

ELECTRONIC SPREADSHEETS

Introduction:

Refers to software used to manipulate numbers and figures and also perform advanced chart drawing. Spreadsheets can do a lot more than simply adding up a column of numbers. Spreadsheets can handle financial calculations for a large business, calculate profitability or other statistical information, do complex trigonometry and make colourful graphs and charts.

A spreadsheet is a grid of rows (horizontal lines) and columns (vertical lines).

TYPES OF SPREADSHEETS

There are two types of spreadsheets:

1. Manual Spreadsheets
2. Electronic Spreadsheets

MANUAL SPREADSHEETS

A manual spreadsheet is a spreadsheet that consists of a book with many sheets divided into rows and columns on which data elements are entered manually using a pen/pencil.

Examples of Manual spreadsheets

1. Ledger book
2. Counter book
3. Manuscript
4. Accounts Analysis book

ELECTRONIC SPREADSHEETS

Is a computerized spreadsheet that enables users to enter data in rows and columns and manipulate data automatically using in-built formulas and functions.

Electronic spreadsheet is application software which enables users to organize and analyse numeric data presented in a grid of rows and columns.

With electronic spreadsheets, one does not need a paper, a pen, ruler and a calculator because the screen is already divided into rows and columns into which data can be entered using a keyboard and manipulated using in-built formulas and functions.

EXAMPLES OF ELECTRONIC SPREADSHEET SOFTWARE

1. Microsoft Excel
2. VisiCalc (Visual Calculator) developed in 1978
3. Lotus 1 -2-3 developed in 1983
4. Corel Quattro pro

5. Super Calc
6. Symphony
7. Lotus freelance
8. Multi Plan
9. View Sheet
10. Wiki Calc

COMPONENTS OF SPREADSHEETS

1. Worksheet

Is a single sheet in a workbook made up of rows and columns where data entry and calculations can be carried out.

2. Graph/Chart

Pictorial representation of data on the worksheet .e.g. Column, Bar, Pie, Line etc.

3. Database

Is a data management feature of a spreadsheet software is found on the data menu (Excel 2003 or Data Tab (Excel 2007/2010). Data entered in the spreadsheet can be manipulated by sorting, filtering and sub-totaling.

ADVANTAGES OF USING ELECTRONIC SPREADSHEETS OVER MANUAL

1. Have large sheets compared to manual spreadsheets.
2. Automatically adjust results whenever the value in a that is referenced in the formula. This feature is called Automatic recalculation.
3. Have better editing and formatting features hence produce neat work.
4. Easy entry of data due to typing aids such as auto complete, Auto correct, Auto fill, copy etc.
5. It allows easy management of large amounts of data using data management features such as sorting, filtering, and Sub-totaling.
6. Analytical graphs/charts lets one provide visual presentation of data from a worksheet.

APPLICATION/USES OF SPREADSHEETS

1. Compiling and Analysing Statistics
2. Mathematical and Scientific Calculations
3. Inventory management:
4. Accounting
5. Performing calculation.
6. Creation of charts/graphs.
7. Forecasting/management.(Performing What if analysis)
8. Sorting/arrangement of data
9. Home and personal use

FEATURES/CHARACTERISTICS OF MICROSOFT EXCEL 2010

1. Excel 2010 files are called **Workbooks**. Each workbook may contain worksheets, chart sheets and Visual programming modules. The numbers of worksheets you can create and store is limited only by the memory within your computer.
2. **New Templates and Wizards** that make creating personal and business worksheets very fast such as Balance sheet, Expense statement, Loan Amortization, Sales Invoice and Timecards.
3. **What if analysis**. The term what-if analysis refers to the ability to change in the spreadsheet and immediately see the effect it has on other calculations. E.g. what if my salary is only 200,000/=?. How would that affect my net income?
4. Automatic recalculation (a feature in spreadsheet that automatically adjusts results when a value in a cell is changed that is referenced in the formula.
5. Built-in formulas and functions. A formula is a sequence of values, cell references and operators in a cell that together produce a new value. A function is a predefined formula used to perform a calculation.
6. Data validation
7. Sub-totaling/summarizing data.
8. **Wizards** which simplify the process of creating of entering functions, analyzing data, importing text and working with databases.
9. Excel 2010 provides productivity enhancement tools such as Auto Calculate, AutoComplete, AutoCorrect, AutoFilter and Auto format features.
10. Excel 2010 has an improved file search utility.
11. Data Map Utility lets you create geographical maps and pinpoint demographic information such as age, income, and education statistics and analyze trends using numerical worksheet information.
12. Dialog boxes which enhance opening, saving and managing your worksheet documents.
13. Excel 2010 Ribbon enables easy access to formatting, drawing, charting and other commands.
14. Cells (Intersection of a row and column)
15. Rows and columns
16. Range (a group or block of cells that can be selected and manipulated as a block/group)
17. Worksheets.
18. Work books (a group of worksheets in a single file)
19. Ability to create charts.
20. Sorting/ arrangement of data
21. Filtering data.
22. Macros
23. Goal seek

MICROSOFT EXCEL 2010

Excel is an electronic spread sheet program/software used to manipulate numeric data, perform calculations and also perform advanced chart drawing.

An electronic spread sheet is a computerized equivalent of a mammal spread sheet e.g. a Ledger book, counter book etc.

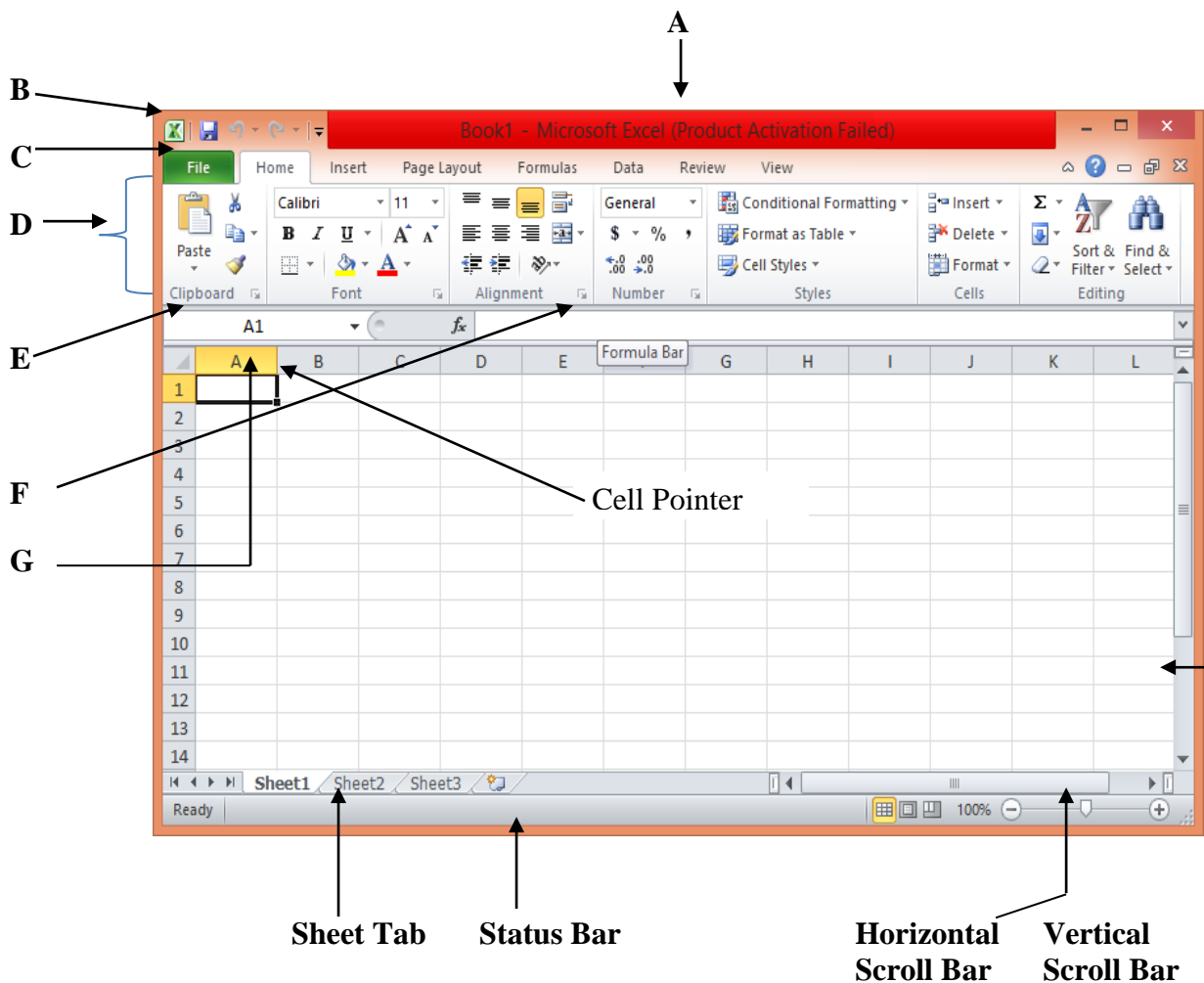
STARTING EXCEL

1. Click the start button
2. Point to programs
3. Click Microsoft Excel

Or

You can also double click the Ms - Excel short cut on the desk top to launch Excel.

THE MICROSOFT EXCEL 2010 SCREEN



A - Title Bar

B – Control Menu

C – Tabs (File Tabs, Home Tabs, Insert Tab, Page Layout etc)

D – Ribbon

E – Name Box

F – Formula Bar

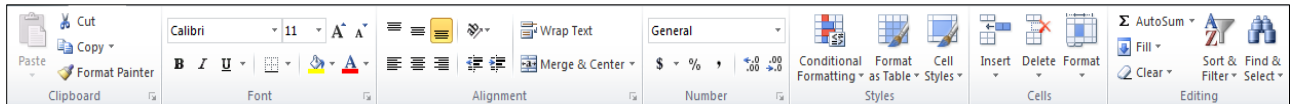
G – Active Cell/Current cell.

TITLE BAR

This is the top most bar across the Ms Excel screen containing the name of a program (Ms-Excel) and the name of the workbook (i.e. Book1,if you have NOT yet saved your workbook)

RIBBON

The ribbon makes it easy for you to find commands and features that are frequently used.



The Ribbon, which is part of the Microsoft Office Fluent user interface, is designed to help you quickly find the commands that you need to complete a task. Commands are organized in logical groups that are collected together under tabs. Each tab relates to a type of activity, such as writing or laying out a page.

FORMULAR BAR

The formula bar normally appears below the formatting toolbar or above the worksheet.

This is where data and formulae appear as you type in the active cell.

The cell contents may also be edited in the formula bar.

STATUS BAR

It is located at the bottom of the Ms – Excel screen. At its left side is a brief description of the currently selected command or active command while the right side shows the keyboard mode/indicators such as Num Lock, ADD, EXT etc.

WORKSHEET

A worksheet is the primary document used in a spreadsheet program. It is made up of rows and columns.

The worksheet is used to store, Manipulate, Calculate and analyses data such as numbers, Text and Formulae.

In Excel 2010, Each worksheet is made up of 512 Columns labeled A-Z, AA – AZ, BB – BZ up to XFD and Rows labeled 1 – 1,048,576.

ACTIVE WORKSHEET

Is sheet that you are currently `working on in a workbook. The name on the sheet Tab of the active sheet is bold.

CELL

The intersection of a row and column is called a **Cell**. A cell is a basic unit of a worksheet in which data is entered, stored and manipulated.

ACTIVE CELL

Is the selected cell on the on the worksheet in which data is entered when you begin typing. Only one cell is active at a time.

The active is bounded by a heavy border known as a cell pointer.

The rectangular highlight that marks the currently cell on the worksheet is called the **cell pointer**.

HOME CELL

Is the first cell of the worksheet (intersection of column A and row 1)

When you start Excel, the cell pointer is always positioned in cell A1, this is known as the **home cell**.

Whenever you want to make an entry, the cell pointer must be positioned in only one cell, this is called the active cell or current cell. As type the data, it appears both in the active cell as well as in the formula bar.

CELL REFERENCE

Cells in a worksheet are defined by a column letter and row number e.g. A1 refers to a cell in column A and row 1, this is known as the Cell Address or Cell reference or cell co-ordinates.

A cell reference is a set of coordinates that a cell occupies on the worksheet. E.g. B2, J27, K2

Therefore a cell address is the location of a cell on the worksheet

WORKBOOKS

A workbook is a file that contains one or more worksheets that you can use to organize various kinds of related information.

Or

A workbook is a collection of worksheets.

Files in a spreadsheet are called **workbooks**. Microsoft Office Excel 2010 displays Book 1 at the top of the Excel screen if you have not yet saved your workbook.

By default, Microsoft Office Excel 2010 opens with three worksheets within a single workbook. However, more worksheets can be added later. The sheets can be worksheets or Chart sheets.

Moving/Navigating around the Worksheet using a Keyboard

1. ↑ - *Moves up one cell*
2. ↓ - *Moves down one cell*

3. → - *Moves right one cell*
4. ← - *Moves left one cell*
5. Ctrl + → - *Moves to the last column.*
6. Ctrl + ← - *Moves to the first column.*
7. Ctrl + ↑ - *Moves to the first Row (Top of the worksheet)*
8. Ctrl + ↓ - *Moves to the last Row (Bottom of the worksheet)*
9. Home - *Start of the current Row.*
10. Ctrl + Home - *Beginning of the worksheet (cell A1)*
11. Ctrl + End - *End of the Worksheet data.*
12. Page Up - *Moves up one screen (previous page)*
14. Page Down - *Moves down one screen (Next page)*
15. Alt + Page up - *Moves one screen Left.*
16. Alt + Page down - *Moves one screen Right.*
17. Ctrl + Page up - *Moves to the previous worksheet.*
18. Ctrl + Page down - *Moves to next worksheet.*
19. Ctrl + G or F5 - *Addresses a named cell.*

ENTERING DATA

In Microsoft Excel, data is entered in the current/active cell.

To enter data:

1. Click the cell into which you want to enter data to make it active. You can also use the arrow keys to the cell.
2. Type the required data e.g. numbers, symbols e.t.c.
(as you type, the data appears in the formula bar and in the active cell)
To erase unwanted characters, press backspace.
3. Press enter or click the enter box in the worksheet.
To cancel the entry press Esc or click the cancel box x on the formula bar.
To move to the next cell, press the tab key or an arrow key.

EDITING DATA ON THE WORKSHEET

If you notice a mistake after you have finished entering data, do the following:

1. Double click the cell containing the data you want correct the cursor appears.
2. Use of backspace /delete key to remove the unwanted characters.
3. When done, press, enter.

OR

1. Move the cell pointer to the cell contain the data you want to edit.
2. Press F2, the cursor appears.
3. Correct the mistakes as required.
4. When done, press enter.

DELETING DATA

1. Click the cell containing the data you want to erase.
2. Press the delete key.

TYPES OF DATA ENTRIES

Microsoft Excel recognizes the following types of data:

1. Label/Text entry
2. Number/Value entry
3. General
4. Currency
5. Date.
6. Time
7. Percentage
8. Fraction
9. Scientific
10. Accounting
11. Special
12. Custom

VALUE

Is a number entry e.g. the result of a formula you view in a cell.

It refers to data that can be evaluated numerically including numbers, dates and mathematical formulas.

A value can either be data you type directly into a cell or the result of formula in the cell.

CHARACTERISTICS OF VALUE ENTRIES:

1. Always right aligned on entry to the worksheet.
2. cannot split into adjacent cells, instead if the entry is too much to fit into the column, it turns into a row of hashes (#####) indicating that the column is not wide enough
3. Can turn into a label/text entry if you start the entry with a single quotation mark/apostrophe. For examples years must be entered as labels.

LABEL /TEXT ENTRIES

Is a text entry e.g. a column heading. Labels are text or a combination of text and numbers you enter into a cell.

A label is an entry consisting of text such as Report titles, column and row headings. Labels can consist of any combination of letters, numbers, and punctuation and can be up to 255 characters long.

Label is also a term used to refer to heading and titles in charts such as horizontal and vertical axes.

Characteristics of Labels

1. Always left aligned on entry to the worksheet.
2. Can spill into adjacent cells.
3. Can be a combination of numbers and text e.g. UNEB/2007, 1999/2000, 1GB.etc.
4. Text entries can be up to 255 characters long.

Note: A constant value is data which is either numeric including a date/time or text.

Saving a Workbook

1. Click file menu.
2. Click save or save as
3. In the Save in list box, specify the location under which you want to store your file e.g. My Documents.
4. In the file name box type the name of your file
5. Click save

Saving a Workbook on the floppy diskette

1. Click file menu.
2. Click save or save as
3. In the Save in list box, Select 3½ floppy (A:)
4. In the file name box type the name of your file.
5. Click save

Differences between Save and Save As Commands

Save and Save As commands work the same if you are saving a workbook for the first time, However, they work differently after saving your workbook.

Use the “Save” command to save any changes/additional information you have made to your workbook.

Use “Save As” command to save a workbook under a different name or location e.g. on a diskette (3¹/₂ Floppy A:)

Closing a Workbook

1. Click file menu.
2. Click Close or click the close button in upper right corner of the document window

Retrieving /Opening a Workbook

1. Click file menu.
2. Click Open
3. In the “Look in” list box, specify the location under which your file is stored
4. Click the file you want to open and Click open.

Exiting Microsoft Excel

1. Click file menu.
2. Click Exit.

Or

Click the close button in upper right corner of the Microsoft Excel Screen.

Or

Press ALT + F4 to quit Micros Excel.

Selecting Data in a Worksheet

A selection consists of the highlighted items on the screen that will be affected by the next command or action.

Before carrying out most tasks in Excel such as formatting, copying, moving or deleting data, one must first select the data you want work with.

The selection can be a single cell, range, entire row, column or worksheet.

Selecting a Single Cell

With a mouse, click the cell you want to select.

Or

With a keyboard, press the arrow keys to move to the cell you want to select.

Selecting a Range

A range is a group/block of cells. A range may vary from a single cell, row, column, a rectangular block of cells or entire worksheet.

Ranges are commonly when manipulating data in a worksheet. E.g. summation of data in a specified range or finding the average, minimum or maximum values from the specified range.

To select a range, do the following:-

With a mouse, click the first cell of range and then drag over the to last cell of the range.

