

LECTURE THREE

NETWORKS AND VIRUSES

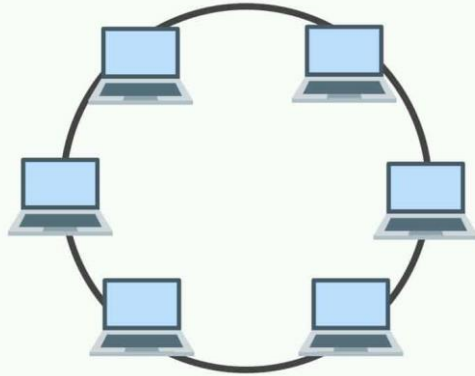
BY

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RING TOPOLOGY

Ring Topology

- **Logical ring**
 - **Meaning that data travels in circular fashion from one computer to another on the network.**
 - **Typically FDDI, SONET or Token Ring technology are used to implement a ring network**
 - **Ring networks are most commonly wired in a star configuration**
- **Token Ring has multi-station access unit (MSAU), equivalent to hub or switch. MSAU performs the token circulation internally**

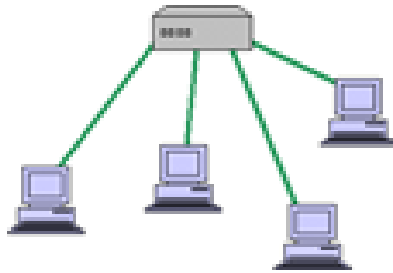


Ring Topology

Advantages	Disadvantages
Cable faults are easily located, making troubleshooting easier	Expansion to the network can cause network disruption
Ring networks are moderately easy to install	A single break in the cable can disrupt the entire network.

STAR TOPOLOGY

- **All computers/devices connect to a central device called hub or switch.**
- **Each device requires a single cable**
- **point-to-point connection between the device and hub.**
- **Most widely implemented**
- **Hub is the single point of failure**



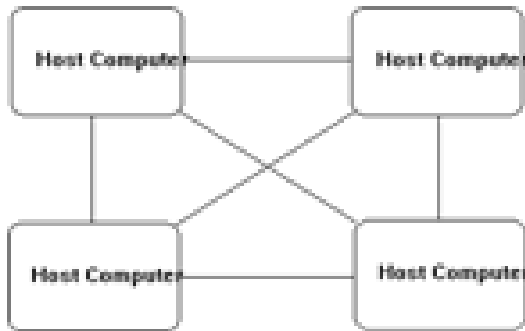
Star Topology

Advantages	Disadvantages
Easily expanded without disruption to the network	Requires more cable
Cable failure affects only a single user	A central connecting device allows for a single point of failure
Easy to troubleshoot and isolate problems	More difficult to implement

MESH TOPOLOGY

- Each computer connects to every other.
- High level of redundancy.
- Rarely used.
- Wiring is very complicated
- Cabling cost is high
- Troubleshooting a failed cable is tricky
- A variation hybrid mesh – create point to point connection between specific network devices, often seen in WAN implementation.

Mesh Topology

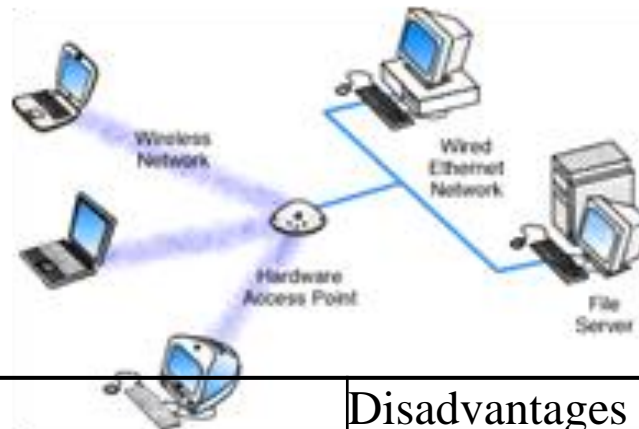


Advantages	Disadvantages
Provides redundant paths between devices	Requires more cable than the other LAN topologies
The network can be expanded without disruption to current uses	Complicated implementation

WIRELESS NETWORKING

- **Do not require physical cabling**
- **Particularly useful for remote access for laptop users**
- **Eliminate cable faults and cable breaks.**
- **Signal interference and security issue.**

Wireless networking



Advantages

Allows for wireless remote access

Network can be expanded without disruption to current users

Disadvantages

Potential security issues associated with wireless transmissions

Limited speed in comparison to other network topologies

COMPUTER VIRUSES*

Viruses: A virus is a small piece of software that piggybacks on real programs. For example, a virus might attach itself to a program such as a spreadsheet program. Each time the spreadsheet program runs, the virus runs, too, and it has the chance to reproduce (by attaching to other programs) or wreak havoc.

- E-mail viruses:** An e-mail virus travels as an attachment to e-mail messages, and usually replicates itself by automatically mailing itself to dozens of people in the victim's e-mail address book. Some e-mail viruses don't even require a double-click -- they launch when you view the infected message in the preview pane of your e-mail software [source: Johnson].

- Trojan horses:** A Trojan horse is simply a computer program. The program claims to do one thing (it may claim to be a game) but instead does damage when you run it (it may erase your hard disk). Trojan horses have no way to replicate automatically.

- Worms:** A worm is a small piece of software that uses computer networks and security holes to replicate itself. A copy of the worm scans the network for another machine that has a specific security hole. It copies itself to the new machine using the security hole, and then starts replicating from there, as well.

WHAT ARE SOME TIPS TO AVOID VIRUSES AND LESSEN THEIR IMPACT?*

- **Install anti-virus software from a reputable vendor. Update it and use it regularly.**
- **In addition to scanning for viruses on a regular basis, install an "on access" scanner (included in most anti-virus software packages) and configure it to start each time you start up your computer. This will protect your system by checking for viruses each time you run an executable file.**
- **Use a virus scan before you open any new programs or files that may contain executable code. This includes packaged software that you buy from the store as well as any program you might download from the Internet.**
- **If you are a member of an online community or chat room, be very careful about accepting files or clicking links that you find or that people send you within the community.**
- **Make sure you back up your data (documents, bookmark files, important email messages, etc.) on disc so that in the event of a virus infection, you do not lose valuable work.**

Microsoft Word 2010 Tutorial

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The fundamentals

How to create a new word document

1. Click the **File** tab and then click **New**.
2. Click **Create**.

How to open a document

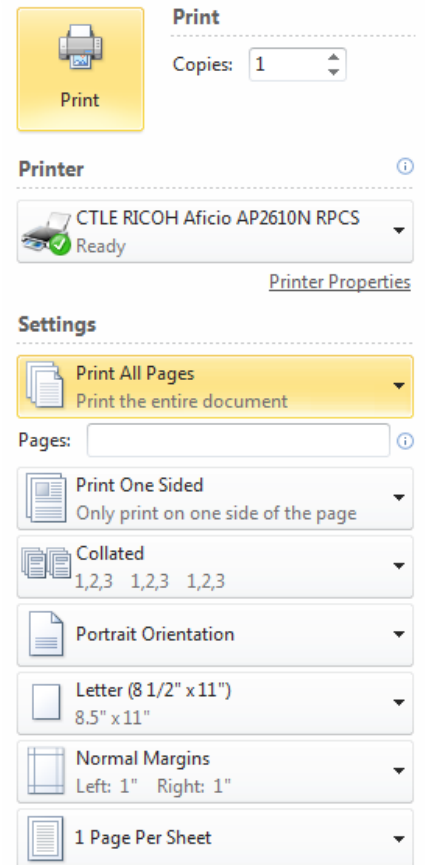
1. Click **File** then **Open**.

How to save a document

1. Click the **Save button** on the Quick Access Toolbar.
2. Give the presentation a name and save it into a memorable location.

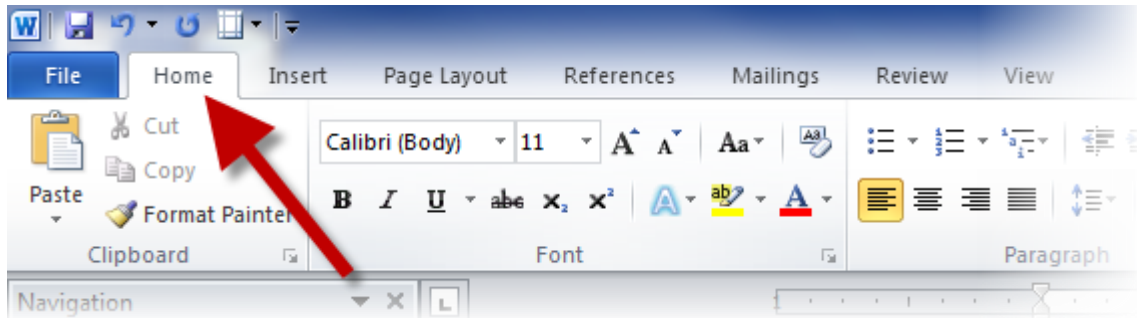
Printing documents

1. Select the number of copies you would like to print by adjusting the number to the right of the print button.
2. Select the printer that you would like to print to from the drop down menu.
3. By clicking the Print All Pages button dropdown arrow, you can select to print the entire document, a section that you have selected, the current page, or a custom page range.
4. Another option to print a page range is by typing in the page range in the box to the right of where it says Pages:.
5. The Print One Sided button dropdown menu will give you the option to print on both sides, if your printer has this capability.
6. Selecting the Collated button will give you the opportunity to select between collated printing and uncollated printing.
7. The Orientation button allows you to select between landscape and portrait orientated printing.
8. If you are going to print on different sized paper, the page size button (often seen as Letter (8 ½" x 11")) is where you can select the particular size.



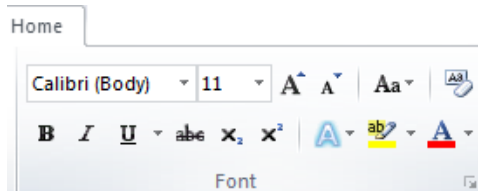
9. You can adjust margins by clicking the margins button.
10. You can also select the number of pages you would like to print on one sheet of printer paper by clicking the 1 page per sheet button.

All about the Home Tab



The Font Menu

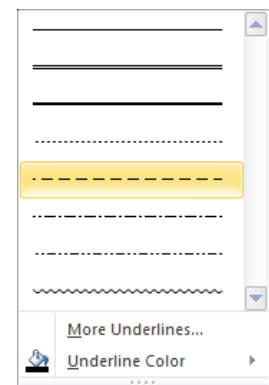
How to change fonts



1. From the Home tab, in the Font menu area, you can find a dropdown menu that allows you to select different fonts. In the above screenshot, it is the area that says Calibri (Body).
2. The number to the right of the font name indicates the size of the font that you are typing in. If you have selected a block of text and you find blanks in these sections it indicates that there are multiple fonts and/or sizes being used in the selected text.

How to format text bold, italics, underline, strike-through, subscript, or superscript.


1. From the Home Tab, find the Font toolbox.
2. From the Font menu **B I U** x_2 x^2 , you can change selected text to bold, italics, underline, strike-through, subscript, or superscript.
3. The dropdown arrow next to the underline () icon gives you the ability to select from several types of underlining lines. You can even change the color of the line if so desired.

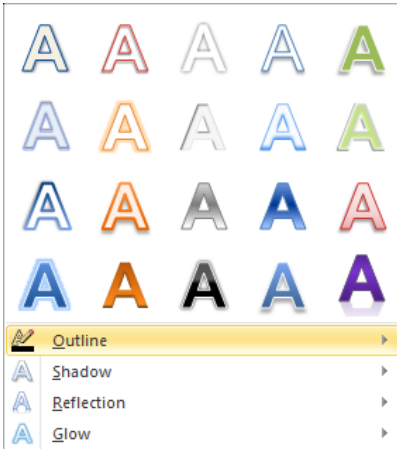


How to change selected text with Text Effects

1. From the Home Tab, find the Font toolbox.




2. You can apply visual effects such as outline, shadow, reflection, and glow by clicking the  icon. This will bring up the Text Effects menu and several styles to consider.
3. Click the style you desire from the available choices.




4. It is also possible to modify the outline, shadow, reflection, and glow settings by selecting those items.


How to highlight text

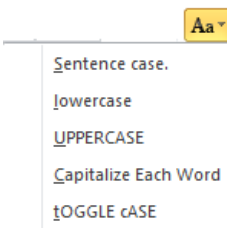
1. From the Home Tab, find the Font toolbox.
2. Select the text that you would like to highlight and then click the  icon.
3. If you would like a different highlighter color, select the drop down menu to the right of the icon and select the color of your choice.

How to change the font color

1. From the Home Tab, find the Font toolbox.
2. Select the text that you would like to change the color of and then click the  icon.
3. If you would like a different font color, select the drop down menu to the right of the icon and select the color of your choice.

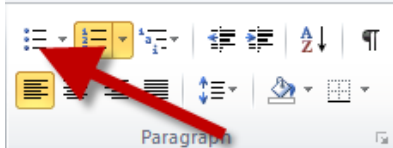
How to change the case of text

1. From the Home Tab, find the Font toolbox.
2. Select the text that you would like to change the case of and then click the  icon.
3. From the dropdown menu choose the style that you would like the case of the text to be.



How to add bullets

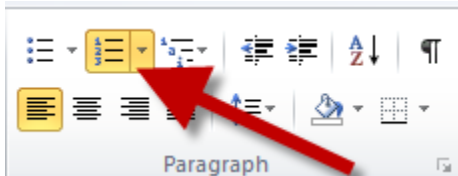
1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to have bulleted.
3. Click the bullets icon in the Paragraph group.



4. If you would like to select a different style of bullet, click the dropdown arrow to the right of the icon and select the bullet of your choice.
5. The next time you hit the Enter key, a new bullet will display.

How to add numbered items

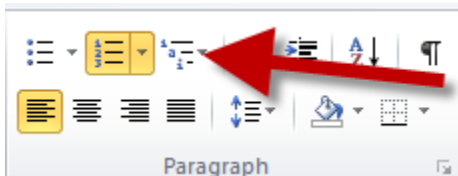
1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to be numbered.
3. Click the numbering icon in the Paragraph group.



4. If you would like to select a different style of numbering, click the dropdown arrow to the right of the icon and select the numbering style of your choice.
5. The next time you press the Enter key, a new numbered item will display.

How to create a Multilevel-List

1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to turn into a multilevel list.
3. Click the multilevel-list icon in the Paragraph group.



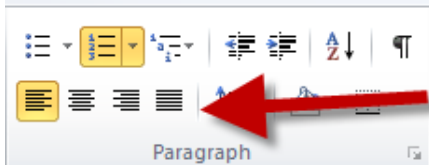
4. If you would like to select a different style of list, click the dropdown arrow to the right of the icon and select the style of your choice.
5. The next time you hit the Enter key, a new listed item (bullet or number) will display.

How to align text

1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to align.

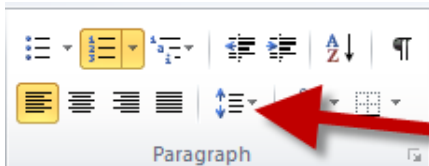


3. Select the icon for left, center, right, or plain justify, justification. Your text will have the justification of your choice.

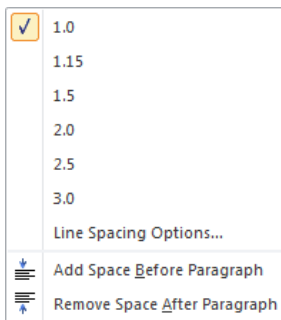


How to change the line and paragraph spacing

1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to change the spacing.

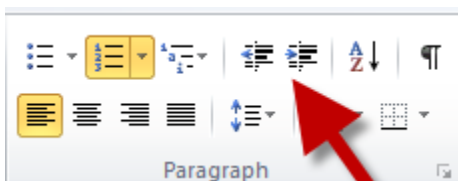


3. Select the icon for line and paragraph spacing. The dropdown arrow will allow you to see the different choices for line and paragraph spacing.



