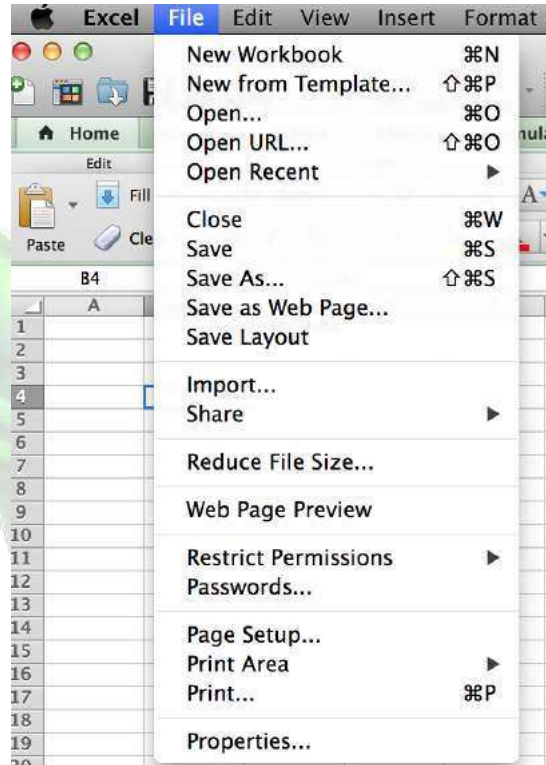
AutoCorrect: You can have Excel fix your common typing errors automatically.

Compatibility: Sets the default format for saved files and other compatibility options. Changing the default file format to Excel 97-2004 Workbook (.xls) might be prudent should you share files frequently with people using older versions of Excel.



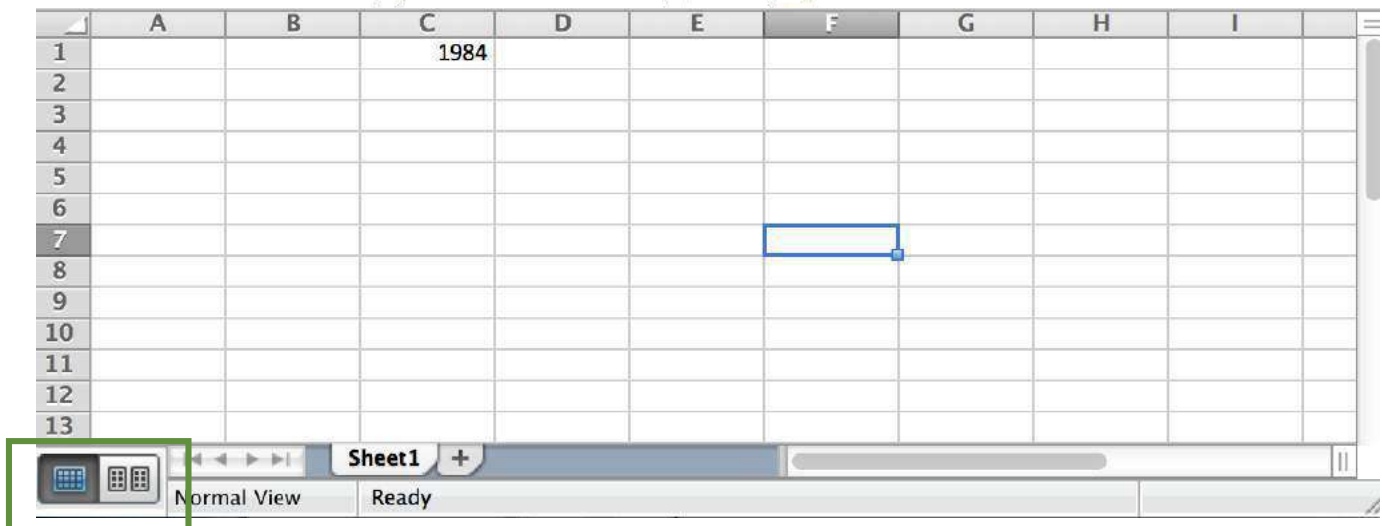
❑ The File Menu

Click the **File** tab on the **Menu Bar**.



❑ The Worksheet Views

Excel 2011 has a variety of viewing options that change how your workbook is displayed. You can choose to view any workbook in **Normal view** or **Page Layout view**. To **change worksheet views**, locate and select the desired **worksheet view command** in the bottom-left corner of the Excel window.



❑ Zoom Control

To use the **Zoom control**, you can use the Zoom box on the **Standard Toolbar** or hold CTRL key and use the mouse scroll/wheel.

Challenge!

1. Open Excel 2011.
2. Click through all of the **tabs**, and review the **commands** on the **Ribbon**.
3. Try **minimizing** and **maximizing** the **Ribbon**.
4. Identify the **Standard Toolbar**.
5. Navigate to the **Preferences Menu**, and find the **General settings**.
6. Try switching **worksheet views**.
7. **Close** Excel (you do not have to save the workbook).

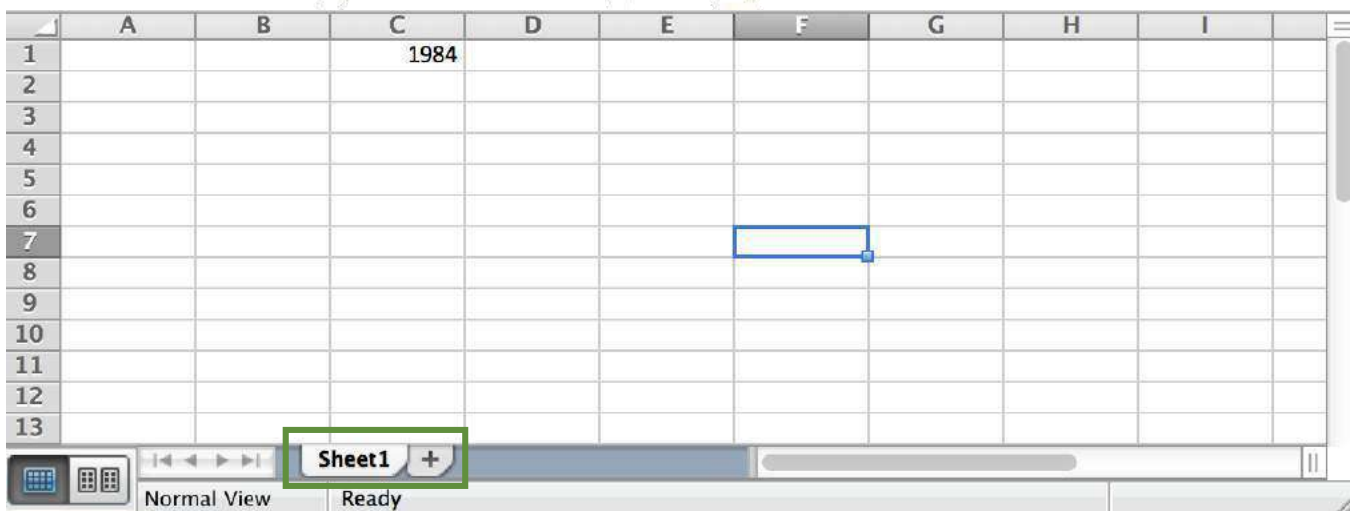
2.1.2. The Workbook Window

In Excel 2011, when you open up a new workbook it now contains only 1 worksheet There can be a max of 1,048,576 rows and 16,384 columns in an excel work sheet.

❑ The Worksheet

Excel files are called **workbooks**. Each workbook holds one or more **worksheets** (also known as "spreadsheets").

Whenever you create a new Excel workbook, it will contain **one worksheet** named **Sheet1**. A worksheet is a grid of columns and rows where columns are designated by letters running across the top of the worksheet and rows are designated by numbers running down the left side of the worksheet.

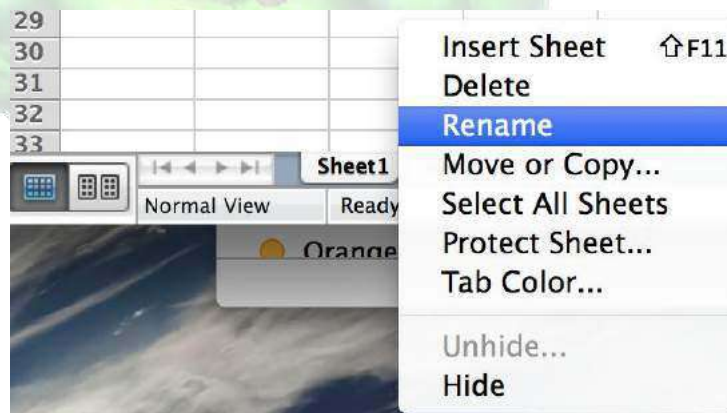


When working with a large amount of data, you can create **multiple worksheets** to help organize your workbook and make it easier to find content. You can also **group** worksheets to quickly add information to multiple worksheets at the same time.

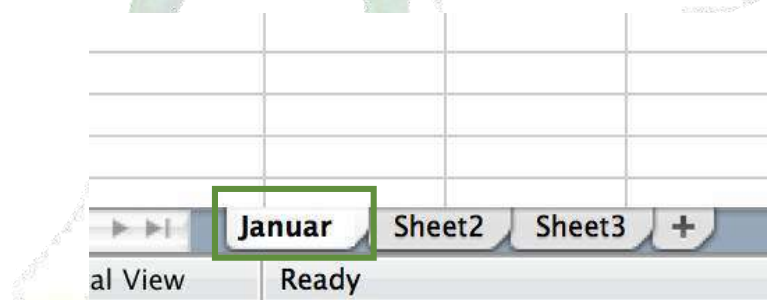
To rename a worksheet

Whenever you create a new Excel workbook, it will contain **one worksheet** named **Sheet1**. You can rename a worksheet to better reflect its content. In our example, we will create a training log organized **by month**.

1. Hold CTRL key and right-click the **worksheet** you wish to rename, then select **Rename** from the **worksheet** menu.



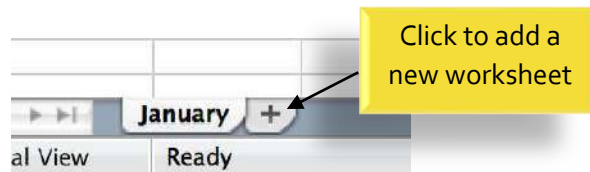
2. Type the **desired name** for the worksheet.



3. Click anywhere outside of the worksheet, or press **Enter** on your keyboard. The worksheet will be **renamed**.

To insert a new worksheet

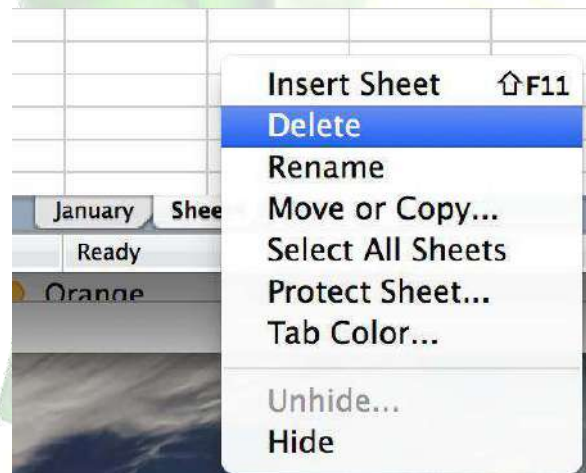
1. Locate and select the **New sheet** button.



2. A new, blank worksheet will appear.

To delete a worksheet

1. Hold CTRL key and right-click the **worksheet** you wish to delete, then select **Delete** from the **worksheet** menu.



2. The worksheet will be **deleted** from your workbook.

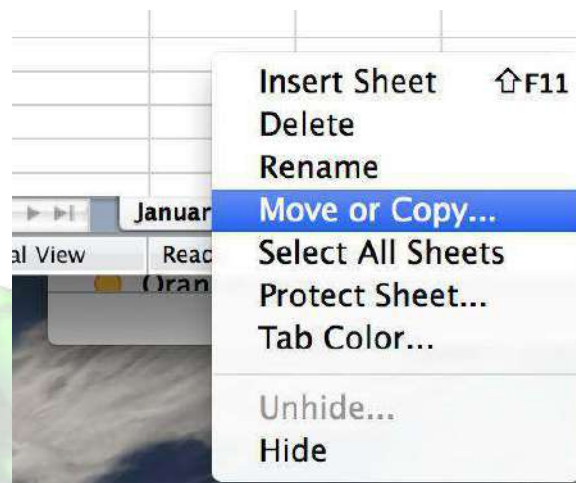
Alternatively, from the **Edit Menu** in the **Cells Group** select **Delete Sheet**.

Warning: The Undo button will not undo the deletion of a worksheet.

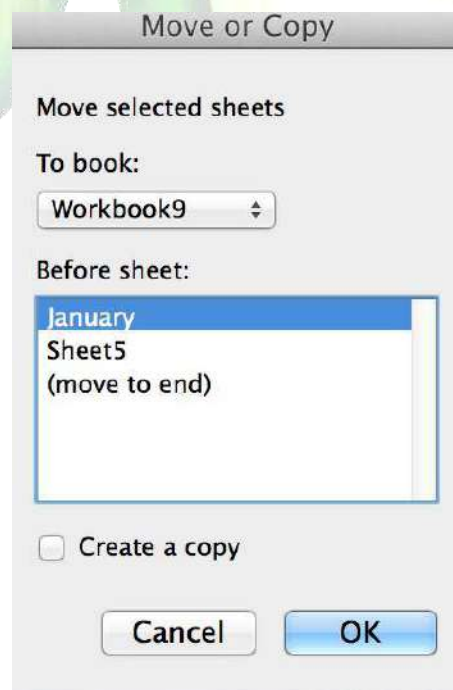
To copy a worksheet

If you need to duplicate the content of one worksheet to another, Excel allows you to copy an existing worksheet.

1. Hold CTRL key and right-click the worksheet you want to copy, then select **Move or Copy** from the **worksheet** menu.



2. The **Move or Copy** dialog box will appear. Choose where the sheet will appear in the **Before sheet:** field. In our example, we'll choose **(move to end)** to place the worksheet to the right of the existing worksheet.
3. **Check the box** next to **Create a copy**, then click **OK**.




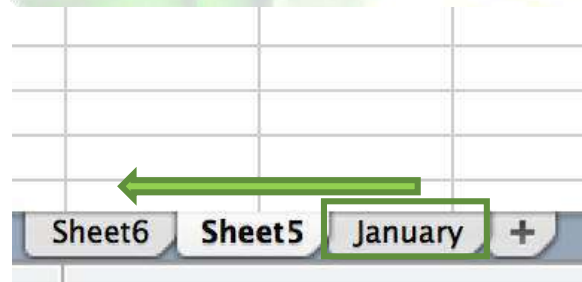
4. The worksheet will be **copied**. It will have the same title as the original worksheet, as well as a **version number**.

TIP: You can also copy a worksheet to an entirely different **workbook**. You can select any workbook that is currently open from the drop-down menu.

To move a worksheet

Sometimes you may want to **move** a worksheet to rearrange your workbook.

1. Select the **worksheet** you wish to move. The cursor will become a **small worksheet** icon .
2. Hold and drag the mouse until a **small black arrow** ▼ appears above the desired location.

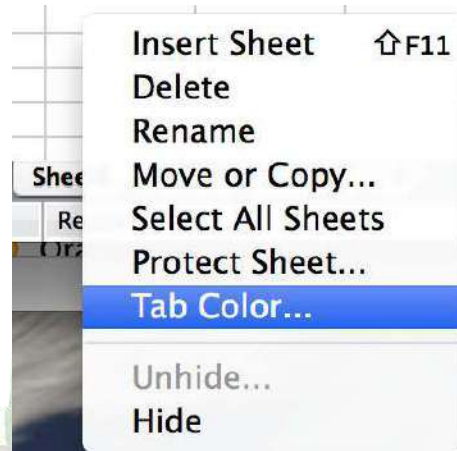


3. Release the mouse. The worksheet will be **moved**.

To change the worksheet color

You can change a worksheet's **color** to help organize your worksheets and make your workbook easier to navigate.

1. Hold CTRL key and right-click the desired worksheet, and hover the mouse over **Tab Color**. The **Color** menu will appear.
2. Select the desired **color**. A **live preview** of the new worksheet color will appear as you hover the mouse over different options. In our example, we'll choose **Red**.



3. The worksheet color will be **changed**.

The worksheet color is considerably **less noticeable** when the worksheet is selected. Select another worksheet to see how the color will appear when the worksheet is not selected.