Or

With a keyboard, use the arrow keys to move to the first cell of the range, press F8 to turn on the extension key and then press the arrow keys to extend the selection to include the cells you want to select.

Selecting Ranges of Ranges (Non-adjacent Cells) using a mouse

1. Select the first cell or range of cells.
2. While holding down the ctrl key, click the additional cells or drag through ranges of cells you want to select.

Selecting Ranges of Ranges (Non-adjacent Cells) using a Keyboard

1. Select the first cell or range of cells.
2. Press F8 to turn on the Extension key and then use arrow keys to extend the selection.
3. Press Shift + F8 to keep the current selection and then move to another part of the worksheet to select another range.
4. Repeat steps 1-3 to make more selections.

Selecting Entire Row

Click the row heading (row number)

To select several rows, drag through the row headings.

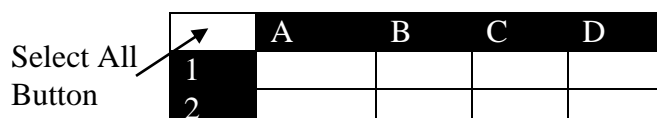
Selecting Entire Column

Click the column heading e.g. A, B, C.

To select several columns, drag through the column headings.

Selecting Entire Worksheet

Click the “select all” button located above the first row and left of the first column



The diagram shows a small grid representing the top-left corner of a worksheet. The first row is labeled '1' and the first column is labeled 'A'. The cell at the intersection of row 1 and column A is shaded black and contains a white arrow pointing to it from the text 'Select All Button' located to the left of the grid. The rest of the grid consists of empty cells.

Select All Button		A	B	C	D
	1				
	2				

Copying Data within the worksheet

1. Select the cells you want to copy.
2. Right Click the select cells
3. Select the paste area (Click the upper most left cell of the paste area)
4. Right Click and Choose Paste.

Copying Cells and Data by Dragging

1. Select the cells you want to copy.
2. Point to the border of the selected cells
3. Hold down the ctrl key and drag the cells to the new location on the worksheet.

Note: To drag the selection to a different worksheet, hold down ctrl + Alt and then drag over a sheet tab.

Cutting/Moving Cells and Data

1. Select the cells you want to move.
2. Right click the highlighted cells and from the Pop-up menu, Click cut.
3. Right click, the paste area (Right Click the upper most left cell of the paste area)
4. Choose Paste from the Pop-up menu (CTRL + V).

Moving Cells and Data by Dragging

1. Select the cells you want to move.
2. Point to the border of the selected cells
3. Drag the cells to the new location on the worksheet

Note: To move the selection to a different worksheet, hold down Alt key and then drag over a sheet where you want the data to be moved.

USING THE FILL COMMAND

The fill command is used to copy or fill data to adjacent cells.

To use the fill command, do the following:

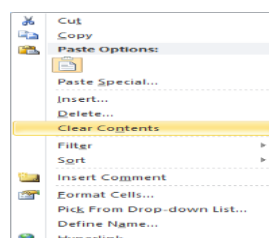
Drag the fill handle at the right most bottom corner of the selected cells to fill the data to adjacent cells.

Clearing cells

The Clear command on the edit menu clears the contents (Data), format, comments or all from the selected cells and leaves the cells within the structure of the worksheet.

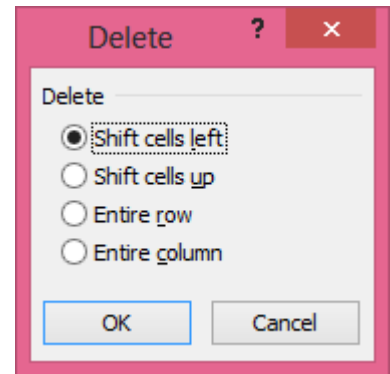
To clear cells do the following:

1. Right click on the selected cells
2. Click clear Contents



Deleting cells or Ranges of Cells

1. Select the cell or range you want to delete.
2. Right click on the selected cells
3. Click Delete, the dialog box appears.
4. Decide how you want to shift cells e.g. Up, left, right or down.
5. Click Ok.



Deleting an entire Row

1. Select the row you want to delete. (The best way a row is to click on the row heading or drag through the row headings)
2. Right click in the row heading,
3. From the Pop up menu, Click Delete.

Deleting an entire Column

1. Select the column you want to delete. (The best way a column is to click on the column Heading or drag through the column headings)
2. Right click in the column Heading e.g. A, B, C etc
3. From the Pop up menu, Click Delete.

Deleting an entire Worksheet

1. Right click the worksheet you want to delete e.g. Sheet1
 2. From the Pop-up menu, Click delete.
- Note:** The Worksheet will be permanently deleted.

FINDING AND REPLACING TEXT AND NUMBERS IN THE WORKSHEET

1. In a worksheet, click any cell.
2. On the **Home** tab, in the **Editing** group, click **Find & Select**.



3. Do one of the following:
 - To find text or numbers, click **Find**.
 - To find and replace text or numbers, click **Replace**.
4. In the **Find what** box, type the text or numbers that you want to search for.
5. In the Replace with box., enter the or numbers you want to replace with
6. Click Replace or Replace All button to replace the text or numbers.
7. When done, Click close button to close the dialog box..

Note:

You can use wildcard characters, such as an asterisk (*) or a question mark (?), in your search criteria:

- Use the asterisk to find any string of characters. For example, **s*d** finds "sad" and "started".
- Use the question mark to find any single character. For example, **s?t** finds "sat" and "set".

CHANGING VIEWS

Microsoft Excel has modes you can use to view data in the worksheet.

1. Normal View (default View).
2. Page Layout View
3. Page Break Preview.
4. Custom views
5. Full Screen View.

To switch between Normal View and Page Break Preview, do the following:

1. Choose View Menu
2. Click the view you want e.g. normal or Page Break Preview

Hiding/Minimizing a Ribbon

To reduce screen clutter, some tabs are shown only when they are needed. When the Ribbon is minimized, you see only the tabs.

Right-click the Ribbon, and then click **Minimize the Ribbon**.

Displaying/Restoring a Ribbon Hiding a Toolbar

Right-click the Ribbon, and then click **Minimize the Ribbon**.

Note:

To quickly minimize the Ribbon, double-click the name of the active tab. Double-click a tab again to restore the Ribbon.

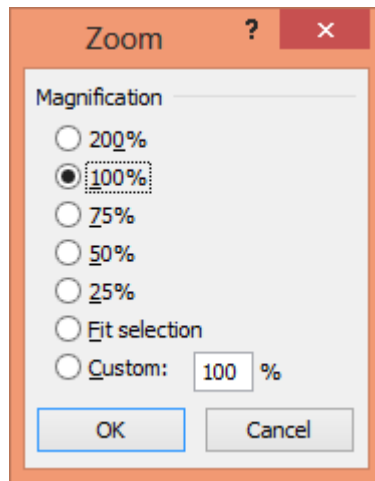
Keyboard shortcut: To minimize or restore the Ribbon, press **CTRL+F1**.

ZOOMING IN AND OUT OF THE WORKSHEET

Zooming refers to the magnification or reduction in the screen display. Zooming displays a worksheet at different scales/sizes ranging from 25% - 400%

To zoom in or out of the worksheet, do the following:

1. Click View Tab.
2. Click zoom, the zoom Dialog box appears.
3. Select the required magnification from the list or you can type a zoom size in the custom box.
4. Click Ok.



WORKING WITH FULL SCREEN

Full Screen displays your worksheet in detail. In full screen mode, all window elements such as Tabs, Ribbon and status bar are hidden.

To switch to Full Screen View, Click View Tab, click Full Screen view.

To return to normal view, Press **Esc/Cancel** Key.

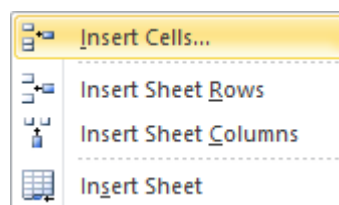
DISPLAYING THE FORMULA BAR

If you do not see the formula bar on the Screen, click View Tab, Click Formula bar.

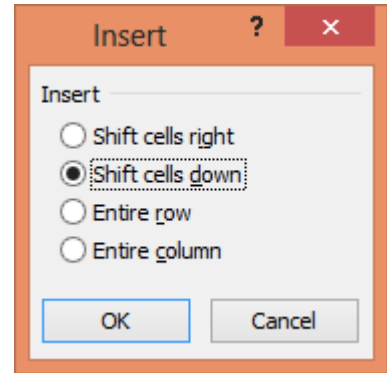
INSERTING CELLS

You can insert blank cells above or to the left of the active cell on a worksheet. When you insert blank cells, Excel shifts other cells in the same column down or cells in the same row to the right to accommodate the new cells

1. Select the cell or the range of cells where you want to insert the new blank cells. Select the same number of cells as you want to insert. For example, to insert five blank cells, select five cells.
2. On the **Home** tab, in the **Cells** group, click the down arrow next to **Insert**, and then click **Insert Cells**.



3. The Dialog box appears
4. Decide how you want to shift cells e.g. right, left up or down.
5. When done, click ok



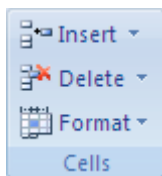
ADDING/ INSERTING A ROW(S)

1. To insert a single row, select either the whole row (Click in the row heading) or a cell in the row above which you want to insert the new row. For example, to insert a new row above row 5, click a cell in row 5.

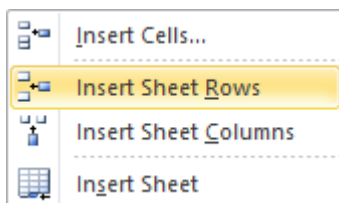
To insert multiple rows, select the rows above which you want to insert rows. Select the same number of rows as you want to insert. For example, to insert three new rows, you select three rows.

To insert nonadjacent rows, hold down CTRL while you select nonadjacent rows.

2. On the **Home** tab, in the **Cells** group, click the down arrow next to **Insert**.



3. Click **Insert Worksheet Rows**.



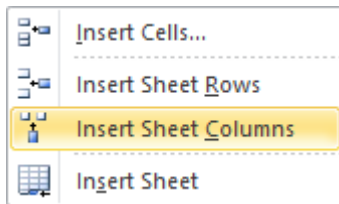
Note: You can also right-click the selected rows and then click **Insert**.

ADDIND/ INSERTING COLUMNS

1. To insert a single column, click a cell in a column to the right where you want to add a column.

To insert many columns, select the same number of columns as the number of columns you want to insert.

3. On the **Home** tab, in the **Cells** group, click the arrow next to **Insert**.
3. Click **Insert Sheet Columns**.

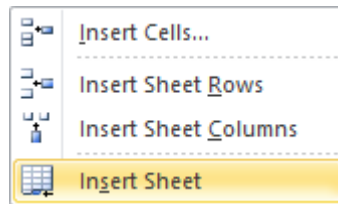


Note:

You can also right-click the selected cells and then click **Insert**.

INSERTING WORKSHEETS

1. Select the worksheet where you want to insert the worksheet
2. Click Home Tab
3. Click the down arrow next to insert



4. Click insert Sheet.

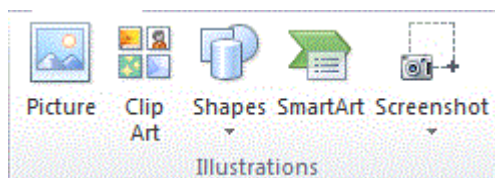
Or

1. Right click a sheet Tab
2. Click Insert from the shortcut menu,
3. Choose Worksheet
4. Click ok.

INSERTING PICTURES/CLIP ART/SHAPES INTO THE WORKSHEET

You can insert or copy pictures and clip art into an Excel worksheet from many different sources, including downloading from a clip art Web site on the Internet.

1. Click Insert Tab
2. Click in the **Illustrations** group.



3. In the **Clip Art** task pane, in the **Search for** text box, type a word or phrase that describes the clip art that you want, or type all or some of the file name of the clip art.
4. Click **Go**.
5. In the list of results, click the clip art to insert it.

SIZING A PICTURE

Drag the picture handles (place holders) to size the picture.

Note, Picture handles| place holders are small squares surrounding the picture when you click on it. Drag to size only when you see the mouse pointer turns into two headed arrows.

MOVING A PICTURE

Point to the picture you want to move, when you see the mouse pointer turn into 4-headed arrows; drag the picture to the new location.

DELETING A PICTURE

1. Select the picture you want to delete
2. Press the delete key on the key board.

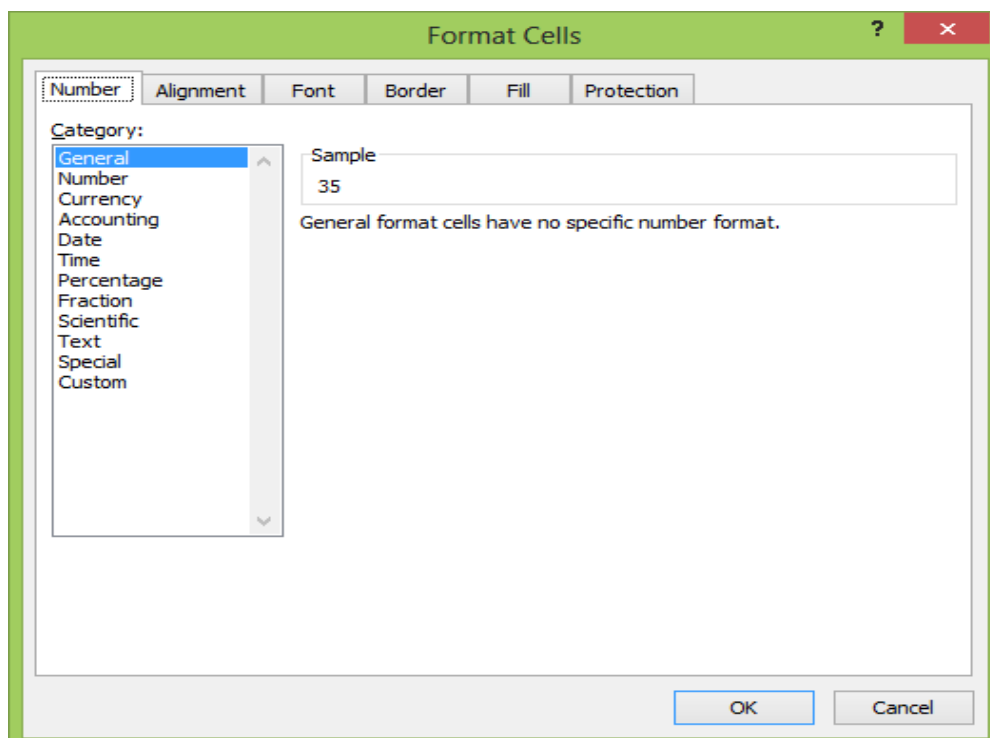
FORMATTING CELLS

Cells can be formatted when they are empty. The containing data. If empty cells are formatted, the data entered in these cells takes on the formats applied.

To format cells do the following:

1. Select the cells you want to format.
2. Click Tab.
3. Click the down arrow next to format menu,
4. Click Format cells.

The format cells dialog box appears with the following options:



Number

This is used to format cells containing numbers. Excel uses a general number format unless you specify otherwise.

The general number format right aligns numbers and left aligns text entries.

To format numbers, click number from the category and then make necessary settings as required and click ok.

Alignment

This refers to location of numbers and text within the selected cells. E.g. left, center, right or justify.

There are two types of alignment:

1. Horizontal alignment.
2. Vertical alignment

Horizontal Alignment

Aligns numbers and text within the selected cells horizontally (General, Left, Center, Right or Justify)

Horizontal Alignment includes the following:

1. General – aligns text to the left and numbers to the right
2. Left – aligns selected cells entries to the left.
3. Center – aligns selected cells entries to the Center
4. Right – aligns selected cells entries to the right
5. Fill – repeats the contents of the selected cell entries until the cell is full.
6. Justify – aligns text and numbers within the selected cells to the left and right.

Vertical Alignment

Aligns cell entries vertically e.g. to the Top, Center or bottom of the cell.

Vertical alignment includes the following:

1. Top – aligns the selected cell entries to the top.
2. Center - aligns the selected cell entries to the Center of the cell vertically.
3. Bottom - aligns the selected cell entries to the bottom of the cell.
4. Justify – aligns text and numbers within the selected cells to the Top and bottom

Text Wrap

Displays long strings of text on multiple lines within a cell. i.e. limits long text within the cell.

Orientation

Rotates the selected cell to the specified degree. You can specify the degree of rotation for the cell. E.g. 45^o, 90^o, 180^o, -90^o etc. The default or Normal is 0^o.

Indenting

This is used to specify a distance of text or numbers in a cell from the left border.

MERGING/JOINING CELLS

Centers or aligns or merges data that spans several rows or columns such as Column or Row headings into one cell.

To merge/join cells do the following:

1. Select the cells you want to merge/join.
2. Right click the selected cells, From the Pop-up menu, Click Format Cells
3. Click Alignment Tab/Button in the dialog box
4. Click merge Cells
5. Click ok.

SHRINKING CELL ENTRIES

Reduces the size of the data in a cell to fit without resizing the cell.

Steps

1. Right Click the cell you want to shrink
2. From the Pop-up menu, Click Format Cells, The Format Cells Dialog Box appears
3. Click Alignment Tab
4. Shrink to fit
5. Click Ok.

FONT TAB

Enables one to choose the font type/typeface, Style, Size, font Colour, Underline and other effects to the selected cells.

The preview area in the Font dialog box shows a sample of what the formatted text will look like.