How to increase or decrease the indent of a paragraph

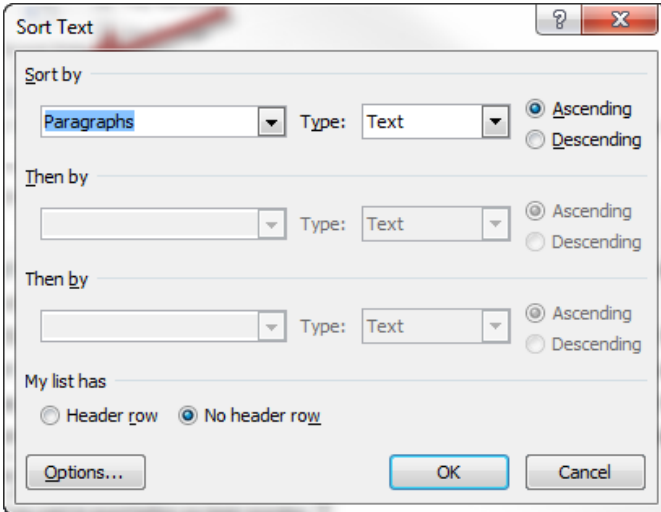
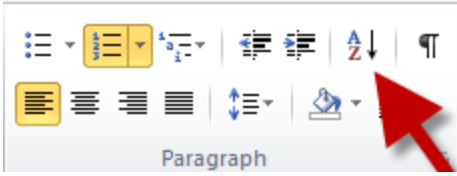
1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to increase the indentation of.
3. Click either the increase or decrease indent button.



How to sort items in a list with one click

1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to alphabetize or put in numbered order.
3. Click the Sort icon. Then select how you would like to sort the items.

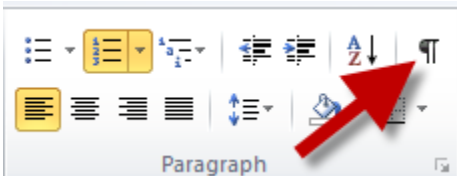




4. Click ok.

How to see paragraph marks and hidden formatting symbols

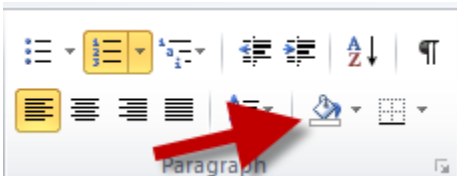
1. From the Home Tab, find the Paragraph toolbox.
2. Click the Show/Hide paragraph and formatting symbols button.



3. To turn it off, click the button again.

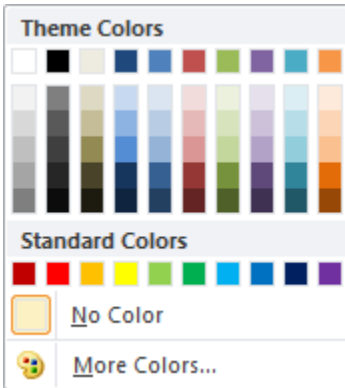
How to change the fill color of objects on the page (not text objects)

1. From the Home Tab, find the Paragraph toolbox.
2. Click the shape that you would like to change the fill color of.



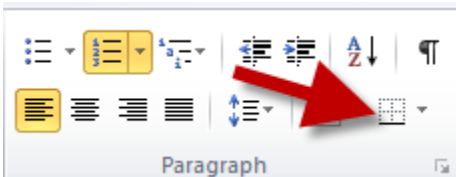
3. Click the paint bucket button and then select the color of your choice.



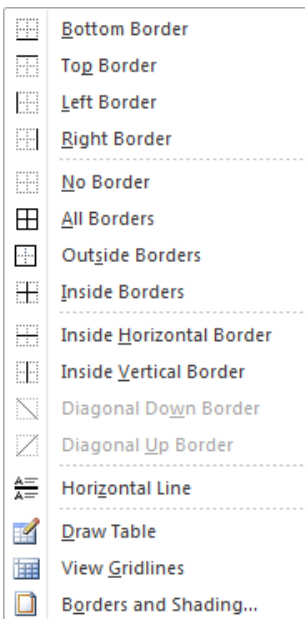


How to fill in the borders of tables

1. From the Home Tab, find the Paragraph toolbox.
2. Select the cell of a table that you would like to add a border to.



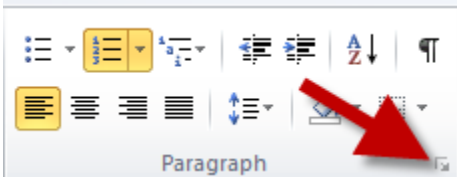
3. Click the border line that you would like the cell(s) of your table to have filled in.



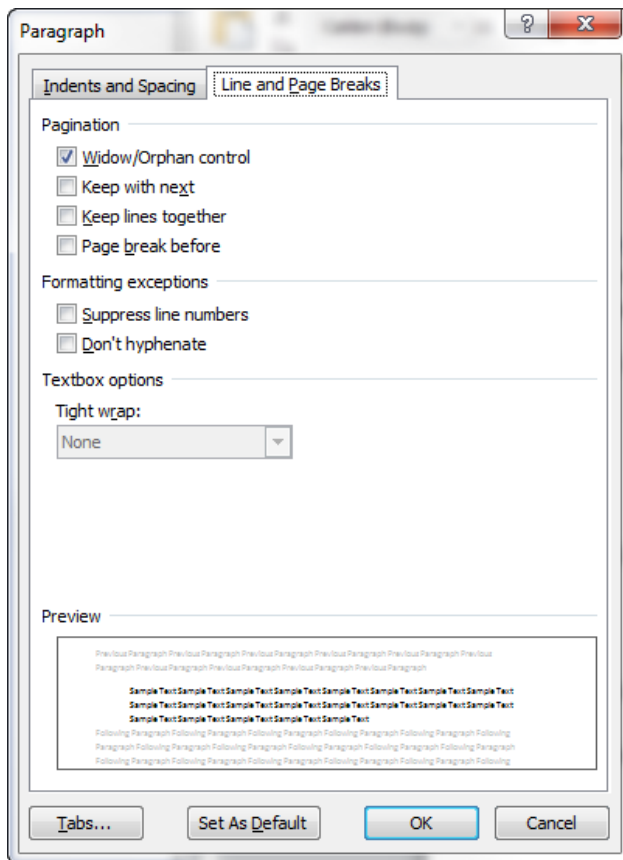
How to turn on/off widow and orphan control

Widows and orphans are the words or short lines that are at the beginning or end of a paragraph which are left at the top or bottom of a column of text. Turning on Widow/Orphan control will keep a line from being marooned on page 1 with the rest of the paragraph's lines on page 2. If you have a strict page count requirement for a document and seem to have a lot more to write than you have room for you may consider turning these off.

1. From the Home Tab, find the Paragraph toolbox.
2. Click the expander icon in the lower right corner of the Paragraph section.



3. Click the tab titled Line and Page Breaks.
4. In the Pagination section click the checkbox to the left of Widow/Orphan control.
5. The other options available are a bit more straight forward.
 - a. Keep with next will keep the paragraph on the same page as the next paragraph.
 - b. Keep lines together will keep all of the lines of a paragraph on the same page (unless, that is, it is longer than a single page.).
 - c. Page break before will make sure that the paragraph will start on a new page.



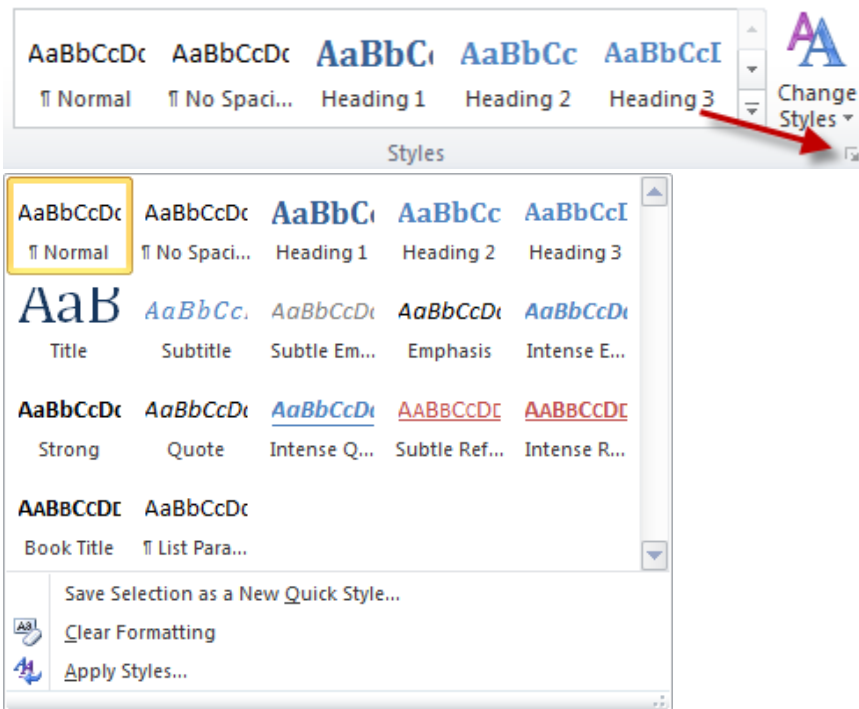
How to change the style of text

Changing the style of text can make your document look amazing as well as prepare your document for a table of contents page. (See the section on how to create a table of contents for more on this) You have several choices to choose from.

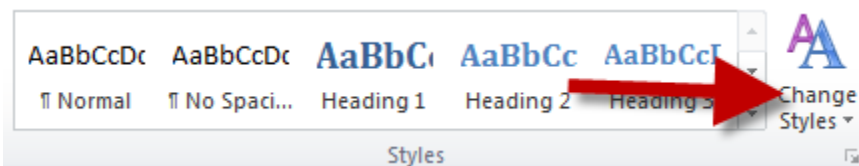
1. From the Home Tab, find the Styles toolbox.



2. Select the text that you would like to change the style of.
3. Click the style that you would like to change the text to.
4. To see all options, click the arrow in the lower right corner of the Styles section.

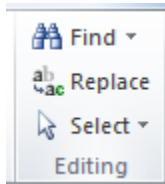


5. You can also change Styles of text, paragraphs, default styles, etc by selecting the dropdown menu of the Change Styles icon.



The Editing Toolbox

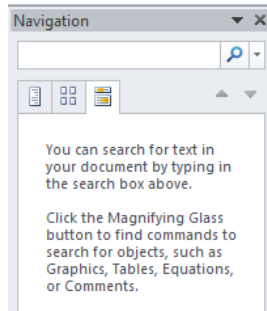
The editing toolbox allows access to the Find tool. This tool allows you to locate certain words in your document. You can also access the Replace tool which allows you to replace words of your choice.



How to use the Find button

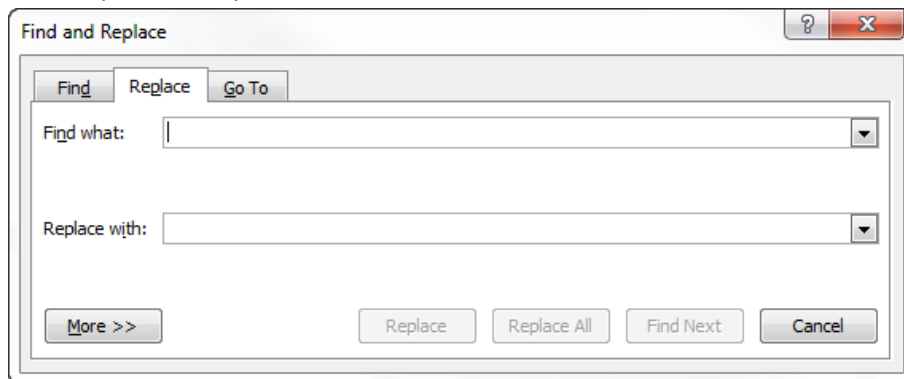
- a. From the Home Tab locate the editing toolbox at the far right of the ribbon.
- b. Click the Find button and you will see a Navigation pane open up on the screen. This give you the opportunity to search the document for a particular word or phrase.
- c. To close the navigation pane, click the X in its upper right corner.





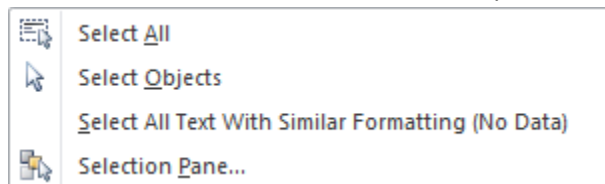
How to use the Replace button

- From the Home Tab locate the editing toolbox at the far right of the ribbon.
- Click the Replace button in the Editing toolbox. The Find and Replace dialog box will display.
- Type in the word to find and then type in the word you would like to replace it with.
- Click Replace or Replace all.

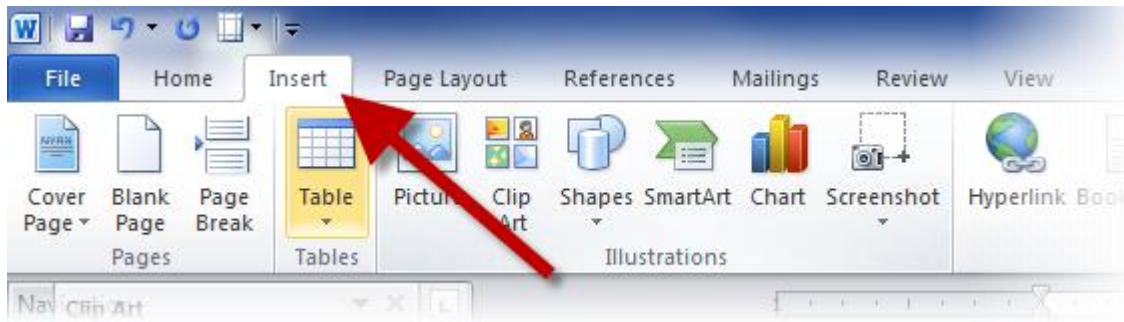


How to use the Select button.

- From the Home Tab locate the editing toolbox at the far right of the ribbon.
- The Select button gives you the option to select items in your document.
- Click the button to access the available options for selection.



All about the Insert Tab



How to add a Cover Page

1. From the Insert Tab, in the Pages toolbox, click the Cover Page button.
2. Select the cover page of your choice.
3. Add in important information by editing the text that displays on the cover page.
4. There are several built in cover pages, but you can select the More Cover Pages from Office.com to see even more options.

How to add a blank page

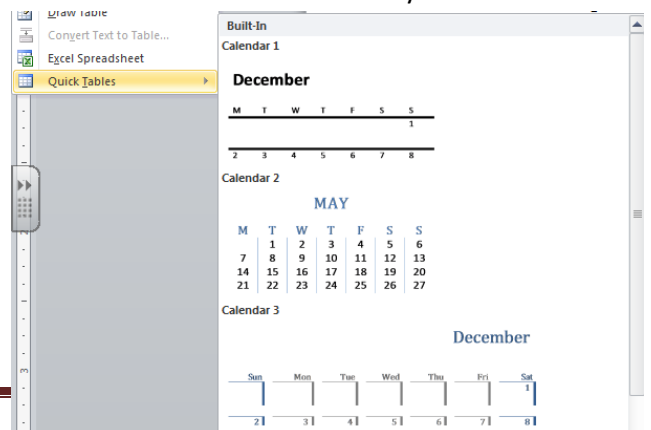
1. From the Insert Tab, add a blank page by clicking the Blank Page button in the Pages toolbox.

How to add a page break

1. From the Insert Tab, add a page break by placing your cursor in the location that you would like to have a page break.

How to add tables

1. From the Insert Tab, click the Table icon in the Tables toolbox.
2. Click and drag over the small boxes to determine the number of columns and rows for your table. Optionally, you can click the Insert Table menu item to type in the number of columns and rows. You can also click the Draw Table button to use a pencil tool to draw cells of a table.
3. You can also add a previously created Excel spreadsheet by clicking Excel Spreadsheet.
4. Add preconfigured tables by selecting the Quick Tables menu

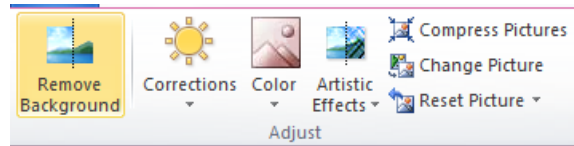


How to add pictures

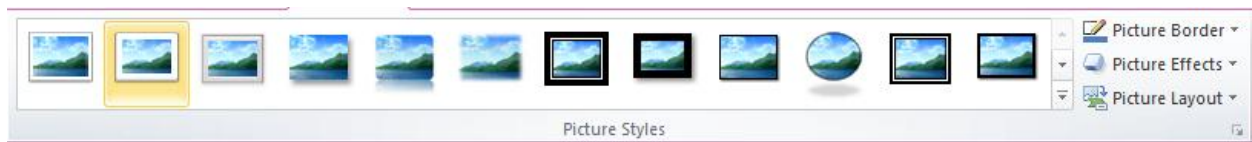
1. From the Insert Tab, click the Picture button in the Illustrations toolbox.
2. Once the navigation window opens, find the picture that you would like to add, then click insert.

