

Workshop Objectives

1. The Excel Workbook - Overview
2. Getting Started
3. Entering Data into the Worksheet
4. Adjusting Column Widths and Row Height
5. Writing a formula
6. Creating a chart
7. Formatting your Worksheet
8. Freezing Rows and Columns



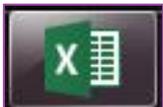
What is Excel?

The Microsoft Excel spreadsheet is the computerized equivalent of a paper ledger sheet. Excel is the perfect choice for recording, analyzing, calculating, and graphing data. Excel contains numerous built-in calculation formulas and formatting styles that you can apply to your work or you can create your own formulas and customize your spreadsheet to fit your needs. Excel is available as part of the Microsoft Office suite of products.

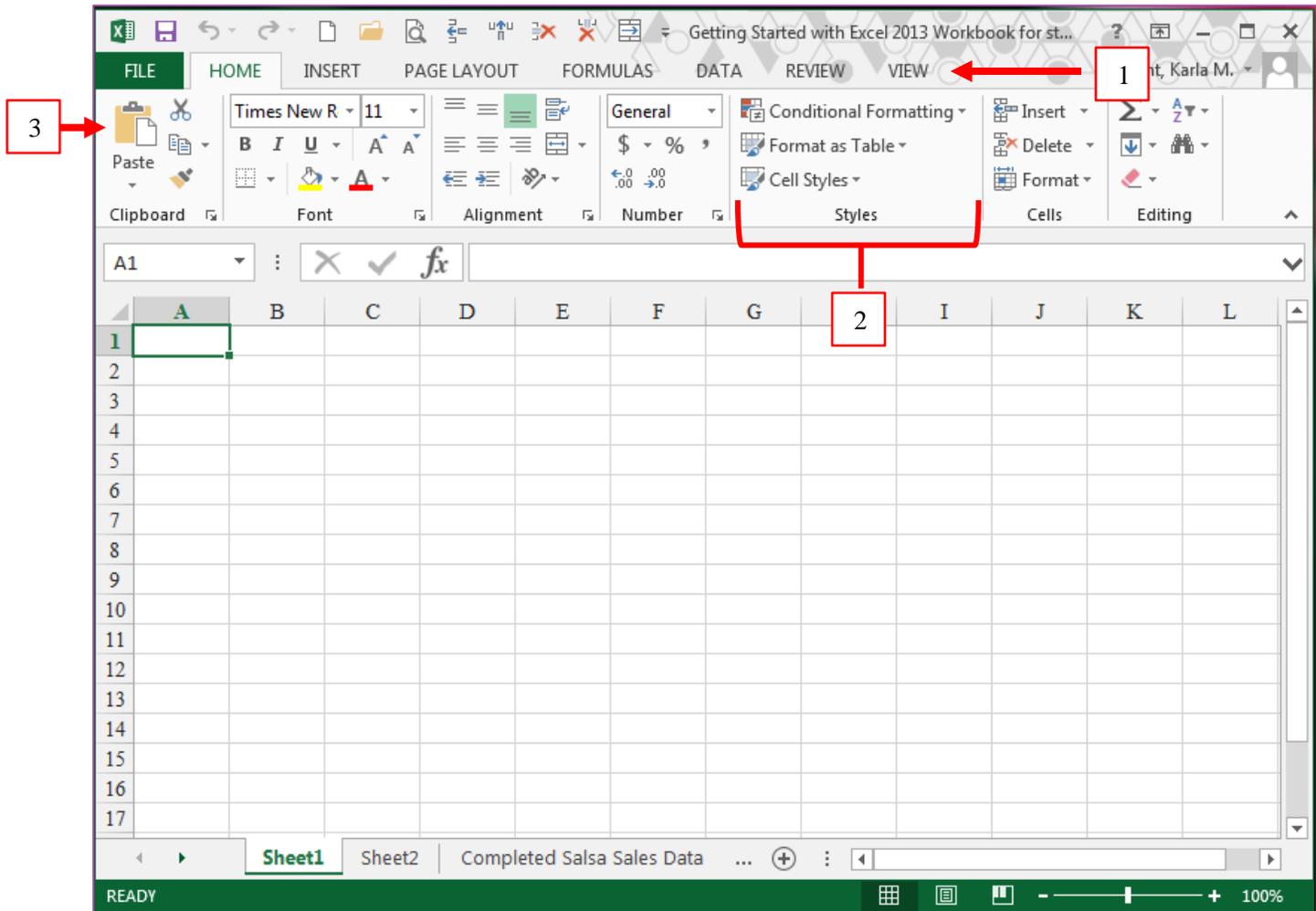
Opening Excel:

1. Click on the **Start** button in the taskbar to display the Start menu
2. Point to **All Programs**
3. Click on the folder **Microsoft Office**
4. Click on **Microsoft Office Excel** – your workbook will open with three blank worksheets. You can begin using this workbook or open an existing file.