Steps:

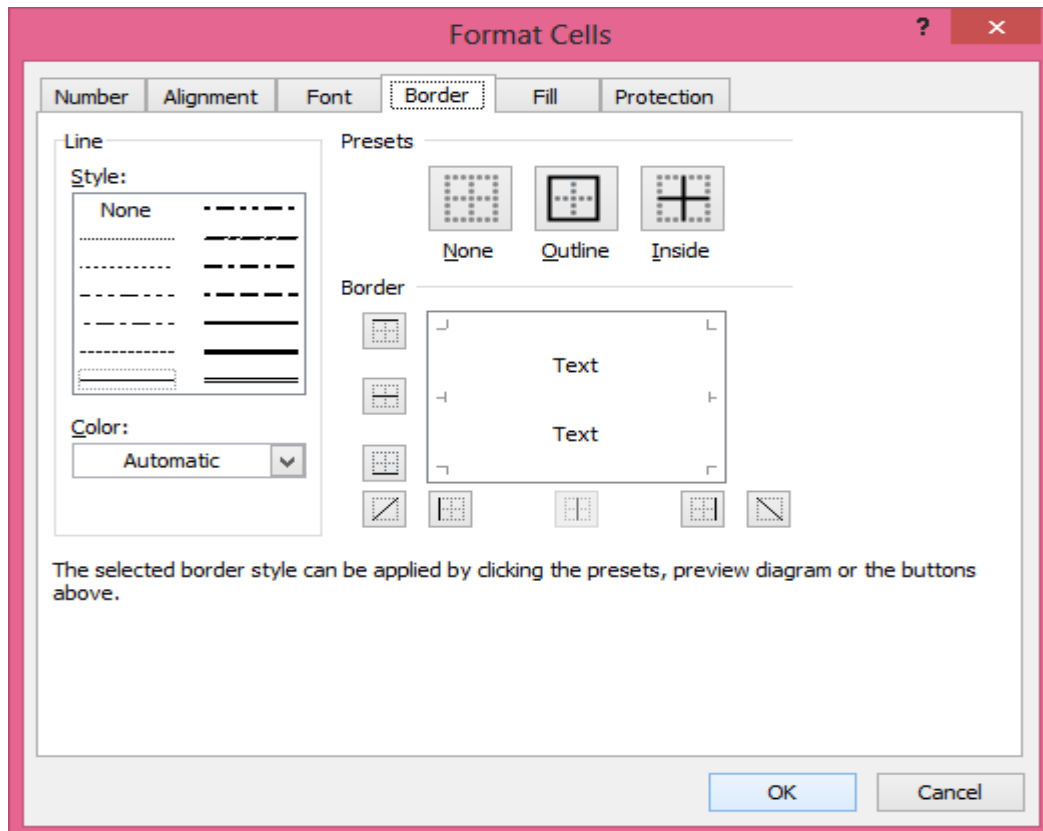
1. Select the cells you want to format.
2. Click Home Tab
3. Click Format and then Click Format Cells. Dialog Boxes appears.
3. Click Font Tab.
4. Choose options e.g. Font, Font style, Font size, Colour, Underline etc.
5. When done, Click ok.

ADDING BORDERS

In MS-Excel, borders are added along specific edges of each cell in the selection. The particular edges are Outline, Left, Right, Top and Bottom.

To add borders do the following:

1. Select the cells you want to format.
2. From the **Home Tab**, Click the down arrow next to **Format**, Then Click **Format Cells**, The Format Cells dialog box appears.



3. Click the Border Tab.
4. Under presets, Click the Inside and Outline buttons to apply borders to all edges of the selected cells. Or click the buttons under borders to apply borders to specific sides/edges of the selected cells.

REMOVING BORDERS

1. Select the cells from which you want to remove borders.
2. Click Home Tab, Click Format and then click format cells. Dialog Box appears.
3. Click Borders Tab
4. Click None.

APPLYING PATTERNS

Controls the shading of the selected cells in the worksheet or appearance of the selected graphic or object.

You can format text boxes, ovals, arcs, rectangles, picture borders and lines. The options available depend on the object you have selected.

To apply cell Shading and patterns to the selected cells, do the following

1. Right Click the selected cells
2. Click Format cells, the format cells dialog box appears
3. Click the Patterns Tab.
4. Under Cell Shading, Select the Colour and Pattern you want
5. When done, click ok.

REMOVING PATTERNS AND SHADING

1. Select the cells from which you want to remove the shading
2. Right Click the selected cells and from the Pop-Up menu, Click format Cells.
3. Click Fill Tab
4. Click No Colour.
6. Click Ok.

PROTECTING WORKSHEETS AND WORKSHEET ELEMENTS

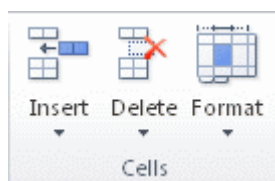
To prevent a user from accidentally or deliberately changing, moving, or deleting important data from a worksheet or workbook, you can protect certain worksheet or workbook elements, with or without a password. You can remove the protection from a worksheet as needed.

Protection determines whether cells will be locked or whether their formulas will be hidden when you protect the worksheet.

Locked cells cannot be edited when the worksheet is protected. Hidden cells display their values but no formula appears in the formula bar.

To protect a Worksheet do the following:

1. Select the worksheet that you want to protect.
2. To Lock/unlock any cells or ranges that you want other users to be able to change, do the following:
 1. Select each cell or range that you want to unlock.
 2. On the **Home** tab, in the **Cells** group, click **Format**, and then click **Format Cells**.



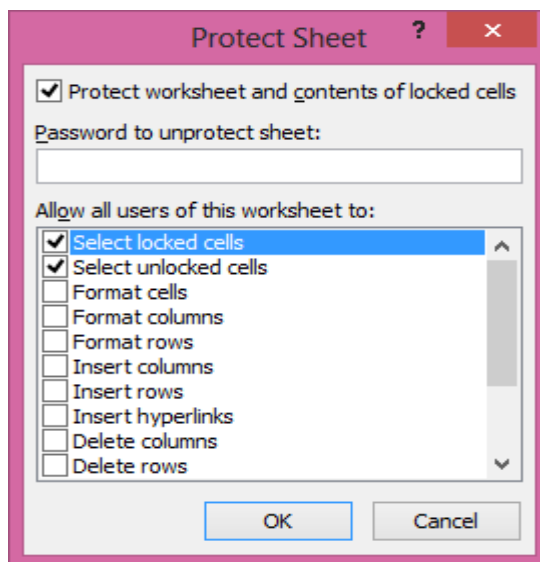
- On the **Protection** tab, Check (lock) or clear the **Locked** check box to unlock to cells, and then click **OK**.

To hide any formulas that you do not want to be visible, do the following:

- In the worksheet, select the cells that contain the formulas that you want to hide.
 - On the **Home** tab, in the **Cells** group, click **Format**, and then click **Format Cells**.
 - On the **Protection** tab, select the **Hidden** check box, and then click **OK**.
- On the **Review** Tab, in the **Changes** group, Click **Protect Sheet**.



The Protect sheet Dialog Box appears.



- To prevent other users from removing workbook protection, in the **Password** box, type a password, click **OK**, and then retype the password to confirm it.
- In the **Allow all users of this worksheet to** list, select the elements that you do not want users to be change.
- Click ok.

PROTECTING WORKBOOKS

1. Click the Review Tab
2. Click **Protect Workbook**



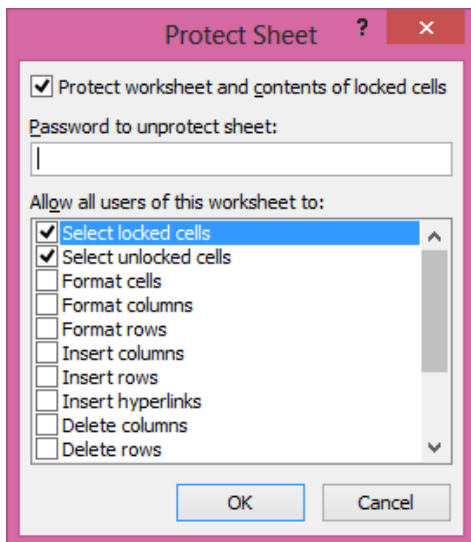
2. Under **Protect workbook for**, do one or more of the following:
 - To protect the structure of a workbook, select the **Structure** check box.
 - To keep workbook windows in the same size and position every time the workbook is opened, select the **Windows** check
3. To prevent other users from removing workbook protection, in the **Password (optional)** box, type a password, click **OK**, and then retype the password to confirm it.

UNPROTECTING WORKSHEETS

1. On the **Review** Tab, in the **Changes** group, Click **Protect Sheet**.



2. In the **Allow all users of this worksheet to** list, select the elements that you want users to be able to change.



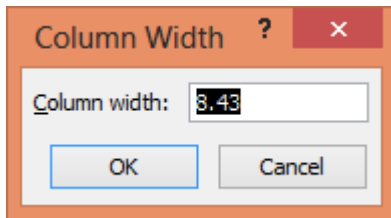
3. In the **Password to unprotect sheet** box, type a password for the sheet, click **OK**, and then retype the password to confirm it.

Note:

Passwords are case sensitive and thus great care must be taken when entering a password.

ADJUSTING COLUMN WIDTH

1. Click a cell in a column (for a single cell) or select an entire row to change the width of all Columns in the worksheet.
2. Click Home Tab, Click Format and then choose Column width. Dialog Box appears.



3. Enter the width you want in the column width box.
4. Click ok.

The standard/default column width is 8.43 points (64pixes).

Note:

You can adjust the column width by dragging the column border to the right of the column heading until the column is the size you want.

You can also adjust the column width for auto Fit by Double Clicking the column border to the right of the column heading.

STANDARD COLUMN WIDTH

Changes the width of all columns in the active worksheet that have not been individually changed.

You can enter an integer or decimal fraction from 0 – 255. This number represents the number of characters that can be displayed in a cell for the current font or size.

HIDING ROWS OR COLUMNS

1. Select the Row (s) or Column (s) you want to hide
2. Click Home Tab, Click Format, Under Visibility, point to hide & unhide
3. Click Hide Rows or Columns.

UNHIDING ROWS OR COLUMNS

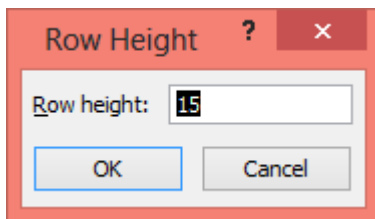
1. Select the Row (s) or Column (s) you want to unhide
2. Click Home Tab, Click Format, Under Visibility, point to hide & unhide
3. Click Unhide Rows or Columns.

ADJUSTING ROW HEIGHT

The row height automatically changes according to the size of the data in it. However, one can change the row height as desired.

To adjust the row height, do the following:

1. Select the only one cell in the row to change the height for the entire row. To change the height of all rows in a worksheet, select one entire column or entire worksheet.
2. Click Home Tab, Click Format and then choose Row Height. Dialog Box appears.



4. Enter the integer or decimal fraction representing the row height in the Row height box in points e.g. 15, 20, 30 and so on. The default or standard row height is 15 points.
5. Click ok.

Standard Row Height

Standard row height varies according to the font size. It returns each row in the selection to the standard height for the font within the row.

If the row contains more than one font, the standard row height is adjusted for the largest font.

To apply standard row height, do the following:

1. Select the rows you want to format.
2. Click **Home Tab**, Click Format
3. Click AutoFit Row height

RENAMING WORKSHEETS

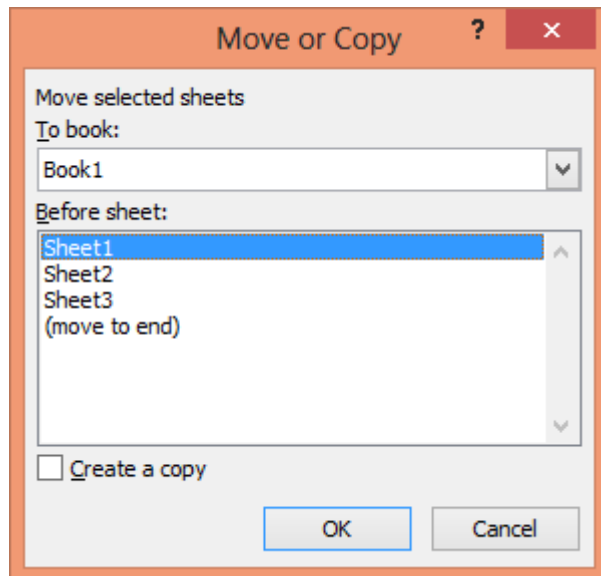
1. Right click the worksheet you to rename.
2. From the Pop-Up Menu, Click Rename
3. Type the name of the worksheet and press enter.

Or

1. Select the sheet you want to rename
2. Choose **Home Tab**
3. Click the down arrow next to **Format**
4. Click Rename Sheet
5. Type the sheet name and press enter.

MOVING OR COPYING A SHEET

1. Right click the worksheet you to Move or Copy
2. From the Pop-Up Menu, Click Move or Copy, Dialog Box appears



4. Select the sheets you want to move and click ok
5. To copy a sheet, Click create a copy and click ok.

DELETING WORKSHEETS

Right the Sheet you want to delete and then click delete

WORKING WITH PANES AND TITLES

Panes are screen portions. Panes allow the user to view different areas of a large worksheet simultaneously. You can split a window into two panes horizontally or vertically.

With a **vertical split**, the panes scroll together vertically but independently horizontally.

With a **horizontal split**, the panes scroll together horizontally but independently vertically.

If you split a window both vertically and horizontally, you can display four panes.

SPLITTING A WINDOW INTO TWO PANES

1. Select a column (for a horizontal split) or a row (for a vertical split).
2. Click Window Menu
3. Click Split

Alternatively, you can split a window into two panes by dragging the horizontal or vertical split box to the desired position. These boxes are found on the Vertical and horizontal scroll bars. When you position the mouse pointer on a split box, the pointer changes into a two-headed arrow.

SPLITTING A WINDOW INTO FOUR PANES

1. Select a cell to the left and top of which you want the split to occur (for both Vertical and Horizontal split)
2. Click **View Tab**
3. Click Split.

Note:

You can adjust split panes by dragging the split bar to the position you want.

If you want to display another copy of your worksheet in its own window, Click **View Tab**, Then Click **Arrange All**.

REMOVING SPLITS

1. Click View Tab
2. Click Split.

Alternatively, Double Click any part of the split bar to remove it.

FREEZING PANES AND TITLES

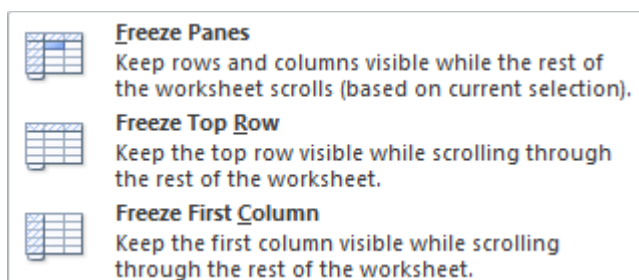
Freezing panes keeps row and column headings/titles on the screen while scrolling through a long list of data on the worksheet.

You can split a window into panes first and then freeze panes or you can freeze worksheet titles in a single step.

Freezing Titles does not affect printing.

FREEZING VERTICAL/HORIZONTAL TITLES

1. Select a row below the titles (for a horizontal split) or a column to the right of the titles (for a vertical split).
2. Click **View Tab**
3. Click Freeze Panes.



FREEZING BOTH HORIZONTAL AND VERTICAL TITLES

1. Select the cell below the titles and right of the columns you want to freeze.
2. Select **View Tab**
3. Click Freeze

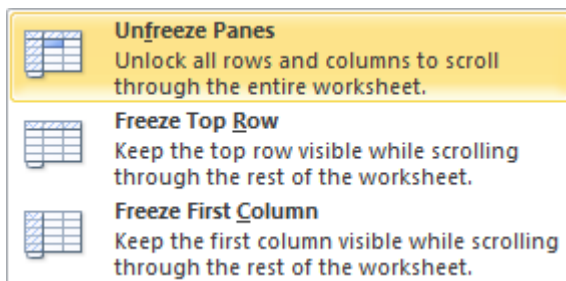
All rows above the selected cell and columns to the left of the selected cell will be frozen.

Note:

1. If you split the window before freezing panes, the panes are frozen at their current location, not at the active cell.
2. To freeze a pane if the window is already split, select Window Menu, Click freeze Panes.
3. If you split window before choosing the Freeze Panes command, the split remains otherwise the window returns to normal.

UNFREEZING PANES AND TITLES

1. Click **View Tab**
2. Click the down arrow next to Freeze Panes
2. Click Unfreeze Panes.



WORKING WITH FORMULAS

A formula is a set of instructions for performing a calculation. A sequence of values, cell references and operators in a cell that together produce a new value.

TYPES OF FORMULAS

There are three types of formulas in Microsoft Excel worksheets. These include:

1. Arithmetic formulas.
2. Logical formulas
3. Text Formulas

ARITHMETIC FORMULAS

These are formulas used to evaluate numbers. They are the most commonly used type of formulas.

ARITHMETIC OPERATORS

- | | | | |
|----|---|---|----------------|
| 1. | + | - | Addition |
| 2. | - | - | Subtraction |
| 3. | / | - | Division |
| 4. | * | - | Multiplication |
| 5. | ^ | - | Square |
| 6. | % | - | Percentage |

LOGICAL FORMULAS

These are formulas used for comparing values. The comparison operators include:

- | | | | |
|----|----|---|-------------------------|
| 1. | = | - | Equal to |
| 2. | < | - | Less Than |
| 3. | > | - | Greater than |
| 4. | =< | - | Less than or Equal to |
| 5. | => | - | Greater or Greater than |
| 6. | <> | - | Less or Greater |

TEXT FORMULAS

These are formulas used for evaluating text. The text operator is &.

Example:

= "New" & Vision" and then press enter key.

= Newvision.

REFERENCE OPERATOR

1. Full colon [:]

UNION OPERATOR

This is used to combine a number of values or cell addresses to obtain the total sum. The union operator is a Comma (,).

Example: =Sum(A1,B2, C4,D9)

HOW TO ENTER A FORMULA

1. Select a cell in which you want to enter the formula.
2. Type an = or + sign. (all formulas in Ms-Excel always begin with a plus or Equal sign. These signs tell Excel that all data that follow these signs is a formula. Please avoid starting your entry with a “+” or “=” or “-” sign if you are not entering a formula.
3. Type the cell reference/address, values, operators, parenthesis, and functions immediately after the = or + sign.
4. Press Enter Key to complete the formula.

Examples of some formulas

1. =Sum(A2:E12) - Produces the Total sum of all cells spanning from A2 through E12.
2. =(F37/12)*30 - Produces the result of dividing the value in F37 by 12 then Multiplying it by 30.
3. =(B4^2) - Produces the result of squaring the value in B4.