What can be found on the Picture Tools Format Tab

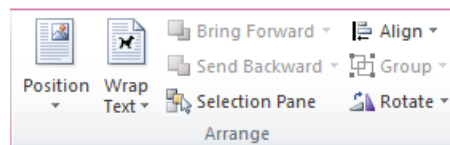
Once you have added a picture to your document while the picture is still selected you will see a new tab display on the ribbon. These are the Picture Tools. From the Adjust toolbox you can Remove picture backgrounds, modify colors, add artistic effects, and change pictures.



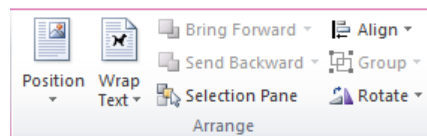
The Picture Styles toolbox gives you the opportunity to format your pictures using excellent picture presets. Click the dropdown arrow to view all of the available presets. From the Picture Styles toolbox you can also add picture borders, effects, and modify picture layouts.



The Arrange toolbox allows you to change positions of pictures and modify how text flows around pictures. You can also arrange, align, and rotate pictures from this toolbox.

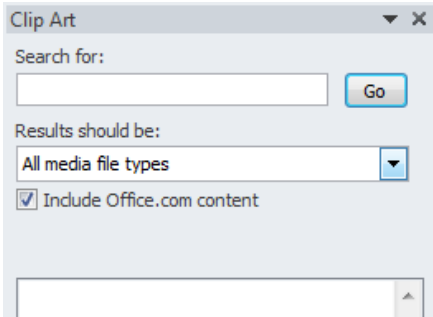


The Size toolbox allows you to change the height and width of pictures as well as gives you access to the cropping tool.



How to add Clip Art

1. From the Insert tab, click the Clip Art button in the Illustrations toolbox.
2. A Clip Art pane will display on the screen. From the search bar type in the clip art you are looking for and click Go. You can adjust the media type by clicking the dropdown menu of the Results should be: section.

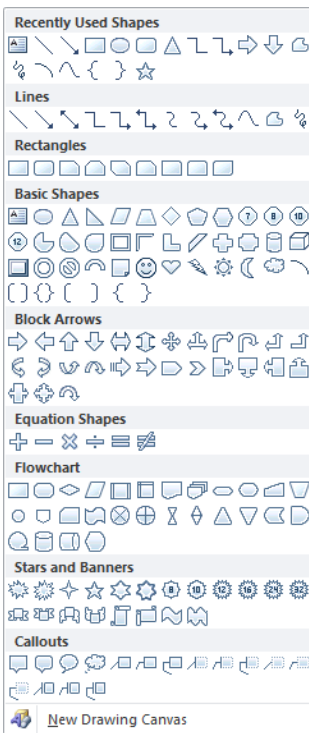


3. If you would like to continue your search at Office.com, select that choice at the bottom of the Clip Art pane.



How to add shapes to your document

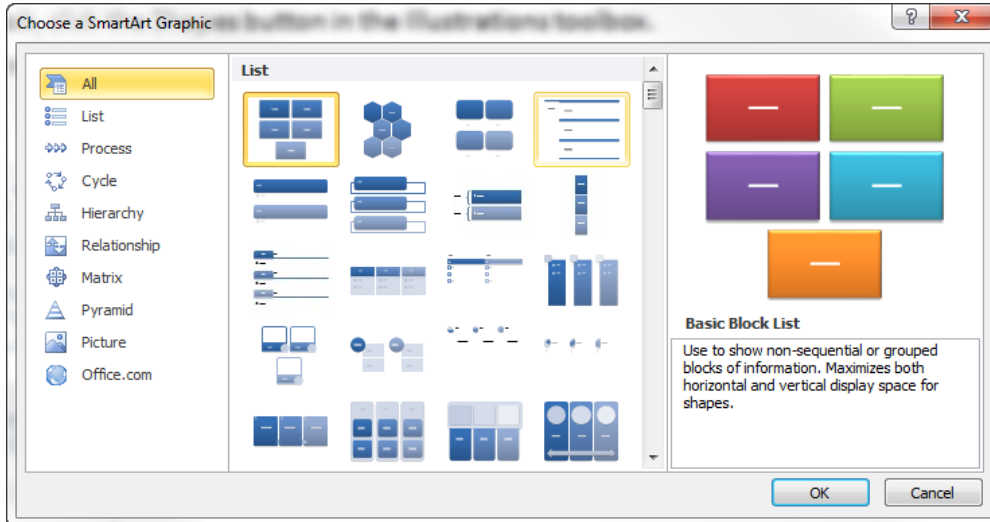
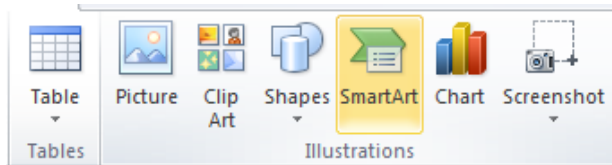
1. From the Insert tab, click the Shapes button in the Illustrations toolbox.
2. Select the shape you desire from the options available.



How to add SmartArt graphics

Smart Art graphics are visual representations of information that you can create easily. There are many layouts to consider. To use Smart Art graphics effectively, be sure to select the option which will convey the information that you are presenting in your document. Most shapes in Smart Art graphics are text boxes that you can edit.

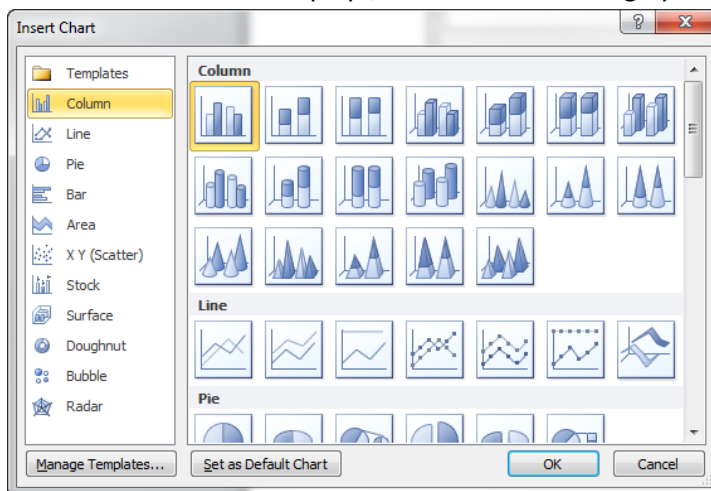




1. From the Insert tab, in the illustrations toolbox, select Smart Art.
2. When the menu displays, select the type of graphic which conveys the information you would like to share with your audience.
3. Click the Ok button to insert your Smart Art graphic.
4. Click and edit the graphic as desired.

How to add a chart

1. From the Insert tab, in the illustrations toolbox, select Chart.
2. From the menu which displays, select the chart design you would like to use and then click Ok.

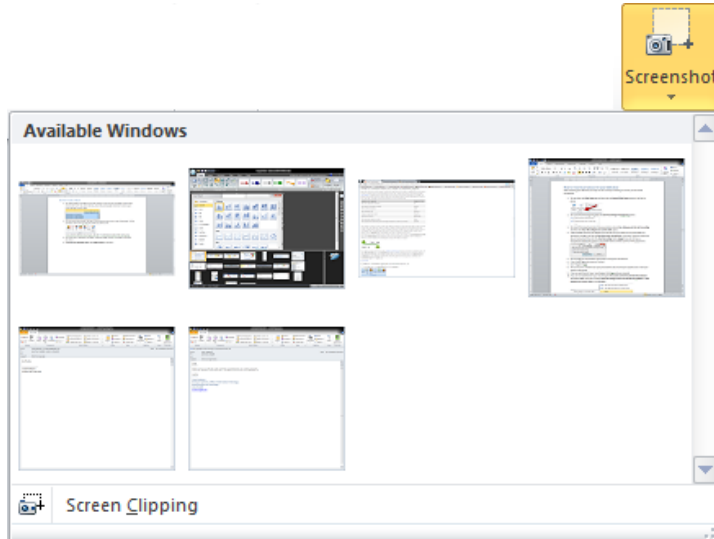


3. An Excel file will display. Modify the Excel sheet to include the data that you would like to have on your chart.

4. In Excel, your data should be arranged in rows and columns. Be sure to have row labels to the left and column labels at the top, above the data.
5. You can also copy and paste a chart from Excel into Word.

How to use the Screenshot tool

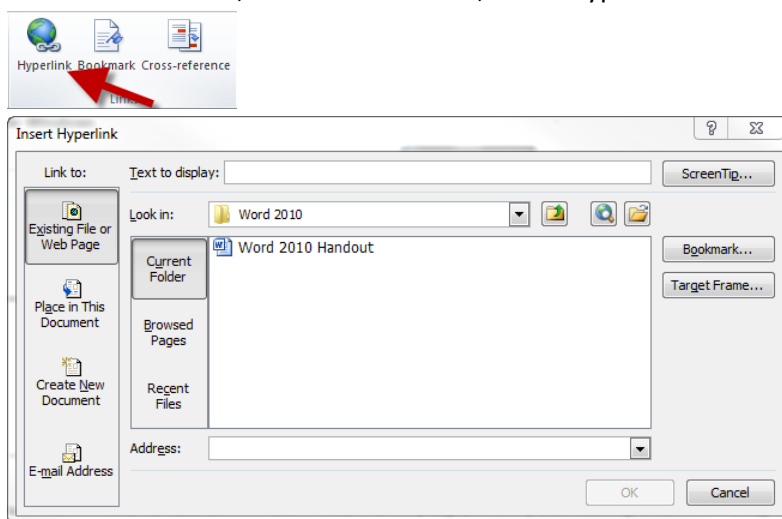
1. From the Insert tab, in the illustrations toolbox, select Screenshot.



2. A menu of all the available Windows currently open on your computer will display. Select the window that you would like a screen shot of.
3. You can also use the Screen Clipping tool which allows you to take a screenshot of a smaller section of a window.

How to add a Hyperlink

1. Select the text or object that you would like to create a hyperlink out of.
2. From the Insert tab, in the links toolbox, select Hyperlink.

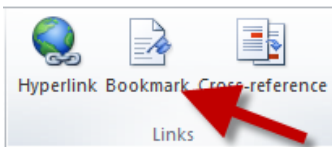


3. The selected text will display in the Text to display box. If you have an object selected (shape, picture, etc) it will display <<Selection in Document>>.
4. To add a hyperlink which will take you to an outside source, in the address bar, add the external hyperlink (copied and pasted from a web page, etc).
5. To add a hyperlink which will take you to another part of your document click the button on the left which says Place in this Document. You should be given a list of potential places in your document to link to.
6. You can also create a new document to connect to by clicking the Create New Document button on the left. Edit the new document to include what ever information you would like to connect to. This is an external link, but only external to the document which you are already creating and not on the network or internet.
7. You can also add an email address by clicking on the Email Address button on the left and then including the email address on the address bar.

How to add Bookmarks

Bookmarks allow you to quickly navigate to predetermined places in your document.

1. Select the text that you would like to turn into a bookmark.
2. From the Insert tab, in the Links toolbox, select Bookmark.

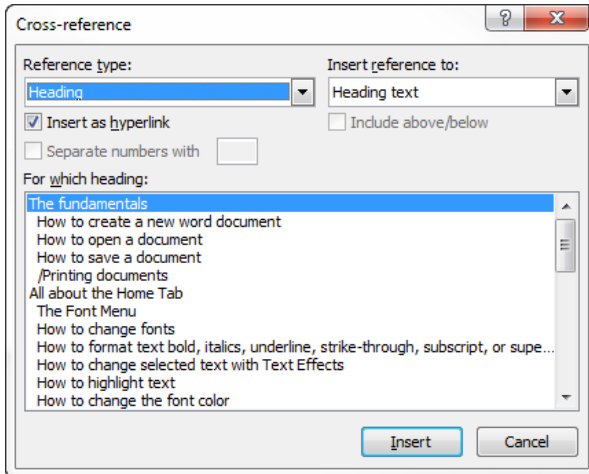


3. Type in the name of the new bookmark then click Add. Add as many bookmarks as you would like.
4. To navigate to a bookmarked item, click the bookmark button, and then select the bookmark title of your choice and then click the Go To button.

How to add a Cross-Reference

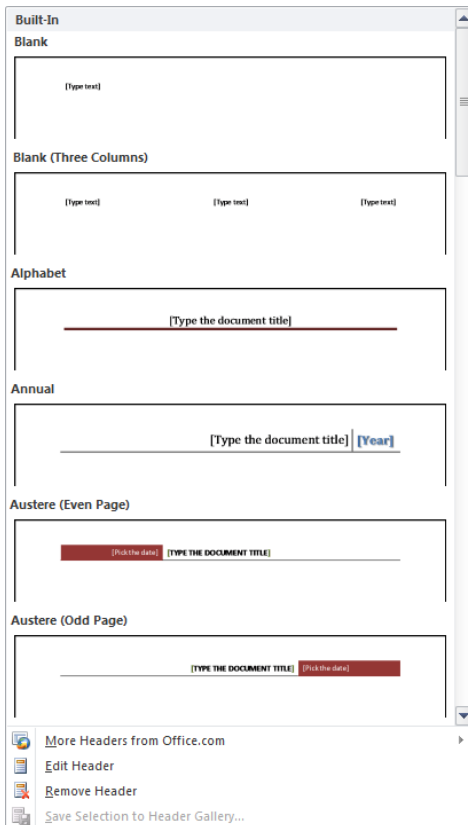
Cross-Reference allows you to create a link in your document which will take you to another section. It creates link to this other section which is clickable (ctrl – click). These links will update automatically as changes are made to the document.

1. Place your cursor at the location that you would like to insert a Cross-referenced link.
2. From the Insert Tab, in the Links toolbox, click Cross-reference.
3. Select your desired reference type from the drop down menu.
4. Select the Insert Reference to: item that you would like the reference to point to.
5. In the For which heading section, select the location in the document that you are referencing.
6. Select insert.



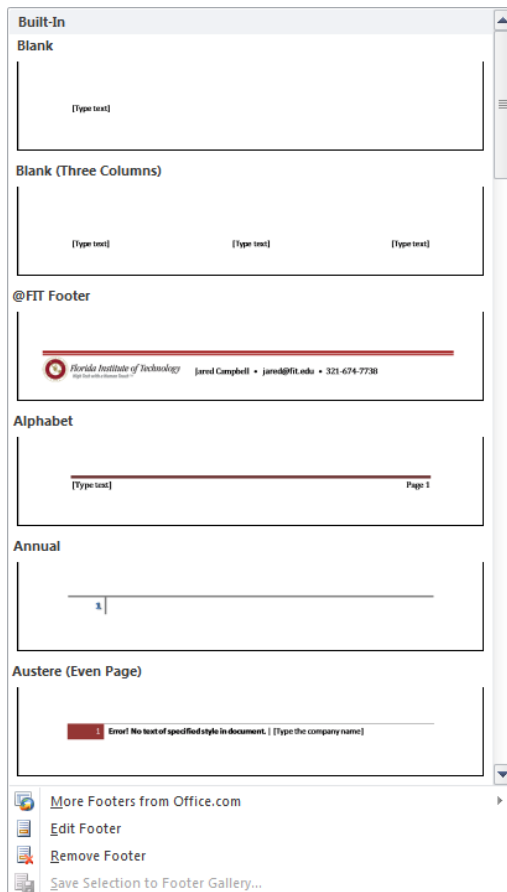
How to add a Header

1. From the Insert Tab, in the Header & Footer toolbox, click Header.
2. From the menu that displays, select the header of your choice.
3. Once the header displays, you may click to edit its parts.
4. In order to get out of the header area double click the main body of the document.
5. If you would like to return to the header area you can double click in the header area of the document.



How to add a Footer

1. From the Insert Tab, in the Header & Footer toolbox, click Footer.
2. From the menu that displays, select the footer of your choice.
3. Once the footer displays, you may click to edit its parts.
4. In order to get out of the footer area double click the main body of the document.
5. If you would like to return to the footer area you can double click in the footer area of the document.