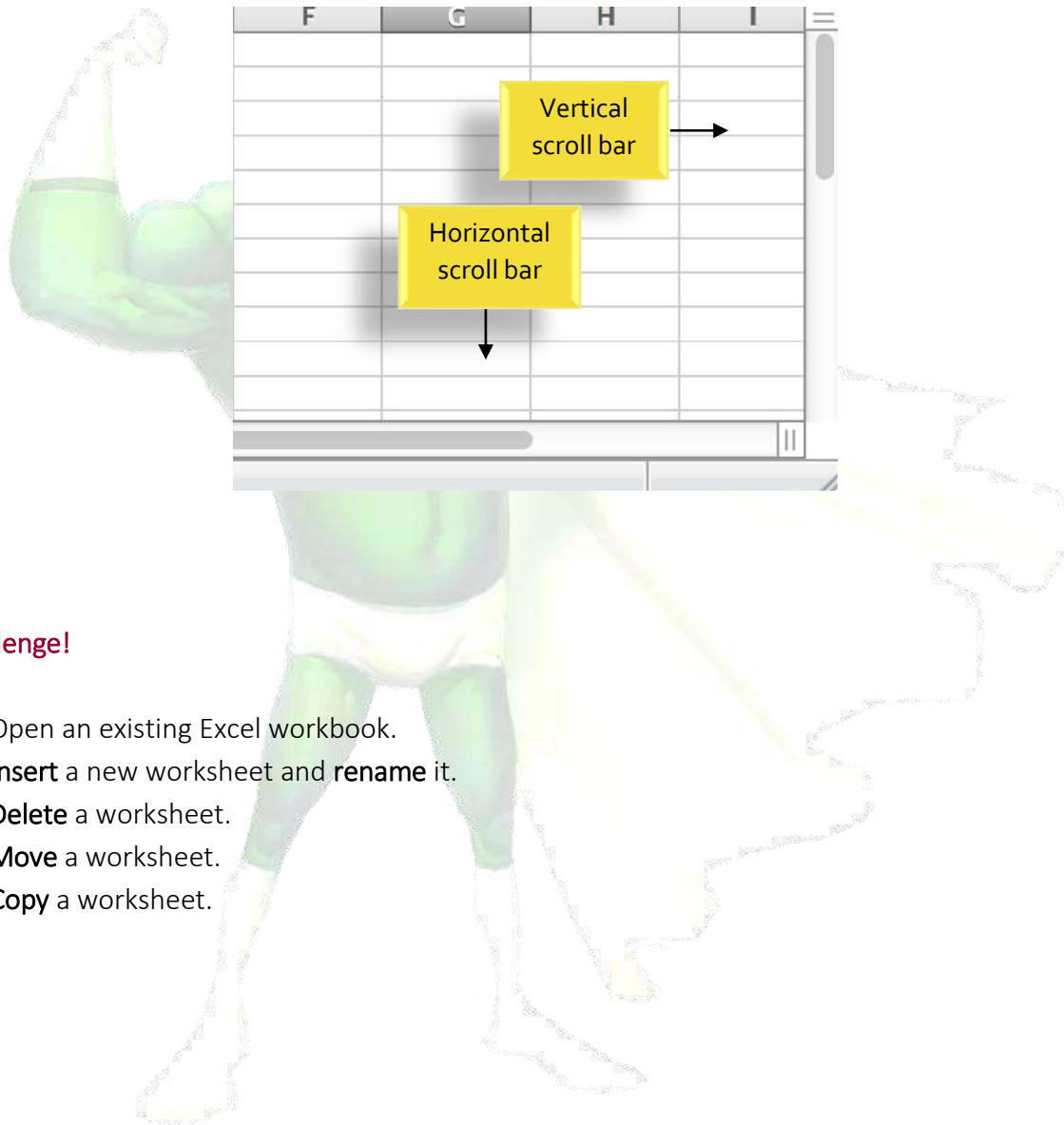
❑ The Scrolling Buttons

These buttons scroll the display of sheet tabs one at a time or to display the first and last grouping of sheet tabs and are located to the left of the sheet tabs.



❑ The Scroll Bars

Your spreadsheet may frequently have more data than you can see on the screen at once. Click, hold and drag the vertical or horizontal scroll bar depending on what part of the page you want to see.



Challenge!

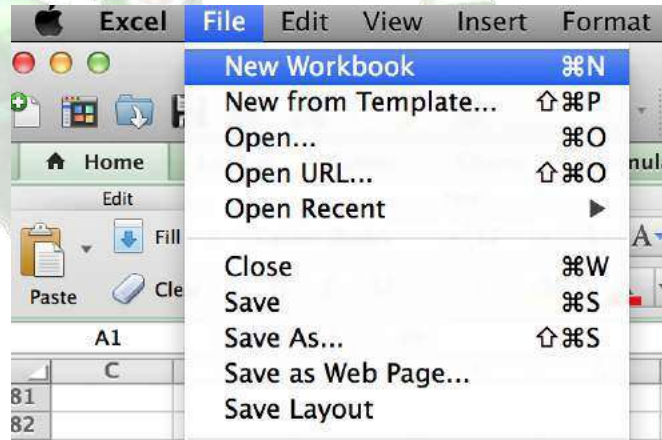
1. Open an existing Excel workbook.
2. **Insert** a new worksheet and **rename** it.
3. **Delete** a worksheet.
4. **Move** a worksheet.
5. **Copy** a worksheet.

2.2. Creating and Opening Workbooks

Excel files are called **workbooks**. Whenever you start a new project in Excel, you'll need to **create a new workbook**. There are several ways to start working with a workbook in Excel 2011. You can choose to **create a new workbook**—either with a **blank workbook** or a predesigned **template**—or **open an existing workbook**.

2.2.1. Create a new blank workbook

1. Select the **File** tab.

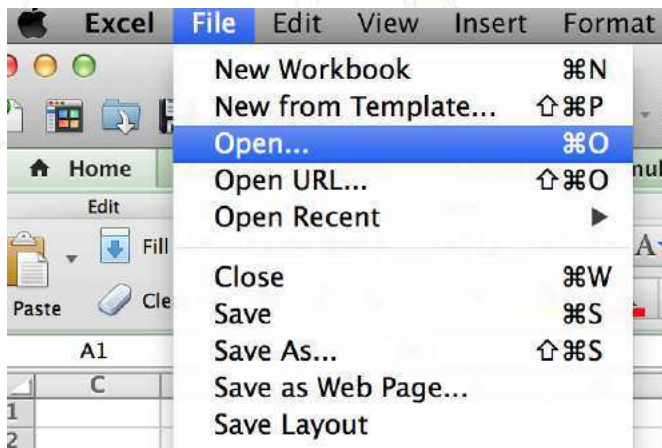


2. Select **New Workbook**.
3. A new blank workbook will appear.

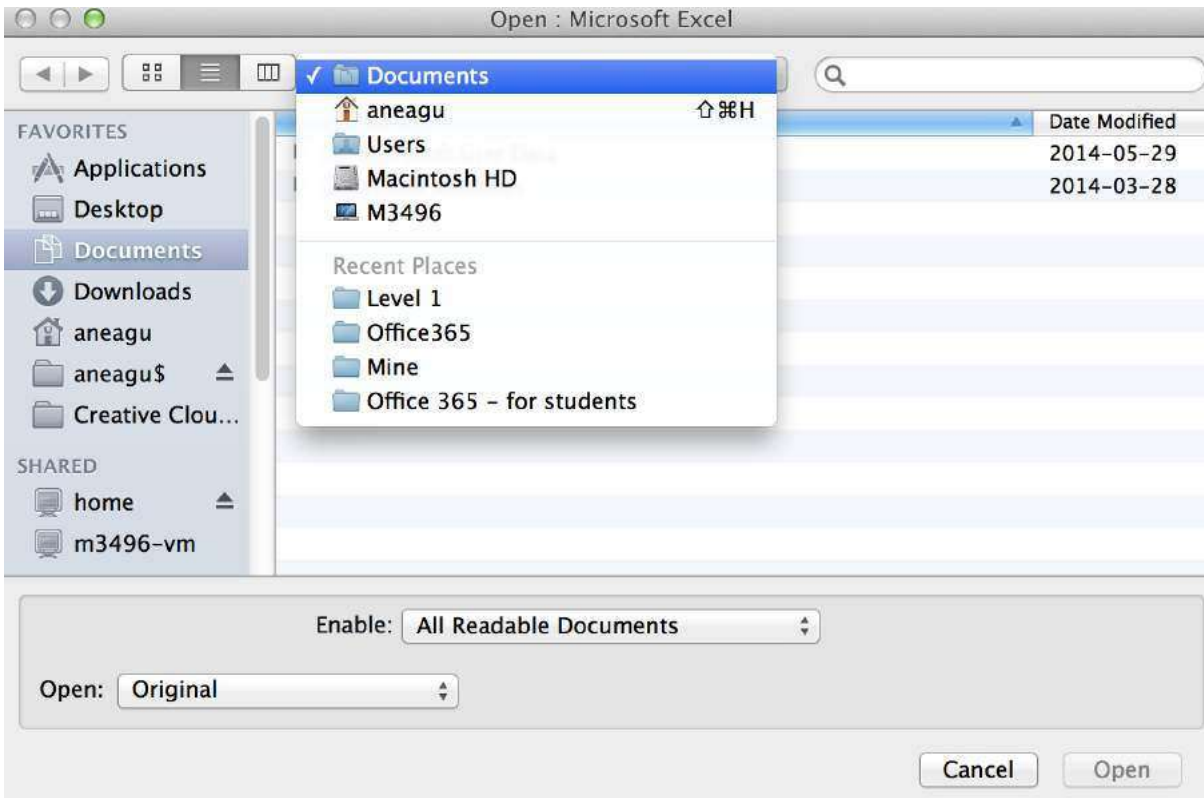
2.2.2. Open an existing workbook


In addition to creating new workbooks, you'll often need to open a workbook that was previously saved.

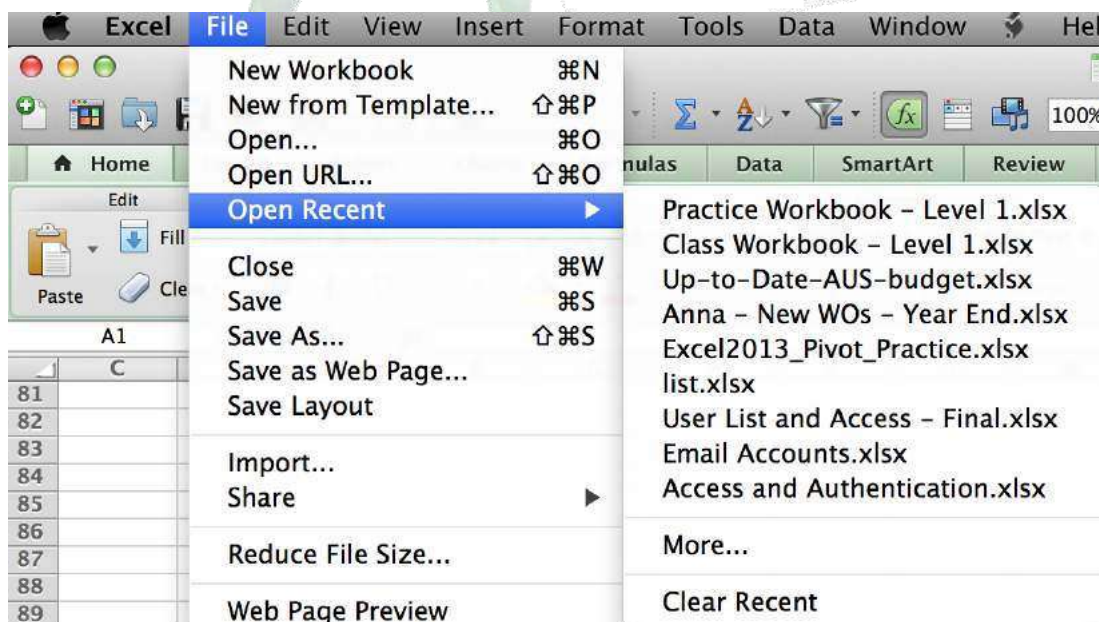
1. Select **File** tab, then click **Open...**



2. **Browse** to the file location and **open** the file.

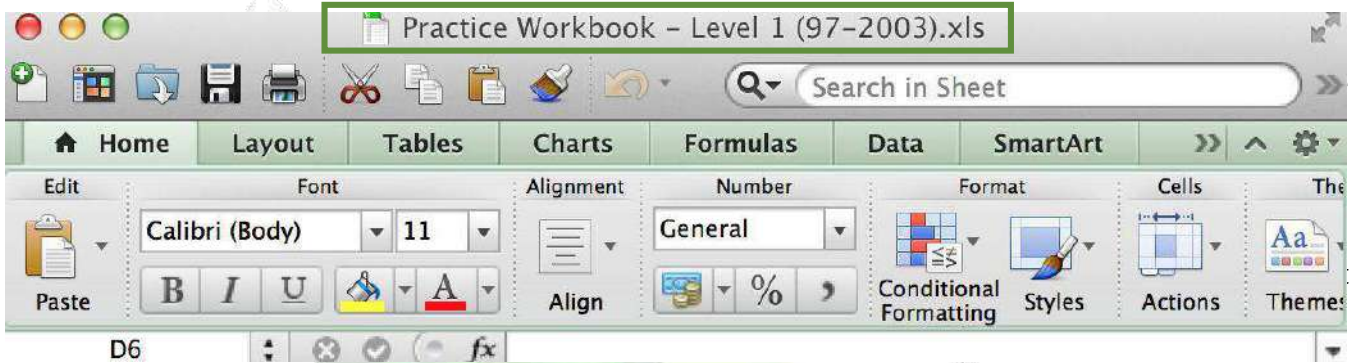


 **TIP:** If you've opened the desired workbook recently, you can browse your **Recent Workbooks** rather than searching for the file.



2.2.3. Compatibility mode

Sometimes you may need to work with workbooks that were created in earlier versions of Microsoft Excel, such as Excel 2003 or Excel 2000. When you open these kinds of workbooks, they will appear in **Compatibility mode**.

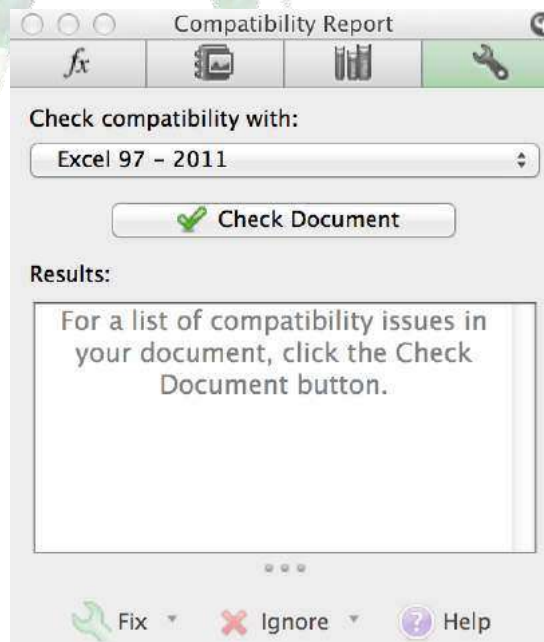


To check for compatibility issues

Office for Mac checks a document's compatibility with other versions of Office for Mac and Windows versions of Office and creates a Compatibility Report.

Note that the Compatibility Report checks for compatibility issues with Office 98 for Mac through Microsoft Office for Mac 2011 and with Windows versions from Office 97 through the Microsoft Office 2010.

1. On the **View** menu, click **Compatibility Report**.
2. The **Compatibility Report** pane opens.



Challenge!

1. Create a **new blank workbook**.
2. Open an **existing workbook** from your computer.
3. Check the file for **compatibility** issues.

2.3. Saving and Sharing Workbooks

Whenever you create a new workbook in Excel, you'll need to know how to save it in order to access and edit it later. As with previous versions of Excel, you can save files **locally** to your computer.

2.3.1. Save and Save As

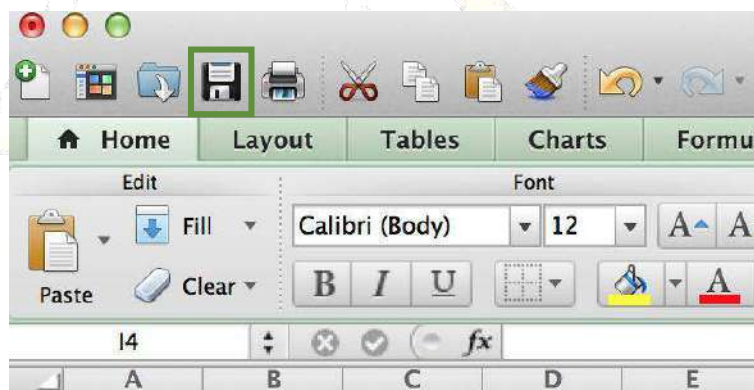
Excel offers two ways to save a file: **Save** and **Save As**. These options work in similar ways, with a few important differences:

- ☑ **Save:** When you create or edit a workbook, you'll use the **Save** command to save your changes. You'll use this command most of the time. When you save a file, you'll only need to choose a file name and location the first time. After that, you can just click the Save command to save it with the same name and location.
- ☑ **Save As:** You'll use this command to create a **copy** of a workbook while keeping the original. When you use Save As, you'll need to choose a different name and/or location for the copied version.

To save a workbook

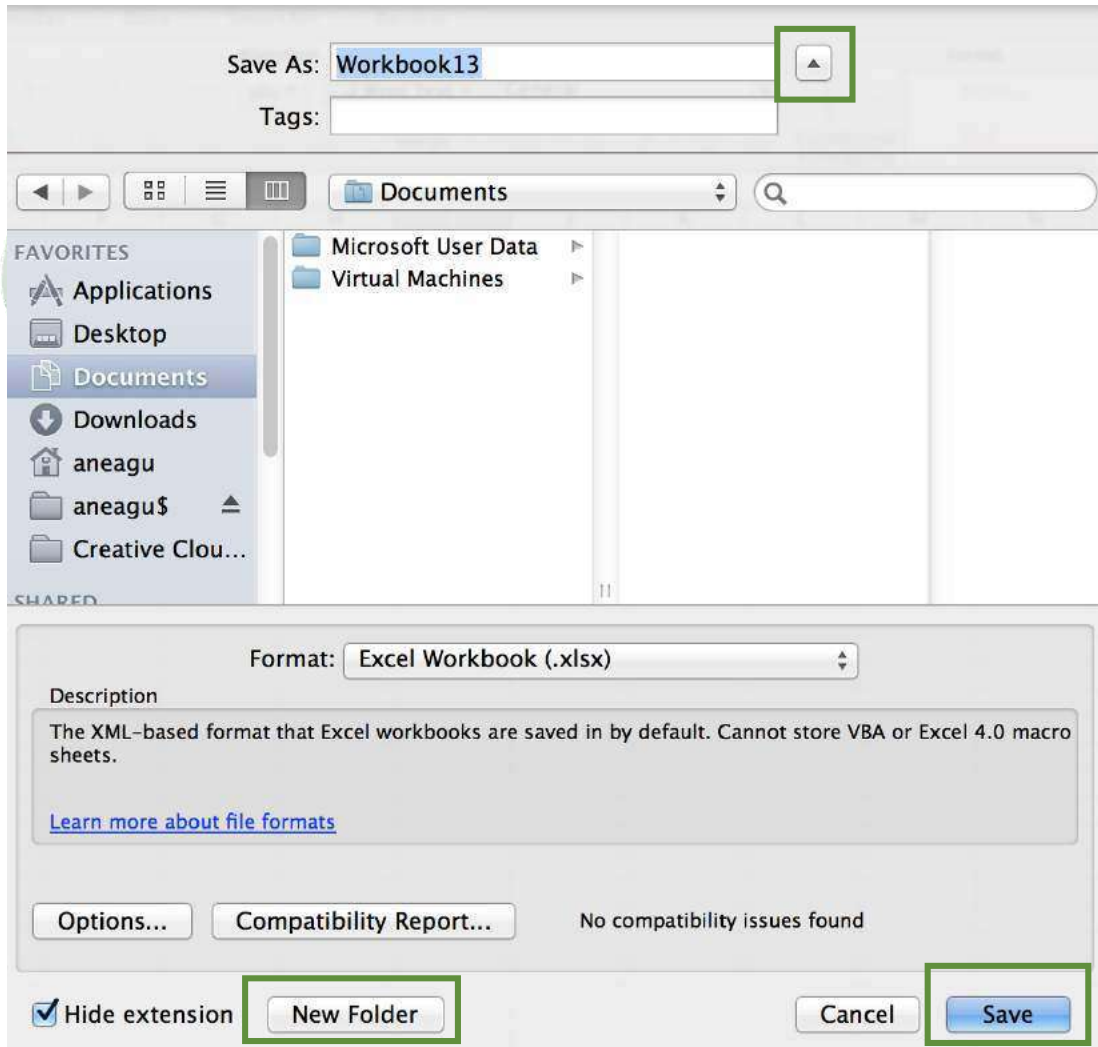
It's important to **save your workbook** whenever you start a new project or make changes to an existing one. Saving early and often can prevent your work from being lost. You'll also need to pay close attention to **where you save** the workbook so it will be easy to find later.