PARTS OF A FORMULA

A formula can begin with an equal sign or a plus sign. These signs are immediately followed by desired sequence of values, cell references, names, functions or operators.

A formula calculates a value from the existing values. The existing values can be constants that are entered as part of the formula itself or they can be other cells that are referenced or named in the formula

The operators and functions specify the type of calculation you want Excel to perform in the formula.

CELL REFERENCES AND REFERENCING

A reference is the location of a cell on a worksheet. For example, the cell reference B5 refers to a cell in Column B row 5.

References make formulas flexible. You can use the same value in many formulas by entering the value in the cell and entering the reference of that cell in the formula. If you should change the value in the cell, Excel automatically updates all formulas using the value.

TYPES OF REFERENCES

Micro Excel recognizes three types of references. These include:

1. Relative Reference
2. Absolute Reference
3. Mixed Reference.

RELATIVE REFERENCE

This is the references of a cell regardless of its location on the worksheet. A5, K95, G27.

Or

Relative reference is the normal cell reference that is automatically adjusted when a formula is copied that refers to that cell.

Relative reference tells Excel how to find another cell starting from a cell containing the formula. It is like giving some one direction e.g. go up 2 floors and turn right.

Relative references are used to copy formulas across rows.

ABSOLUTE REFERENCE

This is a reference of a cell based on its exact location on the worksheet.

or

Absolute reference is a reference of a cell that Excel cannot automatically adjust.

Absolute references are indicated/designated by adding a dollar sign (\$) before the Column letter and Row number. Examples of absolute references: \$D\$9, \$G\$24, \$B\$2.

\$B\$2 is the same as B2.

Absolute references are used to copy formulas downward the column.

Absolute reference is like a street address e.g. Plot 30 Kampala Road. It tells Excel how to find a cell based on the exact location of that cell on the worksheet.

MIXED REFERENCE

Is a reference that uses an absolute column reference and a relative row reference and Vice-versa.

or

Is a cell reference that has either a row or column made Absolute but not both using a dollar Sign (\$).

Examples of mixed references are \$A2 or A\$2, which is the same as A2.

FORMULAS AND ARITHMETIC OPERATORS

Apart from performing arithmetic operations on numbers typed directly into a formula, one can enter cell references/addresses of the cells containing numbers into the formula instead of numbers themselves. Excel then performs the calculations basing on whatever values are contained in these cells.

For example:

If you have numbers 500 in cell A1 and 320 in A2 and you want the sum of these two values in cell A4, Enter a formula in Cell A4 that refers to the cells A1 and A2, instead of 500 and 320.

Formulas always begin with an equal (=) sign or a plus sign (+). In our example therefore, the formula to be entered in cell A4 would be =A1+A2.

The cell such as A4 in which the formula is entered is called the formula cell.

When you complete the entry, Excel displays the result of the formula in the current cell and the formula itself is displayed in the formula bar.

Arithmetic formulas contain numbers and operators. They are entered into cells like any other entry.

You can also have a combination of cell references and numbers in a formula.

AUTOMATIC RECALCULATION

When you use cell references in a formula, you instruct excel to use whatever numbers which are currently in those cells to give you the result. After you have entered a formula, you can change the numbers at will; Ms-Excel remembers your instructions and automatically recalculates them, generating a new result. This feature is known as **Automatic Recalculation**. Which means that any time you change the values in the cell that is referenced in formulas in other cells (be it directly or indirectly), the result of the formulas are automatically re-calculated.

THE ORDER OF CALCULATION

Formulas that contain more than one operator are a subject to strict rules governing the order of calculation. In some cases these rules cause Excel to calculate a formula in a sequence other than the one expected thus generating unintended results.

The order of precedence among arithmetic operators is:

1. Exponentiation
2. A minus sign or a plus sign occurring at the beginning of the formula.
3. Multiplication and division.
4. Addition and Subtraction.

Example:

The formula = B1 +B2/4 will produce a result dividing B2 by 4 and then adding B1.

If you want the operations within a formula to be carried out in sequence other than one dictated by the rules of precedence, then you need to use parenthesis (brackets). In the above example therefore, if you want the sum of B1 + B2 divided by 4, you should enter the formula: =(B1+B2)/4.

REFERENCING BLOCKS OF CELLS

A block is a group of cells in a worksheet. It sometimes known as a Range.

A block can range in size from a single cell to an entire worksheet. It can contain several cells within a row, column or cells in multiple rows and columns.

A block is designated by the address of the top left corners and the lower right corners separated by two periods or a full colon [:].

If the cells are in the same column the address may be read as the top cell and the bottom cell.

If the cells are in the same row, the address may be read as the left most cell and the right most cell.

Blocks are used in two situations:

1. In formulas
2. In commands.

Examples of blocks:

1. D5 - Single cell block
2. C4:C9 - A block of cells within column C spanning from C4 through C9.
3. B1:E4 - Includes cells spanning through row 1 – 4 and columns B through E.

You can also take the two cells on the other diagonal when specifying a block e.g. B4:E1 instead of B1:E4.

Note:

As you manipulate worksheets e.g. enter a formula, sometimes you may want to refer to so many cells at a go (e.g. totaling values in 100 cells). It becomes tedious if you are to refer to each cell individually. Microsoft Excel provides a way of referring to a group of cells at a time.

INSERTING CELL OR RANGE REFERENCES INTO A FORMULA

Ms-Excel provides two ways of inserting/including cell references in a formula.

You can enter a cell or range reference by typing them into the formula while in enter mode or by selecting the cells/range of cells in point mode.

Using the Point Mode

1. Type an Equal sign or a Plus sign at the beginning of the formula, followed by a function, Parenthesis, Cell address or an operator.
 2. With a mouse simply click on the cell or drag over the range that you want to reference. As soon as you move cell pointer you are placed into point mode. As you select cells or range, the address of the selected cells is inserted into the formula. Otherwise use the arrow keys to select cells or range that you want to reference.
 3. if you want to keep adding cell references to the formula, type another operator and Continue typing or point to another cell.
1. When done entering the formula, press enter or click the enter box.

COPYING A FORMULAR

1. Select the cell containing the formula.
2. Click Edit Menu, Click Copy
3. Select the cells where you want to copy formula.
4. Click Edit Menu, Click Paste.

Alternatively, select the cell containing formula and then drag auto fill handle to copy the formula to the rest of the cells.

USING FUNCTIONS

A function is a pre-defined formula.

Examples of Functions include:

1. SUM
2. AVERAGE
3. PRODUCT
4. MAX (MAXIMUM)
5. MIN (MINIMUM)
6. IF
7. STD. DEV.
8. RANK
9. VLOOKUP
10. COUNT
11. COUNT IF
12. COUNTA
13. COUNT BLANK

- 14. COLUMNS
- 15. ROUND
- 16. MEDIAN
- 17. SUM IF

SUM

Sum adds all the numbers in the range of cells.

Example: =Sum(Range) e.g. =SUM(C2:C9) gives the total sum of cells in column C ranging from C2 to C9.

AVERAGE

Determines/Returns the average value of the selected cells.

Returns the average (Arithmetic mean) of its arguments which can be numbers or names or references that contain numbers.

Mean refers to the Total sum divide by the number of elements.

Example: = AVERAGE(Range)

PRODUCT

Multiplies all the numbers given as arguments and returns the product.

Example: =PRODUCT(Arguments or numbers)

MAX

Returns the Maximum/largest number/value from a set of values.

Example: = MAX(numbers)

MIN

Returns the lowest value in the set of values.

Example: = MIN(numbers)

IF

Returns to one value if a condition you specify evaluates to a True and another value if it evaluates to False.

COLUMNS

Returns the number of columns within the list of arguments.

Example: =COLUMN([Reference])

COUNT

Counts the number of cells in a range that contain numbers.

COUNTA

Counts the number of cells in a range that are not empty

COUNTIF

Counts the number of cells within the range that meet the given condition/criteria.

Example: COUNTIF(Range, criteria) e.g. =COUNTIF(B2:B10, ">60") gives cells within the range that have values greater than 60.

ROUND

Rounds a number to a specified number of digits.

Example: =ROUND(number, num_digits)

MEDIAN

Returns the median, or the number in the middle of the set of given numbers.

Example: =MEDIAN(number1, [number2],...)

RANK

Returns the rank of a number in a list of numbers: its size relative to other values in the list.

Example: RANK(number, ref, [order])

e.g. =RANK(B2, \$B\$2:\$B\$11,0), ranks numbers in the list according to

VLOOKUP

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify, By default, the table must be sorted in ascending order.

Example: VLOOKUP(Lookup value, Table of Array, Col_Index_num, [range_lookup])

MICROSOFT EXCEL ERROR MESSAGES

These are errors which occur when a wrong formula, function, operand or argument is entered into an excel cell.

If Excel cannot properly evaluate a worksheet formula or function, it will display an error value such as #REF, #NULL, #DIV/0, in a cell where the formula is located.

The error value itself plus the error option button, which is displayed in cells with error formulas, gives some help in identifying the problem about the problem.

COMMON EXCEL ERROR MESSAGES AND THEIR MEANING

1. **#NAME?** – Excel does not recognize text in the formula.
2. **#DIV/0!** – Formula is trying to divide a number by 0 or an empty cell.
3. **#NULL!** – A space was used in the formula that references multiple Cells/ranges.
4. **#N/A!** – A formula refers to a value it cannot find. Probably pointing to an empty cell.
5. **#VALUE** – Wrong type of operand/function or argument is used.
6. **#####** - Cell/column is not wide enough to display the contents designated for it.
7. **#REF!** – A cell reference is not valid or A formula refers to a missing cell. or a cell which is not valid. This is often displayed when you delete cells which are referenced in a formula.

MANAGING LISTS

A list is a labeled series of worksheet rows which contain sets of data. A list can be used as a database, where columns are **fields** and rows are **records**.

Microsoft Excel provides a powerful set of commands to make it easy to manage lists. You do not need to do anything special to make your list a database. When you perform a database task such as sorting data, Ms-Excel automatically recognizes your list as a Database.

- Columns in a list are called fields in a database.
- Column headings/Labels in a list are called field names in a database.
- Each row in a list is called a record in a database.

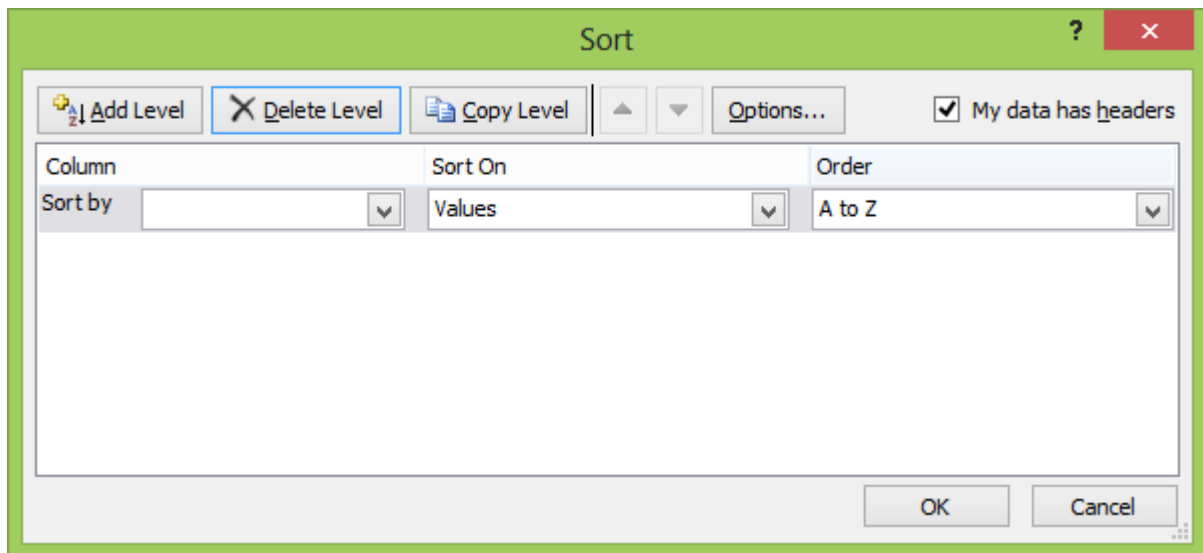
SORTING DATA

Sorting simply means arranging data. Sorting arranges rows in a list according to the contents of the selected columns.

To sort data, do the following:

1. Select a single cell in the list you want to sort.
2. Click **Data Tab**.
3. Click Sort, the sort dialog box appears
4. In the Sort by box, select the column you want to use to sort the data and then select the sort order e.g. Ascending (A-Z) or Descending (Z-A)
5. Click ok.

You can click Add Level tab for more sort options. Otherwise click delete level to remove the level.



Note:

1. Then By Box

Enables one to specify the order in which to sort rows if there are duplicate items in the previous column you specified. Select the sort order for each box to determine the arrangement of data.

2. My List has a Headers

Determines whether the header row/first row of your list is excluded or included when data is being sorted. If your list has column labels/headings, the header row option is selected for you. And the first row is excluded.

Select no Header Row option button to include the first row in the sort.

3. If you sort by one column, rows with duplicate items in the column remain in their original order.
4. Rows with blank cells in the sort column are placed last in the sorted list.
5. If you sort by more one column, Rows with duplicate items in the primary column are sorted according to the second column you specify. Rows with duplicate items in second column are sorted according to the third column you specify.
3. It is possible to sort only selected cells.

WORKING WITH DATA FORMS

A data form provides a simple way to view, change, add and delete records from the list or Database or to find specific records based on the criteria you specify.

When you choose the Form command on the Data Menu, Microsoft reads your data and creates a Data Form dialog box.

When you enter or edit data in these fields, Excel changes the corresponding cells in your list.

To use a data form, your list must have column headings/labels. The data form dialog box automatically expands to display all the fields in your list up to 32 fields.

To use the Data Form, do the following:

1. Click one cell in the list.
2. Click Data Menu.
3. Click Form, the data form dialog box appears.

Adding a Record Using the Data Form

1. In the Data Form Dialog Box, Click New Button.
2. Type the fields for the new record and then press tab key to move to the next field.
3. When you finish entering the data, Press Enter.
4. Repeat steps 1-3 to add more records.
5. When done, Click the Close button to return to the worksheet data.

Note:

The new records are inserted at the bottom of the list.

Browsing through the List

1. To move forward, Click Find Next button.
2. To move Backward, Click Find Prev button

You can also use the scroll bars to move/browse through the list.

Finding Records that meet search Criteria

1. Click the Criteria Button in the Data Form Dialog Box.
2. In the Edit Boxes, type the criteria you want to use to search the list.

You can also enter comparison operators with the Criteria such as >, <, <=, >=, =, and ? or *.

3. Click the Find Next or Find Prev Button.

To locate other records in the list, click the clear button to remove the current criteria and then enter a new criterion.

4. When done, Click Close button.

Regaining Access to the entire List

1. Click the Criteria button
2. Click the Clear button
3. Click the Form button.

FILTERING DATA

Filtering means extracting records/data from a list based on the specified criteria. Filtering enables you to find and work with a subset of the data in your list.

Filtering displays only rows that contain a certain value or that meet a set of criteria while hiding the other rows.

Microsoft Excel provides two commands for filtering data. These include:

1. Auto Filter command
2. Advanced Filter Command

USING AUTO FILTER

This applies Drop-Down arrows directly to the Column Labels/headings in the List. You can then open the arrow buttons to select the item you want to display from the list.

To use Auto filter, Your List/Data must have Column Labels/Headings.

To use Auto Filter, Do the following:

1. Select a cell in a list you want to filter.
2. Click the Data Menu.
3. Point to Filter and then click Auto filter. Ms- Excel inserts Drop-Down Arrow buttons next to each Column Heading in the List.
4. Click the Drop-Down arrow in the column that contains the data you want to display.
5. Select the item you want to display.

REMOVING AUTO FILTER

- Click the Arrow button next to the column you filtered and then click **All** from the list.
- To redisplay all rows in the filtered list, Click data menu, Point to filter and then click **Show**

All.

- To remove the Auto Filter arrows from a list, Select Data Menu, Point to Filter and then Clear the Auto filter.

USING CUSTOM FILTER

Auto filter inserts drop down arrows next to the column heading. To filter data using auto filter, do the following:

1. Click the drop down arrow next to the column you want to filter.
2. Click custom filter
3. Select the condition you want to use to filter the data e.g. equal to, Less than etc.
4. Click Ok.

FILTERING A LIST USING ADVANCED FILTER

Advanced filter enables one to find rows by using a more complex criterion. One can display only rows that meet all the Criteria specified.

A criteria Range is the containing a set of conditions that you use to filter data in a list. It consists of one row that contains the criteria labels and at least one row that defines the search conditions.

To use Advanced filter do the following:

1. Insert several rows at the top of your worksheet.
2. In one blank row, type the Column Headings you want to use to filter the data in the list.
3. In the row below the Column Headings, type the Criteria you want to use to filter the data.
4. Select the data you want to filter.
5. Click the Data Menu.
6. Point to filter, Click advanced filter, The advanced filter dialog Box appears.
7. Select options as required.
8. When done, Click Ok.

Options in Advanced Filter Dialog Box

1. Action

- **Filter the List in Place:** This hides the Rows that do not meet the criteria.
- **Copy to another location:** Copies the filtered data to another location on the same Worksheet or another worksheet.

2. List Range: Specifies the range containing the Criteria.

3. Copy To: Specifies a range of cells to which to copy the rows that meet the criteria you

Specify. It is active only if you select the copy to another location button.

- 4. Unique Records Only:** Displays unique rows that meet the criteria and excludes rows that contain the duplicate items.

If you do not specify a criteria range, this option hides all duplicate rows in the list.

SUBTOTALING DATA IN THE LIST

One way to analyse data in a list is to sub-total the data. The subtotals command on the data menu inserts the subtotal rows in list, summarizing the data any way you choose.

When you insert the subtotals, Ms-Excel automatically inserts the Grand total row at the bottom of the list.

Before you sub-total the data, note the following:

1. The list must have column labels/headings and must be sorted first.
2. Choose the data you want to subtotal.
3. Choose one or groups to define the subtotals.
4. Choose the subtotal function. E.g. if you want to add up values, choose SUM.