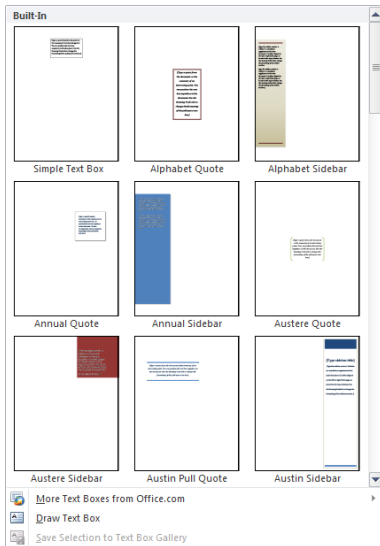
How to add Page Numbers

1. From the Insert Tab, in the Header & Footer toolbox, click Page Number.
2. From the dropdown menu, select the location where you would like to place your page numbers.

How to insert a Text Box

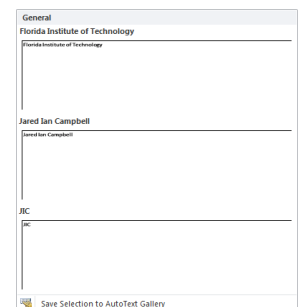
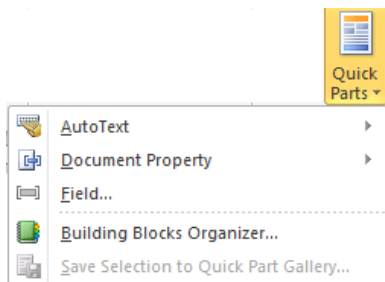
1. From the Insert Tab, in the Text toolbox, click Text Box.
2. In the resulting Built-in menu, select the textbox style of your choice.





How to add Quick Parts

Quick parts are reusable pieces of content which can be stored and added to documents as needed.

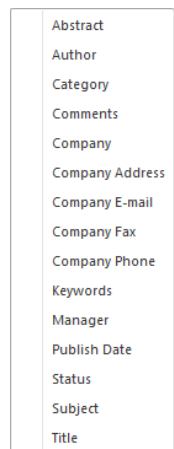


Quick Parts – Auto Text

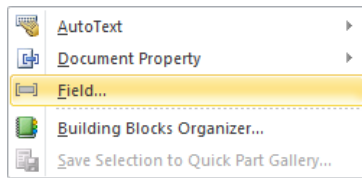
1. From the Insert Tab, in the Text toolbox, click Quick Parts.
2. To add Auto Text, in the dropdown menu, click Auto Text.
3. Select the item that you would like to add.

Quick Parts – Document Property

1. From the Insert Tab, in the Text toolbox, click Quick Parts.
2. Click Document Property to choose from a list of properties that you would like to add to your document.
3. Fill in the document property box to create properties that will travel with your document.



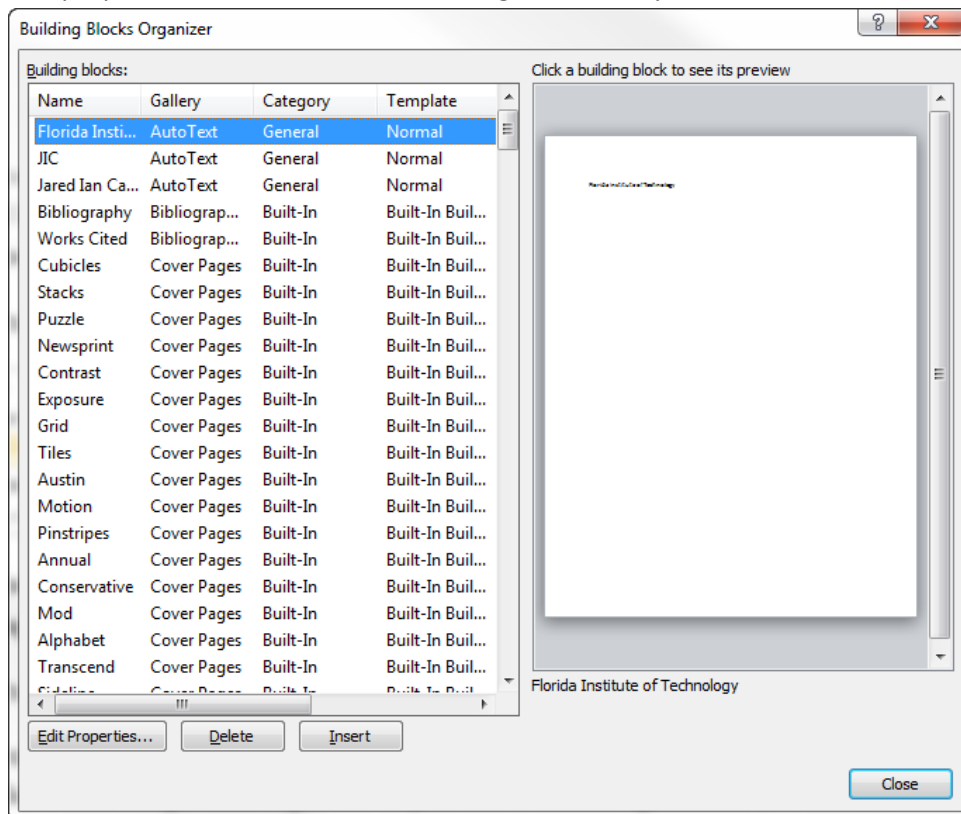
Quick Parts – Field



1. From the Insert Tab, in the Text toolbox, click Quick Parts.
2. Use field codes to insert fields that will provide auto-updated information such as the time, title, page numbers, etc.

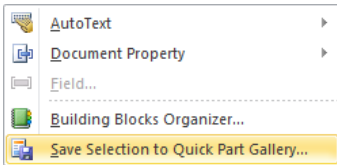
Quick Parts – Building Blocks Organizer

1. From the Insert Tab, in the Text toolbox, click Quick Parts.
2. Click on Building Blocks Organizer to preview the building blocks that are available. You can also edit properties, delete, and insert building blocks into your document.



How to save a selection to the Quick Part Gallery

1. From the Insert Tab, in the Text toolbox, click Quick Parts.
2. Select the text that you would like to save as a quick part.
3. From the Insert Tab, in the Text toolbox, click Quick Parts.
4. Select Save Selection to Quick Part Gallery.



5. You can now reuse this Quick Part by choosing the selection from the gallery.

How to add Word Art

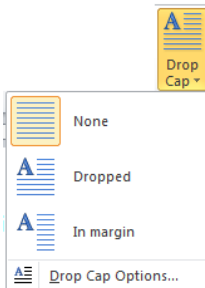
1. From the Insert Tab, in the Text toolbox, click Word Art.
2. Select the format of your choice from the available options.



3. In the text box that displays, add the text that you would like to be in the WordArt format that you selected.

How to add Drop Cap Text

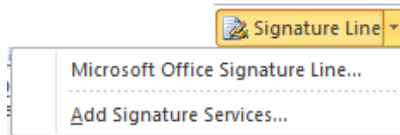
1. Select a paragraph from your document.
2. From the Insert Tab, in the Text toolbox, click Drop Cap.



3. Select the DropCap option of your choice from the menu.

How to add a Signature Line

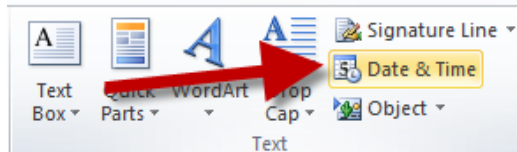
1. Place your cursor in the location that you would like a signature line to be added.
2. From the Insert Tab, in the Text toolbox, click Signature Line.



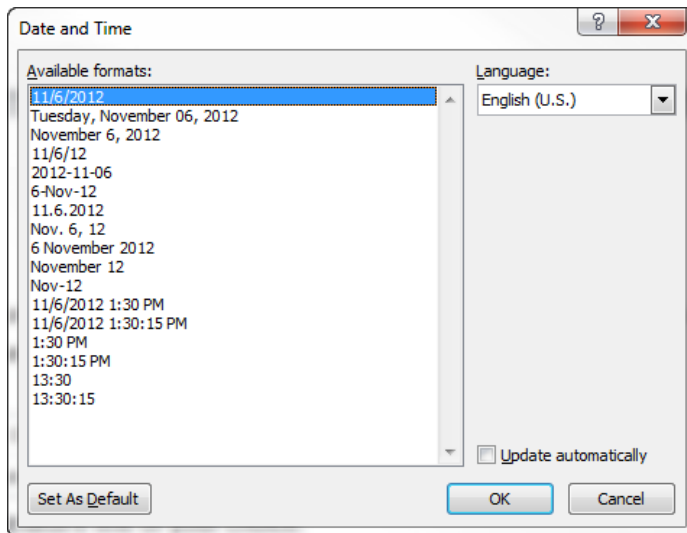
3. Select the signature line of your choice.

How to add Date & Time

1. Place your cursor in the location that you would like the Date & Time to be added.
2. From the Insert Tab, in the Text toolbox, click Date & Time.



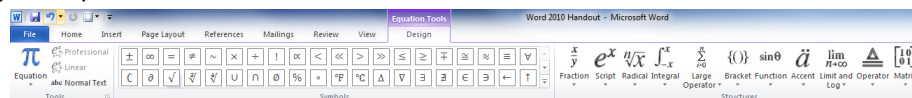
3. Choose from the list of available formats and then click OK.



How to add Equations

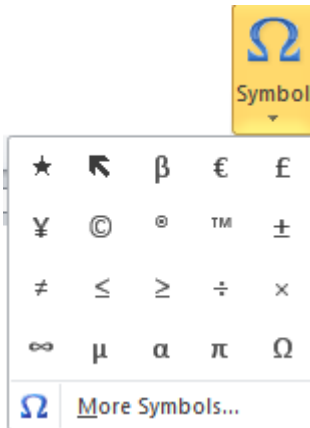
The Microsoft Equation Editor allows you to create formatted equations for your document.

1. Place your cursor in the location that you would like the equation to be added.
2. From the Insert Tab, in the Symbols toolbox, click Equation.
3. Select from one of the premade equations to add them to your document. To edit the equation, click on the symbol or number that you would like to change and edit as you would text.
4. If you would like to use a self created equation, after selecting Equation, scroll down to Insert New Equation. A new tab named Equation tools will display. Use the available tools to create and edit your equation.



How to add a Symbol

1. Place your cursor in the location that you would like the symbol to be added.
2. From the Insert Tab, in the Symbols toolbox, click Symbol.



3. Select the symbol of your choice from the available options.
4. If you don't find the symbol at first, click the More Symbols option and select from the choices made available.

All about the Page Layout Tab

How to use a Theme

The Themes toolbox consists of colors, fonts, and effects. You can select themes to create matching documents as all of Microsoft Office software uses the same available themes. They will affect the look of charts, tables, and more.

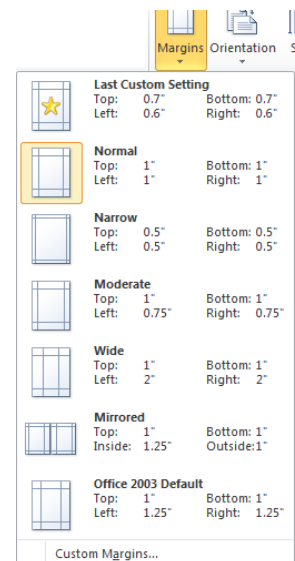
1. From the Page Layout Tab, in the Themes toolbox, select the theme of your choice by selecting the Theme dropdown menu and selecting the theme.
2. You can also select colors to use in your theme, but selecting the colors button.
3. Fonts can be selected here as well from the fonts button.
4. You can also select effects for shapes by clicking the Effects button.

How to adjust the margins of your document

1. From the Page Layout Tab, in the Page Setup toolbox, select Margins.
2. From the dropdown menu that displays, select the margins you would like to use.

How to change the orientation of your document.

1. From the Page Layout Tab, in the Page Setup toolbox, select Orientation.
2. Choose from either Portrait or Landscape.

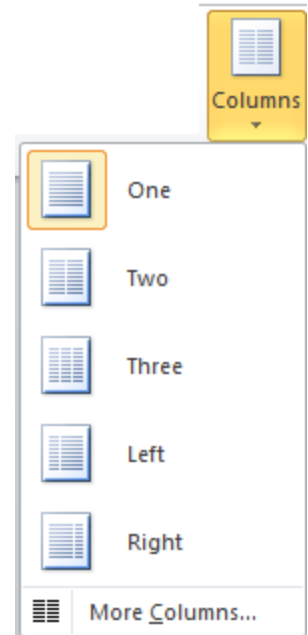


How to change the size of the document being created

1. From the Page Layout Tab, in the Page Setup toolbox, select Size.
2. Select from the list of available page sizes.

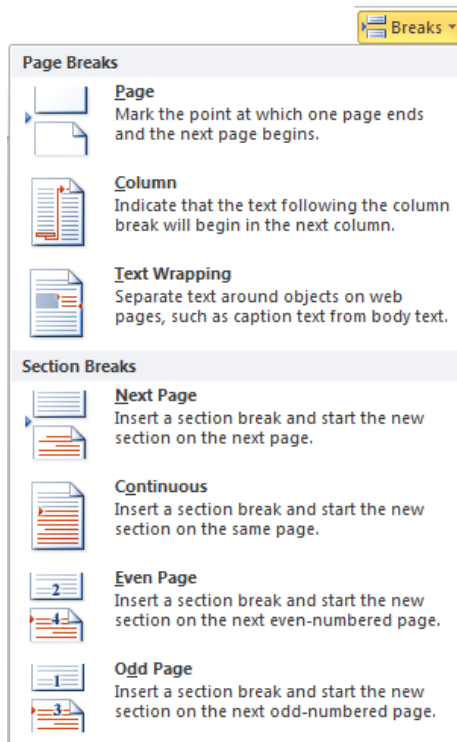
How to add columns to your document.

1. Select the text that you would like to put into columns.
2. From the Page Layout Tab, in the Page Setup toolbox, select Columns.
3. Select the number of columns you would like to have.



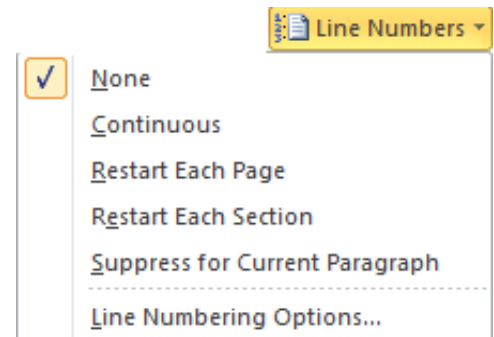
How to add Page Breaks and Section Breaks

1. Place your cursor where you would like to put a break in your document.
2. From the Page Layout Tab, in the Page Setup toolbox, select Breaks.
3. From the available breaks, select the one that you would like to use.



How to add Line Number

1. From the Page Layout Tab, in the Page Setup toolbox, select Line Numbers.
2. From the available options, click the style of line numbering you want.



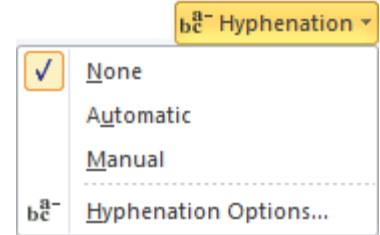
How to adjust Hyphenation settings

1. From the Page Layout Tab, in the Page Setup toolbox, select



Hyphenation.

2. From the available options, click the style of hyphenation you want.

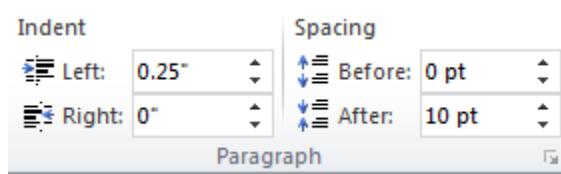


How to add Watermarks, Adjust Page Color, and add Page Borders

1. From the Page Layout Tab, in the Page Background toolbox, select the tool of your choice.

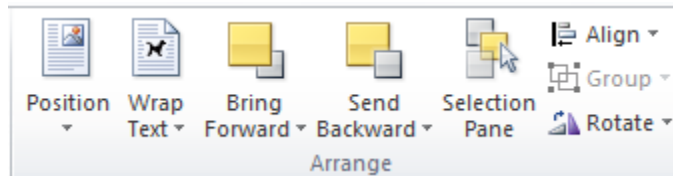
How to set the default indentation and line spacing of your document

1. From the Page Layout Tab, in the Paragraph toolbox, select and modify the measurements for indentation and line spacing.