You may have an Excel Icon on your Desktop – you can click the icon (shortcut) to open the program



1. The Excel Workbook: an Overview



The Ribbon makes the commands you need visible and easy to access. It consists of three parts:

1. **Tabs:** There are seven of them across the top. Each represents core tasks you do in Excel
2. **Groups:** Each tab has groups that show related items together.
3. **Commands:** A command is a button, a box to enter information, or a menu.

The **Quick Access Toolbar** provides a single-click access to frequently used commands, such as, save, undo, and re-do. You can customize the toolbar by adding your own commands

Workbook: Contains one or more individual worksheets.

Worksheet: the Excel document made up of rows and columns

Formula Bar: displays contents of the active cell. You can use the formula bar to enter or edit data in the active cell

Name Box: displays the cell reference for the active cell

Columns are labeled with letters and contain a group of related data (first name, last name, test grade, etc...)

Rows are labeled with numbers and contain a record (information about Jon Smith or Jane Doe)

Cell is the rectangular area where a column and a row intersect. The **active cell** is the cell that is currently selected.

Cell Reference: identifies the cells column and row location. B4 indicates the cell where column B and row 4 intersect

Sheet Tabs: title of worksheet - active sheet tab is bold

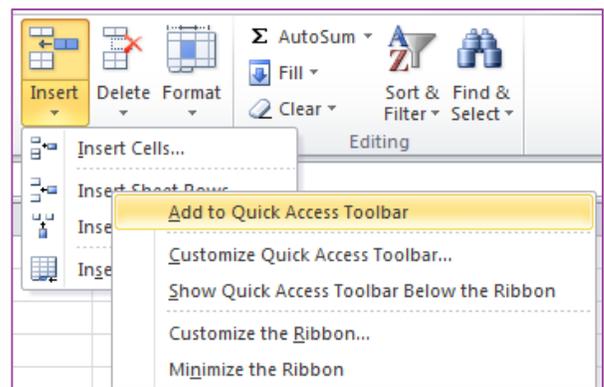
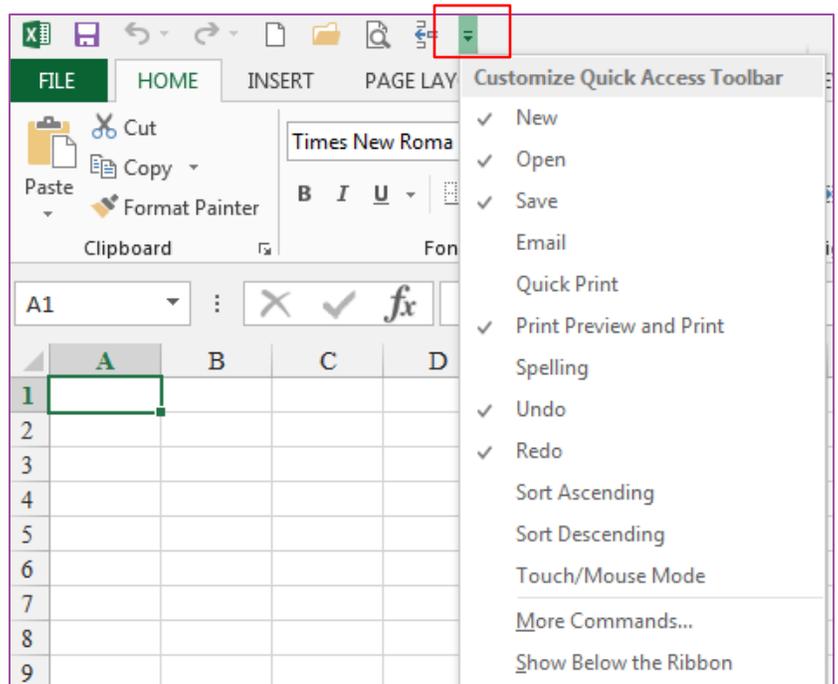
Sheet tab scroll buttons: allows you to scroll through the sheet tabs that are not currently visible

2. Getting Started

Customize your workspace

Utilizing the Quick access toolbar can make it easier to access the items in Excel that you use frequently.