To subtotal the data, do the following:

1. Sort the list by the column for which you want the sub Totals.
2. Select a cell list you want subtotal.
3. Click Data Menu.
4. Click subtotals.
5. In the At Each Change In Box, select the column containing the groups you want to Subtotals for.
6. In the use Function Box, select the function you want to use to summarise the data.
7. In the Add Subtotals to Box, select the column containing the values you want to summarise.
8. When done, Click ok

Options in the sub Totals Dialog Box

At Each change In Box: Specifies the column that contains the groups you want Subtotals for. The column must be the one you used to sort the list.

Use Function: Calculates the subtotal using the function you select. The computed Subtotals appear in the Add Subtotals To box.

Add Subtotals To: Specifies a column in which you want the subtotals to appear.

Replace Current Subtotals: Replaces all subtotals in the list with the new subtotals you select.. Clear this box to keep the current subtotals and insert new ones.

Page Break Between Groups: Automatically inserts a page break proceeding each group of data that you subtotal.

Summary Below Data: Places the summary Rows and Grand Total row below the above associated data. Clear this option to insert the Subtotal rows and Grand Total Rows their detail data..

Remove All: Removes all the subtotals from the current list.

REMOVING SUBTOTALS FROM A LIST

1. Select a cell in the List you want to remove the Subtotals.
2. Click Data Menu.
3. Click Subtotals
4. Click the remove all Button.
5. Click ok.

CHARTS/GRAPHS

A chart is a graphical representation of worksheet data. The chart helps to analyse and compare data or put attention to particular aspects of your data.

TYPES OF CHARTS

There are about 14 types of charts that can be created in Microsoft Excel. These include:

1. Column
2. Bar
3. Line
4. Pie
5. Doughnut
6. XY (Scatter)
7. Surface
8. Bubble
9. Stock
10. Area
11. Cylinder
12. Cone
13. Radar
14. Pyramid

CATEGORIES OF CHARTS

There are 2 categories of charts or graphics in Microsoft. These are include:

1. Embedded Charts
2. Chart sheets.

EMBEDDED CHARTS

An embedded chart is a chart that appears on the same sheet with the data it is created from.

Embedded charts are ideal for reports or other documents in which one wants to show a chart within the context of the worksheet data.

CHART SHEETS

A chart sheet is a chart that appears on a separate sheet from the data it is created from.

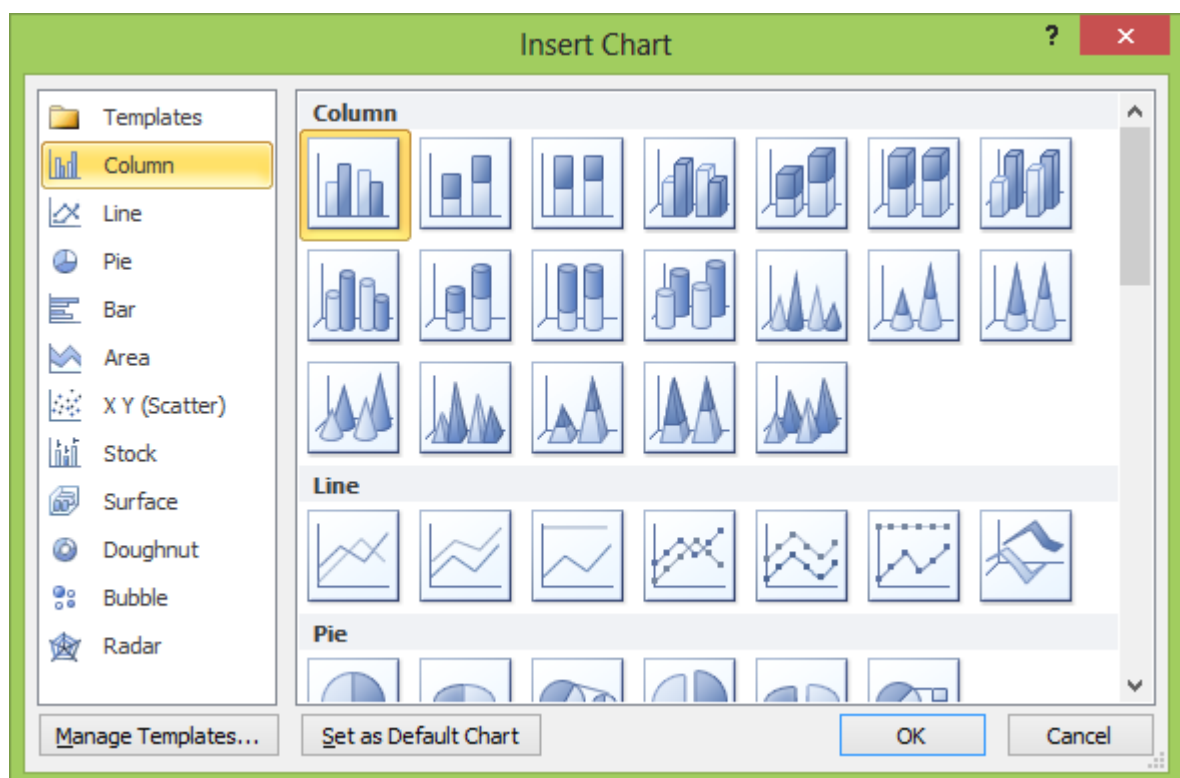
A chart sheet is automatically inserted into the workbook to the left of the worksheet it is based on.

A chart sheet is suitable for presentation and training purposes, such as handouts, or enhancing printed material such as Newspaper articles and advertisements.

Both embedded and chart sheets are linked to the worksheet data they were created from and both are updated whenever you save or update the worksheet.

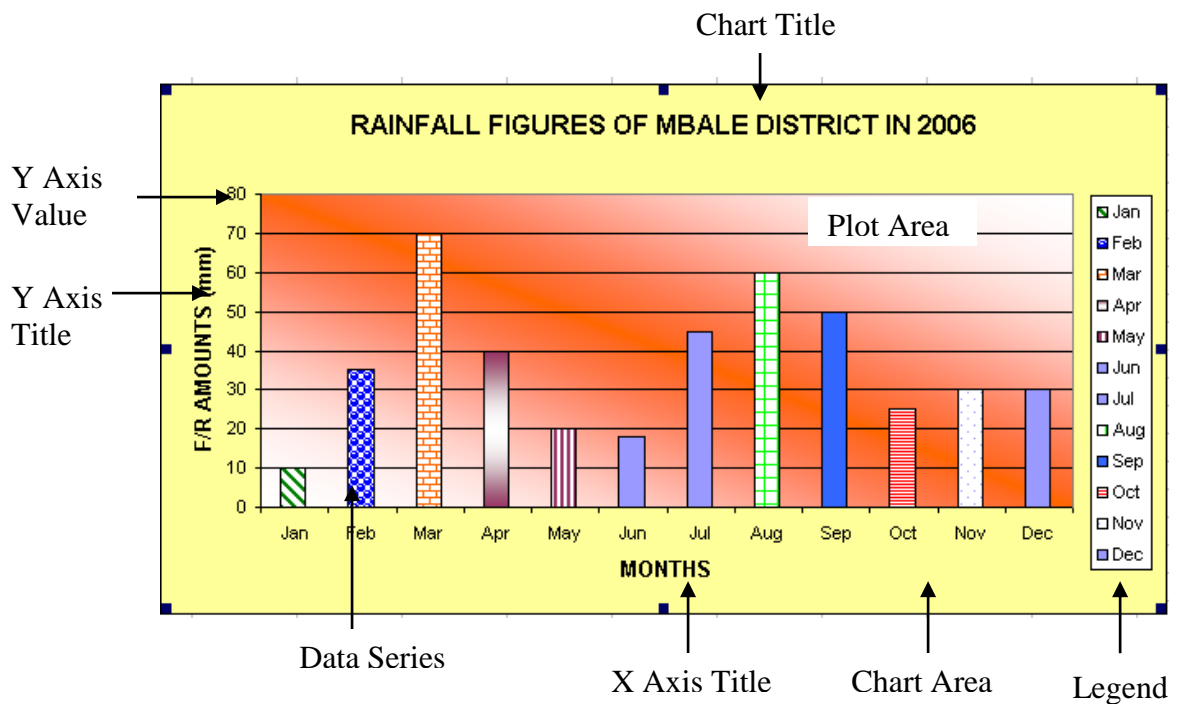
PLOTTING A CHART

1. Select the data you want to plot.
2. Click Insert Tab
3. Click the chart wizard button on the Insert Tab, the chart wizard dialog box appears



4. Select the type of chart you want.

PARTS OF A CHART



FORMATTING A CHART

After creating a chart and adding some chart items, such as Chart Titles, Grid lines, Axis Titles, Legends etc. you can format the entire chart area including data series and plot area or one chart item at a time.

The chart area

This is the area surrounding the entire chart just outside the plot area.

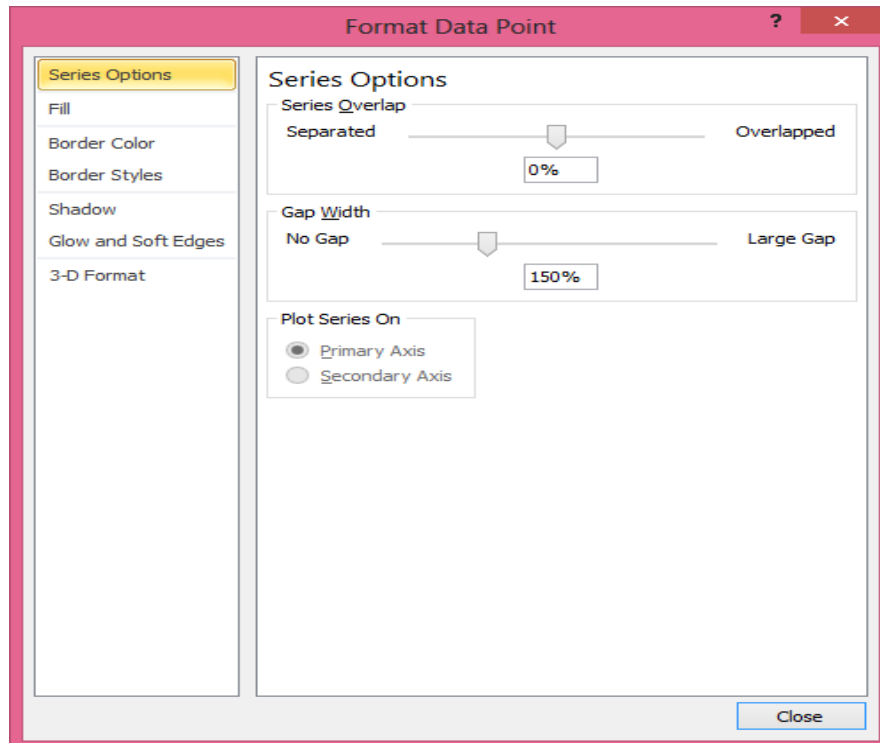
The Plot area

Is the area of the chart where data is plotted.

When you point at any chart item, Microsoft Excel flashes a message telling you what the item is and when you click on it, its name appears in the formula bar in the Name box.

To format an item, Click it and click it again to ensure only one item is selected at a time and then right click it and from the Pop-menu, choose the appropriate command. E.g. to format the Legend, right click on it and choose format Legend.

For each item you select, Microsoft Excel presents a Dialog box with appropriate formats. Click on each Tab that represents the format you want and make any necessary settings.



When done, click ok.

USING GRADIENT, TEXTURE, PARTNER OR PICTURES IN THE CHART.

You can use gradient, Texture, Partner or picture to format Data makers/series in Column, chart, Bar chart, area chart, Bubble chart, Line chart or in the plot area and chart area to enhance the appearance of your chart.

Steps

1. Right click on the chart item you want to format e.g. Chart area, Plot area, Data series or Data Point/Maker or Legend. From the pop up menu, click for example Format chart area.

The dialog box will appear.

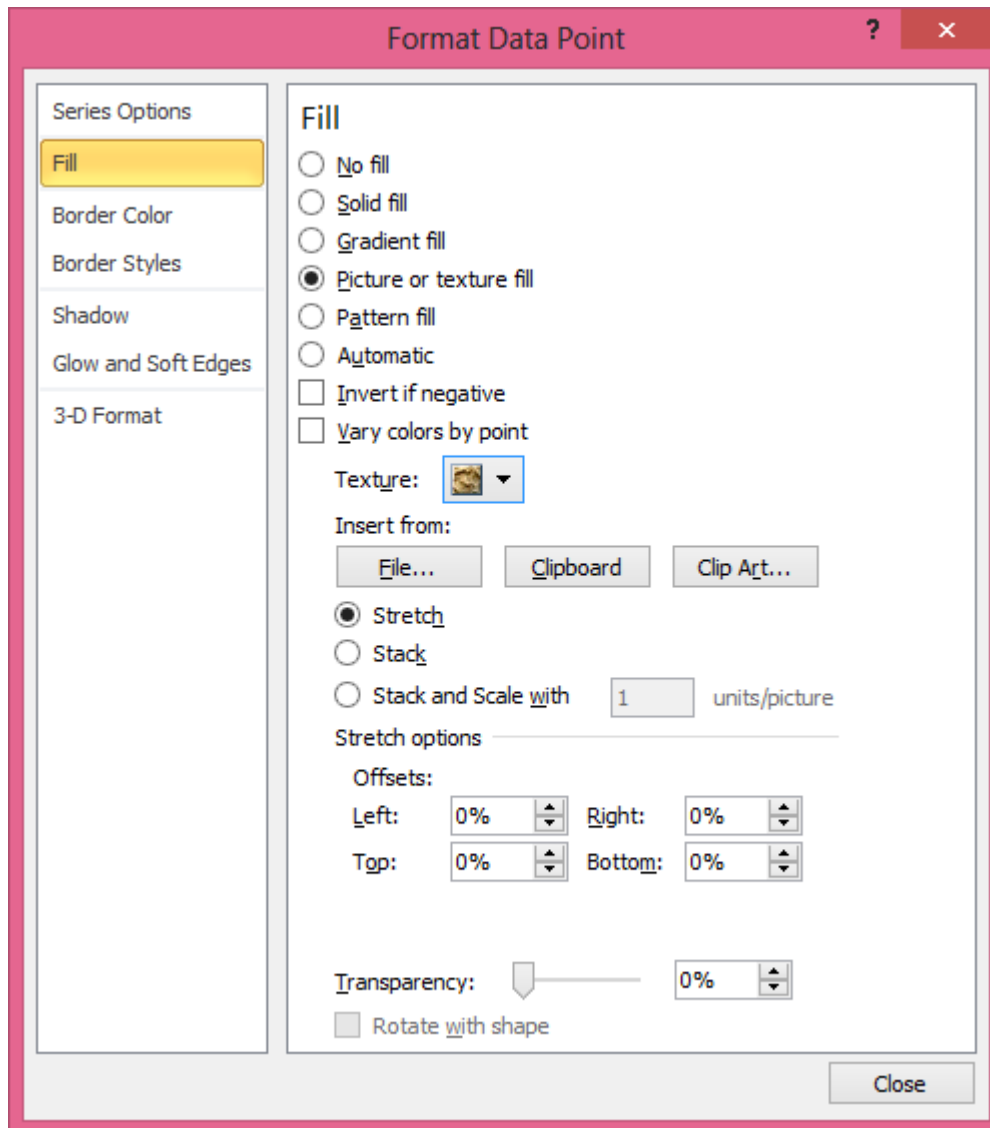
2. Click Fill effects, the Fill effects dialog box appears
3. Click the required Tab e.g. Gradient, Texture, Partner or Pictures.
4. Select the options you want, and then click ok.

ADDING GRADIENT IN THE CHART

1. Click Fill button
2. Click gradient Tab.
3. Select options you want For example:
 - Colours (one, Two or Presets)
 - Shading Styles
 - Variants
4. When done, click ok.