Tools available for Arranging your document

1. Select the object that you would like to adjust the arrangement of.
2. From the Page Layout Tab, in the Arrange toolbox, select the tool of your choice.



3. Modify the position, how text wraps around pictures and other objects, send the object forward or backward, the object's alignment. You can also group objects together by selecting multiple objects and then selecting the Group button. Rotate objects by selecting the rotate tool.

All about the References Tab

How to create an Automatic Table of Contents

If you have used the different styles available on different headings in your document; creating a table of contents is brilliantly easy. If you revisit the Home tab and look at the different headings available and look at the dropdown menu that displays when you click on the Table of Contents button on the References tab, you will notice certain similarities.

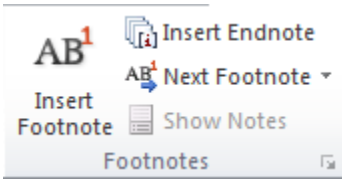
Firstly, many of the automatic tables that are available as built-in options, will display. Many times, you will see that each subsequent heading is tabbed in. If you have used these headings, when you click on the table of contents button, you will find that your TOC is automatically created. This document has one of those automatic table of contents. I used Automatic table 1.

How to insert footnotes

1. Place the cursor where you would like to insert a footnote.



2. From the References Tab, in the Footnotes toolbox, click the Insert Footnote button.



3. You will be taken to where the footnote is to be written. Add the necessary footnote.

How to create an Automatic Bibliography/Work Cited

Bibliographies are usually saved for the end of a document. In Word 2010 you can create a bibliography based on the source information that you have provided for the document.

Saving source information is easy in Word 2010. When you have added all of your sources you can choose the bibliography style that you wish to use.

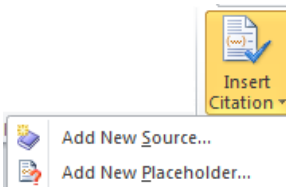
How to pick the bibliography style

1. From the References Tab, in the Citations and Bibliography toolbox, click the Style button.
2. Select the style of bibliography that you want to use by clicking on the dropdown menu and then selecting the style name.
3. The available styles are:

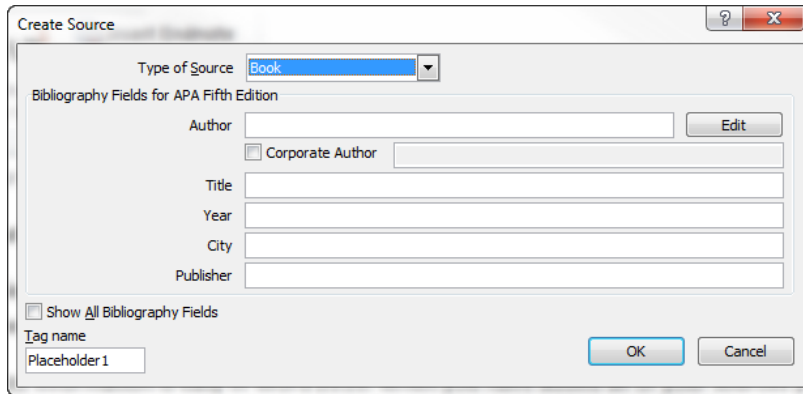


How to add in text citations

1. Place the cursor in the location that you would like to place a citation.
2. From the References Tab, in the Citations and Bibliography toolbox, click the Insert Citation button and then click Add New Source...



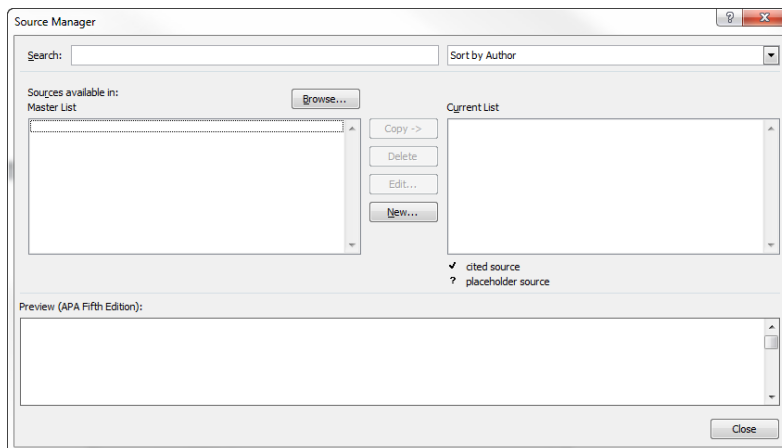
3. Enter as much of the source information you have available in the window that displays.



4. Click ok. The citation should be shown in the correct format and the source should be added to the current list in the Source Manager.

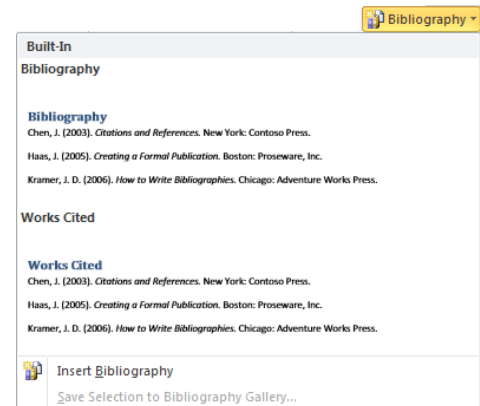
How to Manage your Sources

1. From the References Tab, in the Citations and Bibliography toolbox, click the Manage Sources button.
2. From sources available, click the sources you are interested in and then select Copy to get them to be added to the Current List. You will be able to preview these sources.
3. Click closed when finished.



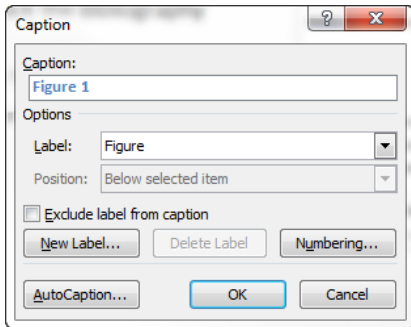
How to generate the Automatic Bibliography

1. Place the cursor where you would like your bibliography to be.
2. From the References Tab, in the Citations and Bibliography toolbox, click the Bibliography button.
3. Select a Bibliography or Work Cited.
4. Your reference page should now be available.



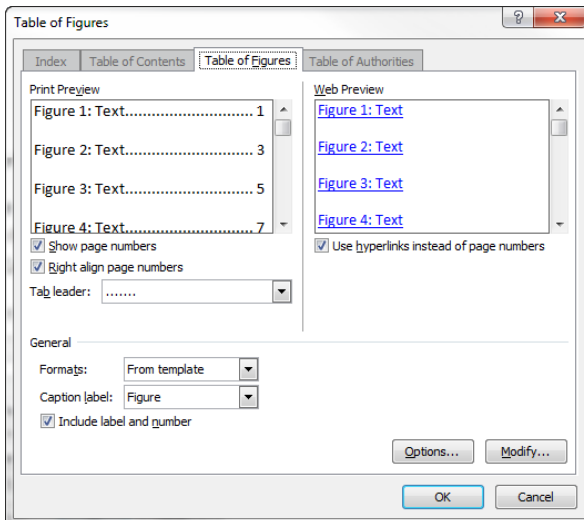
How to Insert Captions

1. Select the drawing, picture, or diagram that you would like to caption.
2. From the References Tab, in the Captions toolbox, click the Insert Caption button.
3. Edit the Caption as you wish.
4. Click Ok.



How to Insert a Table of Figures

1. Place the cursor in the location you would like the Table of Figures to be.
2. From the References Tab, in the Captions toolbox, click the Insert Tables of Figures button.

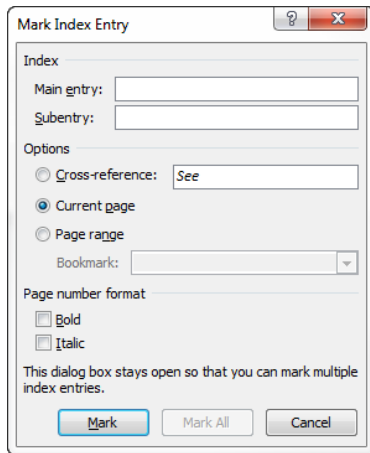


3. Edit as needed
4. Click Ok.

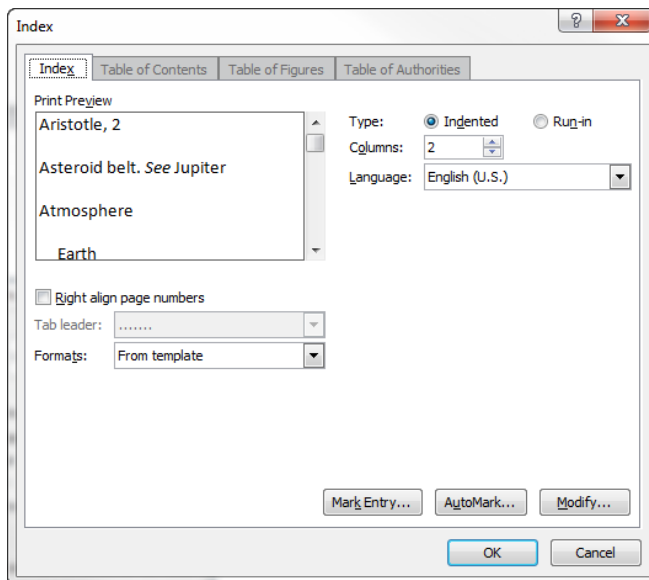
How to create an Index

1. Select the text that you would like to reference in your index.
2. From the References Tab, in the Index toolbox, click the Mark Entry button.





3. When the Mark Index Entry window displays enter in what you would like the Main entry of the index to display and then any subentry text necessary.
4. Add cross referencing as needed.
5. Click the Mark button when finished.
6. Place the cursor in the location you would like your index to be.
7. Click the Insert Index button.



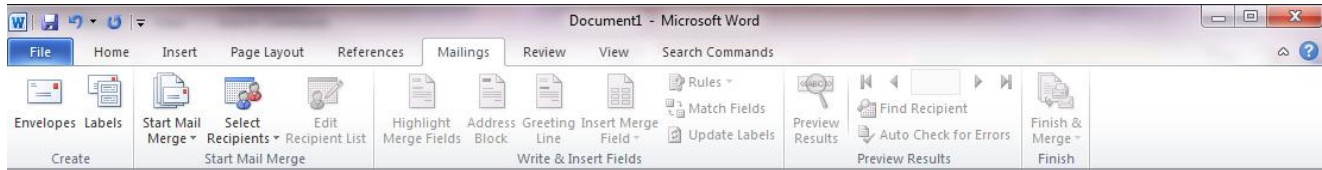
8. Check to see if the Print Preview panel displays to your liking. Edit as needed.
9. Click Ok. Your index should generate.

All about the Mailings Tab

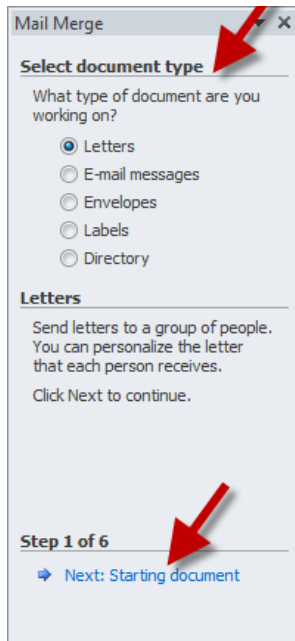
How to perform a mail merge using Word 2010 and an Excel file

1. Create a new document in Word 2010.
2. Save it with the name and location of your choice.
3. Click the **Mailings** tab.

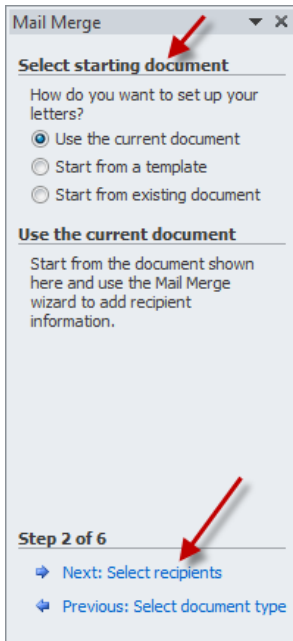




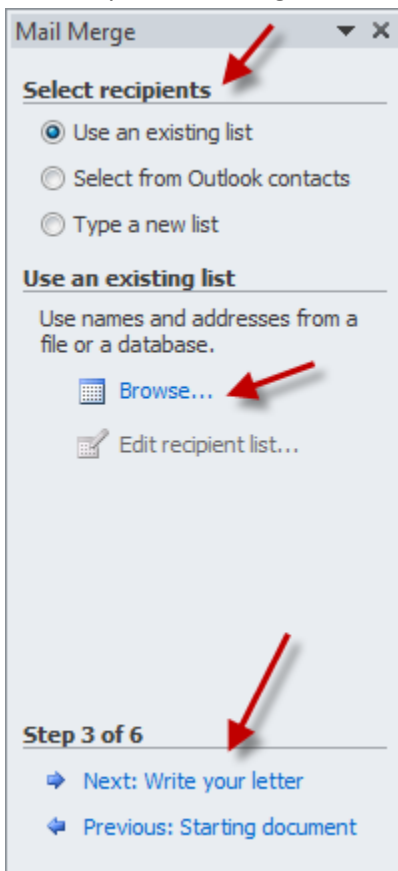
4. Click **Start Mail Merge**. Select the type of mail merge you would like to perform. For this tutorial I will select **Step by Step Mail Merge Wizard**. You should see the Mail Merge Wizard display on the right side of the screen.
5. After selecting the document type, click the **Next: Starting document** link at the bottom of the Mail Merge Wizard. For this tutorial will select Letter.



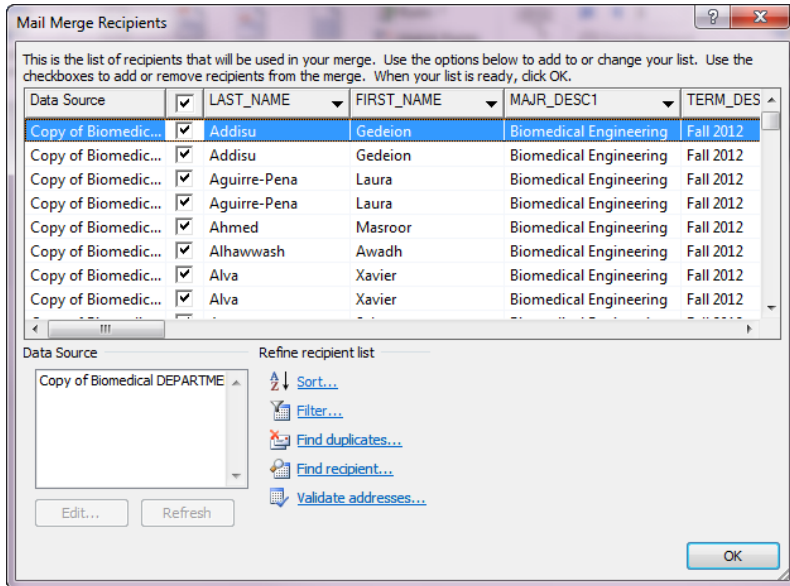
6. Select how you would like to set up your letter. Select the **Next: Select recipients link**.



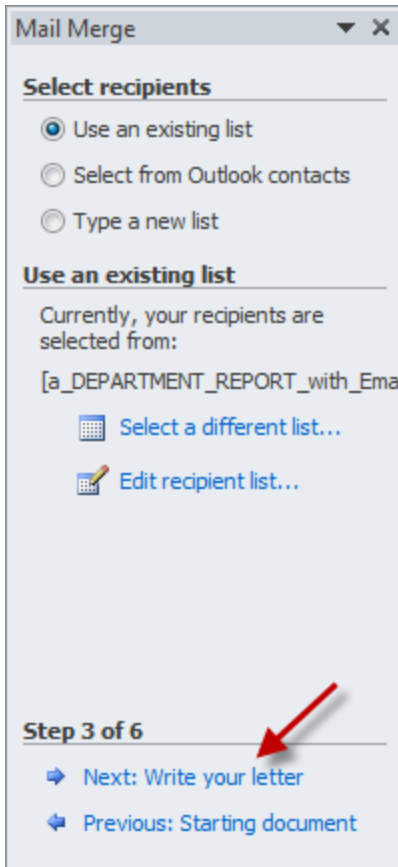
7. Select use an existing list. Then select Browse and then navigate to the Excel file you are using as data for your mail merge. After selecting the file, click Open.