1. Click on the small dropdown arrow and the right end on the Quick Access toolbar and click in the space next to **New, Open, and Print Preview and Print.**
2. Click on the drop down arrow under **Insert** – right-click on **Insert Sheet Rows** and click on the **Add to Quick Access Toolbar**
3. Repeat to add the Insert Column button and then the delete Rows and Delete Column buttons to the toolbar



Exercise 1: Name and Save your Workbook

1. Click on the **File Button** scroll down to **Save As** and from the menu on the right, click on Excel Workbook
2. From the **Save In** drop down menu, select the drive or location where you want to save your workbook.
3. For this workshop we will save our workbook on the *Desktop*.
4. **Name** your workbook (You generally want to use a name that relates to the contents of your workbook)
5. Rename the Excel Workshop Workbook.xlsx as *Your Name* Workshop (the file extension will be added automatically)
6. Click **Save**. This saves a second copy of the workbook and makes it the copy you are using.

Exercise 2: Naming the Worksheet Tabs

Now that we have named and saved our workbook we will name our worksheet to reflect its contents.

1. **Right click** on the Sheet 1 tab and select Rename - you can also **double-click** the tab
2. The text is selected and you can just **type** in the new name
3. Rename Sheet 1 as **Tutorial 1**
4. Press **Enter** to save the change or click somewhere in the workbook
5. Rename Sheet 2 as **Employees**
6. Press **Enter** to save the change
7. Click the **Save** icon on the Quick Access toolbar or press the Control Key plus the “s” key together

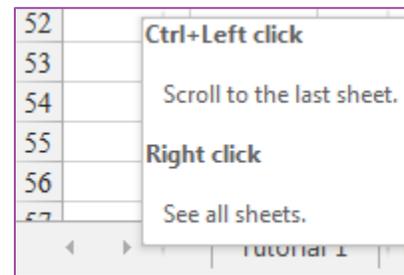
TIP! Colored Sheet tabs: right click the sheet tab and choose Tab Color – select a color and click enter.



Exercise 3: Navigating between Worksheets

The **sheet tabs** allow you to navigate back and forth between the sheets. If you can see the sheet tab of the sheet you want to view you can click on that tab. Use the **sheet tab scroll buttons** to view the sheet tabs of sheets that are hidden from your view.

1. Click the **Tutorial 1** tab
2. Try using the sheet tab scroll buttons to scroll through the sheets in the Exercise workbook



3. Entering Data into the Worksheet

An Excel cell can contain **text**, a **value**, or a **formula**. **Text** entries can be letters, symbols, numbers, and spaces. Text maybe data or your text may be used to describe the data contained in the worksheet (labels). **Values** are numbers that represent a quantity of some type: units in inventory, stock price, exam scores, and so on. A **formula** is the arithmetic used to calculate values appearing in the worksheet. Formulas always begin with an equal sign (=) ex: =B2+B3

Exercise 4: Entering data:

1. Click on the Tutorial 1 sheet if it is not the Active sheet.
2. Begin in cell **A1** and type **Last Name**; press the **tab key** on your keyboard to move to the next cell on the right.

Continue to add the following column labels:

A	B	C	D	E	F
Last Name	First Name	Department	Rank	Year Hired	Salary

TIP! Key Board Navigation

- Pressing the Enter key moves the cursor down one cell
- Pressing the TAB key moves the cursor to the adjacent cell on the right or SHIFT+TAB moves the cursor to the left.
- You can also use the arrow keys to navigate back and forth, up and down in the sheet

3. **Save** your work. Click on the **Employees sheet tab**, this sheet contains the employee data
4. Let's add the last 2 entries in our list using the following information.

Graves, Wendy, Management, Associate, 1982, 55829

5. Click **Enter** to move to the next row – enter the last entry

As you type, watch the screen and notice the **Auto Complete feature**

Blackwell, Dean, Management, Associate, 1992, 37797

6. **Save** your Work (Ctrl+s)

Quick Reference: Correcting Typing Mistakes

By default, you can edit the contents of a cell directly in the cell. You can also edit the contents of a cell in the Formula bar.