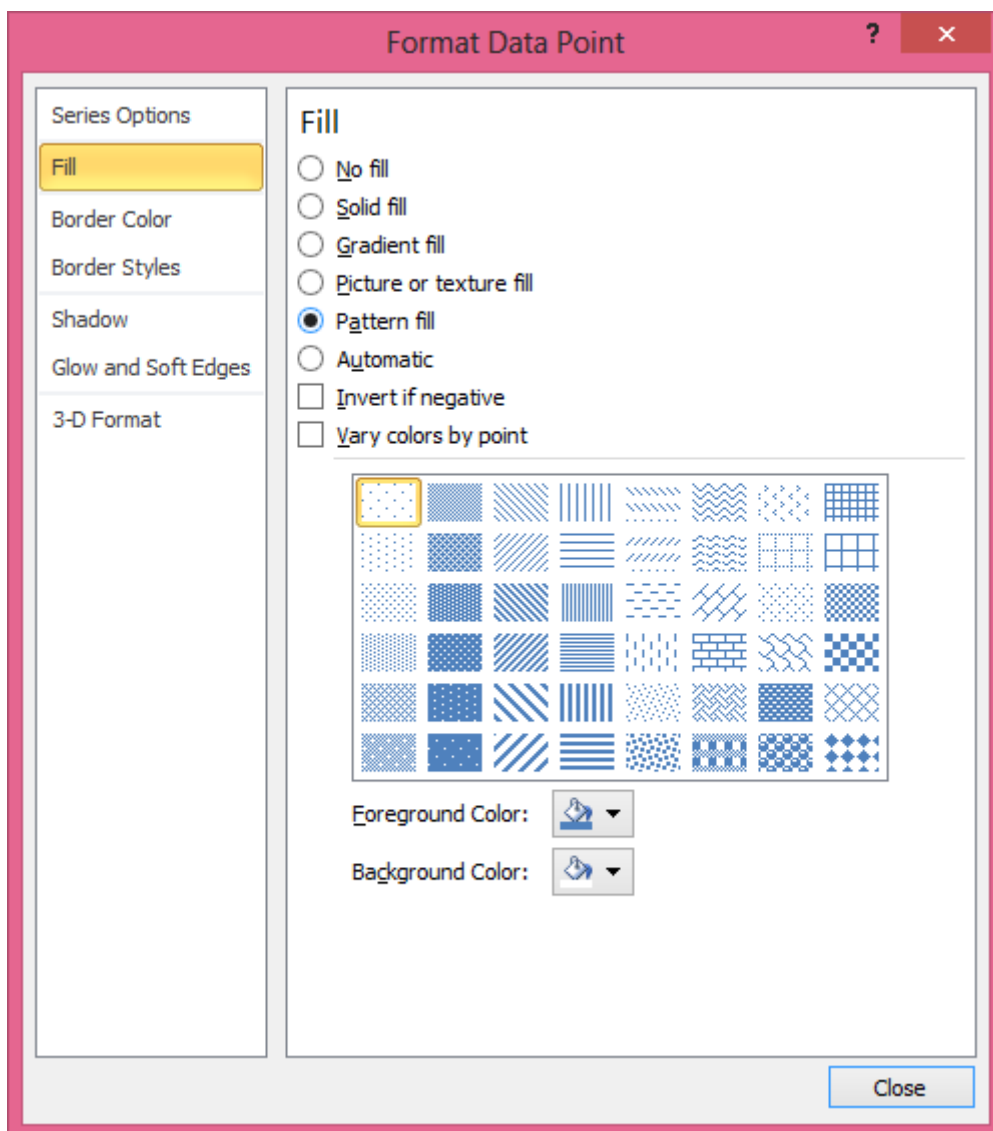
ADDING TEXTURE IN THE CHART

1. Click Fill button
2. Click Texture Tab.
3. Select options you want
4. When done, click ok.



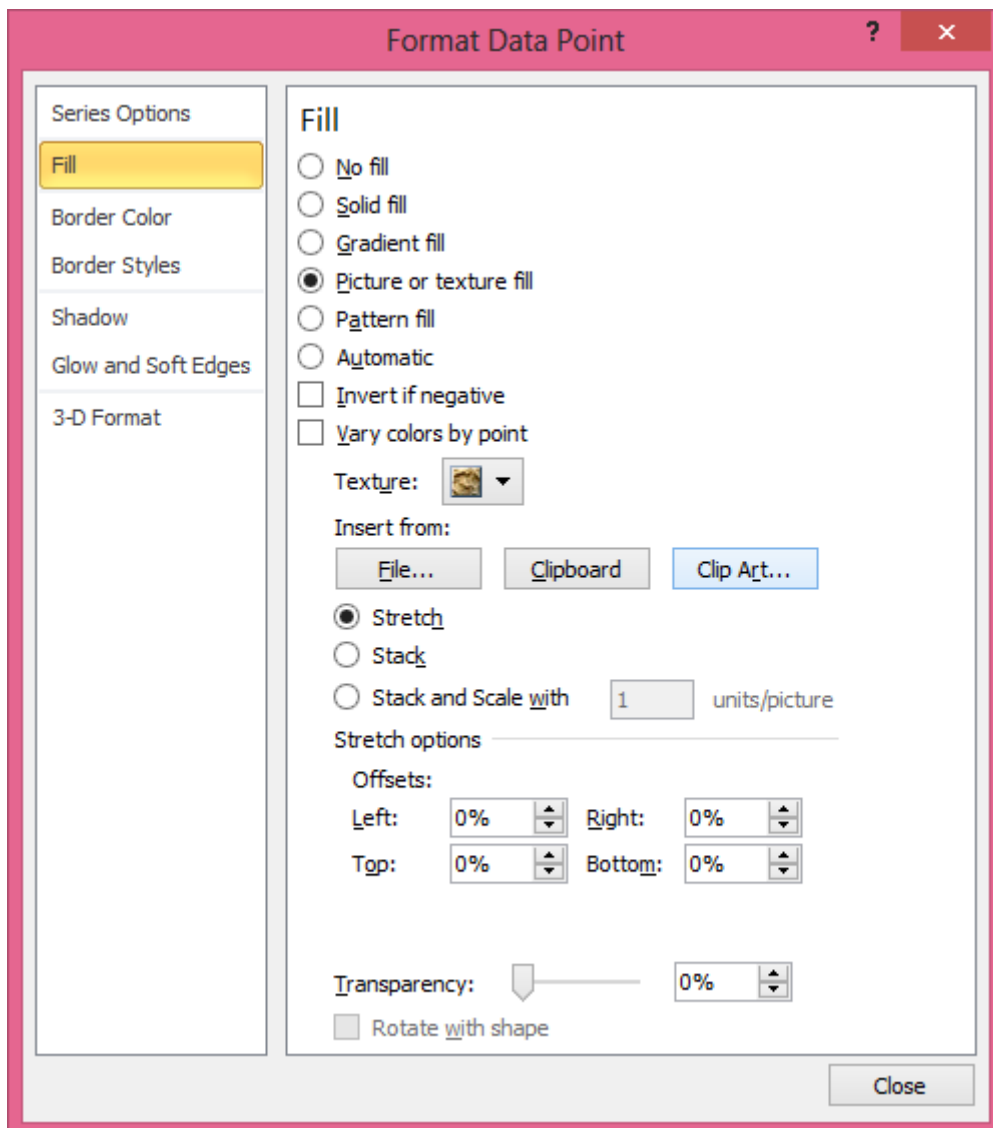
ADDING PARTNERS

1. Click Fill button.
2. Click Partners Tab.
3. Select options you want. E.g. Foreground and Background Colours. The sample area shows the selected partner.
4. When done, click ok.



USING PICTURES IN A CHART

1. Click Fill button.
2. Click Picture or texture fill
3. Click Clip Art
4. Click Select Picture
5. In the **Look in** box, click the drive, folder, or Internet location that contains the picture, and then double-click the picture you want. The picture appears in the sample box.
6. Click Ok. And then Ok again to apply the picture in the chart.



ADDING OR CHANGING CHART ITEMS

You can add or change some chart items after creating a chart such as Titles, Legend, Data Labels, Gridlines, and Data Tables etc.

Procedure

1. Select the Chart
2. Click Layout Tab
3. Click chart option you want to add or change e.g. Chart Title, Legend, Data Labels, Axis Titles etc
4. When done, click ok.

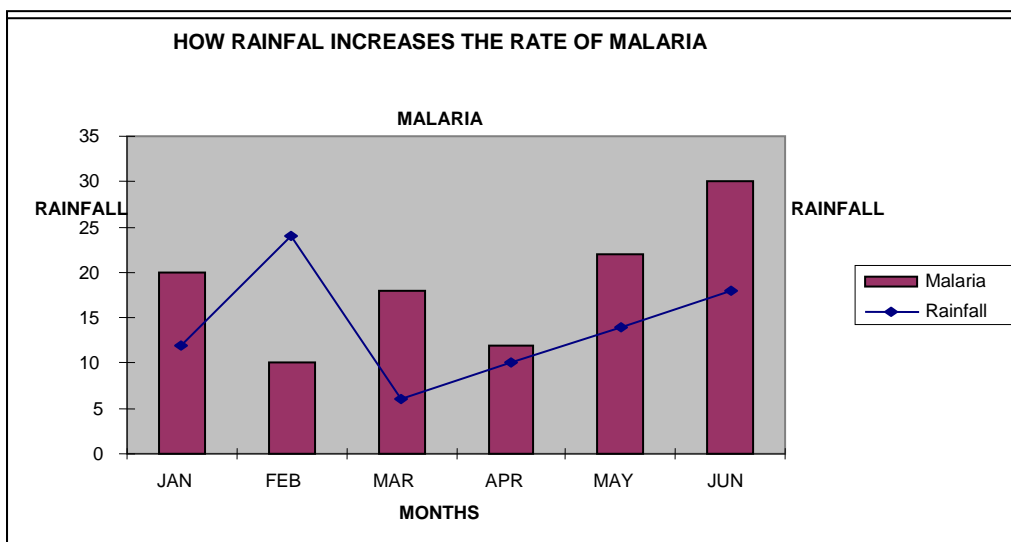
COMBINATION CHARTS

A combination chart uses two or more chart types to emphasize that the chart contains different kinds of information.

You may have a column chart type and a Line chart type combined which will result into a Line – Chart. The Column chart type will have the Data series and the line will have the actual values.

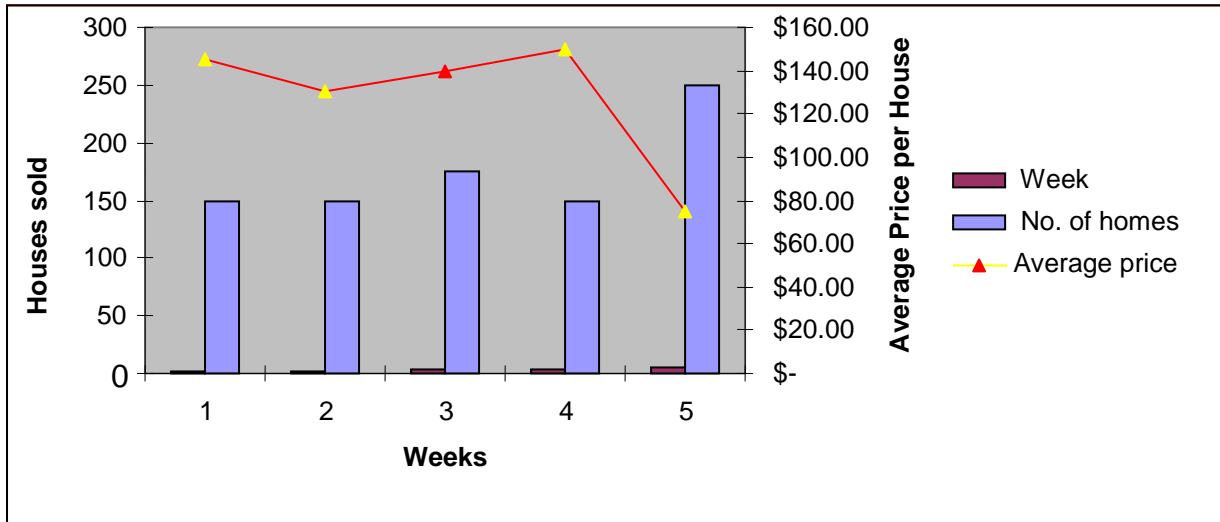
To create this kind of overlay effect, select a custom chart type in Step 1 of the Chart Wizard when you create a chart.

This example uses the Line – Column chart type. You can change an existing chart to a combination chart by selecting the data series you want to change and then changing the chart type for that series.



Secondary axis When the range of values for different data series varies widely, or when you have mixed types of data, you can plot one or more data series on a secondary value (y) axis. The scale of the secondary axis reflects the values for the associated series.

The chart in the example shows the number of homes sold on the left y-axis and the average price on the right y-axis.



Note:

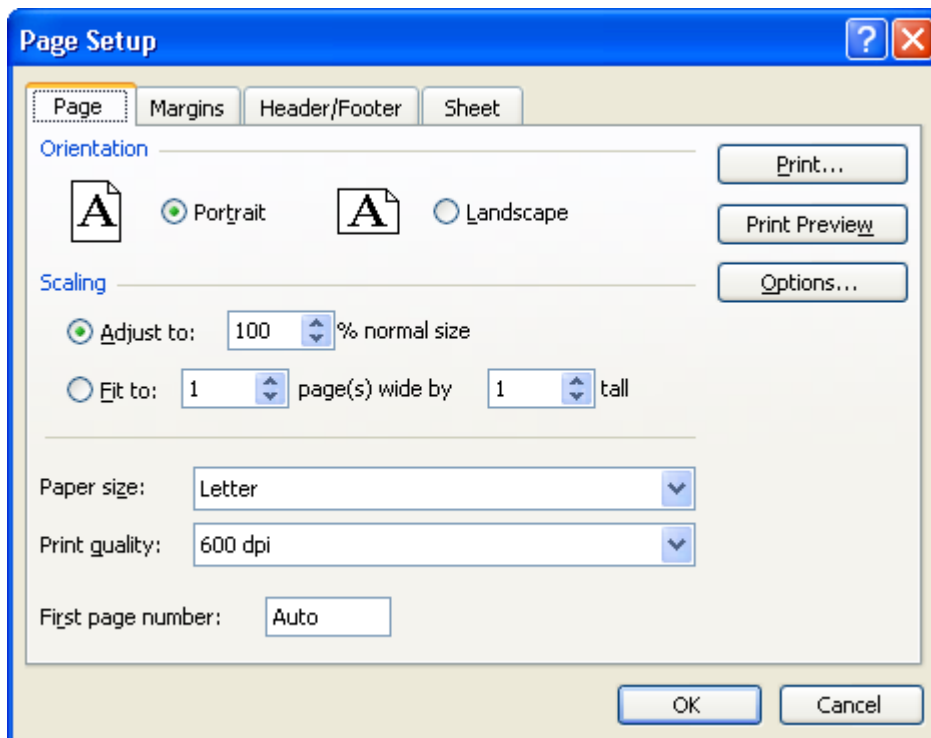
Columns are plotted on the Primary Axis and Lines are plotted on the Secondary Axis.

PAGE SETUP

Page Setup controls the appearance and final layout of the printed worksheet. The settings apply to individual sheets within a work book.

Procedure

1. Click File
2. Click Page Setup
3. The Page Setup dialog box will be displayed where you can make settings.



THE PAGE TAB

Controls Page Orientation, Scaling, Paper Size, Print Quality and starting number for the selected sheet.

Orientation

Specifies the Orientation for the printed page e.g. Portrait (Tall) or Landscape (wide). Portrait prints with the short edge of the paper horizontally and Landscape prints with the long edge of the paper horizontally.

Scaling

Scaling enlarges or reduces the printed worksheet.

Scaling options

(i) Adjust To:

Reduces or enlarges the printed sheet. The adjustment ranges between 10% and 400% of normal size.

(ii) Fit To:

Enlarges or reduces the worksheet or selection when you print so that it fits on the specified number of pages, wide or tall. The sheet or selection is scaled proportionally, preserving its relative dimensions, so it may print on less than the specified number of pages.

Enter a number in the page(s) wide by box, and enter a number in the tall box. To fill the paper width and use as many pages as necessary, type 1 in the pages(s) wide by box and leave the tall box blank.

Page Size

Select the paper size you want from the list. E.g. Letter, Legal, Executive, A4 or other size options to indicate the size you want your document or envelope printed.

Print Quality

Select the resolution of printing. Resolution is the quality of output expressed in Dots Per Inch (DPI) that will appear on the printed paper. The number of dots the better the quality of output.

First Page Number

Enter the starting page number for the printed pages of the sheet. The default is Auto which starts numbering with 1.

THE MARGINS TAB

The margins Tab controls the page margins, Header/Footer Margins and can center the sheet on the page **vertically, horizontally or both.**

Margin Options

(i) Top

Distance between the data and top edge of the page.

(ii) Bottom

Distance between the data and bottom edge of the page.

(iii) Left

Distance between the data and Left edge of the page

(iv) Right

Distance between the data and Right edge of the page

Enter margin settings and see results in the **Preview** box. Adjust measurements in the **Top, Bottom, Left, and Right** boxes to specify the distance between your data and the edge of the printed page.

(v) Header

Distance between the Header and Top edge of the page

(vi) Footer

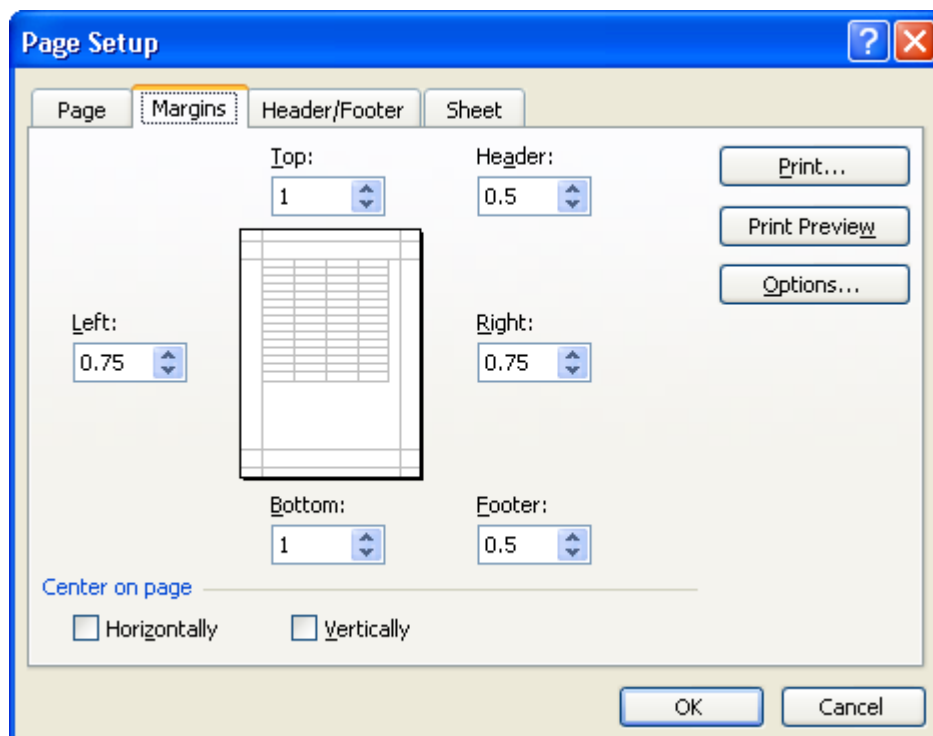
Distance between the Footer and bottom edge of the page

Note:

Distance between the header and top of the page and between the footer and bottom of the page should be less than the margin setting to prevent the header/footer from overlapping the data.

Center on Page

Centers the data on page within the margin vertically, horizontally or both.