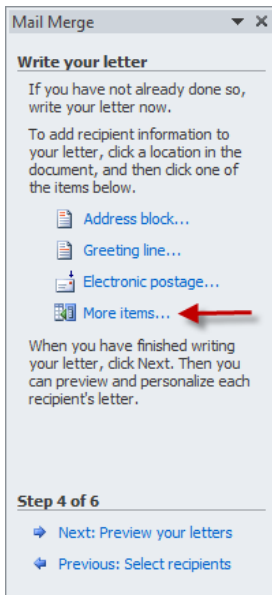
8. By default, every record in the file will be checked. If you would like to not include someone from the Excel file, uncheck the box next to the appropriate name. Click **OK**.



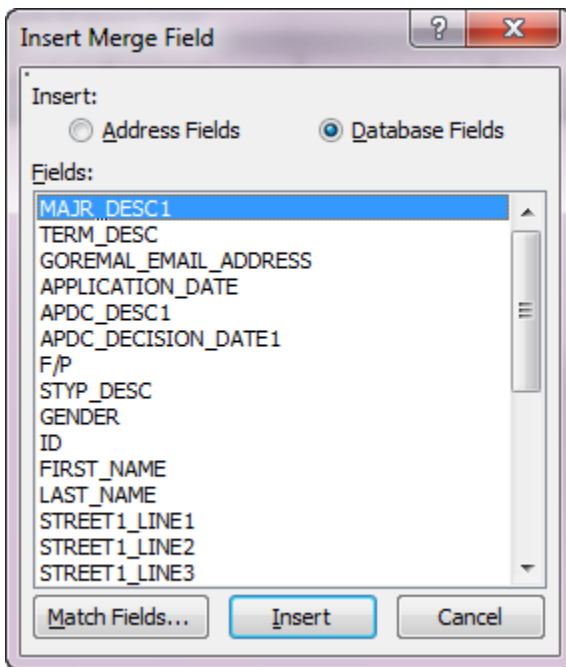
9. Click Next: Write your letter.



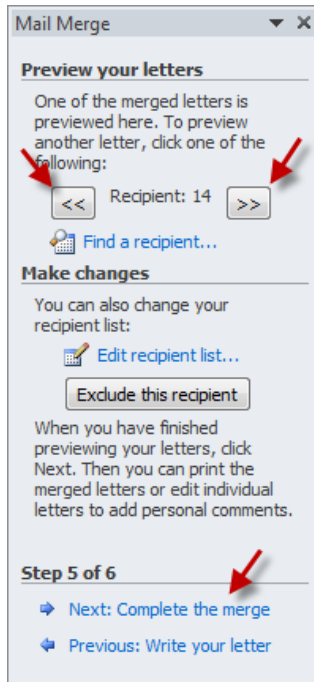
10. If you haven't done so, write your letter at this time. To add recipient information to your letter, click **More Items**.



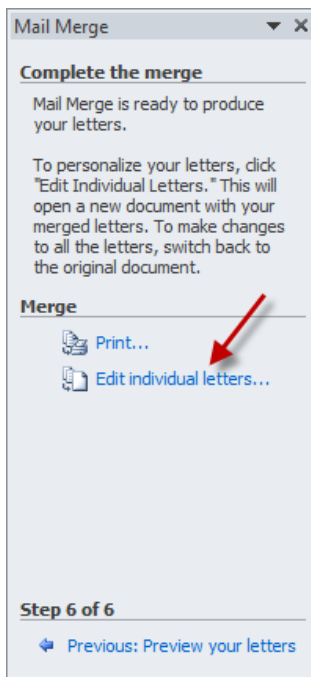
11. Navigate to the location in your document that you would like to add information. Select the item that you would like to insert and then click **Insert**. You may wish to insert more than one item, select the item desired and then click insert. Do this for wherever you would like to insert information.



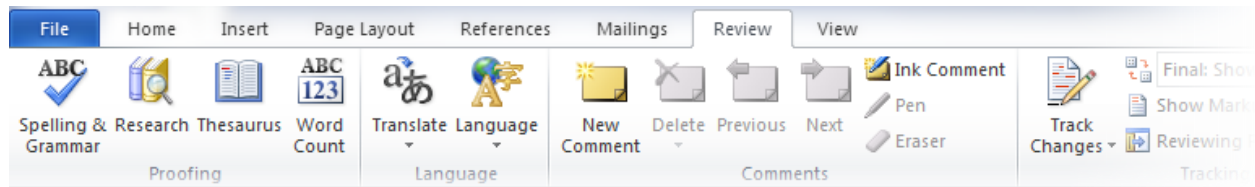
12. You can preview your letters by clicking the << and >> buttons. Once you deem everything looks as intended, select **Next: Complete the merge**.



13. If you find that all of the documents are as intended you may simply click Print. If you would like to view and edit any of the individual letter click **Edit individual letters**. When finished, you may print all letters by going to **File<Print**.

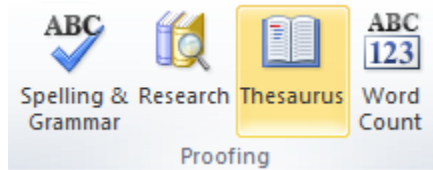


All about the Review Tab



How to use the Spelling and Grammar checker

1. From the Review Tab, in the Proofing toolbox, click the Spelling & Grammar button.



2. The spelling and grammar checker will begin at the start and continue through till the end of the document.
3. If you would like to check only a small portion of the document, select the section of text that you are interested in and then click the Spelling & Grammar button.

How to perform web research from within Word

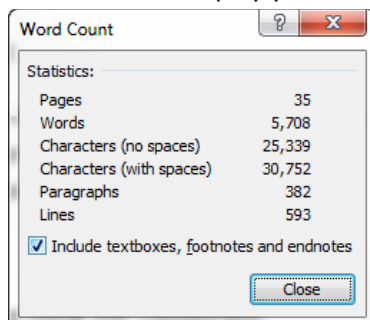
1. From the Review Tab, in the Proofing toolbox, click the Research button.
1. A research pane will display. You can search from the search bar.
2. The results of the search, when clicked on, will open in your browser.

How to use the Thesaurus

1. Select the word you would like to replace using the Thesaurus.
2. From the Review Tab, in the Proofing toolbox, click the Thesaurus button.
3. A thesaurus pane should display showing all of the available choices for word replacement.

How to use the Word Count

1. From the Review Tab, in the Proofing toolbox, click the Word Count button.
2. A window will display your documents statistics. Click the Close button when finished.

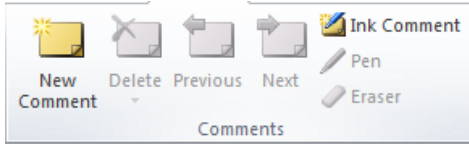


How to add Comments to your document

1. Place the cursor in the location that you would like to add a comment.



- From the Review Tab, in the Comments toolbox, click the New Comment button.



- A comment box will display. Add your comment.

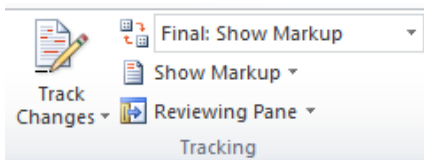
How to add Ink Comments to your document

- Place the cursor in the location that you would like to add a comment.
- From the Review Tab, in the Comments toolbox, click the Ink Comment button.
- Write your comment using your mouse or a stylus (touch screen).

How to Track Changes

Track Changes allows you to keep track of changes made to a document. This can be very helpful when more than one person is allowed to edit a document.

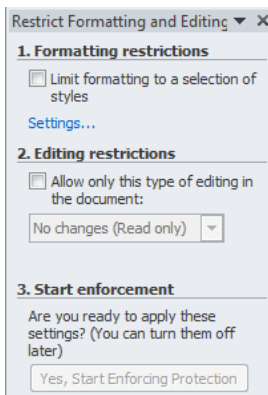
- From the Review Tab, in the Tracking toolbox, click the Track Changes button.



- The button should highlight, when track changes is engaged.
- Edit the text as needed. You will notice that the text will show a **different color** and words you delete will display as **stricken through**.
- If the changes are acceptable to you click the Accept button in the Changes toolbox. If they are not, click the Reject button in the Changes toolbox.
- To compare changes made to the document, click the Compare button in the Compare toolbox.

How to Restrict Editing of a document

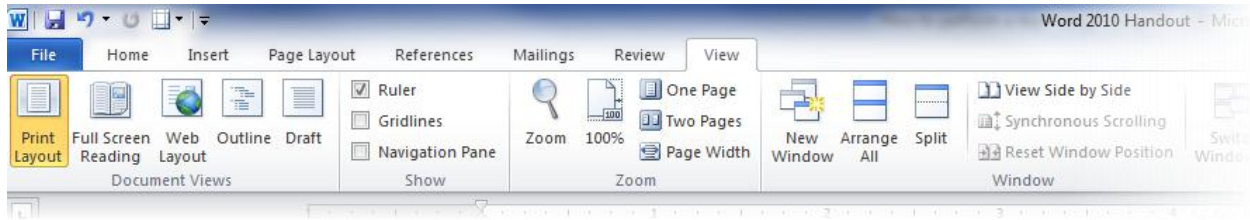
- From the Review Tab, in the Protect toolbox, click the Restrict Editing button.
- In the Restrict Formatting and Editing pane that displays, modify the settings as needed.



- Once your settings are all configured, select the Yes, Start Enforcing Protection in number three of the pane.



All about the View Tab



The view tab gives you all of the tools necessary to change how you view the document. You can choose from several different document views, turn on/off rulers, gridlines, and navigation panes, zoom in and out of a document, and select to view multiple documents on the same screen by clicking buttons on the Window toolbox.

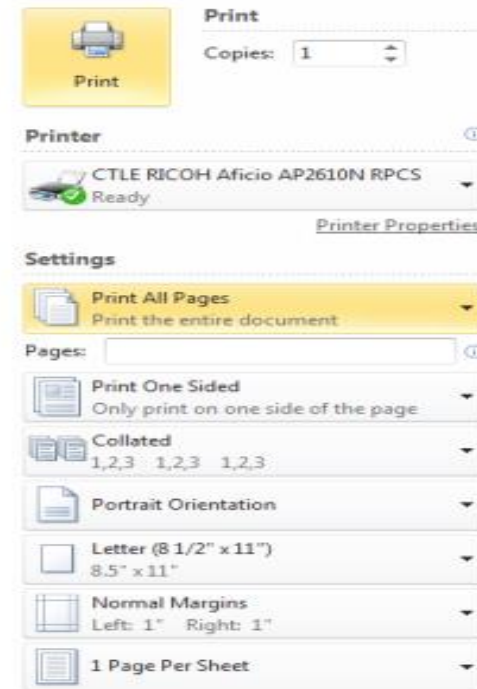
The View toolbox is where you will find access to Macros. Macros are beyond the scope of this handout, but if you are interested in them I suggest you visit <http://goo.gl/VS74D> to learn more.



Microsoft WORD 2

Printing documents

1. Select the number of copies you would like to print by adjusting the number to the right of the print button.
2. Select the printer that you would like to print to from the drop down menu.
3. By clicking the Print All Pages button dropdown arrow, you can select to print the entire document, a section that you have selected, the current page, or a custom page range.
4. Another option to print a page range is by typing in the page range in the box to the right of where it says Pages:.
5. The Print One Sided button dropdown menu will give you the option to print on both sides, if your printer has this capability.
6. Selecting the Collated button will give you the opportunity to select between collated printing and uncollated printing.
7. The Orientation button allows you to select between landscape and portrait orientated printing.
8. If you are going to print on different sized paper, the page size button (often seen as Letter (8 ½" x 11")) is where you can select the particular size.



How to format text bold, italics, underline, strike-through, subscript, or superscript.

- 1. From the Home Tab, find the Font toolbox.
- 2. From the Font menu , you can change selected text to bold, italics, underline, strike-through, subscript, or superscript.
- 3. The dropdown arrow next to the underline (U) icon gives you the ability to select from several types of underlining lines. You can even change the color of the line if so desired.

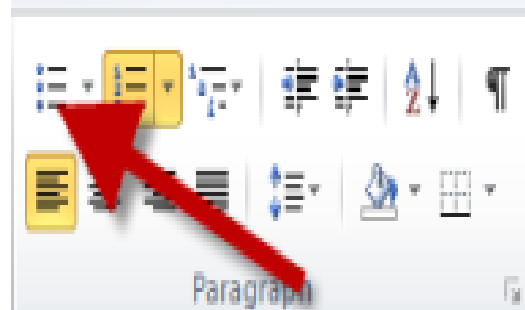


How to change selected text with Text Effects

- 1. From the Home Tab, find the Font toolbox.
- 2. You can apply visual effects such as outline, shadow, reflection, and glow by clicking the
- icon. This will bring up the Text Effects menu and several styles to consider.
- 3. Click the style you desire from the available choices.
- . It is also possible to modify the outline, shadow, reflection, and glow settings by selecting those
- items.

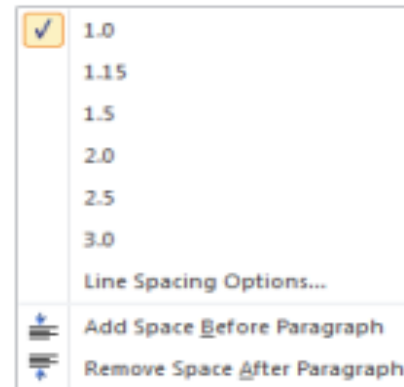
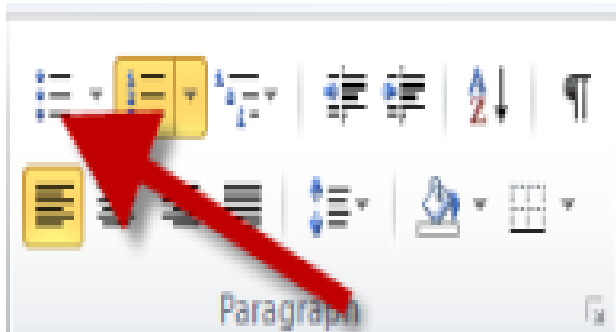
How to add or numbered item bullets

- ❖ 1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to have bulleted.
3. Click the bullets icon in the Paragraph group you would like to
4. select a different style of bullet, click the dropdown arrow to the right of the icon and select the bullet of your choice.
5. The next time you hit the Enter key, a new bullet will display



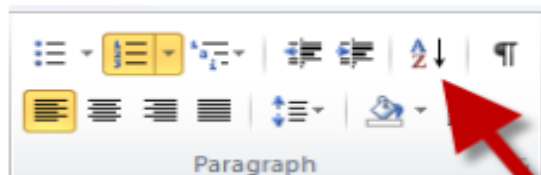
How to change the line and paragraph spacing

- 1. From the Home Tab, find the Paragraph toolbox.
- 2. Select the text that you would like to change the spacing.
- 3. Select the icon for line and paragraph spacing. The dropdown arrow will allow you to see the different choices for line and paragraph spacing.



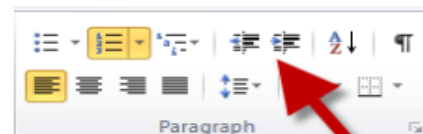
How to sort items in a list with one click

1. From the Home Tab, find the Paragraph toolbox.
2. Select the text that you would like to alphabetize or put in numbered order.
3. Click the Sort icon. Then select how you would like to sort the items



How to increase or decrease the indent of a paragraph

- 1. From the Home Tab, find the Paragraph toolbox.
- 2. Select the text that you would like to increase the indentation of.
- 3. Click either the increase or decrease indent button.