To place the contents of a cell in editing mode, do one of the following:

- Double-click the cell that contains the data that you want to edit. You can then move the cursor using the arrow keys.
- Click the cell that contains the data that you want to edit, and then click anywhere in the formula bar.
- Click the cell that contains the data that you want to edit, and press F2 to move the insertion point to the end of the cell contents.
- Click in the cell you wish to edit and begin typing. The new text will overwrite the cells current contents.

To enter your changes, press Enter. Before you press Enter you can cancel any changes that you made by pressing ESC.

Selecting Data in the Worksheet

A range of cells	Click the first cell in the range, and then drag to the last cell, or hold down SHIFT while you use the arrow keys to extend the selection.
A large range of cells	Click the first cell in the range, and then hold down SHIFT while you click the last cell in the range. You can scroll to make the last cell visible.
Nonadjacent cells or cell ranges	Select the first cell or range of cells, and then hold down CTRL while you select the other cells or ranges. You can also select the first cell or range of cells and then press SHIFT+F8 to add another nonadjacent cell or range to the selection.
An entire row or column	<p>Click the row or column heading.</p> <p>1 Row heading 2 Column heading</p> <p>You can also select cells in a row or column by selecting the first cell and then pressing CTRL+SHIFT+ARROW KEY (RIGHT ARROW or LEFT ARROW for rows, UP ARROW or DOWN ARROW for columns).</p>
Adjacent rows or columns	Drag across the row or column headings. Or select the first row or column; then hold down SHIFT while you select the last row or column.
Nonadjacent rows or columns	Click the column or row heading of the first row or column in your selection; then hold down CTRL while you click the column or row headings of other rows or columns that you want to add to the selection.

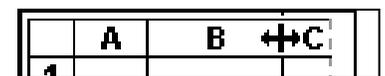


4. Adjusting Column Width and Row Height

You may notice that you cannot see all of the labels or text in some of your columns. Changing the column width will allow you to see everything in the column and will improve the look of the spreadsheet.

Exercise 5: Adjusting the Column Width

1. Select the **Last Name** column by click on the **column heading** (the letter at the top of the column) the entire column will be highlighted.
2. On the Home tab, in the Cells group, Click on **Format**, click on **AutoFit** Column Width. The column width is now fit to the longest name in the column.
3. Place the cursor on the **dividing line** between the **First Name** and **Department** columns.
4. The cursor will change to the resize arrow
5. Now **click** and **drag** the resize arrow to the right to increase the column width.
6. This time place the cursor between the next two columns and **double click**.
7. Now select **2 or more columns** and **double click** the dividing line between any of the selected columns
8. **Save** your changes



Exercise 6: Adjusting the row height

1. The steps above can be used to format the rows
2. Try it out – adjust the row heights

Quick Reference: Changing the Column Width or Row Heights

- Click the columns heading(s) whose width you want to change. Click Format, point to column, and then click width. In the column width dialog box, enter the desired width. Or click the AutoFit Selection to make the column(s) as wide as the longest text label or number in the column(s).
- Drag the column heading dividing line to the right to increase the column width or left to decrease the column width.
- Double click the column heading dividing line to AutoFit the column to the longest text string or number in the column
- Use the same procedures above to change the row height substituting the row headings for the column headings.

5. Writing a Formula

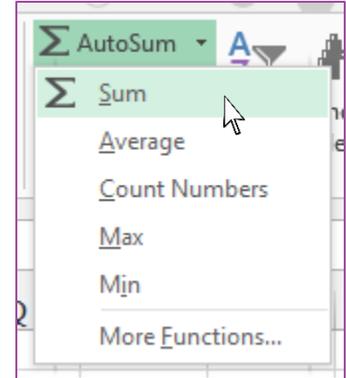
When you need to perform a calculation in Excel you use a formula. A **formula** is the arithmetic used to calculate values appearing in the worksheet. Once you have created a formula, if you change one number, Excel will automatically recalculate any formula affected by the change. **An Excel formula always begins with an equals sign (=)**. Formulas are created by combining numbers, cell references, arithmetic operators, and/or functions. **Functions** are predefined or built-in formulas (shortcuts) for the most commonly used calculations.