1. Locate and select the **Save** command on the **Standard Toolbar**.



2. If you're saving the file for the first time, the **Save As** dialog box will appear.

3. Enter a **file name** for the workbook.
4. On the Where pop-up menu, click **Documents**, then click **the arrow** next to the Save As box so that the arrow faces upward. All folders in your Documents folder appear.



5. Select the location and/or create a new folder.
6. Click **Save**.
7. The workbook will be **saved**. You can click the **Save** command again to save your changes as you modify the workbook.

2.3.2. AutoRecover

Excel automatically saves your workbooks to a temporary folder while you are working on them. If you forget to save your changes, or if Excel crashes, you can restore the file using **AutoRecover**.

To use AutoRecover

1. Open Excel 2011. If **auto-saved versions** of a file are found, the **Document Recovery** pane will appear.



2. Click to **open** an available file. The workbook will be **recovered**.

 **TIP:** By default, Excel autosaves **every 10 minutes**. If you are editing a workbook for less than 10 minutes, Excel may not create an autosaved version.

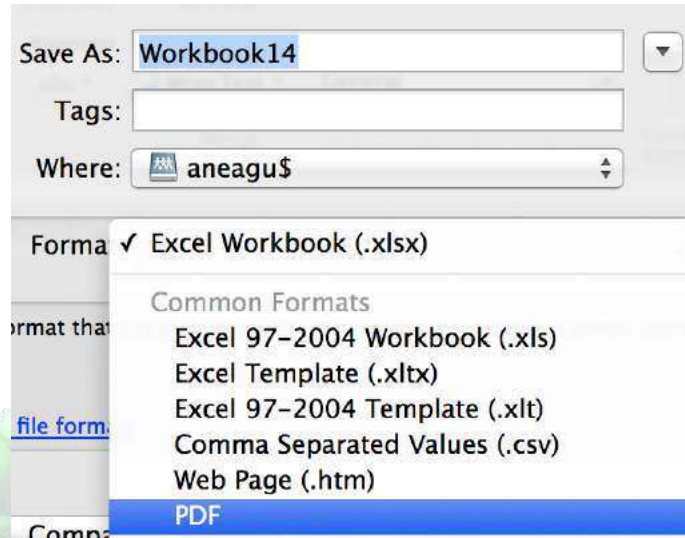
2.3.3. Exporting workbooks

By default, Excel workbooks are saved in the **.xlsx** file type. However, there may be times when you need to use **another file type**, such as a **PDF** or **Excel 97-2004 workbook**. It's easy to **export** your workbook from Excel in a variety of file types.


To save a workbook as a PDF file

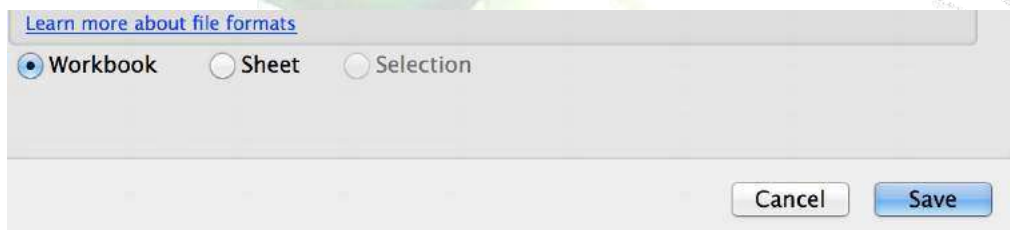
Exporting your workbook as an **Adobe Acrobat document**, commonly known as a **PDF file**, can be especially useful if sharing a workbook with someone who does not have Excel. A PDF will make it possible for recipients to view, but not edit, the content of your workbook.

1. Click the **File** tab.
2. Click **Save as**, then select **PDF** from the **Format** pop-up menu.



3. Click **Save**.

 **TIP:** By default, Excel will only export the **active worksheet**. If you have multiple worksheets and want to save all of them in the same PDF file, select **Workbook**, then click **Save**.



To export a workbook in other file types

Some items that were created by using new features in Office for Mac 2011 might behave differently when the document is saved in the file format that is used by Office 2004 for Mac or earlier. Use the Compatibility Report to avoid using new Office features that might behave differently with earlier versions of Office.

1. Create a file, or open the file that you want to save.
2. On the **File** menu, click **Save As**.
3. In the **Save As** box, type a name for the file.
4. On the **Format** pop-up menu, make sure **Word Document (.docx)** is selected.
5. Click **Save**.

Challenge!

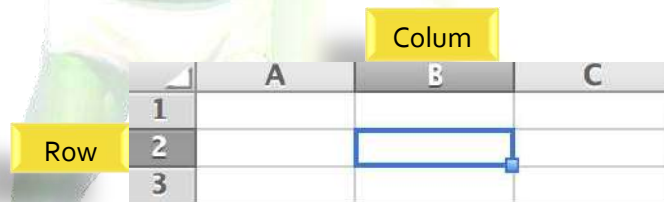
1. Create a **new blank workbook**.
2. Use the **Save** command to save the workbook to your desktop.
3. Save the workbook to **OneDrive** and **invite someone else** to view it.
4. **Export** the workbook as a **PDF** file.

3. Cell Basics

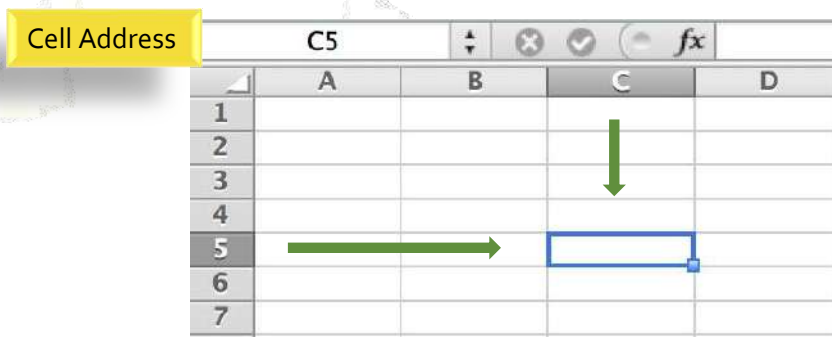
Whenever you work with Excel, you'll enter information, or **content**, into **cells**. Cells are the basic building blocks of a worksheet. You'll need to learn the basics of **cells** and **cell content** to calculate, analyze, and organize data in Excel.

3.1. Understanding Cells

Every worksheet is made up of thousands of rectangles, which are called **cells**. A cell is the **intersection** of a **row** and a **column**. Columns are identified by **letters (A, B, C)**, while rows are identified by **numbers (1, 2, 3)**.



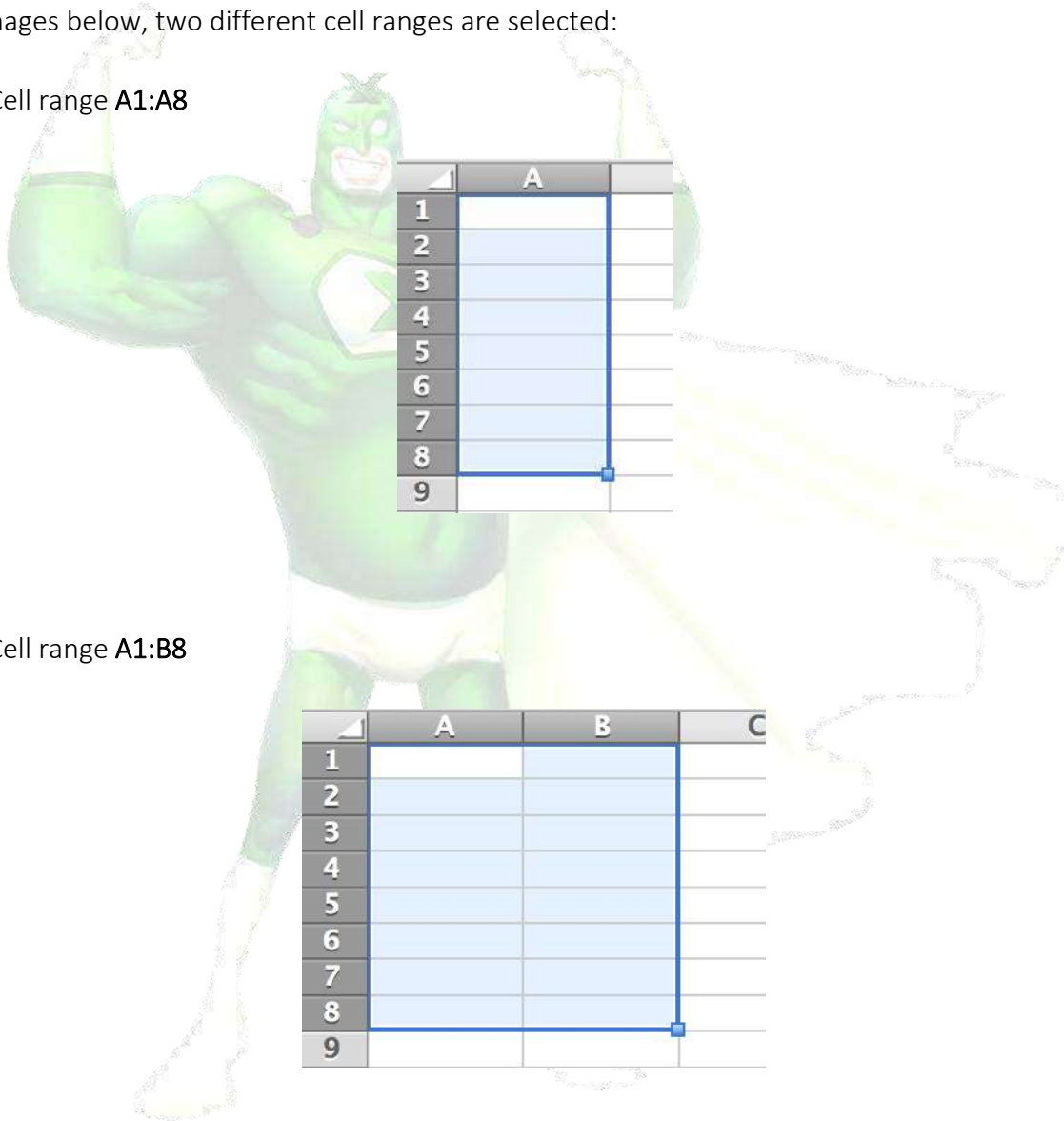
Each cell has its own **name**, or **cell address**, based on its column and row. In this example, the selected cell intersects **column C** and **row 5**, so the cell address is **C5**. The cell address will also appear in the **Name box**. Note that a cell's **column** and **row headings** are **highlighted** when the cell is selected.



You can also select **multiple cells** at the same time. A group of cells is known as a **cell range**. Rather than a single cell address, you will refer to a cell range using the cell addresses of the **first** and **last** cells in the cell range, separated by a **colon**. For example, a cell range that included cells A1, A2, A3, A4, and A5 would be written as **A1:A5**.

In the images below, two different cell ranges are selected:

- Cell range **A1:A8**



- Cell range **A1:B8**

	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			
9			

To select a cell range

Sometimes you may want to select a larger group of cells, or a **cell range**.

1. Click, hold, and drag the mouse until all of the **adjoining cells** you wish to select are **highlighted**.

2. Release the mouse to **select** the desired cell range. The cells will remain **selected** until you click another cell in the worksheet.

3.2. Cell Content

Any information you enter into a spreadsheet will be stored in a cell. Each cell can contain several different kinds of **content**, including **text**, **formatting**, **formulas**, and **functions**.

Text

Cells can contain **text**, such as letters, numbers, and dates.

	A	B	C	D	E
1					
2	Invoice no	Date	Due Date	Name	Amount
3	145872	2015-02-01	2015-02-20	User1	\$650.00
4	125488	2015-02-05	2015-03-02	User2	\$350.00
5	158864	2015-03-01	2015-03-30	User3	\$254.00
6	258799	2015-02-10	2015-03-10	User4	
7	478541	2015-02-15	2015-03-15	User5	\$365.00
8	154478	2015-02-01	2015-02-28	User6	\$125.00
9	258879	2015-02-10	2015-02-10	User7	\$654.00
10	458712			User8	542

Formatting Attributes

Cells can contain **formatting attributes** that change the way letters, numbers, and dates are **displayed**. For example, percentages can appear as 0.15 or 15%. You can even change a cell's **background color**.

Formulas and Functions

Cells can contain **formulas** and **functions** that calculate cell values.

To insert content

1. To enter data, you simply type in the cell where you want the data to appear.
2. To commit data to a cell, you can press **RETURN**, **TAB**, or any of the arrow keys. The key you press determines which cell becomes the active cell.

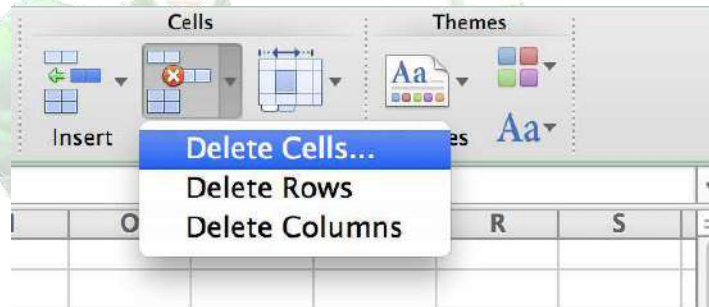
To delete cell content

1. Select the **cell** with content you wish to delete.
2. Press the **Delete** key on your keyboard. The cell's contents will be deleted.

To delete cells

There is an important difference between **deleting the content of a cell** and **deleting the cell itself**. If you delete the entire cell, the cells below it will **shift up** and replace the deleted cells.


1. Select the **cell(s)** you wish to delete.
2. Select the **Delete** command from the **Home** tab on the **Ribbon**.
3. The cells below will **shift up**.




To copy and paste cell content

Excel allows you to **copy** content that is already entered into your spreadsheet and **paste** that content to other cells, which can save you time and effort.

1. Select the **cell(s)** you wish to **copy**.
2. Click **Edit** menu.
3. Select **Copy**.
4. Select the **cell(s)** where you wish to **paste** the content.
5. Click **Edit** and **Paste** the content.

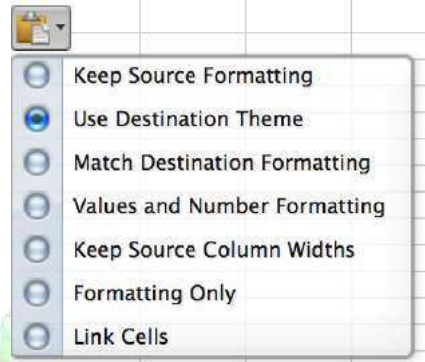
 **TIP:** To copy data by using the keyboard, hold down the command key, and then press C. This is a keyboard shortcut, and you will see it written in Help as **⌘+C**.

 **TIP:** The keyboard shortcut for the Paste command is **⌘+V**.

To access more paste options

You can also access **additional paste options**, which are especially convenient when working with cells that contain **formulas** or **formatting**.

- To access more paste options, click the **drop-down arrow** on the **Paste** command.



- ✎ TIP: If you see ##### in a cell instead of data, the column is too narrow for the data, and you need to increase the width of the column.
- ✎ TIP: To hide the moving marquee around a copied selection, press ESC (located in the upper-left corner of your keyboard).
- ✎ TIP: To use the Format Painter to format multiple, non-adjacent cells, on the Standard toolbar, double click Format Painter, and then select (or "paint") the cells that you want to format. When you are finished formatting, press ESC.
- ✎ TIP: To undo a mistake entering data, click Edit > Undo (or press ⌘+Z).

To drag and drop cells

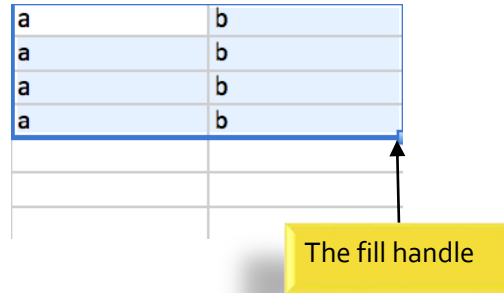
Rather than cutting, copying, and pasting, you can **drag and drop** cells to move their contents.

1. Select the **cell(s)** you wish to **move**.
2. Hover the mouse over the **border** of the selected cell(s) until the cursor changes from a **white cross** to a **little hand**.
3. Click, hold, and drag the cells to the **desired location**.
4. Release the mouse, and the cells will be **dropped** in the selected location.

To use the fill handle

There may be times when you need to copy the content of one cell to several other cells in your worksheet. You could **copy and paste** the content into each cell, but this method would be very time consuming. Instead, you can use the **fill handle** to quickly copy and paste content to **adjacent cells** in the same row or column.