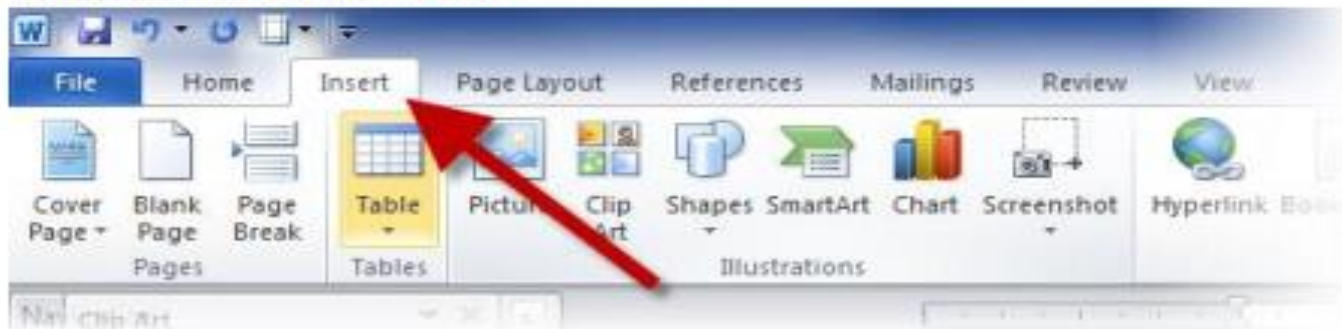


How to change the style of text

- Changing the style of text can make your document look amazing as well as prepare your document for a table of contents page.
- 1. From the Home Tab, find the Styles toolbox.
- Select the text that you would like to change the style of.
- 3. Click the style that you would like to change the text to.
- 4. To see all options, click the arrow in the lower right corner of the Styles section.



All about the Insert Tab



How to add a Cover Page

1. From the Insert Tab, in the Pages toolbox, click the Cover Page button.
2. Select the cover page of your choice.
3. Add in important information by editing the text that displays on the cover page.
4. There are several built in cover pages, but you can select the More Cover Pages from Office.com to see even more options.

How to add a blank page

1. From the Insert Tab, add a blank page by clicking the Blank Page button in the Pages toolbox.

How to add a page break

1. From the Insert Tab, add a page break by placing your cursor in the location that you would like to have a page break.

How to add tables

1. From the Insert Tab, click the Table icon in the Tables toolbox.

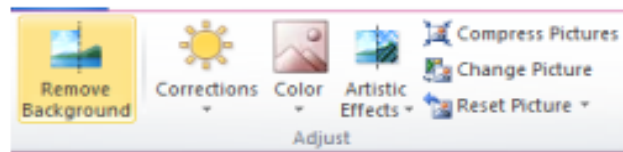


How to add pictures

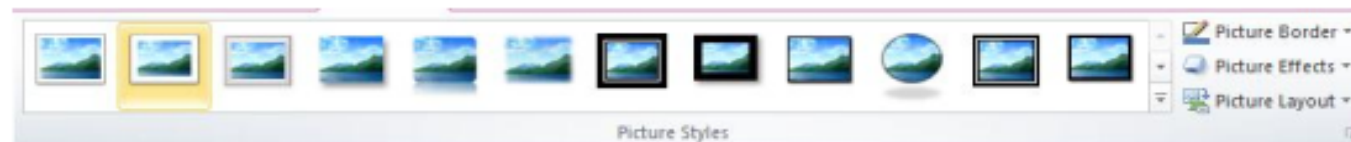
1. From the Insert Tab, click the Picture button in the Illustrations toolbox.
2. Once the navigation window opens, find the picture that you would like to add, then click insert.

What can be found on the Picture Tools Format Tab

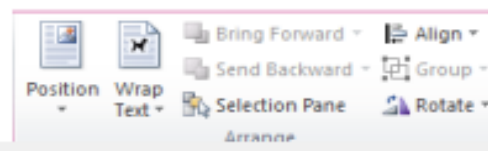
Once you have added a picture to your document while the picture is still selected you will see a new tab display on the ribbon. These are the Picture Tools. From the Adjust toolbox you can Remove picture backgrounds, modify colors, add artistic effects, and change pictures.



The Picture Styles toolbox gives you the opportunity to format your pictures using excellent picture presets. Click the dropdown arrow to view all of the available presets. From the Picture Styles toolbox you can also add picture borders, effects, and modify picture layouts.

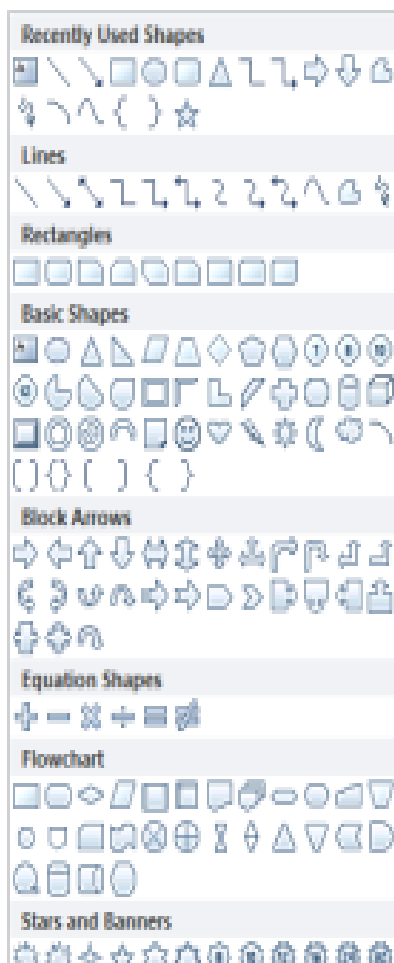


The Arrange toolbox allows you to change positions of pictures and modify how text flows around pictures. You can also arrange, align, and rotate pictures from this toolbox.



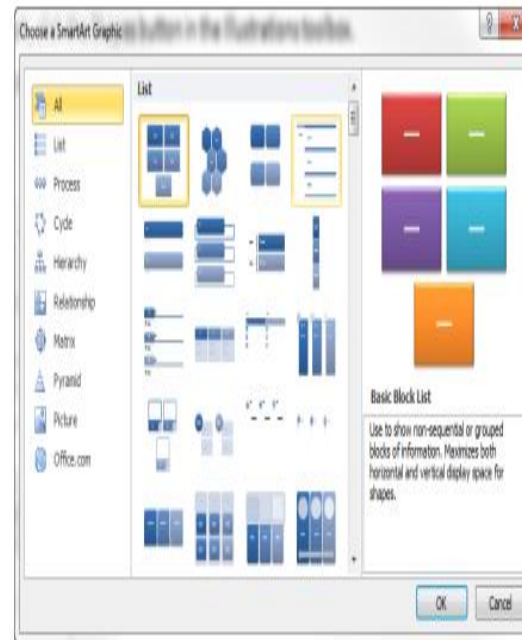
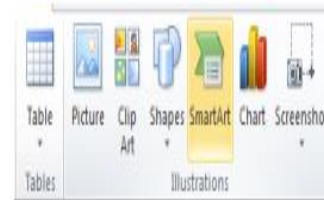
How to add shapes to your document

1. From the Insert tab, click the Shapes button in the Illustrations toolbox.
2. Select the shape you desire from the options available.



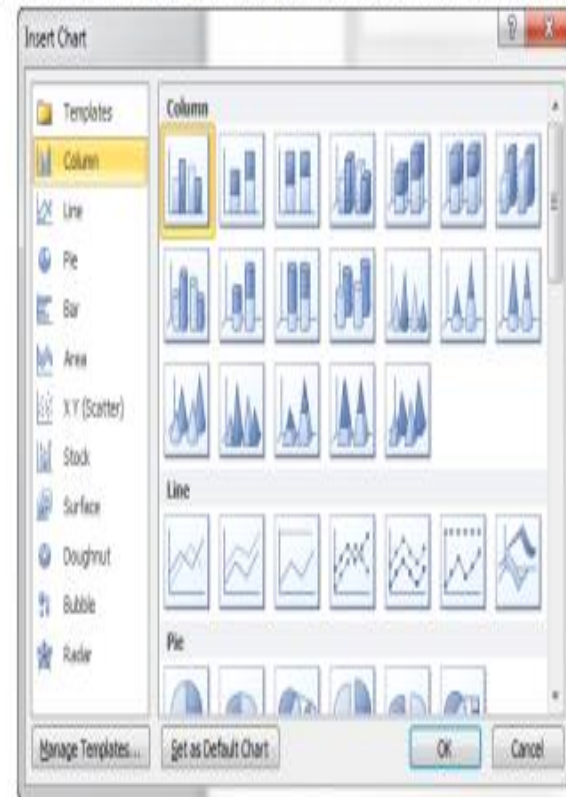
How to add SmartArt graphics

- From the Insert tab, in the illustrations toolbox, select Smart Art.
- 2. When the menu displays, select the type of graphic which conveys the information you would like to share with your audience.
- 3. Click the Ok button to insert your Smart Art graphic.
- 4. Click and edit the graphic as desired.



How to add a chart

- 1. From the Insert tab, in the illustrations toolbox, select Chart.
- 2. From the menu which displays, select the chart design you would like to use and then click Ok.
- 3. An Excel file will display. Modify the Excel sheet to include the data that you would like to have on your chart.
- In Excel, your data should be arranged in rows and columns. Be sure to have row labels to the
- left and column labels at the top, above the data.
- 5. You can also copy and paste a chart from Excel into Word.



How to add a Hyperlink

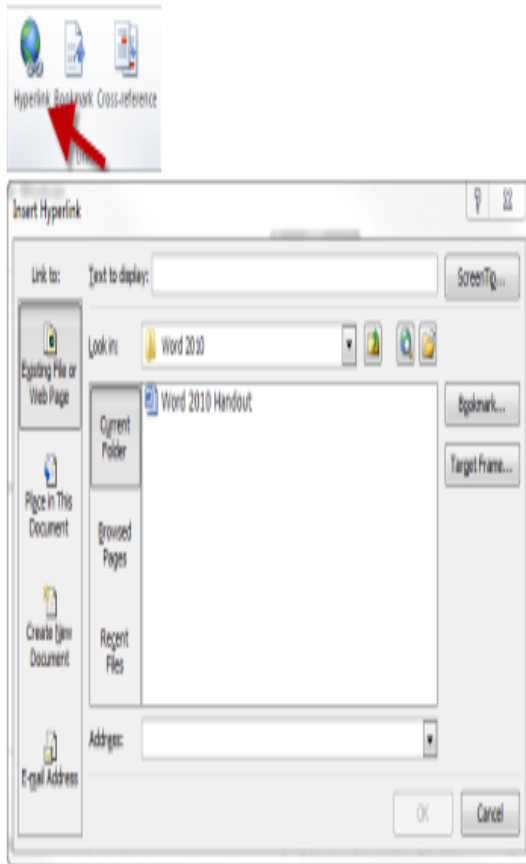
1. Select the text or object that you would like to create a hyperlink out of.

2. From the Insert tab, in the links toolbox, select Hyperlink.

The selected text will display in the Text to display box. If you have an object selected (shape, picture, etc) it will display <<Selection in Document>>.

4. To add a hyperlink which will take you to an outside source, in the address bar, add the external hyperlink (copied and pasted from a web page, etc).

5. To add a hyperlink which will take you to another part of your document click the button on the left which says Place in this Document. You should be given a list of potential places in your document to link to.



How to add a Header and footer

- 1. From the Insert Tab, in the Header & Footer toolbox, click Header.
 - 2. From select the menu that displays, she header of your choice.
 - 3. Once the header displays, you may click to edit its parts.
 - 4. In order to get out of the header area double click the main body of the document.
 - 5. If you would like to return to the header area you can double click in the header area of the document
- 1. From the Insert Tab, in the Header & Footer toolbox, click Footer.
 - 2. From the menu that displays, select the footer of your choice.
 - 3. Once the footer displays, you may click to edit its parts.
 - 4. In order to get out of the footer area double click the main body of the document.
 - 5. If you would like to return to the footer area you can double click in the footer area of the document.

How to add Page Numbers

- 1. From the Insert Tab, in the Header & Footer toolbox, click Page Number.
- 2. From the dropdown menu, select the location where you would like to place your page numbers.
- How to insert a Text Box
- 1. From the Insert Tab, in the Text toolbox, click Text Box.
- 2. In the resulting Built-in menu, select the textbox style of your choice.

Working with Tables in Word 2010

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Insert or create a table

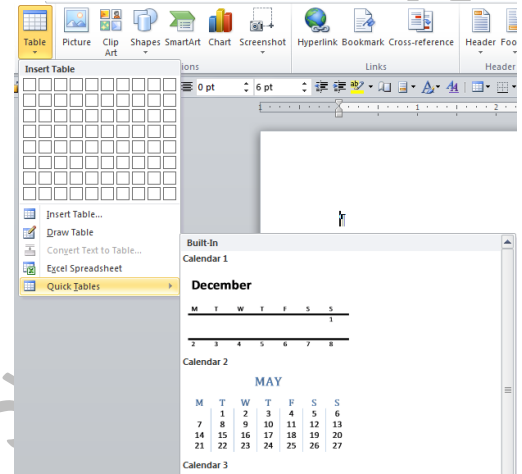
In Microsoft Word, you can insert a table by in three ways:

- Choose from a gallery of preformatted table templates.
- Use the Table menu to specify the number of rows and columns that you want.
- Use the Insert Table dialog box.

Use table templates (Quick Tables)

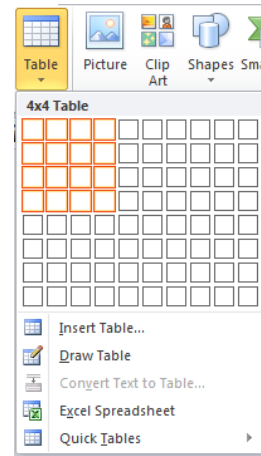
You can use table templates to insert a table that is based on a gallery of preformatted tables. Table templates contain sample data to help you visualize what the table will look like when you add your data.

- 1) Click where you want to insert a table.
- 2) On the **Insert** tab, in the **Tables** group, click **Table**, point to **Quick Tables**, and then click the template that you want.
- 3) Replace the data in the template with the data that you want



Use the Table menu

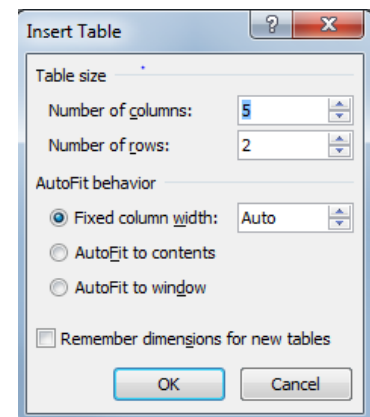
- 1) Place your insertion point where you want to insert a table.
- 2) On the **Insert** tab, in the **Tables** group, click **Table**, and then, under **Insert Table**, drag to select the number of rows and columns that you want.
- 3) The table will be empty and the cursor will appear in the first row of the first column.



Use the Insert Table command

You can use the **Insert Table** command to choose the table dimensions and format before you insert the table into a document.

- 1) Place your insertion point where you want to insert a table.
- 2) On the **Insert** tab, in the **Tables** group, click **Table**, and then click **Insert Table**.
- 3) Under **Table size**, enter the number of columns and rows.
- 4) Under **AutoFit behavior**, choose options to adjust the table size.

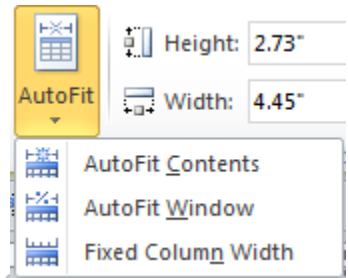


Know your AutoFit options

The **AutoFit** option currently associated with your table may affect your table width when adding a column. The **AutoFit** options are located in the **Cell Size** group of the **Layout** tab.

When you first create a table, it will automatically fit between the margins — that setting is called **AutoFit Window**. When you use this setting, if you add a column before you add text, the size of the columns automatically adjusts to keep the table within the margins.

Another **AutoFit** option is **AutoFit Contents**, which changes column width based on what's inside the cells. If you don't have any text in the cells and choose this option, your cells will shrink to about a character width. If you begin adding text to a new table, and haven't chosen an **AutoFit** option, your table will adjust column widths to accommodate your content.



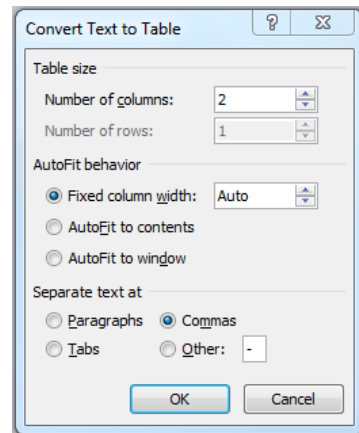
If you want your columns to remain the same width, you can use the **Fixed Column Width** option.