Arithmetic Operators used in Formulas

Addition	+	=B4+B5+B6	Adds the values of cells B4,B5, and B6
Subtraction	-	=C9-D10	Subtracts the value in cell D10 from the value in cell C9
Multiplication	*	=B1*10	Multiplies the value in cell B1 by the constant 10
Division	/	=C9/B9	Divides the value in cell C9 by the value in cell B9
colon	:	=SUM(F10:F20)	Adds the cell range F10 through F20

Exercise 7: Creating a formula - We will continue using the Employees worksheet.

1. Click in cell **A24** and type **Total Salaries**
2. Click in cell **F24** and type **=SUM(F2:F23)** and press **Enter**. You should have the total – 1141290
3. Now let's click in **F24** and press the **Delete** key to delete the formula
4. On the Home tab in the **Editing group**, click on **AutoSum** to select the **sum** option
5. **AutoSum** automatically creates a formula that contains the SUM function by looking at the cells adjacent to the active cell and making an assumption about the range you want to sum.
6. Press **Enter** to accept the formula or you can select a different range of cells if the formula is not correct. To **change the formula** range click in the first cell of the range and drag to select the correct cells and press **Enter**.



Exercise 7: Formulas continued – Salsa Sales Worksheet

1. Click on the **Salsa Sales Data** worksheet
2. Click in cell **D5** and type “=” click in cell **B5** type the minus sign “-“ and click in cell **C5**
3. Press the enter key - you should have 1.99

Exercise 8: Copying a formula using the Fill Handle

Click in cell **D5** to make it the **active cell**

1. Position the pointer over the Fill Handle (in the lower right corner of the active cell) until the pointer changes to +.
2. Click and drag the pointer down the worksheet to outline cells **D6** through **D9**
3. Release the mouse button. Excel has copied the formula to the selected cells
4. Click in an **empty cell** (white space) to deselect the cells. Save your changes

F	G	H
Salary		
33052		
46000		
48387		
42311		
41000		
35381		
42500		
43155		
47616		
27000		
57892		
46000		
55775		
35723		
59281		
45617		
33979		
57167		
35590		
55829		
37797		
=SUM(F2:F22)		
SUM(number1, [number2], ...)		

Exercise 9: Formula Practice

Let's find the Total Sales by product and the Profit from the sales.

1. Click in cell **F5** and enter the formula: **=B5*E5**
2. Copy – Double-click on the fill handle to copy this formula
3. Click in cell **G5** and enter the formula: **=D5*E5**. **Copy to the rest of the rows**
4. Click in cell **E10** then click on the AutoSum button to find the total units sold
5. Click on the Fill Handle and copy the formula to **F10** and **G10**



Now we want to find the *profit per item as a percentage of sales*.

6. Click in cell **H4** and type the title for this new information **% of Total Profit**
7. Click in cell **H5** and enter the formula to divide the profit from the Verde Mild Salsa by the total profit from all the items sold (**=G5/G10**)
8. Copy the formula for the rest of the products
9. *We seem to have a problem!! #DIV/0!*

About copying formulas

You can copy formulas in Excel using menu commands, toolbar buttons, or the fill handle. Using the fill handle reduces errors and it's the fastest way to copy formulas. When you copy a formula that contains a cell reference, Excel automatically updates the cell reference for the new location. Cell references that change when they are copied are called **relative cell references**.

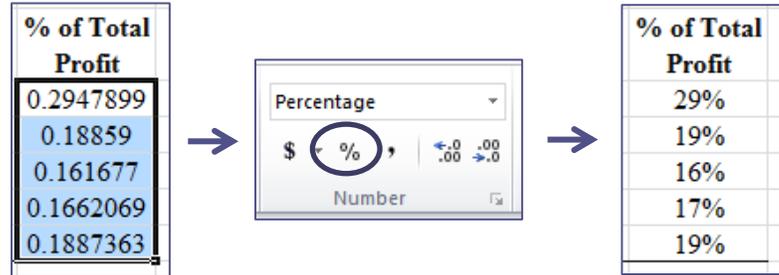
Sometimes you may not want the cell reference to change to reflect its new position in the worksheet. You may want the cell reference to point to the same location in the worksheet as you copy it. This is called an **absolute reference**. An absolute reference is a cell reference in a formula that does not change when copied to another cell. To do this you insert a **dollar sign (\$)** between the column and row of the cell reference. **Ex: \$G\$10 – absolute vs. G10 relative.**