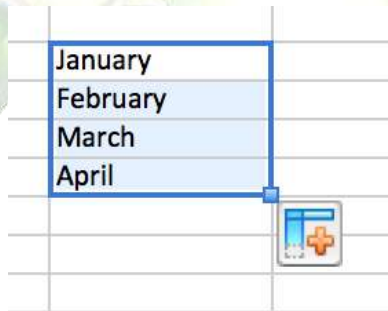
1. Select the **cell(s)** containing the content you wish to use. The **fill handle** will appear as a small square in the bottom-right corner of the selected cell(s).



2. Click, hold, and drag the **fill handle** until all of the cells you wish to fill are **selected**.
3. Release the mouse to **fill** the selected cells.

To continue a series with the fill handle

The fill handle can also be used to **continue a series**. Whenever the content of a row or column follows a sequential order, like **numbers (1, 2, 3)** or **days (Monday, Tuesday, Wednesday)**, the fill handle can guess what should come next in the series. In many cases, you may need to select **multiple cells** before using the fill handle to help Excel determine the series order. In our example below, the fill handle is used to extend a series of **dates** in a column.



3.3. Find and Replace

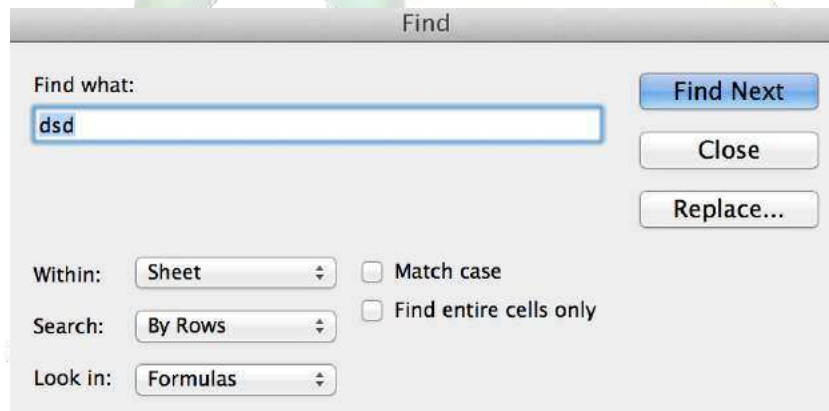
When working with a lot of data in Excel, it can be difficult and time consuming to locate specific information. You can easily search your workbook using the **Find** feature, which also allows you to modify content using the **Replace** feature.


To find content

1. From the **Edit** menu, select **Find...**



2. The **Find and Replace** dialog box will appear. Enter the **content** you wish to find.
3. Click **Find Next**. If the content is found, the cell containing that content will be **selected**.



4. Click **Find Next** to find further instances.
 5. When you are finished, click **Close** to exit the Find and Replace dialog box.
-  **TIP:** You can also access the Find command by pressing **⌘+F** on your keyboard.

To replace cell content

At times, you may discover that you've repeatedly made a mistake throughout your workbook (such as misspelling someone's name), or that you need to exchange a particular word or phrase for another. You can use Excel's **Find and Replace** feature to make quick revisions.

1. From the **Edit** menu, select **Find...**
2. The **Find and Replace** dialog box will appear. Type the text you wish to find in the **Find what:** field.
3. Click **Replace**.
4. Type the text you wish to replace it with in the **Replace with:** field, then click **Find Next**.
5. If the content is found, the cell containing that content will be **selected**.
6. **Replace All** will replace every instance of the text throughout the workbook.
7. Click **OK** to continue.
8. When you are finished, click **Close** to exit the Find and Replace dialog box.

Challenge!

1. Open an existing Excel 2011 workbook.
2. Select cell D3. Notice how the **cell address** appears in the **Name box** and its **content** appears in both the cell and the **Formula bar**.
3. Select a cell, and try inserting **text** and **numbers**.
4. **Delete** a cell, and note how the cells below **shift up** to fill in its place.
5. **Cut** cells and **paste** them into a different location.
6. Try **dragging** and **dropping** some cells to other parts of the worksheet.
7. Use the **fill handle** to fill in data to adjoining cells both vertically and horizontally.
8. Use the **Find** feature to locate content in your workbook.

4. Formatting Cells

All cell content uses the same **formatting** by default, which can make it difficult to read a workbook with a lot of information. Basic formatting can customize the **look and feel** of your workbook, allowing you to draw attention to specific sections and making your content easier to view and understand. You can also apply **number formatting** to tell Excel exactly what type of data you're using in the workbook, such as percentages (%), currency (\$), and so on.


4.1. Font Formatting

To change the font

By default, the font of each new workbook is set to Calibri. However, Excel provides a variety of other fonts you can use to customize your cell text. In the example below, we'll format our **title cell** to help distinguish it from the rest of the worksheet.

1. Select the **cell(s)** you wish to modify.
2. Click the **drop-down arrow** next to the **Font** command on the **Home** tab. The **Font** drop-down menu will appear.
3. Select the desired **font**.



4. The text will change to the **selected font**.
-  **TIP:** When creating a workbook in the workplace, you'll want to select a font that is easy to read. Along with Calibri, standard reading fonts include Cambria, Times New Roman, and Arial.

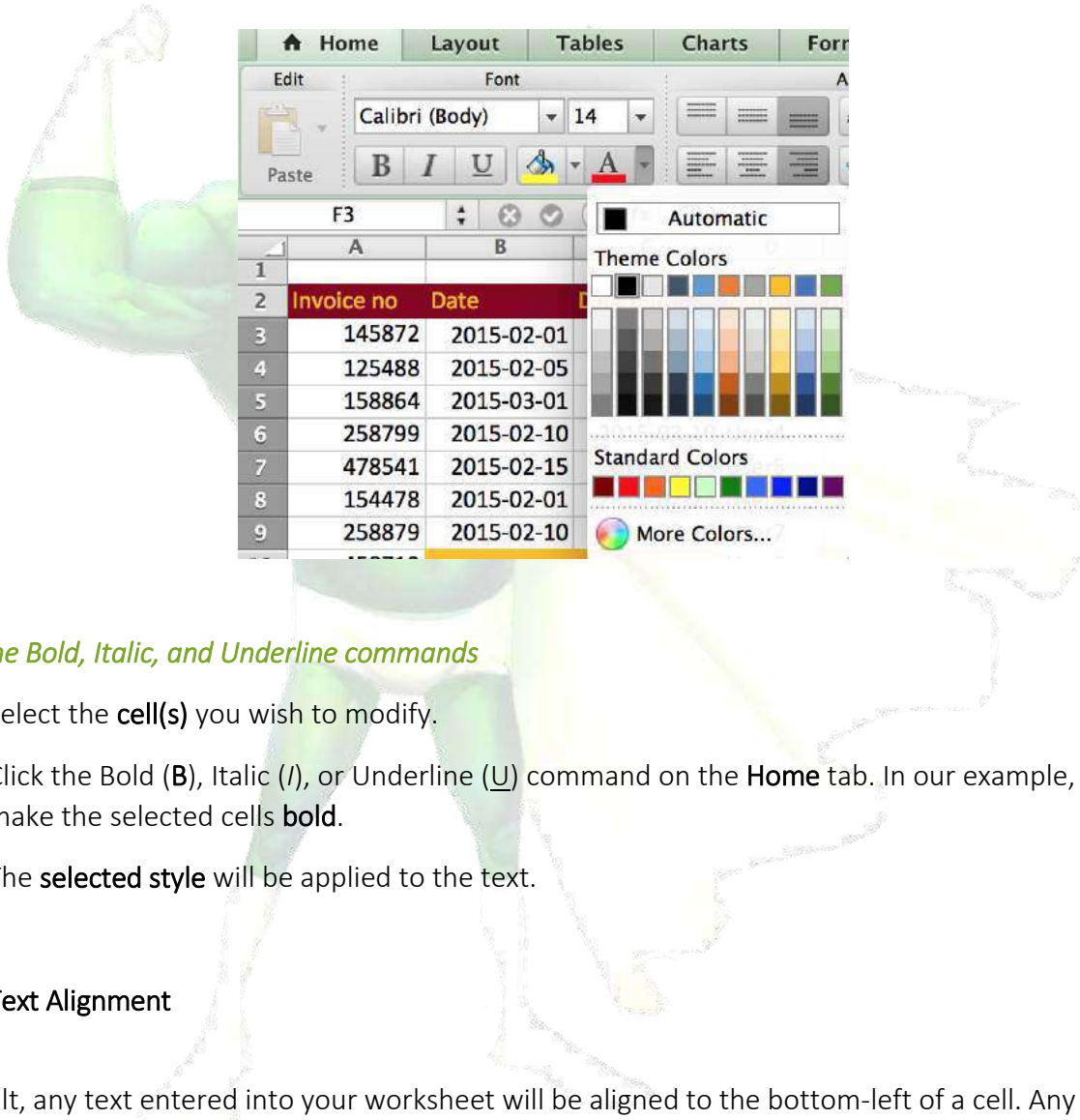
To change the font size

1. Select the **cell(s)** you wish to modify.
2. Click the **drop-down arrow** next to the **Font Size** command on the **Home** tab. The **Font Size** drop-down menu will appear.
3. Select the desired **font size**.
4. The text will change to the **selected font size**.

To change the font color

1. Select the **cell(s)** you wish to modify.

2. Click the **drop-down arrow** next to the **Font Color** command on the **Home** tab. The **Color** menu will appear.
3. Select the desired **font color**.
4. The text will change to the **selected font color**.



To use the Bold, Italic, and Underline commands

1. Select the **cell(s)** you wish to modify.
2. Click the Bold (**B**), Italic (**I**), or Underline (**U**) command on the **Home** tab. In our example, we'll make the selected cells **bold**.
3. The **selected style** will be applied to the text.

4.2. Text Alignment

By default, any text entered into your worksheet will be aligned to the bottom-left of a cell. Any numbers will be aligned to the bottom-right of a cell. Changing the **alignment** of your cell content allows you to choose how the content is displayed in any cell, which can make your cell content easier to read.

To change horizontal text alignment

1. Select the **cell(s)** you wish to modify.
2. Select one of the three **horizontal alignment** commands on the **Home** tab.



3. The text will **realign**.

To change vertical text alignment

1. Select the **cell(s)** you wish to modify.
2. Select one of the three **vertical alignment** commands on the **Home** tab.
3. The text will **realign**.

4.3. Cell borders and fill colors

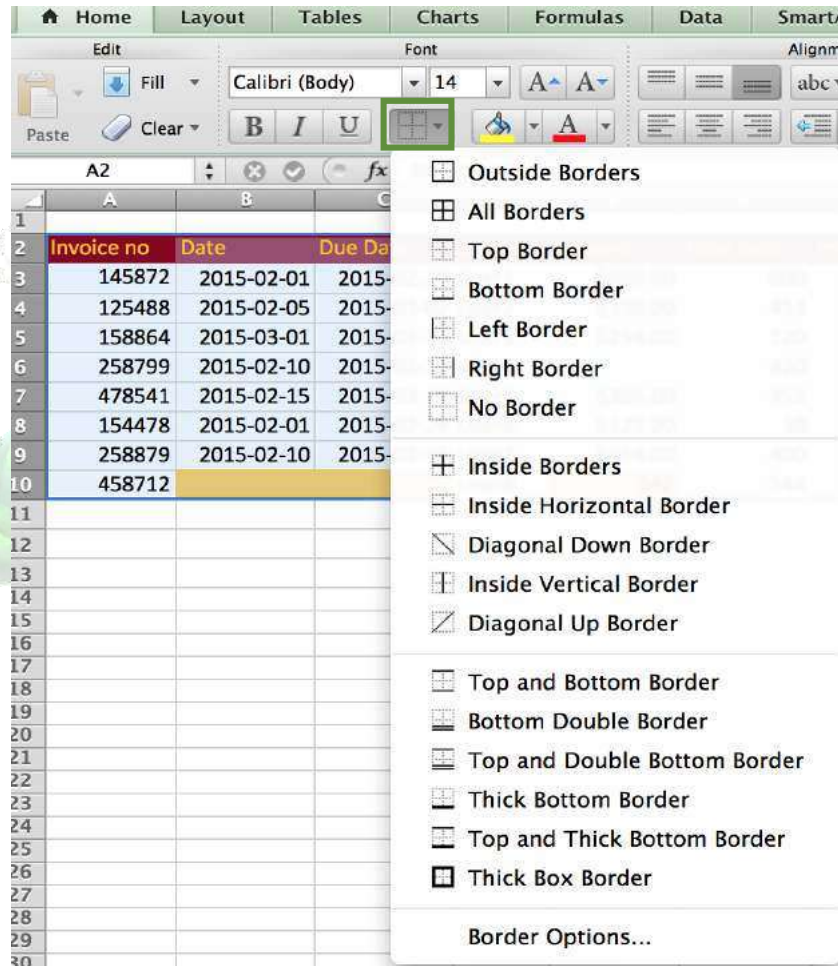
Cell borders and **fill colors** allow you to create clear and defined boundaries for different sections of your worksheet.

To add a fill color

1. Select the **cell(s)** you wish to modify.
2. Click the **drop-down arrow** next to the **Fill Color** command on the **Home** tab. The **Fill Color** menu will appear.
3. Select the **fill color** you want to use. A **live preview** of the new fill color will appear as you hover the mouse over different options.
4. The **selected fill color** will appear in the selected cells.

To add a border

1. Select the **cell(s)** you wish to modify.
2. Click the **drop-down arrow** next to the **Borders** command on the **Home** tab. The **Borders** drop-down menu will appear.



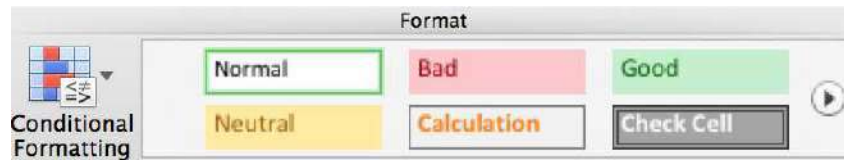
3. Select the **border style** you want to use.
4. The **selected border style** will appear.

4.4. Cell styles


Rather than formatting cells manually, you can use Excel's **predesigned cell styles**. Cell styles are a quick way to include professional formatting for different parts of your workbook, such as **titles** and **headers**.

To apply a cell style

1. Select the **cell(s)** you wish to modify.
2. Click the **Format** group of commands on the **Home** tab, then choose the **desired style** from the list.



3. The **selected cell style** will appear.


 **TIP:** Applying a cell style will **replace** any existing cell formatting except for text alignment. You may not want to use cell styles if you've already added a lot of formatting to your workbook.

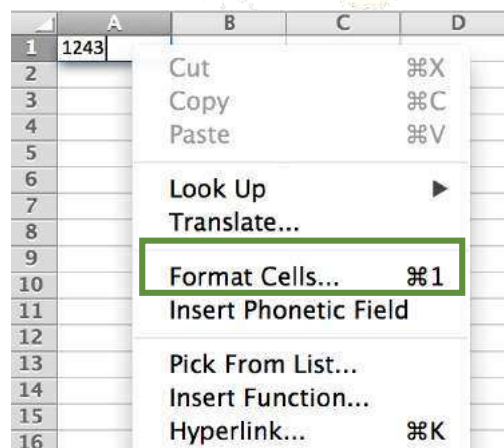
4.5. Formatting text and numbers

One of the most powerful tools in Excel is the ability to apply specific formatting for text and numbers. Instead of displaying all cell content in exactly the same way, you can use formatting to change the appearance of dates, times, decimals, percentages (%), currency (\$), and much more.

To apply number formatting

1. Select the **cells(s)** you wish to modify.
2. Click the drop-down arrow next to the **Number Format** command on the **Home** tab. The Number Formatting drop-down menu will appear.
3. Select the **desired formatting option**.
4. The selected cells will change to the new **formatting style**.

 **TIP:** You can also hold CTRL key, right-click, and then select "Format Cells" from the popup menu.



General is the default format for any cell. When you enter a number into the cell, Excel will guess the number format that is most appropriate.

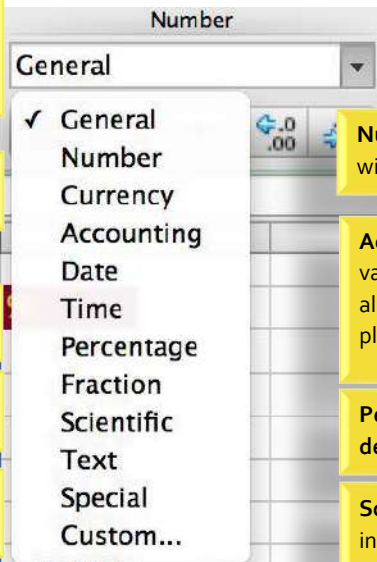
Currency formats numbers as currency with a **currency** symbol.

Date formats numbers as **M/D/YYYY**.

Time formats numbers as **HH/MM/SS** and notes **AM** or **PM**.

Fraction formats numbers as fractions separated by the **forward slash**.

Text formats numbers as text, meaning that what you enter into the cell will appear exactly as it was entered.



Number formats numbers with **decimal places**.

Accounting formats numbers as monetary values like the Currency format, but it also aligns currency symbols and decimal places within columns.

Percentage formats numbers with **decimal places and the percent sign**.

Scientific formats numbers in **scientific notation**.

You can easily customize any format in **More Number Formats**.



Challenge!

1. Open an existing Excel 2011 workbook.
2. Select a **cell** and change the **font style, size, and color** of the text.
3. Apply **bold, italics, or underline** to a cell.
4. Try changing the **vertical and horizontal text alignment** for some cells.
5. Add a **border** to a cell range.
6. Change the **fill color** of a cell range.
7. Try changing the **formatting** of a number.

5. Modifying Columns, Rows and Cells


By default, every row and column of a new workbook is always set to the same **height** and **width**. Excel allows you to modify column width and row height in different ways, including **wrapping text** and **merging cells**.

To modify column width

1. Position the mouse over the **column line** in the **column heading** so the **white cross**  becomes a **double arrow** .