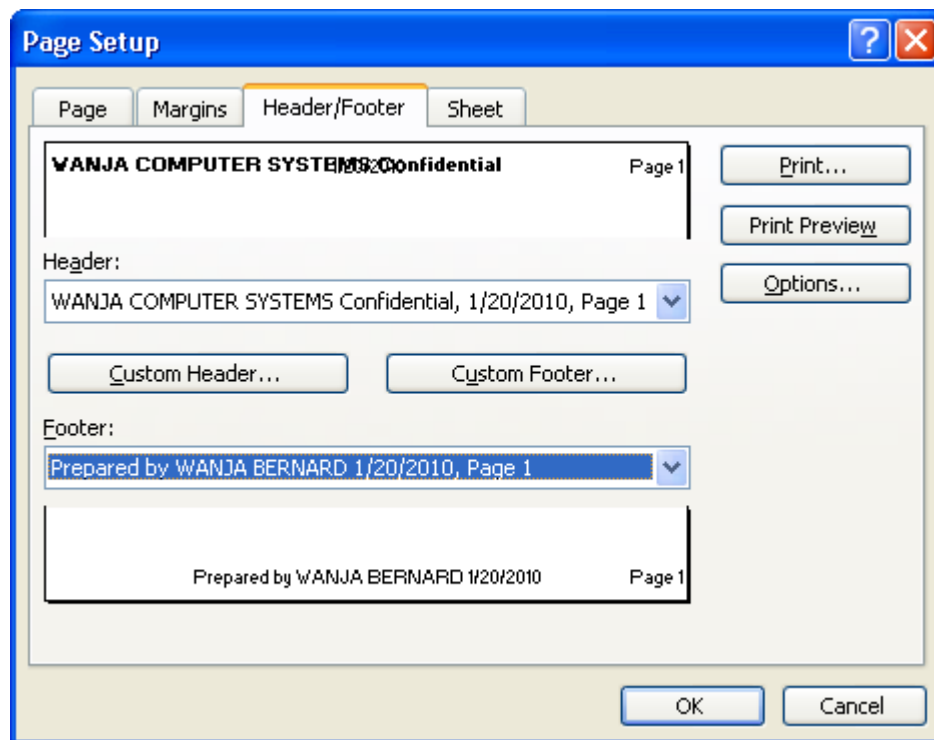


HEADER/FOOTER TAB

Controls the headers and footers for the selected sheet. Headers and footers are descriptive text that prints at the top and bottom of every page in your worksheet.

You can choose from a list inbuilt headers and footers or enter your own headers and footers by clicking custom header or Custom footer.

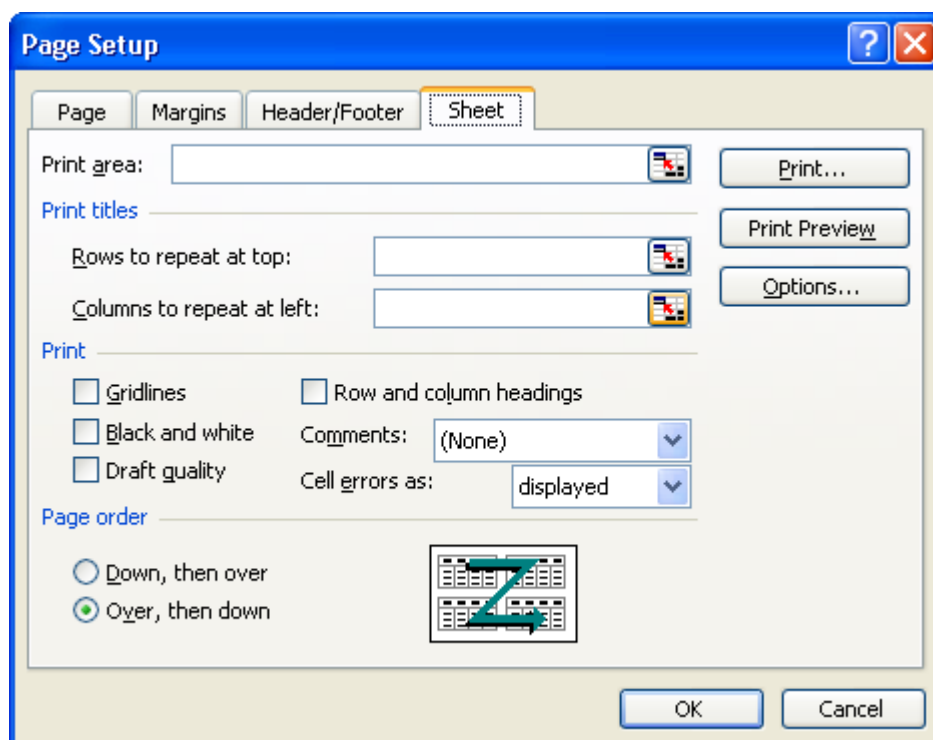
If you do not want a header/footer, click none from the header or footer list boxes. The preview areas above the header and below the footer sections show what the header/footer will look like when printed.



The Dialog Box shows the Header/Footer options

THE SHEET TAB

Specifies which areas of the sheet you want to print. It also controls the print titles, Page order, draft quality and whether gridlines, cell notes and row/column headings should be printed.



Print Area

Specifies the worksheet range you want to print. To specify print area, click the **Print area** box to select a worksheet range to print, and then drag through the worksheet areas that you want to print.

The **Collapse Dialog** button at the right end of this box temporarily moves the dialog box so that you enter the range by selecting cells in the worksheet. When you finish, you can click the button again to display the entire dialog box.

Print Titles

Specifies whether you want to print the same columns or rows as titles on every page of a printed worksheet.

- Select **Rows to repeat** at top if you want specific rows as your horizontal title for each page.
- Select **Columns to repeat** at left if you want vertical titles on each page.
- Then on the worksheet, select a cell or cells in the title columns or rows you want.

Note:

The **Collapse Dialog** button at the right end of this box temporarily moves the dialog box so that you enter the range by selecting cells in the worksheet. When you finish, you can click the button again to display the entire dialog box.

Print

Specifies what is printed from your worksheet, whether the printout is in color or black and white, and what the print quality is. It also specifies whether to print, Row and Column headings, Gridlines, comments, cell errors etc.

Print Order

Controls the order in which data is numbered and printed when it does not fit on one page. E.g. Down, then over or Over, then down. The sample picture previews the direction your document will print when you choose one of these options

Down, then over

Prints and numbers pages down wards and then across the worksheet.

Over, then down.

Prints and numbers pages across and then down the worksheet.

PREVIEWING A DOCUMENT BEFORE PRINTING**Next**

Displays the next page to be printed. If you have multiple worksheets selected and click Next when the last page of a selected worksheet appears, Excel displays the first page of the next selected worksheet.

Previous

Displays the previous page to be printed. If you have multiple worksheets selected and click Previous when the first page of a selected worksheet appears, Excel displays the last page of the previous selected worksheet.

Zoom

Switches between a full-page view of a sheet and a magnified view. The Zoom feature does not affect printing size. You can also switch between a full-page view and a magnified view of a worksheet by clicking any area of the worksheet.

Depending on the resolution of your monitor, you may not see certain graphics, such as thin borders, in full-page view.

Print

Lets you set printing options and then prints the selected worksheet.

Setup

Lets you set options that control the appearance of printed sheets.

Margins

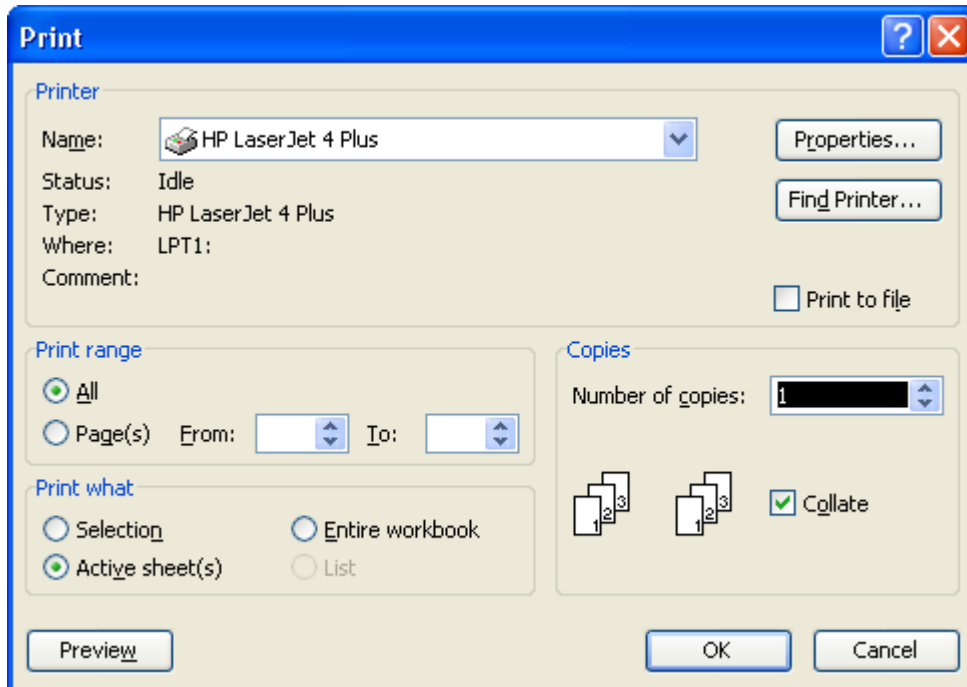
Displays or hides margin handles that you can drag to adjust page margins, header and footer margins, and column widths.

PRINTING

Print your data to a printer to obtain a hard copy of your worksheet. Before printing, select the printer you want to use, setup the page, determine page breaks and choose what elements to print. For any option that do not select, Microsoft Excel uses default settings.

Procedure

1. Click File Menu
2. Click Print, The Print Dialog box will be displayed as can be seen below.



3. Select options as required.
4. click ok to print your work

Options in the Printer dialog box

Printer

Select a printer. The information about the selected printer is displayed.

Print Range

Indicates the pages of the worksheet you want to print. If you click Pages, you must also enter the page numbers you want.

Copies

Specifies the number of copies you want to print.

Collate

Organizes numbered pages when you print multiple copies of a Worksheet. A complete copy of the document is printed before the first page of the next copy is printed.

Print What

Indicates the portion of the document you want to print. For example, choose selection, Active sheets or entire workbook

- Selection

Prints only the selected cells and objects on the worksheet.

- Active sheets

Prints each of the selected sheets. Each sheet in the workbook starts on a new page. If a sheet has a print area, only the print area is printed. If a chart object is selected, this option changes to selected chart.

- Entire Worksheet

Prints all sheets in the active workbook that contain any data. If a sheet has a print area, only the print area is printed.

-Preview

Shows how your document will look with the selected options.

Find Printer

Allows you to select a printer on your network that is not listed here. When you have selected the printer you want to use, click **OK** to return to this menu and print the document.

Properties

Click **Properties** to change the options for the selected printer. In most cases, the settings you specify apply only to the active worksheet.

OK

Click ok to print your worksheet after making necessary setting in the print dialog box. Otherwise click **Cancel**.

Additional notes

EXCEL 2010

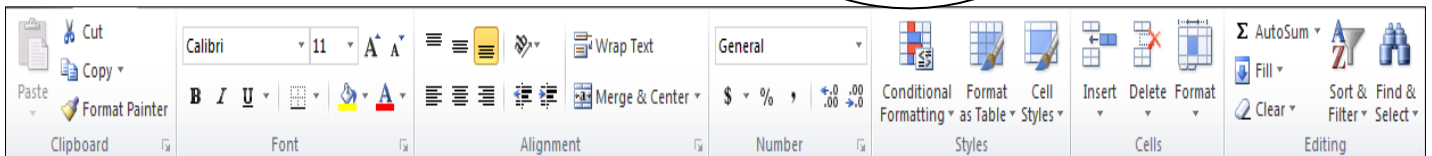
TERMS TO KNOW

- **Row** - named with numbers; move left to right (Horizontal lines)
- **Column** - named with letters; move top to bottom (Vertical lines)
- **Cell** - the intersection of a row & a column
- **Selection Box** – designated by letters for columns & numbers for rows
- **Global Selection Box** – the box in the top left corner. It selects the entire sheet.
- **Formula Bar**
- **Adjust Cursor**
- **Sheet Tabs**

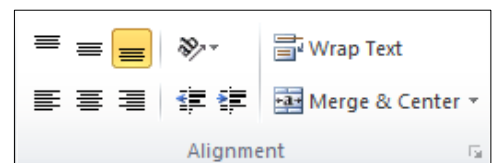
Sheet Tabs can be:

- Renamed
- Reordered
- Colored

HOME tab



1. **Font** - formatting tools
 - a. Border lines around cells
2. **Alignment** tools
 - a. Align data from top to bottom & left to right
 - b. Rotate text orientation in cells
 - c. Wrap text within cells
 - d. Merge & center – merge cells & center data
3. **Number** – format for \$, %, decimals...
4. **Styles** – pre-designed color schemes
5. **Cells** – insert, delete, or format:
 - a. Cells
 - b. Rows
 - c. Columns
 - d. Worksheets



6. Editing

INSERT Tab

1. **Tables**
2. **Illustrations**

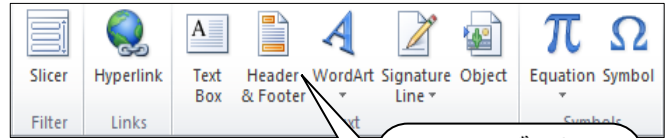
Select functions

Sort or filter data:
A to Z or Z to A
Custom Sort

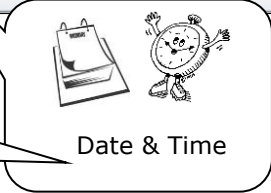
Fill formulas

3. **Charts** – see below for more detail
4. **Sparklines** - a tiny chart in a worksheet cell that provides a visual representation of data. Use sparklines to show trends.
5. **Filter** – slicers used to filter pivot table data
6. **Links** – Internet, bookmarks, other documents
7. **Text**

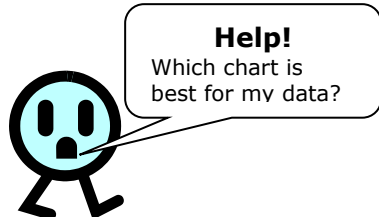
- a. Text Box
- b. Header & Footer
- c. WordArt
- d. Signature Line
- e. Object – use to embed a sound file, video, etc.
- f. Symbol



How do you close the Header/Footer view?
View tab → Normal View



CHARTS

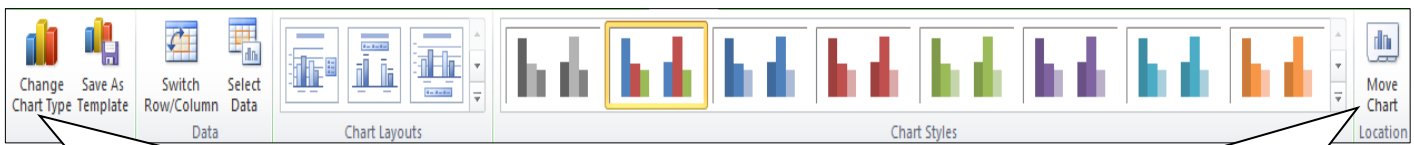


Use the following charts:
 Bar/Column to compare quantities
 Line/Area to show trends or growth
 Pie to show the parts of a whole
 Scatter to compare pairs of values



TIP: Select multiple columns or rows (contiguous or not) by holding down the CTRL key while clicking the selection box for the column or row.

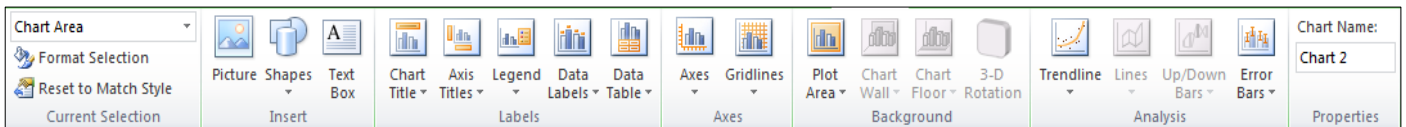
Chart DESIGN ribbon – change the layout & chart style appearance



Change to a different type (pie, bar, etc.)

Change the chart from being an object on the worksheet to a separate worksheet

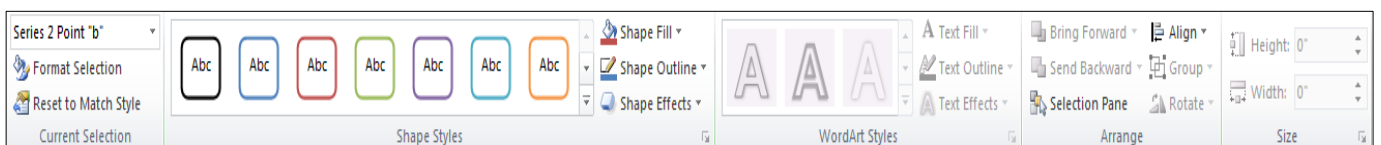
Chart FORMAT ribbon



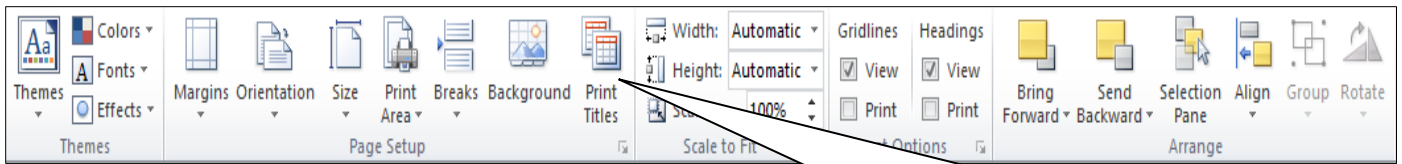
Change colors of lines, fills, or backgrounds:

- Double click the item you wish to change and use the Format Data Point dialog box to make the desired changes.