Exercise 10: Writing a Formula using an absolute reference

Let's fix this problem

1. If you look at the error message, you can see that we have a divide by zero error and this means that we need to use an absolute cell reference.
2. We will use the **edit mode** to correct this. Click in cell **H5** the cell we want to edit.
3. **Double click** the mouse button to edit the formula in the cell. Notice that each cell reference in the formula in cell H5 appears in a different color and the corresponding cells referred to in the formula are outlined in the same color. This feature is called the **Range Finder** and is designed to make it easier to check the accuracy of your formula.
4. Make sure the **insertion point** is to the **right** of the **division operator**, anywhere in the cell reference **G10**.
5. Press the **F4** key to change the reference to **\$G\$10**. *You may need to press F4 more than once until you see \$G\$10.*
6. Press **Enter** to update the formula
7. Now use the **fill handle** to copy the formula. Notice the difference. Click **Save**

8. Highlight the numbers in the **% of Total Profit column** and click on the % symbol to format the numbers with the % symbol.

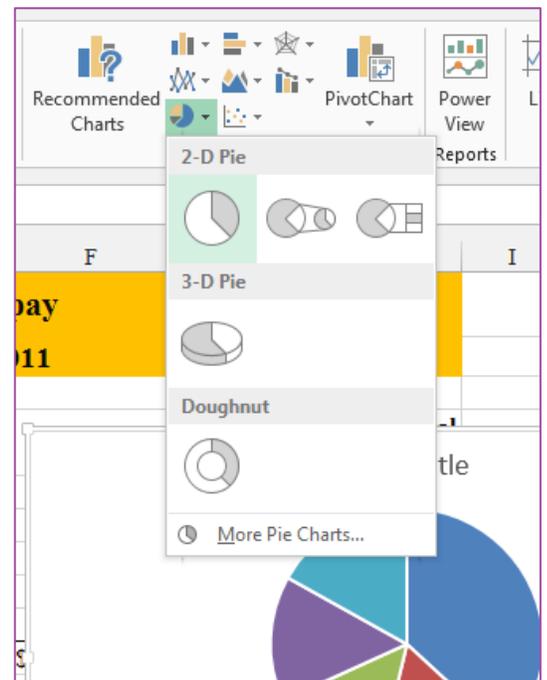
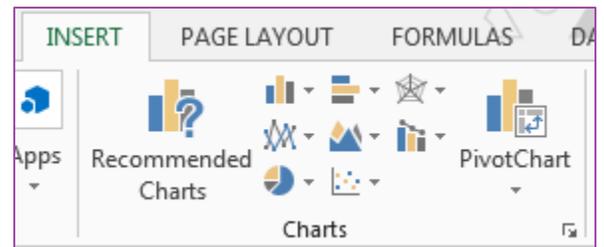


6. Creating a Chart

Now that we have all of our formulas completed we can create our chart.

Exercise 11: inserting a chart into your spreadsheet

1. Select the Names of your Products - cells A5 – A9
2. Hold down the **control key** and select the cells that show the “% of Total Profit” cells H5 – H9
3. Click on the Insert Tab
4. Click on the Pie Chart and select the Exploded pie in 3-D
5. Your chart will be inserted into your spreadsheet and you can now format it using the Chart Tools Tabs.



7. Formatting the Worksheet

Formatting makes the worksheet easier to read and improves its appearance. Click on the Salsa Sales Data to view the finished worksheet.

Inserting a Column or Row

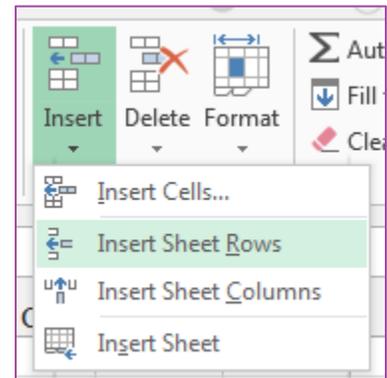
At times you may need to add a column or row to your spreadsheet to make room for new data and/or to improve readability.

Exercise 12: Inserting a Row or Column

1. On the **Employee Records** worksheet
2. Click in cell **A1**
3. On the **Home** tab in the **Cells** group, click **Insert** and then **Insert Sheet Rows**.

Excel will insert a row above the selected cell. Columns are inserted to the left of the selected column.