International Calls	%
10	1.67%
0	0.00%
0	0.00%
15	3.57%
0	0.00%
25	50.00%
152	38.00%
26	4.78%


- Click, hold, and drag the mouse to **increase** or **decrease** the column width.
- Release the mouse. The **column width** will be changed.

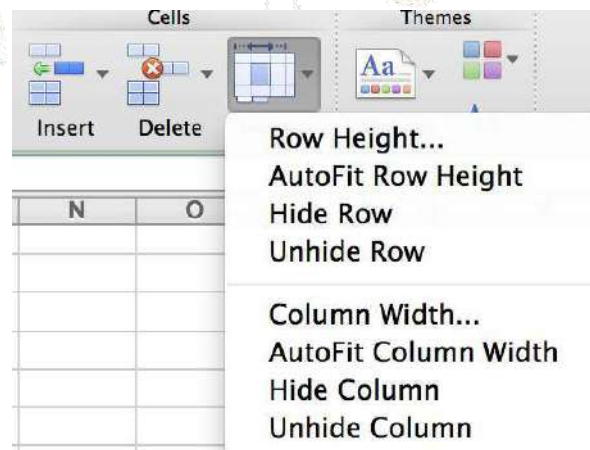
 **TIP:** If you see **pound signs** (#####) in a cell, it means that the column is not wide enough to display the cell content. Simply **increase the column width** to show the cell content.

To AutoFit column width



The **AutoFit** feature will allow you to set a column's width to fit its content **automatically**.

- Position the mouse over the **column line** in the **column heading** so the **white cross**  becomes a **double arrow** .
- Double-click the mouse. The **column width** will be changed automatically to fit the content.

 **TIP:** You can also AutoFit the width for several columns at the same time. Simply select the columns you would like to AutoFit, then select the **AutoFit Column Width** command from the **Format** drop-down menu on the **Home** tab. This method can also be used for **Row height**.




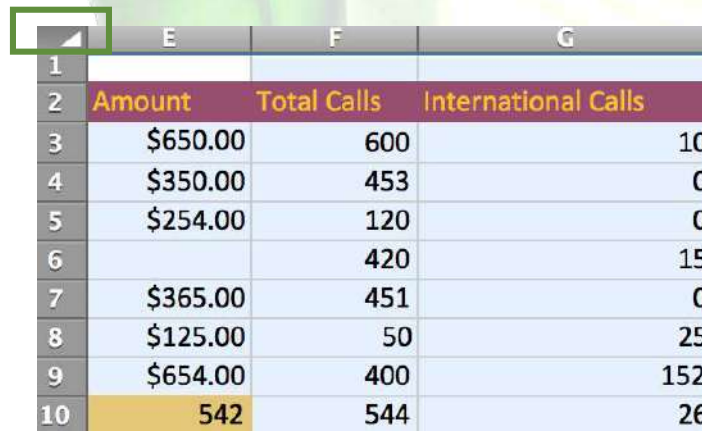
To modify row height

1. Position the **cursor** over the **row line** so the **white cross**  becomes a **double arrow** .
2. Click, hold, and drag the mouse to **increase** or **decrease** the row height.
3. Release the mouse. The **height** of the selected row will be changed.



To modify all rows or columns

Rather than resizing rows and columns individually, you can modify the height and width of every row and column at the same time. This method allows you to set a **uniform size** for every row and column in your worksheet.

1. Locate and click the **Select All** button  just below the **formula bar** to select every cell in the worksheet.



	E	F	G
1			
2	Amount	Total Calls	International Calls
3	\$650.00	600	10
4	\$350.00	453	0
5	\$254.00	120	0
6		420	15
7	\$365.00	451	0
8	\$125.00	50	25
9	\$654.00	400	152
10	542	544	26

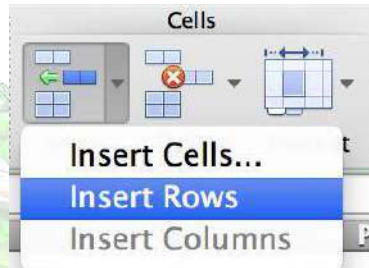
2. Position the mouse over a **row line** so the **white cross**  becomes a **double arrow** .
3. Click, hold, and drag the mouse to **increase** or **decrease** the row height.
4. Release the mouse when you are satisfied with the **new row height** for the worksheet.

5.1. Inserting, deleting, moving, and hiding rows and columns



After you've been working with a workbook for a while, you may find that you want to **insert new** columns or rows, **delete** certain rows or columns, **move** them to a different location in the worksheet, or even **hide** them.

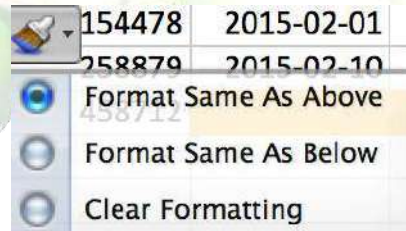
To insert rows

1. Select the **row heading** below where you want the new row to appear.
2. Click the **Insert** command on the **Home** tab.



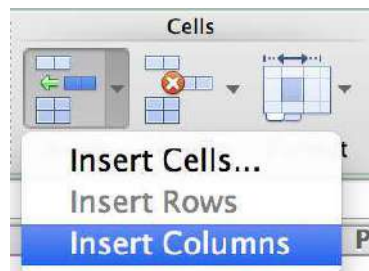
3. The **new row** will appear **above** the selected row.

 **TIP:** When inserting new rows, columns, or cells, you will see the **Insert Options** button  next to the inserted cells. This button allows you to choose how Excel formats these cells. By default, Excel formats inserted rows with the same formatting as the cells in the row above. To access more options, hover your mouse over the **Insert Options** button, then click the **drop-down arrow**.




To insert columns

1. Select the **column heading** to the right of where you want the new column to appear.
2. Click the **Insert** command on the **Home** tab.



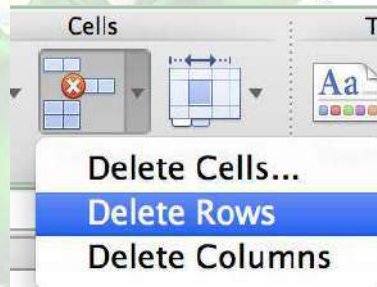
3. The **new column** will appear **to the left** of the selected column.

 **TIP:** When inserting rows and columns, make sure you select the entire row or column by clicking the **heading**. If you select only a cell in the row or column, the **Insert** command will only insert a new cell.

To delete rows

It's easy to **delete** any row that you no longer need in your workbook.


1. Select the **row(s)** you want to delete.
2. Click the **Delete** command on the **Home** tab.



3. The **selected row(s)** will be deleted, and the rows below will **shift up**.

To delete columns

1. Select the **columns(s)** you want to delete.
2. Click the **Delete** command on the **Home** tab.
3. The **selected columns(s)** will be deleted, and the columns to the right will **shift left**.

 **TIP:** It's important to understand the difference between **deleting** a row or column and simply **clearing its contents**. If you want to remove the **content** of a row or column without causing others to shift, **hold CTRL** key and **right-click** a heading, then select **Clear Contents** from the drop-down menu.

To move a row or column

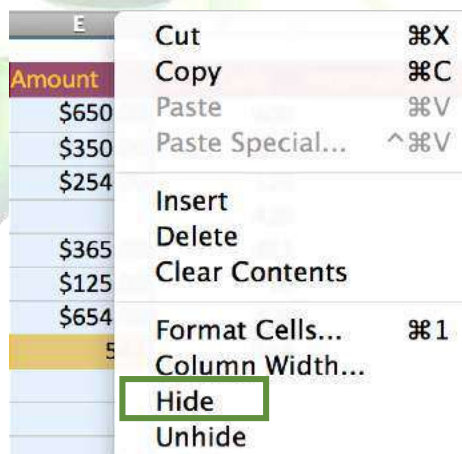
Sometimes you may want to **move** a column or row to rearrange the content of your worksheet.

1. Select the desired **column heading** for the column you wish to move, then click the **Cut** command on the **Standard Toolbar** or press **⌘+X** on your keyboard.
2. Select the **column heading** to the right of where you want to move the column. For example, if you want to move a column between columns B and C, select column C.
3. Click the **Insert** command on the **Home** tab, then select **Insert Cells** from the drop-down menu.
4. The column will be **moved** to the selected location, and the columns to the right will **shift right**.

To hide and unhide a row or column

At times, you may want to **compare** certain rows or columns without changing the organization of your worksheet. Excel allows you to **hide** rows and columns as needed.

1. Select the **column(s)** you wish to **hide**, hold **CTRL** key and **right-click** the mouse, then select **Hide** from the **formatting** menu.



2. The columns will be **hidden**. The **blue column line** indicates the location of the hidden columns.

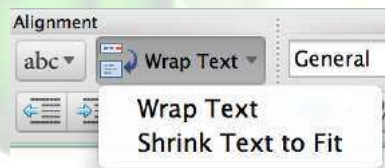
D	F
Name	Total Calls
User1	600
User2	453
User3	120
User4	420


3. To **unhide** the columns, select the columns to the **left** and **right** of the hidden columns (in other words, the columns on **both sides** of the hidden columns).
4. Hold **CTRL** key and **right-click** the mouse, then select **Unhide** from the **formatting** menu. The hidden columns will reappear.

5.2. Wrapping text and merging cells

Whenever you have too much cell content to be displayed in a single cell, you may decide to **wrap the text** or **merge** the cell rather than resizing a column. Wrapping the text will automatically modify a cell's **row height**, allowing cell contents to be displayed **on multiple lines**. Merging allows you to combine a cell with adjacent, empty cells to create **one large cell**.

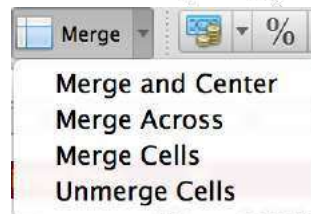
1. Select the cells you wish to wrap.
2. Select the **Wrap Text** command on the **Home** tab.



3. The text in the selected cells will be **wrapped**.
-  **TIP:** Click the **Wrap Text** command again to **unwrap** the text.

To merge cells using the Merge & Center command

1. Select the **cell range** you want to merge together.
2. Select the **Merge** command on the **Home** tab.



3. The selected cells will be **merged**, and the text will be **centered**.

To access more merge options

Click the drop-down arrow next to the **Merge & Center** command on the **Home** tab. The **Merge** drop-down menu will appear. From here, you can choose to:

- **Merge & Center:** Merges the selected cells into **one cell** and **centers** the text
- **Merge Across:** Merges the selected cells into **larger cells** while keeping each **row** separate
- **Merge Cells:** Merges the selected cells into one cell, but **does not center** the text
- **Unmerge Cells:** Unmerges selected cells

Challenge!

1. Open an existing Excel 2011 workbook.
2. Modify the **width** of a column.
3. **Insert** a column between column A and column B, then **insert** a row between row 3 and row 4.
4. **Delete** a column or a row.
5. **Move** a column or row.
6. Try using the **Text Wrap** command on a cell range.
7. Try **merging** some cells together.

6. Formulas and Functions

One of the most powerful features in Excel is the ability to **calculate** numerical information using **formulas**.

6.1. Simple Formulas

Just like a calculator, Excel can add, subtract, multiply, and divide. In this lesson, we'll show you how to use **cell references** to create simple formulas.

Mathematical operators

Excel uses standard operators for formulas, such as a **plus sign** for addition (+), a **minus sign** for subtraction (-), an **asterisk** for multiplication (*), a **forward slash** for division (/), and a **caret** (^) for exponents.

Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponents	^

All formulas in Excel must begin with an **equals sign (=)**. This is because the cell contains, or is equal to, the formula and the value it calculates.

Understanding cell references

While you can create simple formulas in Excel manually (for example, **=2+2** or **=5*5**), most of the time you will use **cell addresses** to create a formula. This is known as making a **cell reference**. Using cell references will ensure that your formulas are always accurate because you can change the value of referenced cells without having to rewrite the formula.

The formula in cell A3 refers to the value in cell A1 plus the value in cell A2

The formula calculates and displays the answer to the equation A1 plus A2

	A
1	10
2	5
3	=A1+A2

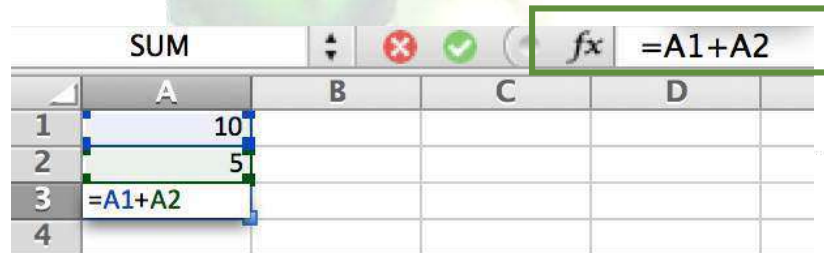
	A
1	10
2	5
3	15

By combining a mathematical operator with cell references, you can create a variety of simple formulas in Excel. Formulas can also include a combination of cell references and numbers, as in the examples below:


=A1+A2	Adds cells A1 and A2
=C4-3	Subtracts 3 from cell C4
=E7/J4	Divides cell E7 by J4
=N10*1.05	Multiplies cell N10 by 1.05
=R5^2	Finds the square of cell R5

To create a formula

1. Select the **cell** that will contain the formula.
2. Type the **equals sign (=)**. Notice how it appears in both the **cell** and the **formula bar**.



1. Type the **cell address** of the cell you wish to reference first in the formula: cell **D1** in our example. A **blue border** will appear around the referenced cell.
2. Type the **mathematical operator** you wish to use. In our example, we'll type the **addition sign (+)**.
3. Type the **cell address** of the cell you wish to reference second in the formula: cell **D2** in our example. A **green border** will appear around the referenced cell.
4. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.

-  **TIP:** If the result of a formula is too large to be displayed in a cell, it may appear as **pound signs (#####)** instead of a value. This means that the column is not wide enough to display the cell content. Simply **increase the column width** to show the cell content.

Modifying values with cell references

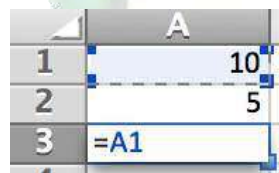
The true advantage of cell references is that they allow you to **update data** in your worksheet without having to rewrite formulas.

-  **TIP:** Excel **will not always tell you** if your formula contains an error, so it's up to you to check all of your formulas.

To create a formula using the point-and-click method

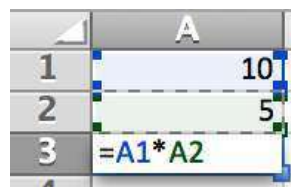
Rather than typing cell addresses manually, you can **point and click** on the cells you wish to include in your formula. This method can save a lot of time and effort when creating formulas. In our example below, we'll create a formula to calculate the cost of ordering several boxes of plastic silverware.

1. Select the **cell** that will contain the formula.
2. Type the **equals sign (=)**.
3. Select the **cell** you wish to reference first in the formula. The **cell address** will appear in the formula, and a **dashed blue line** will appear around the referenced cell.




	A
1	10
2	5
3	=A1

4. Type the **mathematical operator** you wish to use. In our example, we'll type the **multiplication sign (*)**.
5. Select the **cell** you wish to reference second in the formula. The **cell address** will appear in the formula, and a **dashed green line** will appear around the referenced cell.




	A
1	10
2	5
3	=A1*A2

6. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.
-  **TIP:** With AutoFill, you can copy a formula to cells in the same row or column so that you don't have to retype a formula in several places on a sheet. When you use AutoFill to copy formulas, Excel adjusts cell references in different columns or rows automatically, but it uses the same function in all new results cells.

To edit a formula

Sometimes you may want to modify an existing formula. In the example below, we've entered an incorrect cell address in our formula, so we'll need to correct it.

1. Select the **cell** containing the formula you wish to edit.
2. Click the **formula bar** to edit the formula. You can also **double-click** the cell to view and edit the formula directly within the cell.
3. A **border** will appear around any referenced cells.
4. When finished, press **Enter** on your keyboard or select the **Enter** command  in the formula bar.
5. The formula will be **updated**, and the **new value** will be displayed in the cell.

Challenge!

1. Open an existing Excel workbook.
2. Create a simple addition formula using **cell references**.
3. Try modifying the **value** of a cell referenced in a formula.
4. Try using the **point-and-click method** to create a formula.
5. **Edit** a formula using the formula bar.

6.2. Complex Formulas

A simple formula is a mathematical expression with one operator, such as **7+9**. A **complex formula** has more than one mathematical operator, such as **5+2*8**. When there is more than one operation in a formula, the **order of operations** tells Excel which operation to calculate first. In order to use Excel to calculate complex formulas, you will need to understand the order of operations.

Order of operations

Excel calculates formulas based on the following **order of operations**:

1. Operations enclosed in **parentheses**
2. **Exponential** calculations (3^2 , for example)
3. **Multiplication** and **division**, whichever comes first
4. **Addition** and **subtraction**, whichever comes first

Creating complex formulas

In the example below, we will demonstrate how Excel solves a complex formula using the order of operations. Here, we want to calculate the cost of an item after a discount. To do this, we'll write our formula as `=B12*C12-F12` in cell **G12**. This formula will multiply the quantity of our item by its price, and then subtract the discount to calculate the remaining cost.

	A	B	C	D	E	F	G	H
11	Item	Quantity	Price	Extended Amount	Discount %	Discount \$	Cost	Fix Discount
12	Scales	25	\$65.00	\$1,625.00	5%	\$81.25	\$1,543.75	\$113.75
13	Clamps	86	\$6.00	\$516.00	5%			

- TIP:** It is especially important to enter complex formulas with the correct order of operations. Otherwise, Excel will not calculate the results accurately.

Challenge!

1. Open an existing Excel workbook.
2. Create a complex formula that will perform addition before multiplication.

6.2.1. Relative and Absolute Cell References

There are two types of cell references: **relative** and **absolute**. Relative and absolute references behave differently when copied and filled to other cells. Relative references **change** when a formula is copied to another cell. Absolute references, on the other hand, remain **constant**, no matter where they are copied.

6.2.2. Relative cell references

By default, all cell references are **relative references**. *When copied across multiple cells, they change based on the relative position of rows and columns.* For example, if you copy the formula `=A1+B1` from row 1 to

row 2, the formula will become **=A2+B2**. Relative references are especially convenient whenever you need to **repeat** the same calculation across multiple rows or columns.