Chart LAYOUT ribbon



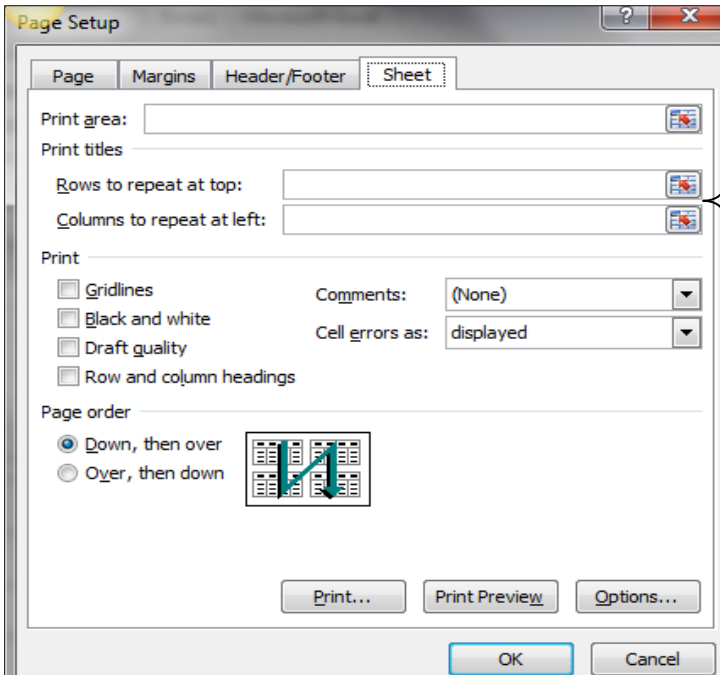
PAGE LAYOUT tab



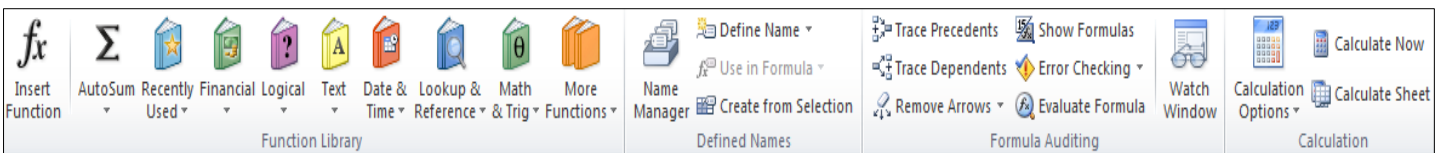
When printing a multi-page document repeat the column headings row at the top of each page or the first column on the left side of each page:

Print Titles → opens the **Page Setup** box → **Sheet** tab

Click the worksheet icon with the red arrow → click the selection box for the row or column you wish to have printed on each page



FORMULA tab



1. Create a FORMULA (write a formula for the computer to apply)

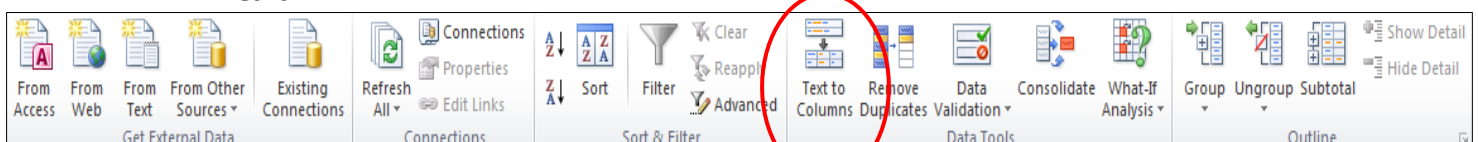
- Type an equals (=) sign in the desired cell.
- Enter the formula either by typing it or clicking the desired cells & inserting the math operations. Examples: =C4+A2 =C4-A2 =C4*A2 =C4/A2
=(A2+C4)*4
- Press Enter. The value displays in the cell. The formula displays in the Formula Bar.

2. Use a FUNCTION (select from a wide variety of pre-built formulas)

- Type a plus (+) Or equal sign (=) sign in the desired cell to begin.
- Click the **Function Box** drop down arrow & select the desired function
- When the **Formula Palette** appears, check to be sure the computer is selecting the desired cells and posting an appropriate answer. Make formula corrections here, if necessary.
- Click OK

	AVERAGE	
	A	B
1	98	
2	95	
3	100	
4	+	
5		
6		

DATA tab



The **Sort** & **Filter** functions are also available on the right side of the **HOME** tab.

Powerful lessons can utilize real-time data from the Internet. Data can be copied & pasted into Excel. Oftentimes, when multiple columns of data are imported from Internet sites they import into only the 1st column. If so, it must be divided into multiple columns before it can be fully utilized.

1. Highlight the column in which the data resides using the selection box at the top
2. **Data** tab → **Text to Columns** → choose either **Delimited** (data is separated by a comma, semicolon, etc.) or **Fixed Width** → **next** → etc.

Internet sites containing data to use in lessons:

Landmark for Schools - list of sites with raw data & suggestions for use - <http://landmark-project.com/page.php?stamp=&pn=4&psn=&cat=22>

Census - <http://factfinder.census.gov/home/saff/main.html?lang=en>

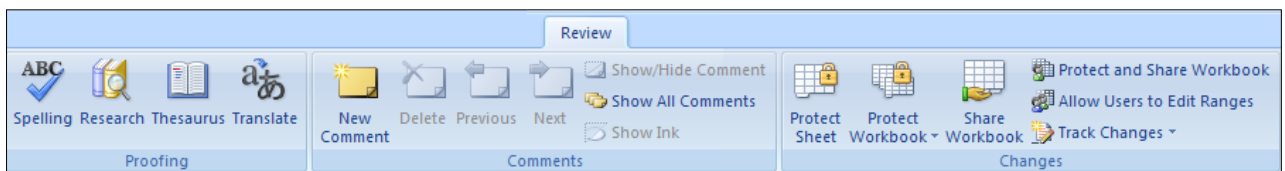
Earthquakes - <http://www.ncedc.org/cnss/catalog-search.html>

Information Please Almanac - <http://www.infoplease.com/almanacs.html>

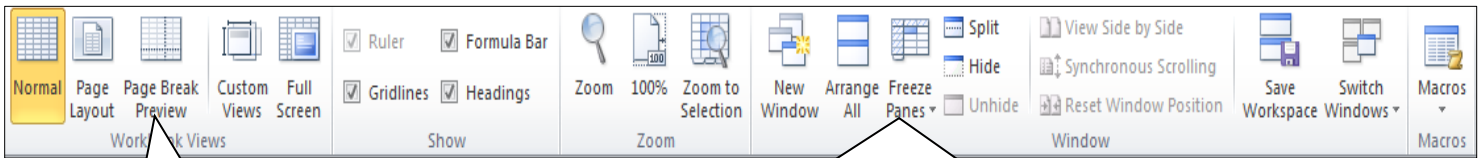
New York Stock Exchange - <http://www.nyse.com/>

US Department of Labor statistics - <http://www.bls.gov/data/>

REVIEW tab



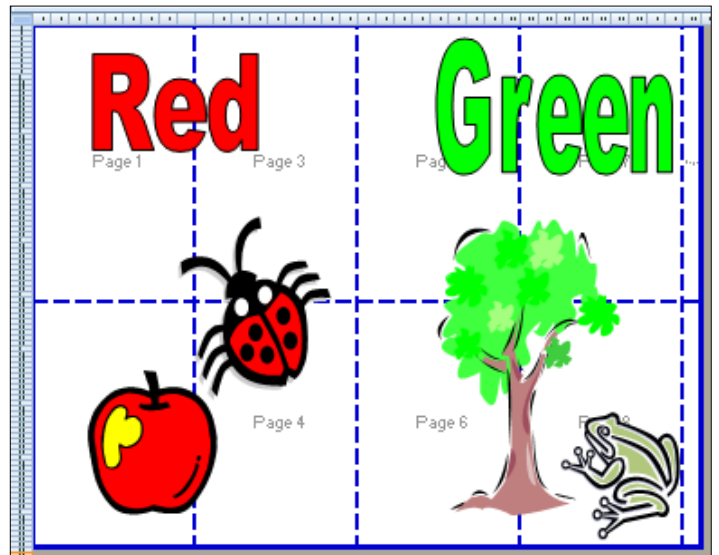
VIEW tab



Use **Page Break Preview** to put page break lines on the worksheet when designing:

- Big Books - multiple pieces of paper to create one page
- Posters - enlarge a graphic larger than one piece of paper

Use **Freeze Panes** to freeze the top row or 1st column in a large spreadsheet while scrolling down or sideways. You can freeze both at the same time.



THE PERIODIC TABLE																																																																																																						
1	2		3-10										11	12	13	14	15	16	17	18																																																																																		
IA	IIA		IIIB-VIIB										IIIB	IVB	VIB	VIA	VIIA	VIIIA	VIIIA																																																																																			
1 H 1.008 Hydrogen	2 He 4.00 Helium	3 Li 6.94 Lithium	4 Be 9.01 Beryllium	5 B 10.81 Boron	6 C 12.01 Carbon	7 N 14.01 Nitrogen	8 O 16.00 Oxygen	9 F 18.99 Fluorine	10 Ne 20.18 Neon	11 Na 22.99 Sodium	12 Mg 24.31 Magnesium	13 Al 26.98 Aluminum	14 Si 28.09 Silicon	15 P 30.97 Phosphorus	16 S 32.07 Sulfur	17 Cl 35.45 Chlorine	18 Ar 39.95 Argon	19 K 39.10 Potassium	20 Ca 40.08 Calcium	21 Sc 44.96 Scandium	22 Ti 47.88 Titanium	23 V 50.94 Vanadium	24 Cr 52.00 Chromium	25 Mn 54.94 Manganese	26 Fe 55.85 Iron	27 Co 58.93 Cobalt	28 Ni 58.69 Nickel	29 Cu 63.55 Copper	30 Zn 65.39 Zinc	31 Ga 69.72 Gallium	32 Ge 72.61 Germanium	33 As 74.92 Arsenic	34 Se 78.96 Selenium	35 Br 79.90 Bromine	36 Kr 83.80 Krypton	37 Rb 85.47 Rubidium	38 Sr 87.62 Strontium	39 Y 88.91 Yttrium	40 Zr 91.22 Zirconium	41 Nb 92.91 Niobium	42 Mo 95.94 Molybdenum	43 Tc 98.91 Technetium	44 Ru 101.07 Ruthenium	45 Rh 101.07 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.87 Silver	48 Cd 112.41 Cadmium	49 In 114.82 Indium	50 Sn 118.71 Tin	51 Sb 121.76 Antimony	52 Te 127.60 Tellurium	53 I 126.91 Iodine	54 Xe 131.29 Xenon	55 Cs 132.91 Cesium	56 Ba 137.33 Barium	57 La 138.91 Lanthanum	58 Ce 140.12 Cerium	59 Pr 140.91 Praseodymium	60 Nd 144.24 Neodymium	61 Pm [145] Promethium	62 Sm 150.36 Samarium	63 Eu 151.97 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.93 Terbium	66 Dy 162.50 Dysprosium	67 Ho 164.93 Holmium	68 Er 167.26 Erbium	69 Tm 168.93 Thulium	70 Yb 173.04 Ytterbium	71 Lu 174.97 Lutetium	72 Hf 178.49 Hafnium	73 Ta 180.95 Tantalum	74 W 183.85 Tungsten	75 Re 186.21 Rhenium	76 Os 190.23 Osmium	77 Ir 192.22 Iridium	78 Pt 195.08 Platinum	79 Au 196.97 Gold	80 Hg 200.59 Mercury	81 Tl 204.38 Thallium	82 Pb 207.2 Lead	83 Bi 208.98 Bismuth	84 Po [209] Polonium	85 At [210] Astatine	86 Rn [222] Radon	87 Fr [223] Francium	88 Ra [226] Radium	89 Ac [227] Actinium	90 Th 232.04 Thorium	91 Pa [231] Protactinium	92 U 238.03 Uranium	93 Np [237] Neptunium	94 Pu [244] Plutonium	95 Am [243] Americium	96 Cm [247] Curium	97 Bk [247] Berkelium	98 Cf [251] Californium	99 Es [252] Einsteinium	100 Fm [257] Fermium	101 Md [258] Mendelevium	102 No [259] Nobelium	103 Lr [262] Lawrencium

4 pages per big book page

6 pages per poster

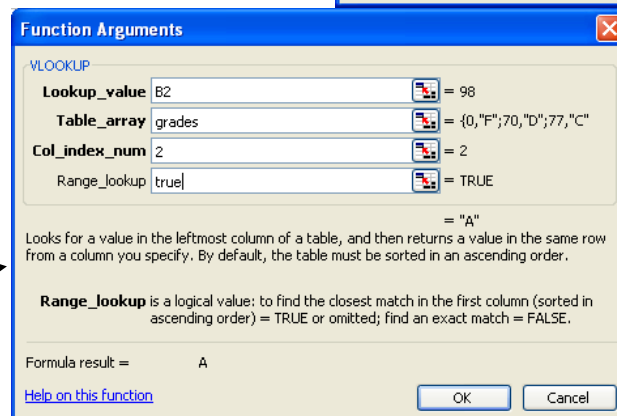
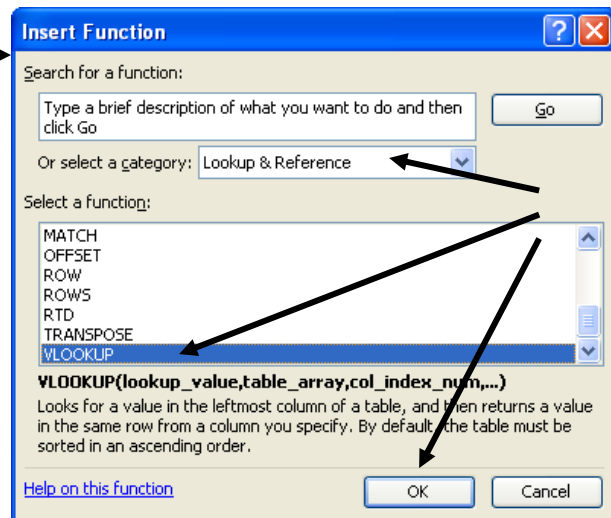
LOOKUP TABLES

Lookup tables contain data that can be drawn upon or used to insert information in another table. In the field of education a lookup table could hold a grading scale that can supply letter grades for a given set of scores.

1. Create the LOOKUP table, preferably on an unused worksheet. To keep organized, name the worksheet LOOKUP
 - a. In the 1st column, enter the lowest values (points) in ascending order (lowest to highest) for each specific grade.
 - b. In the 2nd column, enter the letter grade assigned to the point value from the 1st column.
 - c. Select the cells containing the grades & values. In this case, highlight from A1 through B5.
 - d. Type a name for this table (grades) in the **Name Box** of the Formula bar & press **Enter**... displayed in the red circle on the above diagram.
2. On the grade book worksheet, click in the cell where the letter grade is to be calculated and posted.
3. Click the **Function** button (fx) on the **Formula bar**
4. Select the **Lookup & Reference** category
5. Select the **VLOOKUP** function & click **OK**

	A	B
1	0	F
2	70	D
3	77	C
4	85	B
5	93	A
6		

6. Complete the **Function Arguments** box:
 - a. **Lookup_value** is the worksheet cell that contains the student's total points
 - b. **Table_array** is the name of the LOOKUP table created in step 1 above. Be exact!
 - c. **Col_index_num** is the number of the column containing the letter grade. Type the number **2** since column B of the LOOKUP table contains the letter grades & it is the **2nd** column in the LOOKUP table.
 - d. **Range_lookup** is **true** or leave it blank. "True" means Excel will look for a grade range instead of an exact number.
 - e. Click **OK**



7. Use the **Fill down** technique to calculate grades for the remaining students in the grade book.

RANK

The **Rank** function can display the order of scores without using the **Sort** command. Data can be ranked from high to low or low to high.

The **rank** function can be found in the **Statistical** or **All** categories and looks like this:

RANK(number,ref,order)

Number is the number whose rank you want to find.

Ref is an array of, or a reference to, a list of numbers. Nonnumeric values in ref are ignored.

Order is a number specifying how to rank number.

- ↓ If order is 0 (zero) or omitted, Microsoft Excel ranks number as if ref were a list sorted in descending order.
- ↓ If order is any nonzero value, Microsoft Excel ranks number as if ref were a list sorted in ascending order.

To fill down the function and return data from highest score (1st) to lowest score:

G	H	I	J	K	L	M	N	O
KWHL	Word	Net Tools	Web 2.0	Google	PPT	Podcast	Total Pts	Rank
15	30	28	30	28	29	20	180	1
14	25	25	22	30	25	13	154	4
15	20	28	25	27	22	14	151	6
14	19	29	24	20	26	20	152	5
13	28	25	20	30	27	14	157	2
12	24	20	30	26	24	20	156	3
15	26	25	29	27	15	11	148	7

The function in cell O2 would be **=RANK(N2,N2:N8)**

If you want to fill down the function you must add \$ signs like this:

=RANK(N2,\$N\$2:\$N\$8)

To fill down the function and return data with the lowest score to highest score as in golf:

G	H	I	J	K	L	M	N	O
KWHL	Word	Net Tools	Web 2.0	Google	PPT	Podcast	Total Pts	Rank
15	30	28	30	28	29	20	180	7
14	25	25	22	30	25	13	154	4
15	20	28	25	27	22	14	151	2
14	19	29	24	20	26	20	152	3
13	28	25	20	30	27	14	157	6
12	24	20	30	26	24	20	156	5
15	26	25	29	27	15	11	148	1

The function in cell O2 would be **=RANK(N2,N2:N8,1)**

Adding the **,1** after the range causes it to sort with the lowest score as 1st place

If you want to fill down the function you must add \$ signs like this:

=RANK(N2,\$N\$2:\$N\$8,1)

Need help with something specific?

1. F1 – Help menu
2. Microsoft Online Excel Help - <http://office.microsoft.com/en-us/excel/FX100646951033.aspx>
3. Microsoft Excel 2010 Help - <http://office.microsoft.com/en-us/excel-help/>
4. Atomic Learning:
 - a. <http://pod.nku.edu> – click on the graphic for Atomic Learning, not the text. If on campus, Atomic Learning opens automatically. When accessed off campus, you'll be prompted to enter your NKU email username and password.



SPREADSHEET USES for EDUCATORS:

Management & Instructional Aids:

- Grade book
- Class information database - use for mail merge into letters, envelopes, labels, certificates...
- Lesson Plan Book
- Weekly lesson plan calendar
- Seating chart – include student photos (taken with a digital camera)
- Create “big books” or large posters of graphics or photographs
 - To see the page breaks: **View** tab → **Workbook Views** group → **Page Break Preview**
- Create graph paper in various sizes (templates can be found on Microsoft Online)

Instruction:

- Math – algebra formulas, rounding of numbers, organizing data, problem solving
- Social Studies – organize, sort, and display data
- Science – organize, calculate, and chart data
- Language Arts – organize (alphabetize) vocabulary lists, book collections, reading logs, create “big books”

[Dr. Christie's Using Spreadsheets in K-12 Classrooms](#)