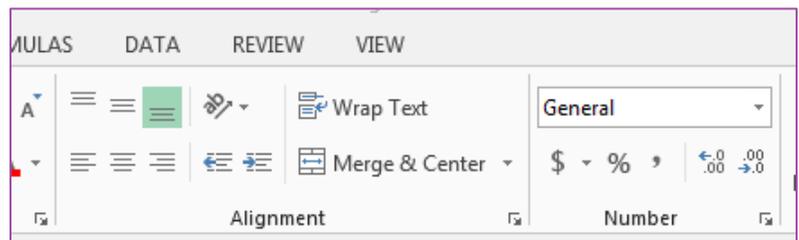
4. Type a name for your worksheet in the new cell **A1** and press **Enter**
5. **Save** your changes.



TIP: to insert **multiple rows or columns** select multiple cells. Select the same number of rows as you want to insert. For example, to insert three new rows, you select three rows.

Exercise 13: Merge and Center

1. **Click and drag** to select cells **A1 – H1**
2. On the Home tab in the Alignment group, click on **Merge & Center**

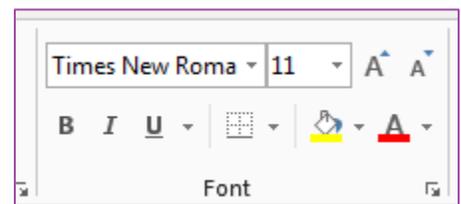


Exercise 14: Formatting the Text

1. Click in the **upper left hand corner** of the sheet to **select the entire sheet**.



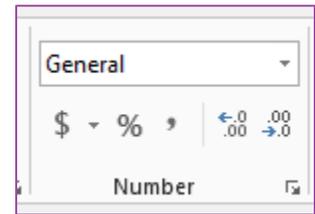
2. To change the font, click the font that you want in the Font box.
3. To change the font size, click the font size that you want in the Font Size box, or click Increase Font Size **A⁺** or Decrease Font Size **A⁻** until the size you want is displayed in the Font Size box.
4. Click in **cell A1** containing the name of your worksheet and increase the font size.



5. Select your column headings and increase the font size

Exercise 15: Formatting the Number Columns

1. **Click and drag** to select cells **F3 – F26** – the Salary column
2. **Right click** over the selected cells and choose **Format Cells**
3. Click on the **Number tab** if it is not at the front
4. Choose **Currency** in the Category box (notice the description and the Sample box)
5. Choose the \$ from the Symbol text box
6. Click **OK** to make the changes
7. **Click and drag** to select cells **G3 – G24** – Proposed Salary column
8. This time select **Currency** from the **Number group** on the Home tab
9. Now click the \$ in the Number group on the Home tab
10. **Click and drag** to select cells **H3 – H24** – Absolute Referencing column
11. Click the % sign in the Number group on the Home tab
12. Notice that the numbers are rounded and there are no decimal places showing. Use the Increase Decimal or Decrease Decimal buttons to format it as you wish.
13. **Click and drag** to select cells **E2 – H24**
14. Click the **Center** button  on the Alignment group on the Home tab to center the data in the cells.
15. Click in an **empty cell** to deselect the formatted cells. **Save.**



Exercise 16: Adding Color (Home tab - Font group)

1. Click in cell **A1** to make the title cell active.
2. Click on the **drop down arrow** next to the Fill Bucket
3. Choose a color that you like
4. Click on the **drop down arrow** next to the **Font Button** and change the text color

TIP: To select several non-consecutive rows or columns hold down the control key while selecting the cells

8. Freezing Rows and Columns

The Freeze Panes feature allows you to freeze a part of the worksheet so that it does not scroll off the screen and out of view. Many times you will want to keep the headings or names in view at all times, especially with large spreadsheets.

Exercise 17: Freezing Rows and Columns

1. Click on Employee Records worksheet tab
2. Click in cell **A2** to make it the active cell
3. Click on the **View** tab in the **Window** group, click on **Freeze Panes**, click on **Freeze Top Row** on the sub-menu
4. Scroll to the bottom of the list; notice how the column labels don't scroll out of view.
5. Click **Freeze Panes** again and select **Unfreeze Panes**
6. Now click in cell **C2** and select **Freeze Panes** from the sub-menu
7. Now scroll **horizontally** and **vertically**
8. Notice how the headings stay on the page and the name is always visible
9. Unfreeze the panes for the next exercise and save