To create and copy a formula using relative references

In the following example, we want to create a formula that will multiply each item's **price** by the **quantity**. Rather than creating a new formula for each row, we can create a single formula in cell **D12** and then copy it to the other rows. We'll use relative references so the formula correctly calculates the total for each item.

1. Select the **cell** that will contain the formula. In our example, we'll select cell **D12**.
2. Enter the **formula** to calculate the desired value. In our example, we'll type **=B12*C12**.


	A	B	C	D
11	Item	Quantity	Price	Extended Amount
12	Scales	25	\$65.00	\$1,625.00
13	Clamps	86	\$6.00	
14	Microscopes	8	\$269.00	

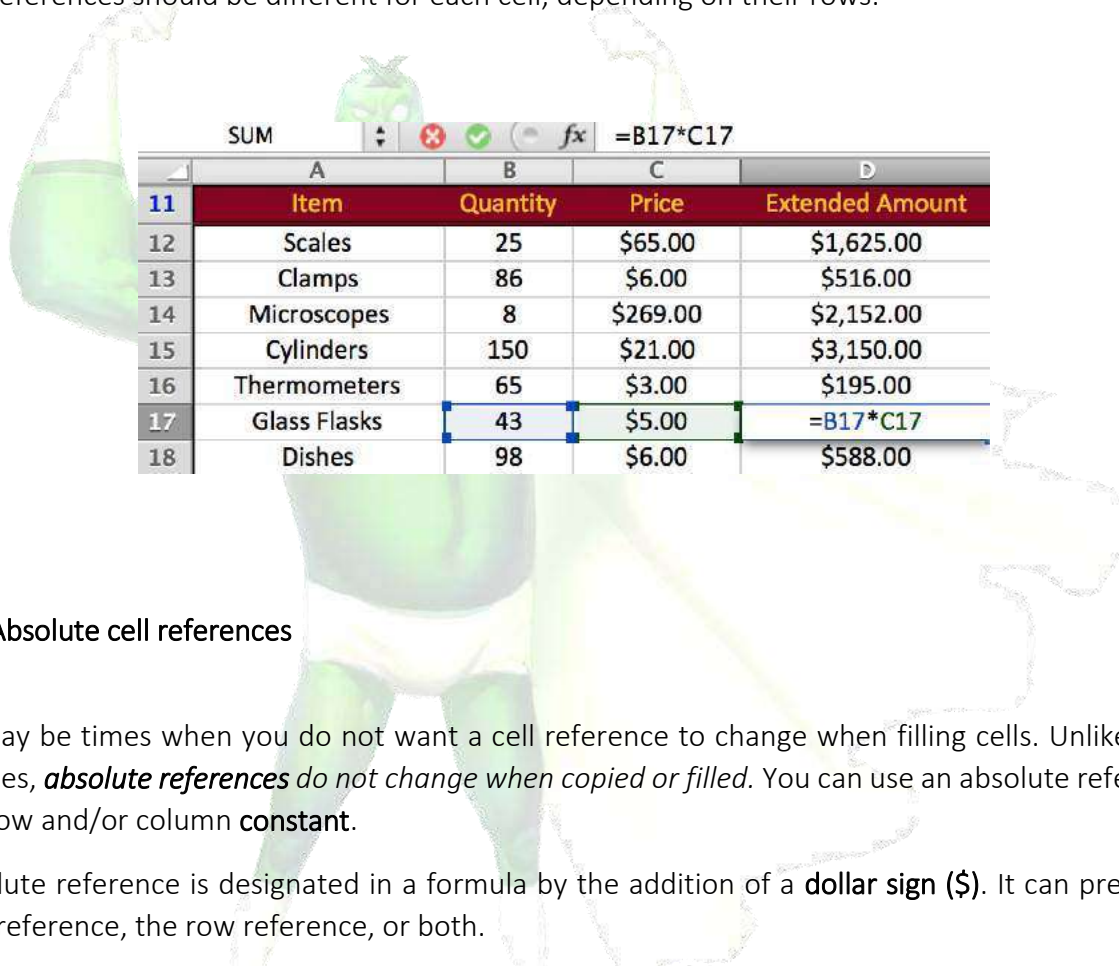
3. Press **Enter** on your keyboard. The formula will be **calculated**, and the result will be displayed in the cell.
4. Locate the **fill handle** in the lower-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D2**.
5. Click, hold, and drag the **fill handle** over the cells you wish to fill.

Click, hold and drag the fill handle to copy the formula to adjacent cells

	A	B	C	D
11	Item	Quantity	Price	Extended Amount
12	Scales	25	\$65.00	\$1,625.00
13	Clamps	86	\$6.00	\$516.00
14	Microscopes	8	\$269.00	\$2,152.00
15	Cylinders	150	\$21.00	\$3,150.00
16	Thermometers	65	\$3.00	
17	Glass Flasks	43	\$5.00	
18	Dishes	98	\$6.00	
19	Droppers	137	\$2.00	

- Release the mouse. The formula will be **copied** to the selected cells with **relative references**, and the values will be calculated in each cell.

 **TIP:** You can double-click the **filled cells** to check their formulas for accuracy. The relative cell references should be different for each cell, depending on their rows.




6.2.3. Absolute cell references

There may be times when you do not want a cell reference to change when filling cells. Unlike relative references, **absolute references do not change when copied or filled**. You can use an absolute reference to keep a row and/or column **constant**.

An absolute reference is designated in a formula by the addition of a **dollar sign (\$)**. It can precede the column reference, the row reference, or both.

\$A\$2	The column and the row do not change when copied
A\$2	The row does not change when copied
\$A2	The column does not change when copied

You will generally use the **\$A\$2** format when creating formulas that contain absolute references. The other two formats are used much less frequently.

 **TIP:** When writing a formula, you can press the **F4+T** key on your keyboard to switch between relative and absolute cell references. This is an easy way to quickly insert an absolute reference.

To create and copy a formula using absolute references

In our example, we'll use the 7% discount rate in cell **H10** to calculate the sales tax for all items in **column H**. We'll need to use the absolute cell reference **\$H\$10** in our formula. Since each formula is using the same tax rate, we want that reference to remain constant when the formula is copied and filled to other cells in column H.

1. Select the **cell** that will contain the formula. In our example, we'll select cell **H12**.
2. Enter the **formula** to calculate the desired value. In our example, we'll type **=D12*\$H\$10**.
3. Press **Enter** on your keyboard. The formula will calculate, and the result will display in the cell.

	B	C	D	E	F	G	H
							7%
	Quantity	Price	Extended Amount	Discount %	Discount \$	Cost	Fix Discount
	25	\$65.00	\$1,625.00	5%	\$81.25	\$1,543.75	\$113.75
	86	\$6.00	\$516.00	5%			

4. Locate the **fill handle** in the lower-right corner of the desired cell.
5. Release the mouse. The formula will be **copied** to the selected cells with an **absolute reference**, and the values will be calculated in each cell.

Challenge!

1. Open an existing Excel workbook.
2. Create a formula that uses a **relative reference**. Double-click a cell to see the copied formula and the relative cell references.
3. Create a formula that uses an **absolute reference**.

6.3. Functions

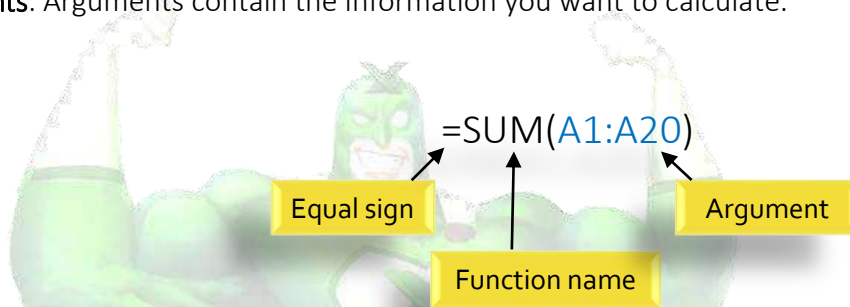
A **function** is a **predefined formula** that performs calculations using specific values in a particular order. Excel includes many common functions that can be useful for quickly finding the **sum**, **average**, **count**, **maximum value**, and **minimum value** for a range of cells. In order to use functions correctly, you'll need to understand the different **parts of a function** and how to create **arguments** to calculate values and cell references.

Formula =A1+A2+A3+A4+A5+A6+A7+A8

Function =SUM(A1:A8)

The parts of a function

In order to work correctly, a function must be written a specific way, which is called the **syntax**. The basic syntax for a function is an **equals sign (=)**, the **function name** (SUM, for example), and one or more **arguments**. Arguments contain the information you want to calculate.



Working with arguments

Arguments can refer to both **individual cells** and **cell ranges** and must be enclosed within **parentheses**. You can include one argument or multiple arguments, depending on the syntax required for the function.

Multiple arguments must be separated by a **comma**. For example, the function =SUM(A1:A3, C1:C2, E1) will **add** the values of all the cells in the three arguments.

	A	B	C	D	E	F
1	34		54		5	
2	32		65			
3	23					
4						
5	=SUM(A1:A3,C1:C2,E1)					
6						

6.3.1. Creating a function

Excel has a variety of functions available. Here are some of the most common functions you'll use:

- **SUM**: This function **adds** all of the values of the cells in the argument.
- **AVERAGE**: This function determines the **average** of the values included in the argument. It calculates the sum of the cells and then divides that value by the number of cells in the argument.

- **COUNT**: This function **counts** the number of cells with numerical data in the argument. This function is useful for quickly counting items in a cell range.
- **MAX**: This function determines the **highest cell value** included in the argument.
- **MIN**: This function determines the **lowest cell value** included in the argument.

To create a basic function

In our example below, we'll create a basic function to calculate the **average price per unit** for a list of recently ordered items using the AVERAGE function.

1. Select the **cell** that will contain the function.
2. Type the **equals sign (=)** and enter the desired **function name**. You can also select the desired function from the list of **suggested functions** that will appear below the cell as you type. In our example, we'll type **=AVERAGE**.
3. Enter the **cell range** for the **argument** inside **parentheses**. In our example, we'll type **(D3:D12)**.
4. Press **Enter** on your keyboard. The function will be **calculated**, and the **result** will appear in the cell.

	A	B	C	D
10				
11	Item	Quantity	Price	Extended Amount
12	Scales	25	\$65.00	\$1,625.00
13	Clamps	86	\$6.00	\$516.00
14	Microscopes	8	\$269.00	\$2,152.00
15	Cylinders	150	\$21.00	\$3,150.00
16	Thermometers	65	\$3.00	\$195.00
17	Glass Flasks	43	\$5.00	\$215.00
18	Dishes	98	\$6.00	\$588.00
19	Droppers	137	\$2.00	\$274.00
20	Centrifuges	7	\$154.00	\$1,078.00
21	Glass Containers	67	\$7.00	\$469.00
22	Hydrometers	67	\$6.00	\$402.00
23	Flasks	34	\$15.00	\$510.00
24		150	=AVERAGE	
25				
26				
27				
28				
29				
30				

Most Recently Used

AVERAGE

Functions

AVERAGE

AVERAGEA

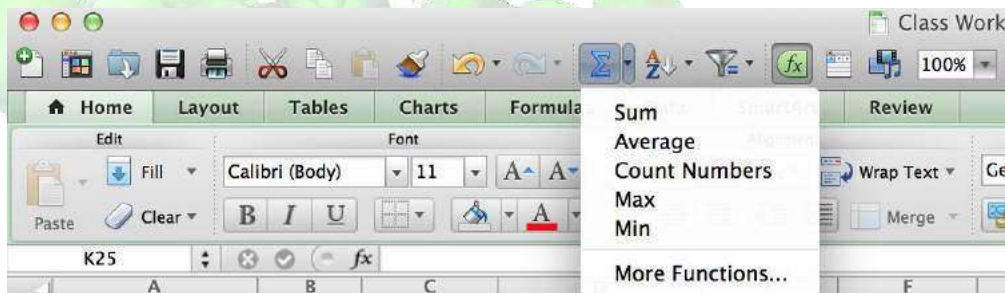
AVERAGEIF

AVERAGEIFS

To create a function using the AutoSum command

The **AutoSum** command allows you to automatically insert the most common functions into your formula, including SUM, AVERAGE, COUNT, MIN, and MAX. In our example below, we'll create a function to calculate the **total cost** for a list of recently ordered items using the SUM function.

1. Select the **cell** that will contain the function.
2. In the **Editing** group on the **Home** tab, locate and select the **arrow** next to the **AutoSum** command and then choose the **desired function** from the drop-down menu. In our example, we'll select **Sum**.



3. The selected **function** will appear in the cell. If logically placed, the AutoSum command will **automatically** select a cell range for the argument. You can also manually enter the desired cell range into the argument.

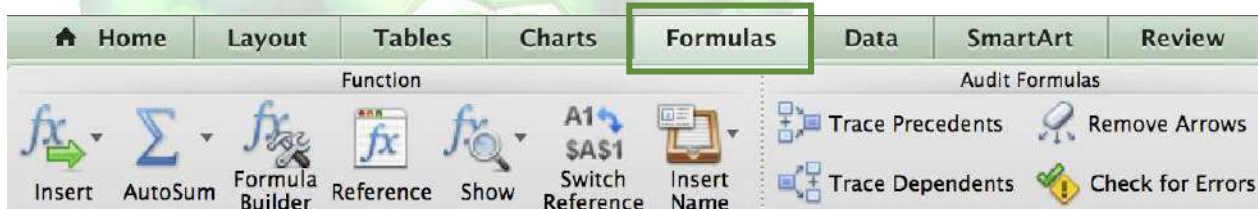
	F	G	H
			7%
	Discount \$	Cost	Fix Discount
	\$81.25	\$1,543.75	\$113.75
	\$25.80	\$490.20	
	\$107.60	\$2,044.40	
	\$283.50	\$2,866.50	
	\$9.75	\$185.25	
	\$10.75	\$204.25	
	\$29.40	\$558.60	
	\$24.66	\$249.34	
	\$53.90	\$1,024.10	
	\$23.45	\$445.55	
	\$20.10	\$381.90	
	\$25.50	\$484.50	
	Sub- TOTAL	=SUM(G12:G23)	
	TAX	\$372.65	
	TOTAL	\$3,239.15	

4. Press **Enter** on your keyboard.

6.3.2. The Function Library

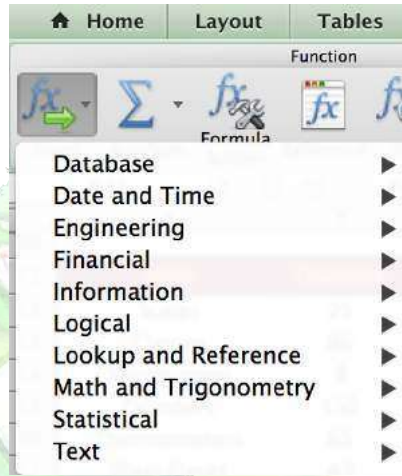
While there are hundreds of functions in Excel, the ones you use most frequently will depend on the **type of data** your workbooks contains. There is no need to learn every single function, but exploring some of the different **types of functions** will be helpful as you create new projects. You can search for functions **by category**, such as **Financial, Logical, Text, Date & Time**, and more from the **Function Library** on the **Formulas** tab.

- To access the **Function Library**, select the **Formulas** tab on the **Ribbon**. The **Function Library** will appear.



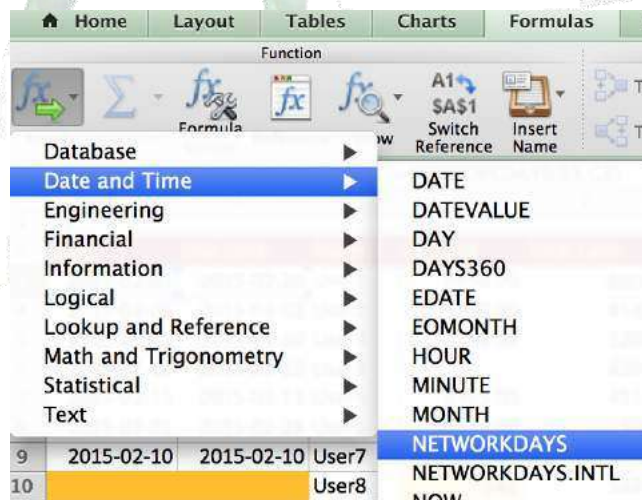
- If you're having trouble finding the right function, the **Insert Function** command allows you to search for functions using keywords.
- The **AutoSum** command allows you to automatically return results for common functions, like **SUM**, **AVERAGE**, and **COUNT**.
- The **Financial** category contains functions for financial calculations like determining a payment (**PMT**) or interest rate for a loan (**RATE**).
- Functions in the **Logical** category check arguments for a value or condition. For example, if an order is over \$50 add \$4.99 for shipping, but if it is over \$100, do not charge for shipping (**IF**).
- The **Text** category contains functions that work with the text in arguments to perform tasks, such as converting text to lowercase (**LOWER**) or replacing text (**REPLACE**).
- The **Date & Time** category contains functions for working with dates and time and will return results like the current date and time (**NOW**) or the seconds (**SECOND**).
- The **Lookup & Reference** category contains functions that will return results for finding and referencing information. For example, you can add a hyperlink (**HYPERLINK**) to a cell or return the value of a particular row and column intersection (**INDEX**).
- The **Math & Trig** category includes functions for numerical arguments. For example, you can round values (**ROUND**), find the value of Pi (**PI**) multiply (**PRODUCT**), subtotal (**SUBTOTAL**), and much more.

- More Functions contains additional functions under categories for Statistical, Engineering, Cube, Information, and Compatibility.



To insert a function from the Function Library

1. Select the **cell** that will contain the function.
2. Click the **Formulas** tab on the **Ribbon** to access the **Function Library**.
3. From the **Function Library** group, select the desired **function category**.
4. Select the **desired function** from the drop-down menu.



5. The **Function Arguments** dialog box will appear. From here, you'll be able to enter or select the cells that will make up the arguments in the function.
6. When you're satisfied with the arguments, click **OK**.
7. The function will be **calculated**, and the **result** will appear in the cell.

Like formulas, functions can be copied to adjacent cells. Hover the mouse over the **cell** that contains the function, then click, hold, and drag the **fill handle** over the cells you wish to fill. The function will be copied, and values for those cells will be calculated relative to their rows or columns.

6.3.3. The Formula Builder

If you're having trouble finding the right function, the **Insert Function** command allows you to search for functions using **keywords**. While it can be extremely useful, this command is sometimes a little difficult to use. If you don't have much experience with functions, you may have more success browsing the **Function Library** instead. For more **advanced users**, however, the Insert Function command can be a powerful way to find a function quickly.

To use the Formula Builder

1. Select the **cell** that will contain the function.
2. Click the **Formulas** tab on the **Ribbon**, then select the **Formula Builder** command.
3. The **Formula Builder** dialog box will appear.
4. Type a few **keywords** describing the calculation you want the function to perform.
5. Review the **results** to find the desired function, then click **OK**.
6. The **Function Arguments** dialog box will appear.
7. When you're satisfied, press Enter.
8. The function will be **calculated**, and the **result** will appear in the cell.

The screenshot shows an Excel spreadsheet with the following data:

Name	Amount	Total Calls	International Calls	%
er1	\$650.00	600	10	1.67%
er2	\$350.00	453	0	0.00%
er3	\$254.00			
er4	\$254.00			
er5	\$365.00			
er6	\$125.00			
er7	\$654.00			
er8	542			

The Formula Builder dialog box is open, showing the following details for the COUNTA function:

- Search: count
- Most Recently Used: COUNT, COUNT, COUNTA, COUNTBLANK, COUNTIF, COUNTIFS
- Description: Counts the number of cells in a range that are not empty. SYNTAX: COUNTA(value1,value2,...) [More help on this function](#)
- Arguments:

value1	E3:E11	{650;350;25}
value2		number
- Result: 1

Challenge!

1. Open an existing Excel workbook.
2. Create a function that contains one **argument**. If you're using the example, use the **SUM** function in cell **B16** to calculate the total quantity of items ordered.
3. Use the **AutoSum** command to insert a function.
4. Explore the **Function Library**, and try using the **Formula Builder** command to search for different types of functions.

Excel Formulas You Should Definitely Know

1. SUM

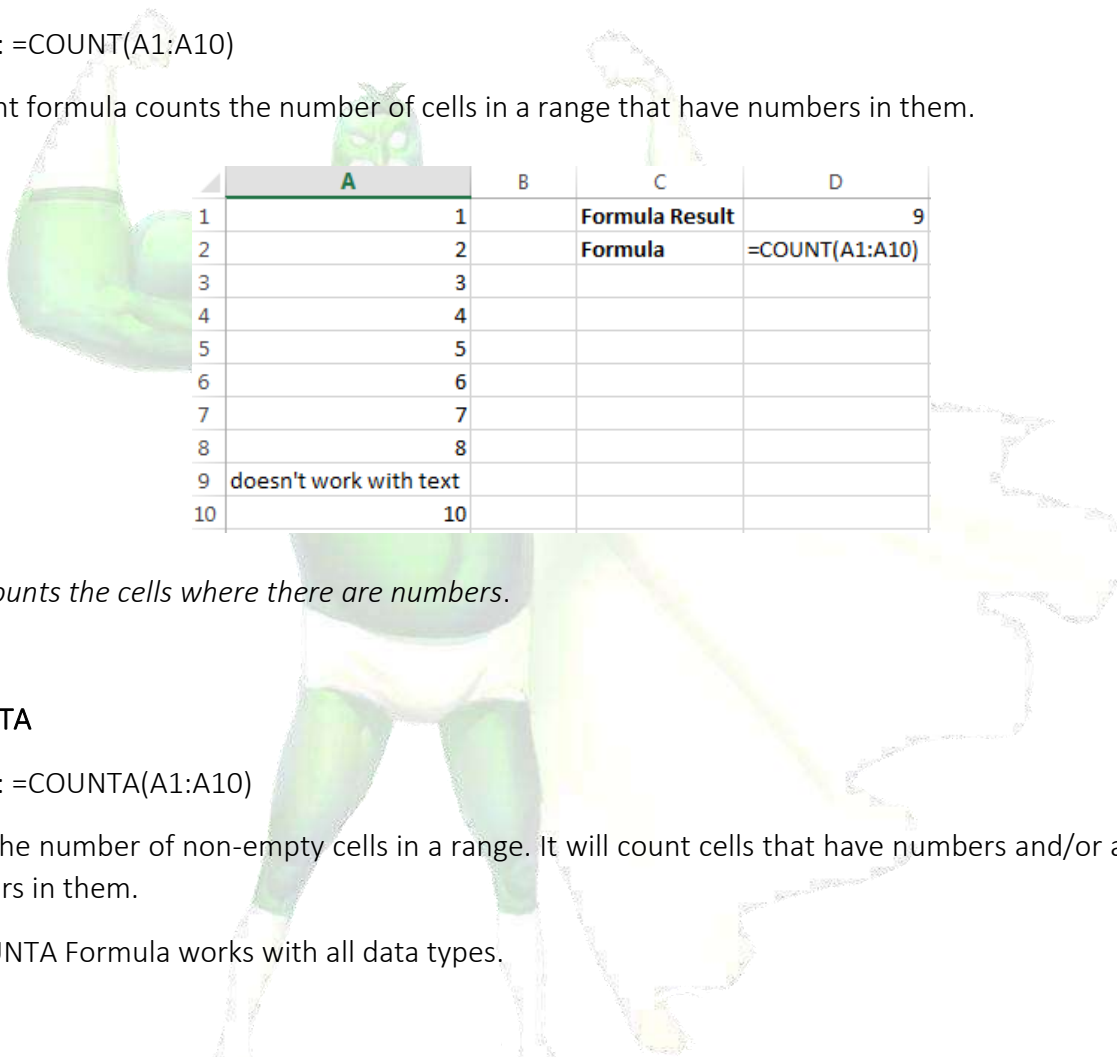
Formula: =SUM(5, 5) or =SUM(A1, B1) or =SUM(A1:B5)

The SUM formula does exactly what you would expect. It allows you to add 2 or more numbers together. You can use cell references as well in this formula.

2. COUNT

Formula: =COUNT(A1:A10)

The count formula counts the number of cells in a range that have numbers in them.



	A	B	C	D
1	1		Formula Result	9
2	2		Formula	=COUNT(A1:A10)
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			
9	doesn't work with text			
10	10			

It only counts the cells where there are numbers.

3. COUNTA

Formula: =COUNTA(A1:A10)

Counts the number of non-empty cells in a range. It will count cells that have numbers and/or any other characters in them.

The COUNTA Formula works with all data types.

	A	B	C	D
1	1		Formula Result	10
2	2		Formula	=COUNTA(A1:A10)
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			
9	This works with text			
10	10			

It counts the number of non-empty cells no matter the data type.

4. LEN

Formula: =LEN(A1)

The LEN formula counts the number of characters in a cell. This includes spaces!

	A	B	C	D
1	I love Excel		Formula Result	12
2	IloveExcel		Formula	=LEN(A1)
3				
4			Formula Result	10
5			Formula	=LEN(A2)

Notice the difference in the formula results: 10 characters without spaces in between the words, 12 with spaces between the words.

5. VLOOKUP

Formula: =VLOOKUP(lookup_value, table_array, col_index_num, range_lookup)

Basically, VLOOKUP lets you **search for specific information** in your spreadsheet. For example, if you have a list of products with prices, you could search for the price of a specific item.

We're going to use VLOOKUP to find the price of the **Photo frame**. You can probably already see that the price is \$9.99, but that's because this is a simple example. Once you learn how to use VLOOKUP, you'll be able to use it with larger, more complex spreadsheets, and that's when it will become truly useful.

	A	B	C	D	E	F
1	Item	Price				
2	Spice rack	\$19.99				
3	Stationery	\$5.49				
4	Gift basket	\$25.99				
5	Cutting board	\$24.99				
6	Landscape painting	\$35.99				
7	Greeting card	\$4.99				
8	T-shirt	\$15.49				
9	Scarf	\$29.99				
10	Coffee mug	\$8.99				
11	Tea set	\$16.99				
12	Serving bowl	\$12.99				
13	Wrapping paper	\$3.99				
14	Photo frame	\$9.99				
15	Handmade soap	\$4.49				
16	Gourmet hot cocoa	\$5.99				

As with any formula, you'll start with an equal sign (=). Then, type the formula name.

=VLOOKUP("Photo frame"

The second argument is the **cell range that contains the data**. In this example, our data is in A2:B16. As with any function, you'll need to use a comma to separate each argument:

=VLOOKUP("Photo frame", A2:B16

Note: It's important to know that VLOOKUP will **always search the first column** in this range. In this example, it will search column A for "Photo frame". In some cases, you may need to move the columns around so that the first column contains the correct data.

The third argument is the **column index number**. It's simpler than it sounds: The first column in the range is 1, the second column is 2, etc. In this case, we are trying to find the **price of the item**, and the prices are contained in the **second column**. That means our third argument will be **2**:

=VLOOKUP("Photo frame", A2:B16, 2

The fourth argument tells VLOOKUP whether to look for **approximate matches**, and it can be either TRUE or FALSE. If it is TRUE, it will look for approximate matches. Generally, this is only useful if the first column has numerical values that have been sorted. Since we're only looking for exact matches, the fourth argument should be **FALSE**. This is our last argument, so go ahead and close the parentheses:

=VLOOKUP("Photo frame", A2:B16, 2, FALSE)

And that's it! When you press enter, it should give you the answer, which is **9.99**.

The screenshot shows an Excel spreadsheet with the formula bar at the top containing `=VLOOKUP("Photo frame", A2:B16, 2, FALSE)`. Below the formula bar, a grid of cells is visible. Column headers are C, D, E, F, and G. Row 3 is highlighted, and cell E3 contains the value 9.99.

	C	D	E	F	G
			9.99		

6. IF Statements

Formula: =IF(logical_statement, return this if logical statement is true, return this if logical statement is false).

Example

Let's say a salesperson has a quota to meet. You used VLOOKUP to put the revenue next to the name. Now you can use an IF statement that says: "IF the salesperson met their quota, say "Met quota", if not say "Did not meet quota"

=IF(C3>D3, "Met Quota", "Did Not Meet Quota")

This IF statement will tell us if the first salesperson met their quota or not. We would then copy and paste this formula along all the entries in the list. It would change for each sales person.

	A	B	C	D	E
1	Master List				
2	Sales Person ID	Sales Person Name	Sales Person Revenue	Quota	Met Quota?
3	1	John	\$ 232,103.00	\$ 500,000.00	Did Not Meet Quota
4	2	Joe	\$ 835,477.00	\$ 500,000.00	Met Quota
5	3	Jen	\$ 116,371.00	\$ 500,000.00	Did Not Meet Quota
6	4	Frank	\$ 393,841.00	\$ 500,000.00	Did Not Meet Quota
7	5	Mark	\$ 989,303.00	\$ 500,000.00	Met Quota
8	6	Amanda	\$ 641,883.00	\$ 500,000.00	Met Quota
9	7	Erik	\$ 525,894.00	\$ 500,000.00	Met Quota
10	8	Mike	\$ 732,195.00	\$ 500,000.00	Met Quota
11	9	Matt	\$ 513,372.00	\$ 500,000.00	Met Quota
12	10	Josh	\$ 961,561.00	\$ 500,000.00	Met Quota
13	11	Shea	\$ 235,652.00	\$ 500,000.00	Did Not Meet Quota
14					
15			Formula		
16			=IF(C3>D3, "Met Quota", "Did Not Meet Quota")		

7. Working with Data

Whenever you're working with a lot of data, it can be difficult to **compare** information in your workbook.

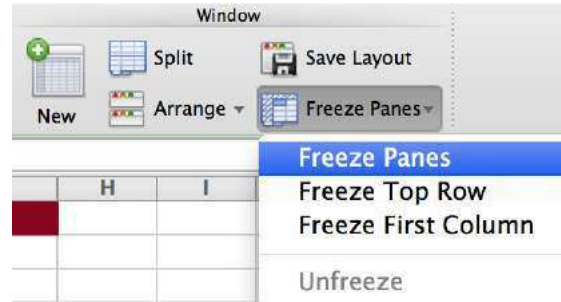
7.1 Freezing Panes and View Options

Excel includes several tools that make it easier to view content from different parts of your workbook at the same time, such as the ability to **freeze panes** and **split** your worksheet.

To freeze rows

You may want to see certain rows or columns all the time in your worksheet, especially **header cells**. By **freezing** rows or columns in place, you'll be able to scroll through your content while continuing to view the frozen cells.

1. Select the **row** below the row(s) you wish to **freeze**.
2. Click the **Layout** tab on the **Ribbon (Window tab)**.
3. Select **Freeze Panes** from the drop-down menu.



The rows will be **frozen** in place, as indicated by the **gray line**. You can **scroll down** the worksheet while continuing to view the frozen rows at the top.

To freeze columns

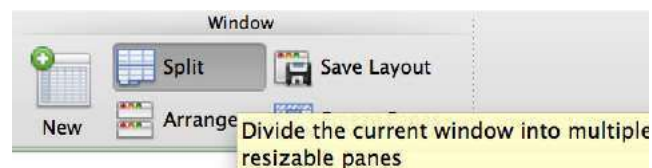
1. Select the **column** to the right of the column(s) you wish to **freeze**.
4. Click the **Layout** tab on the **Ribbon** (**Window** tab).
2. Choose **Freeze Panes** from the drop-down menu.
3. The column will be **frozen** in place, as indicated by the **gray line**. You can **scroll across** the worksheet while continuing to view the frozen column on the left.

To **unfreeze** rows or columns, click the **Freeze Panes** command, then select **Unfreeze Panes** from the drop-down menu.

To split a worksheet

Sometimes you may want to compare different sections of the same workbook without creating a new window. The **Split** command allows you to **divide** the worksheet into multiple panes that scroll separately.

1. Select the **cell** where you wish to split the worksheet.
2. Click the **Layout** tab on the **Ribbon**, then select the **Split** command.



- The workbook will be **split** into different **panes**. You can scroll through each pane separately using the **scroll bars**, allowing you to compare different sections of the workbook.

To remove the split, click the **Split** command again.

Challenge!

- Open an existing Excel workbook.
- Try **freezing** a row or column in place.
- Use the **Split** command to split your worksheet into multiple panes.

7.2 Sorting Data

As you add more content to a worksheet, organizing that information becomes especially important. You can quickly **reorganize** a worksheet by **sorting** your data. For example, you could organize a list of contact information by last name. Content can be sorted alphabetically, numerically, and in many other ways.

When sorting data, it's important to first decide if you would like the sort to apply to the **entire worksheet** or just a **cell range**.

- Sort sheet** organizes all of the data in your worksheet by one column.
- Sort range** sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables. Sorting a range will not affect other content on the worksheet.

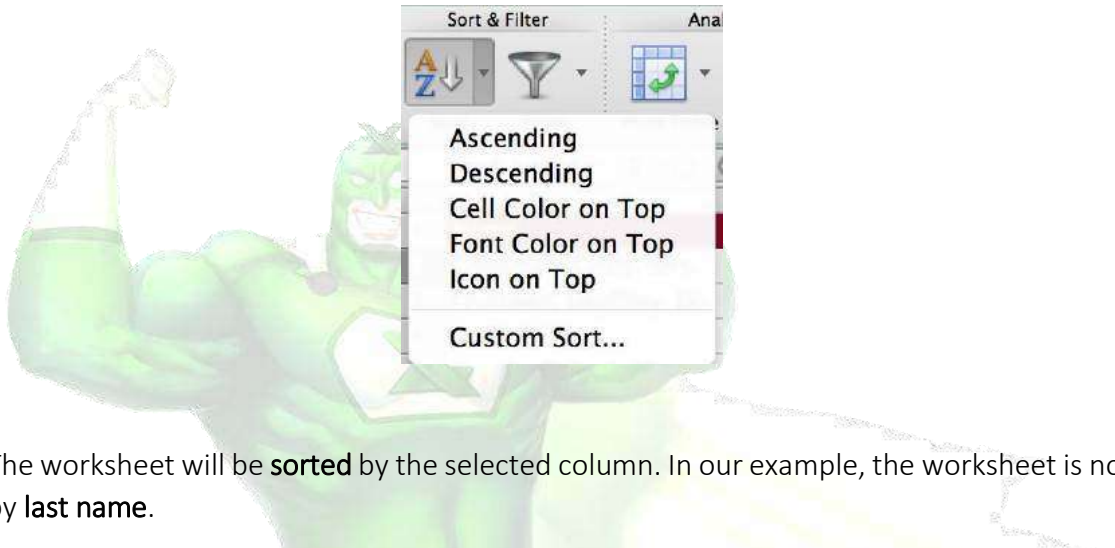
To sort a sheet

In our example, we'll sort a T-shirt order form alphabetically by **Last Name** (column C).

- Select a **cell** in the column you wish to sort by. In our example, we'll select cell **C2**.

	A	B	C	D	E	F
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method	
2	105	Christiana	Chen	Medium	Cash	
3	105	Melissa	White	Small	Debit Card	
4	105	Esther	Yaron	Small	Check	
5	135	Anisa	Naser	Small	Check	
6	135	Chantal	Weller	Medium	Cash	
7	220-A	Juan	Flores	X-Large	Pending	
8	220-B	Malik	Reynolds	Small	Cash	
9	220-B	Avery	Kelly	Medium	Debit Card	
10	105	Derek	MacDonald	Large	Cash	

2. Select the **Data** tab on the **Ribbon**, then click the **Ascending** command to Sort A to Z, or the **Descending** command to Sort Z to A. In our example, we'll click the **Ascending** command.



3. The worksheet will be **sorted** by the selected column. In our example, the worksheet is now sorted by **last name**.

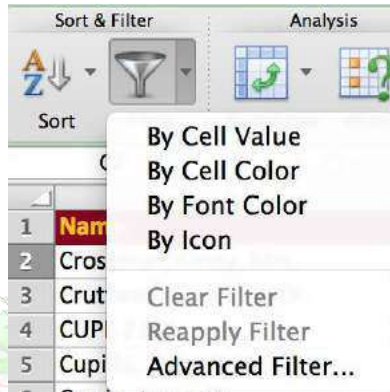
	A	B	C	D	E	F
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method	
2	110	Kris	Ackerman	Large	Money Order	
3	105	Nathan	Albee	Medium	Check	
4	220-B	Samantha	Bell	Medium	Check	
5	110	Matt	Benson	Medium	Money Order	
6	105	Christiana	Chen	Medium	Cash	
7	110	Gabriel	Del Toro	Medium	Cash	
8	220-A	Brigid	Ellison	Small	Cash	
9	220-A	Juan	Flores	X-Large	Pending	
10	220-B	Tyrese	Hanlon	X-Large	Debit Card	


7.3 Filtering Data

If your worksheet contains a lot of content, it can be difficult to find information quickly. **Filters** can be used to **narrow down** the data in your worksheet, allowing you to view only the information you need.

To filter data

1. In order for filtering to work correctly, your worksheet should include a **header row**, which is used to identify the name of each column.
2. Select the **Data** tab, then click the **Filter** command.



3. A **drop-down arrow**  will appear in the header cell for each column.
4. Click the **drop-down arrow** for the column you wish to filter.
5. The **Filter menu** will appear.
6. **Uncheck** the box next to **Select All** to quickly deselect all data.
7. **Check** the boxes next to the data you wish to filter, then click **OK**.

To remove all filters from your worksheet, click the **Filter** command on the **Data** tab.

8. Working with Charts

Creating a chart in Microsoft Office Excel is quick and easy. Excel provides a variety of chart types that you can choose from when you create a chart. Excel offers Pie, Line, Bar, and Column charts to name but a few. Showing data in a chart can make it clearer, more interesting and easier to read. Charts can also help you evaluate your data and make comparisons between different values.

8.1. Understanding charts

Excel has several different **types of charts**, allowing you to choose the one that best fits your data. In order to use charts effectively, you'll need to understand how different charts are used.

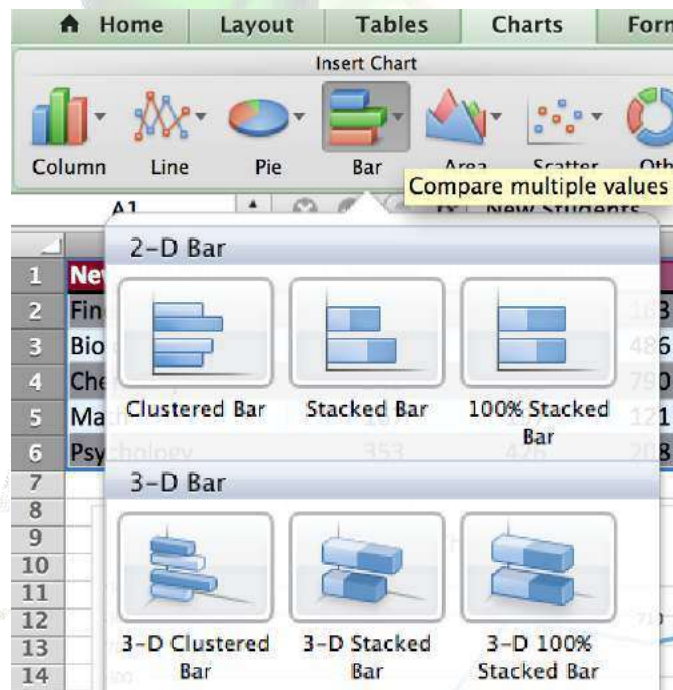
Types of Charts:

- Column charts** use vertical bars to represent data. They can work with many different types of data, but they're most frequently used for comparing information.
- Line charts** are ideal for showing trends. The data points are connected with lines, making it easy to see whether values are increasing or decreasing over time.

- ❑ **Pie charts** make it easy to compare proportions. Each value is shown as a slice of the pie, so it's easy to see which values make up the percentage of a whole.
- ❑ **Bar charts** work just like Column charts, but they use horizontal bars instead of vertical bars.
- ❑ **Area charts** are similar to line charts, except that the areas under the lines are filled in.
- ❑ **Surface charts** allow you to display data across a 3D landscape. They work best with large data sets, allowing you to see a variety of information at the same time.

To insert a chart

1. **Select the cells** you want to chart, including the column titles and row labels. These cells will be the source data for the chart.
2. From the **Charts** tab, click the desired Chart command.
3. **Choose** the desired chart type from the drop-down menu.

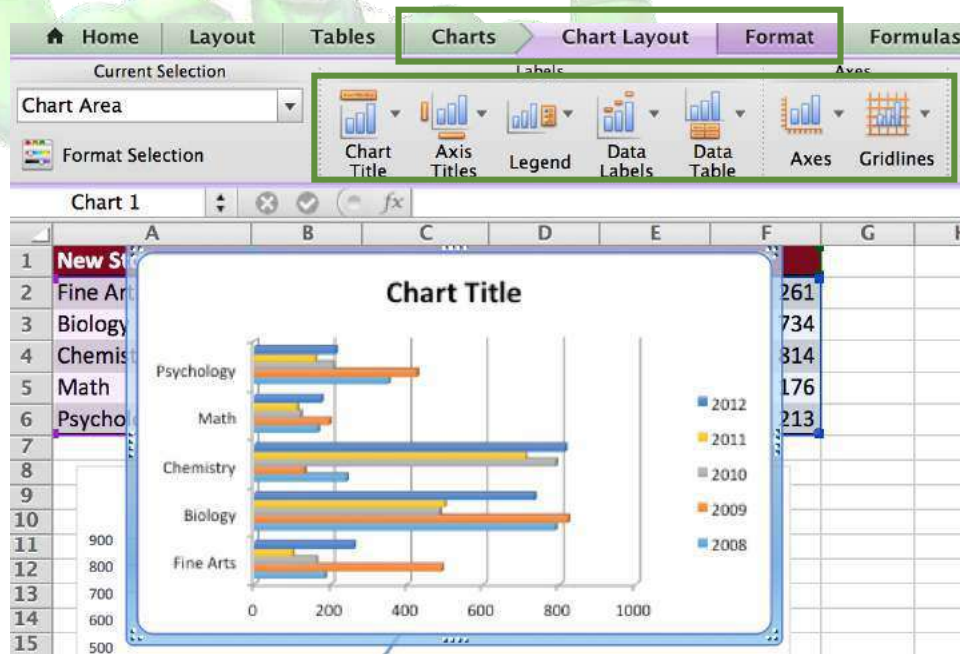


4. The selected chart will be inserted in the worksheet.

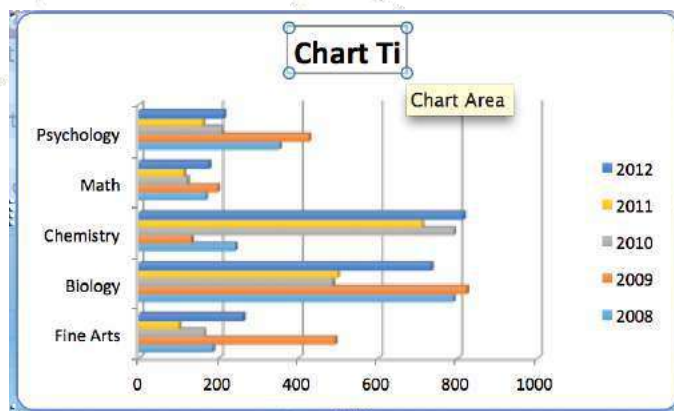
8.2. Chart layout and style

After inserting a chart, there are several things you may want to change about the way your data is displayed. It's easy to edit a chart's **layout** and **style** from the **Charts** tab.

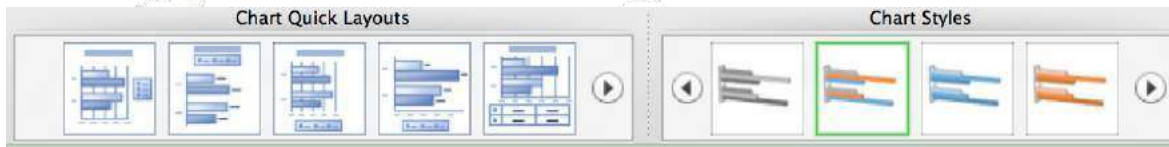
- ☑ Excel allows you to add **chart elements**—such as **chart titles**, **legends**, and **data labels**—to make your chart easier to read. To add a chart element, click the **Add Chart Element** command on the **Design** tab, then choose the **desired element** from the drop-down menu.



- ☑ To **edit** a chart element, like a **chart title**, simply double-click the **placeholder** and begin typing.



- ☑ If you don't want to add chart elements individually, you can use one of Excel's predefined layouts. Simply click the **Chart Quick Layouts** command, then choose the **desired layout** from the drop-down menu.
- ☑ Excel also includes several different **chart styles**, which allow you to quickly modify the look and feel of your chart. To change the chart style, select the **desired style** from the **Chart styles** group.



8.3. Other chart options

There are lots of other ways to customize and organize your charts. For example, Excel allows you to **rearrange** a chart's data, change the **chart type**, and even **move** the chart to a different location in the workbook.

To switch row and column data

Sometimes you may want to change the way charts **group** your data. For example, in the chart below, the Book Sales data are grouped **by year**, with columns for **each genre**. However, we could switch the rows and columns so the chart will group the data **by genre**, with columns for **each year**. In both cases, the chart contains the same data—it's just organized differently.

1. Select the **chart** you wish to modify.
2. From the **Charts** tab, select the **Switch Plot** command.



3. The rows and columns will be **switched**.

To change the chart type

If you find that your data isn't well suited to a certain chart, it's easy to switch to a new **chart type**. In our example, we'll change our chart from a **Column** chart to a **Line** chart.

1. Select the chart.

2. From the **Charts** tab, select the desired **Chart Type**.
3. The selected chart type will appear.

To move a chart

Whenever you insert a new chart, it will appear as an object on the same worksheet that contains its source data. Alternatively, you can **move** the chart to a **new worksheet** to help keep your data organized.

1. Select the **chart** you wish to move.
2. **Hold CTRL** and **right click** the chart, then select the **Move Chart** command.
3. The **Move Chart** dialog box will appear. Select the **desired location** for the chart.
4. Click **OK**.
5. The chart will appear in the selected location.

Challenge!

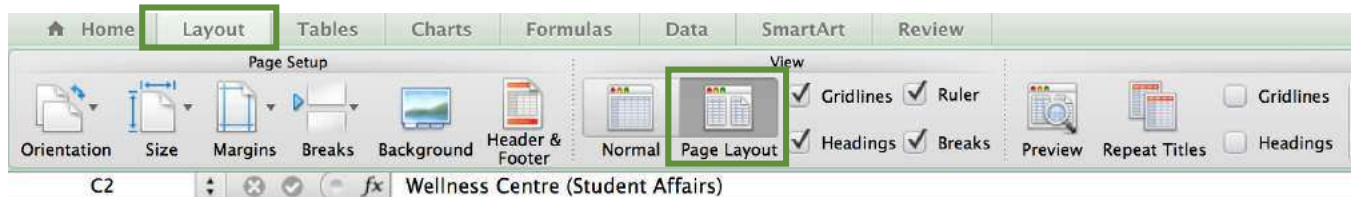
1. Open an **existing Excel workbook**.
2. Use worksheet data to create a **chart**.
3. Change the **chart layout**.
4. Apply a **chart style**.
5. **Move** the chart.

9. Printing Workbooks

There may be times when you want to **print a workbook** to view and share your data **offline**. Once you've chosen your **page layout** settings, it's easy to preview and print a workbook from Excel using the **Print** pane.

To access the Print pane

1. Select the **Layout** tab from the Ribbon.
2. Select **Page Layout**.



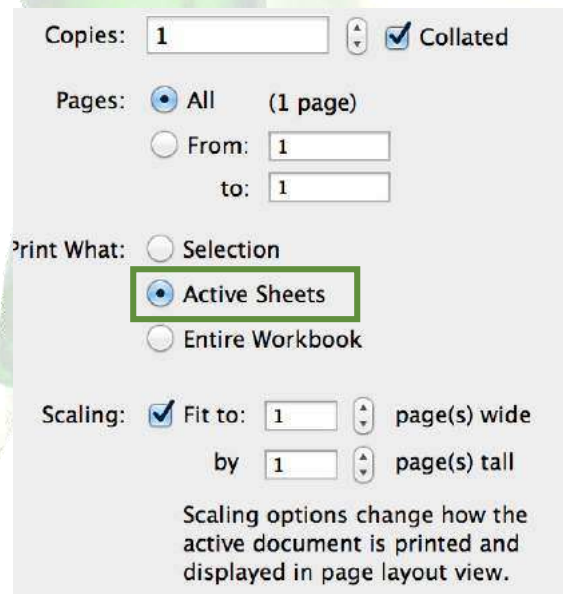
9.1. Choosing a print area

Before you print an Excel workbook, it's important to decide exactly what information you want to print. For example, if you have multiple worksheets in your workbook, you will need to decide if you want to print the **entire workbook** or only **active worksheets**. There may also be times when you want to print only a **selection** of content from your workbook.

To print active sheets

Worksheets are considered active when **selected**.

1. Select the **worksheet** you want to print. To print **multiple worksheets**, click the first worksheet, hold the **Shift** key on your keyboard, then click any other worksheets you want to select.
2. Click on **File** menu.
3. Select **Print**.
4. Select the **Active Sheets** option.



5. Click the **Print** button.


To print the entire workbook

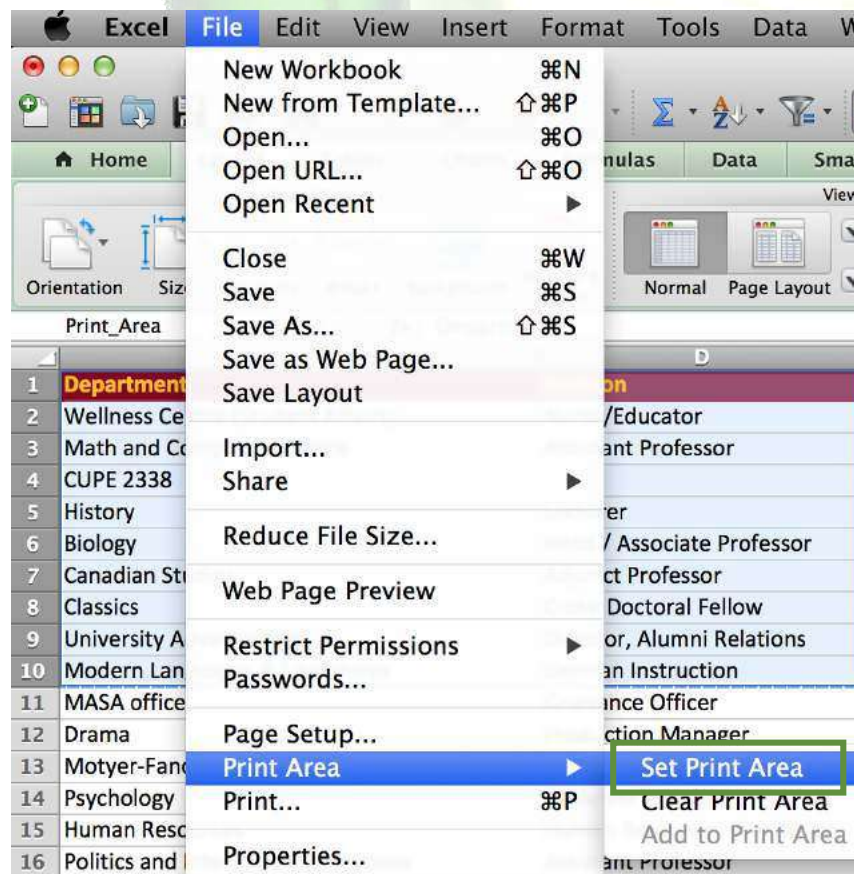
1. Click on **File** menu.
2. Select **Print**.

3. Select the **Entire Workbook** option.
4. Click the **Print** button.

To print a selection

1. Select the **cells** you wish to print.
2. Click on **File** menu.
3. Select **Print**.
4. Check the **Selection** option.
5. Click the **Print** button.

 **TIP:** If you prefer, you can also set the **print area** in advance so you'll be able to visualize which cells will be printed as you work in Excel. Simply **select** the cells you want to print, click the **File** menu, select the **Print Area** command, then choose **Set Print Area**.



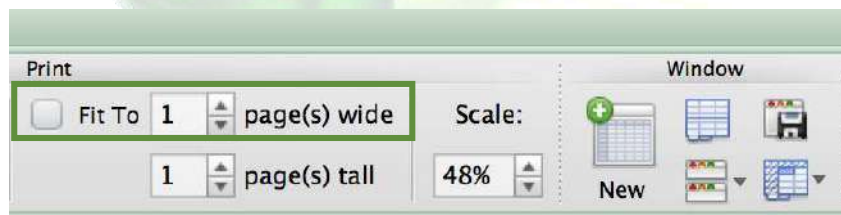
9.2. Fitting and scaling content

On occasion, you may need to make **small adjustments** from the Print pane to fit your workbook content neatly onto a printed page. The Print pane includes several tools to help fit and scale your content, such as **scaling** and **page margins**.

To fit content before printing

If some of your content is being cut off by the printer, you can use **scaling** to fit your workbook to the page automatically.

1. Navigate to the **Layout** tab.
2. Select the desired option from the **Print** menu. In our example, we'll select **Fit To 1 Page**.



3. The worksheet will be **condensed** to fit onto a single page.
4. When you're satisfied with the scaling, click **Print**.

To modify margins

Sometimes you may only need to adjust a **single margin** to make your data fit more comfortably.

1. Click on **File** menu.
2. Select **Page Setup**.
3. Click on **Margins** tab.
4. The **page margins** will appear in the **Preview** pane.
5. Adjust **margin width**.
6. The margin will be modified.
7. Click **OK**.

Challenge!

1. Open an existing Excel workbook.
2. Try printing two **active worksheets**.
3. Try printing only a **selection** of cells.
4. Try the **scaling** feature to condense your workbook content.
5. Adjust the **margins** from the **Preview pane**.