Convert text to a table or vice versa

Create a table out of text

The first step you do when converting text to a table is to decide what character to use to separate the columns. Common characters to use are tabs and commas, but you can use others. Paragraph marks are what separate the rows. Make sure that the character and paragraph marks are between the parts of the text that you want to convert to a table.

- 1) Insert separator characters to indicate where you want to divide the text into columns. Use paragraph marks to indicate where you want to begin a new row.
 - a) For example, in a list with two words on a line, insert a comma or a tab after the first word to create a two-column table.
- 2) Select the text that you want to convert.
- 3) On the **Insert** tab, in the **Tables** group, click **Table**, and then click **Convert Text to Table**.
- 4) In the **Convert Text to Table** dialog box, under **Separate text at**, click the option for the separator character that is in your text.
- 5) In the **Number of columns** box, check the number of columns.
 - a) If you don't see the number of columns that you expect, you may be missing a separator character in one or more lines of text.
- 6) Select any other options that you want.
- 7) Click **OK**.
 - a) If your table isn't what you've expected, confirm that you have characters where you want the columns.

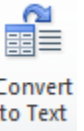


Remove your table and keep your text

Sometimes, you may decide that you don't want to have a table in your document, even though you've already entered information in it. You could cut and paste the information out of the table and into the text of the document, but there's an easier way.

You can remove the table, but keep the information that you've entered with the **Table to Text** command. This is great to know about if you need to save the entire document as a text file.

To convert an existing table to text, select the table or parts of the table that you want to convert. Then select the **Layout** tab and click **Convert to Text** from the **Data** group.




Copy a Word table into Excel

When you want to move data from a Microsoft Office Word table to Microsoft Office Excel, you can avoid having to retype that data by copying it from Word directly into Excel. When you copy data from a Word table into an Excel worksheet, the data in each Word table cell is pasted in an individual cell on the worksheet.

Important: After pasting the data, you may have to clean it up so that you can take advantage of the calculation features in Excel. For example, there may be unwanted extra spacing in cells, numbers may have been pasted as text rather than as numeric values that you can calculate, or dates are not displayed correctly.

- 1) In a Word document, select the rows and columns of the table that you want to copy to an Excel worksheet / copy the selection.
- 2) In the Excel worksheet, select the upper-left corner of the worksheet area where you want to paste the Word table.

Important: Make sure that the paste area is empty before you paste the data. Data in Word table cells will replace any existing data in worksheet cells in the paste area. If necessary, review the table first in Word to verify its dimensions.

- 3) On the **Home** tab, in the **Clipboard** group, click **Paste**.
 - a) To adjust the formatting, click **Paste Options**  next to the data that you pasted, and then do the following:
 - To use the formatting that is applied to the worksheet cells, click **Match Destination Formatting**.
 - To use the formatting of the Word table, click **Keep Source Formatting**.

Working with Tables

About the Table Tools contextual tabs

You will need to know where the **Design** and **Layout Table Tools** contextual tabs are when working on the design and structural layout of a table. The **Design** and **Layout** tabs are only visible after you have clicked inside of a table, and appear at the top of the screen on the ribbon.

The **Layout** tab enables you to change a table's structure, like adding and deleting rows or columns.

The **Design** tab has lots of predefined table styles that will allow you to easily change the look of an entire table.

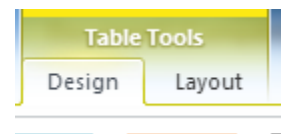


Table Properties

Resize and align a table on a page

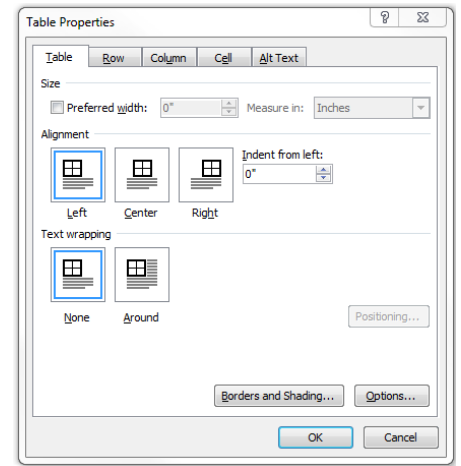
Use the **Table Properties** box to quickly resize the table to a specific measurement or a specific percentage of the page. To access **Table Properties**, click the **Layout** tab and click **Properties** from the **Table** group.

Note: If you're trying to resize a table to fit its contents or to fit the page, try the **AutoFit** options.

On the **Table** tab, select the **Preferred width** check box and then enter the width you want. In the **Measure in** box, select either your default unit of measurement (such as inches or millimeters, set in Word Options) or **Percent** if you want the width to be a percentage of the entire table.

By default, tables are aligned against the left margin of the page. Tables can also be centered, or right-aligned on the page.

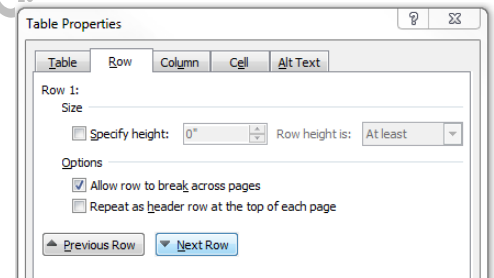
From the **Table** tab, you can also adjust whether text wraps around the table, change the table's cell default margins, or access the **Borders and Shading** box.



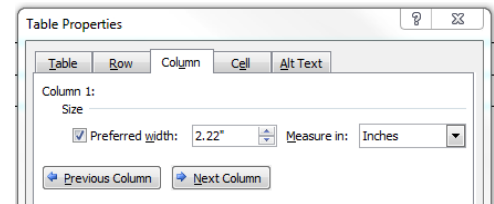
Resize and align a row, column or cell

Besides the **Table** tab, the **Table Properties** box has three other tabs for formatting columns, rows, and cells. Use these tabs to quickly resize a row or column to a specific measurement, or to easily resize several rows or columns.

On the **Row** tab, select the **Specify height** check box and then enter the height you want. In the **Row height is** box, select **Exactly** if you want exactly that height, or **At least** if you want the height to grow taller if the content requires.

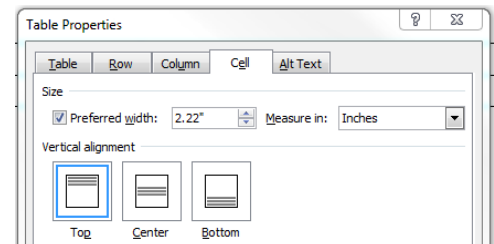


On the **Column** tab, you can set column width by choosing a specific measurement using your default unit of measurement or as a percentage of your table size.



For instance, if you want a three-inch column in a table that measures six inches across, you can either enter **3** and choose **Measure in inches** or you can enter **50** and choose **Measure in Percent**. Click **Next Column** or **Previous Column** to resize other columns without exiting the dialog box.

On the **Cell** tab, you also can choose the default cell width in either the default unit of measurement or percentage of the entire table. You can also choose vertical alignment. The **Options** button on this tab allows you to choose cell margins that are different from the table's margins.



Although you can use the Table Properties dialog box to resize rows, columns and cells, the easiest way to change the width or height of a column or row is to rest the pointer over the right edge of the column or the bottom edge of the row until your pointer changes to a double-headed arrow, then just click and drag to resize.

Be careful: If you select a single cell, only that cell will change size.

Distribute rows and columns evenly


If you prefer, you can distribute all of the rows and columns evenly.

- 1) Click in the table.
- 2) Under **Table Tools**, on the **Layout** tab, in the **Cell Size** group, click **Distribute Rows** or **Distribute columns**.

Add a row above or below

- 1) Click in a cell above or below where you want to add a row.
- 2) Under **Table Tools**, on the **Layout** tab, do one of the following:
 - a) To add a row above the cell, click **Insert Above** in the **Rows and Columns** group.
 - b) To add a row below the cell, click **Insert Below** in the **Rows and Columns** group.

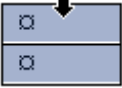
Delete a row

- 1) Select the row that you want to delete by clicking its left edge. 
- 2) Under **Table Tools**, click the **Layout** tab.
- 3) In the **Rows & Columns** group, click **Delete**, and then click **Delete Rows**.

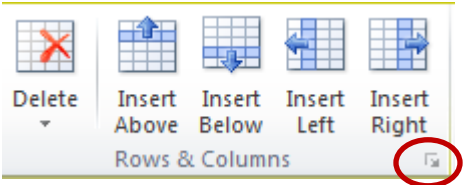
Add a column to the left or right

- 1) Click in a cell to the left or right of where you want to add a column.
- 2) Under **Table Tools**, on the **Layout** tab, do one of the following:
 - a) To add a column to the left of the cell, click **Insert Left** in the **Rows and Columns** group.
 - b) To add a column to the right of the cell, click **Insert Right** in the **Rows and Columns** group.

Delete a column


- 1) Select the column that you want to delete by clicking its top gridline or top border. 
- 2) Under **Table Tools**, click the **Layout** tab.
- 3) In the **Rows & Columns** group, click **Delete**, and then click **Delete Columns**.

Add a cell

- 1) Click in a cell that is to the right of or above where you want to insert a cell.
- 2) Under **Table Tools**, on the **Layout** tab, click the **Rows & Columns** Dialog Box Launcher. 
- 3) Click one of the following options.

Click	To
Shift cells right	Insert a cell and move all other cells in that row to the right. Note: Word does not insert a new column. This may result in a row that has more cells than the other rows.
Shift cells down	Insert a cell and move the existing cells down one row. A new row is added at the bottom of the table.
Insert entire row	Insert a row above the cell that you clicked in.
Insert entire column	Insert a column to the left of the cell that you clicked in.

Delete a cell

- 1) Select the cell that you want to delete by clicking its left edge. 
- 2) Under **Table Tools**, click the **Layout** tab.
- 3) In the **Rows & Columns** group, click **Delete**, and then click **Delete Cells**.
- 4) Click one of the following options:

Click	To do this
Shift cells left	Delete a cell and shift all other cells in that row to the left. Note: Word does not insert a new column. Using this option may result in a row that has fewer cells than the other rows.
Shift cells up	Delete a cell and move the remaining existing cells in that column up one row each. A new, blank cell is added at the bottom of the column.
Delete entire row	Delete the entire row that contains the cell that you clicked in.
Delete entire column	Delete the entire column that contains the cell that you clicked in.


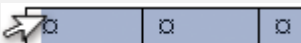
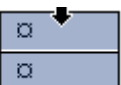

Delete a table

The **Delete** key on your keyboard just deletes the text in your table or parts of your table, but there is a way to delete text and structure all at once.

Put your cursor anywhere in the table that you want to delete, and then click **Delete Table** from the **Rows and Columns** group in the **Layout** tab. Be careful, your deletions do not move to the clipboard.

Note: Using the **BACKSPACE** key on your keyboard will also delete the table and its contents.

Select the contents of a table

To select	Do this
A cell	Click the left edge of the cell. 
A row	Click to the left of the row. 
A column	Click the column's top gridline or border. 
Contiguous cells, rows, or columns	Drag the pointer across the cells, rows, or columns that you want.
Noncontiguous cells, rows, or columns	Click the first cell, row, or column that you want, hold down CTRL , and then click the next cell, row, or column that you want.
Text in the next cell	Press the TAB key.
Text in the previous cell	Press SHIFT+TAB .
The entire table	In Print Layout view, rest the pointer over the table until the table move handle  appears, and then click the table move handle.

Clear the contents of a table

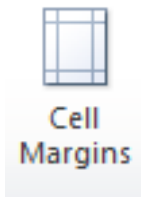
- 1) Select the items that you want to clear.
- 2) Press **DELETE**.

Change default margins and alignment

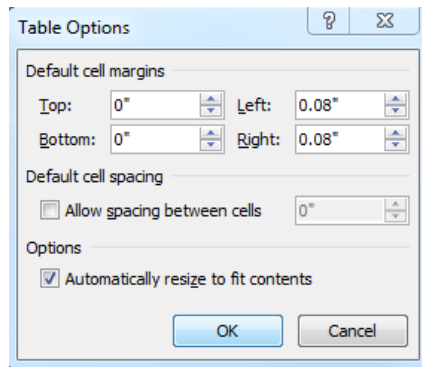
Every cell in a table behaves like its own page with its own margins and alignment. You can change cell margins and alignment for either the entire table or for selected cells.

By default, the alignment and margins for cells in a table are identical. However, if you select a built-in style, you may affect text alignment.

You can change a table's margins (the default cell margins) by selecting the table, clicking the **Layout** tab, and choosing **Cell Margins** from the **Alignment** group.

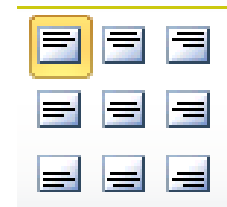


The Table Options dialog box opens.



The **Tables Property** box has other alignment and margin options.

You can change text alignment for a cell, a group of cells, or the entire table by choosing one of the text alignment buttons in the **Alignment** group.

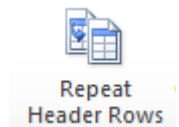


Repeat your headings

When you work with a very long table, it will be divided into several pages. You can make adjustments to the table so that the table headings appear on each page. A heading, or header, identifies the type of data in each column. Not all tables need heading rows.

Repeated table headings are visible only in Print Layout view or when you print the document.

- 1) Select the heading row or rows. The selection must include the first row of the table.
- 2) Under **Table Tools**, on the **Layout** tab, in the **Data** group, click **Repeat Header Rows**.



Note: Microsoft Office Word automatically repeats table headings on new pages that result from automatic page breaks. Word does not repeat a heading if you insert a manual page break within a table.

Merge cells

You can combine two or more table cells located in the same row or column into a single cell. For example, you can merge several cells horizontally to create a table heading that spans several columns.

You can merge any number of cells — they don't need to be heading cells or even be in the same row. They can be any number of adjacent cells anywhere in your table.

Keep in mind, however, that because a table is an organizing tool, simplicity is important. Merge cells only for small alterations.

- 1) Select the cells that you want to merge by clicking the left edge of a cell and then dragging across the other cells that you want.
- 2) Under **Table Tools**, on the **Layout** tab, in the **Merge** group, click **Merge Cells**.

Split cells

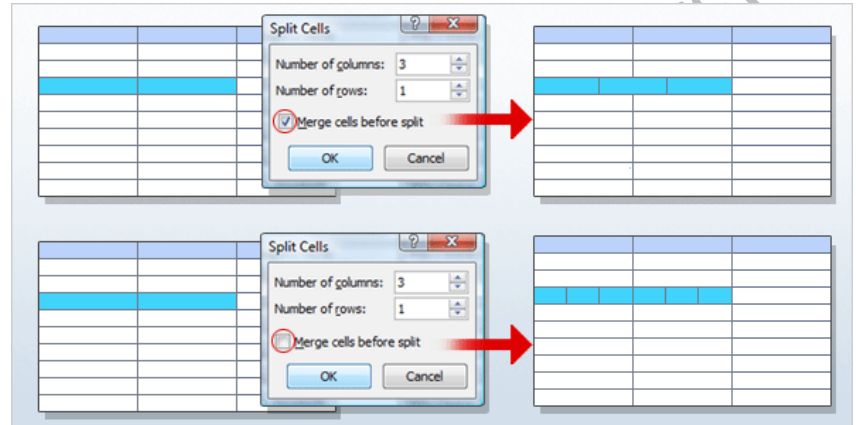
Splitting one cell is pretty straightforward. You just place your cursor in the cell you want split, click the **Layout** tab, and click **Split**. Then choose the number of columns and rows you want to split that cell into.

If you split more than one cell at a time, you will need to decide whether to check or clear the **Merge cells before split** check box. If you check **Merge cells before split**, Word merges the cells before dividing them. If you don't select the check box, Word splits each of the cells.

For example, if you select two cells, check **Merge cells before split**, and then select **3** for **Number of columns**, you will end up with three columns (cells) in the space where the two cells were. If you clear the check box, you will end up with six columns (cells) in the space where the two cells were.

Tip: The default number in the **Number of columns** box varies depending on whether **Merge cells before split** is selected.

Determine whether you want the selected cells to merge before choosing the number of columns and rows you want.



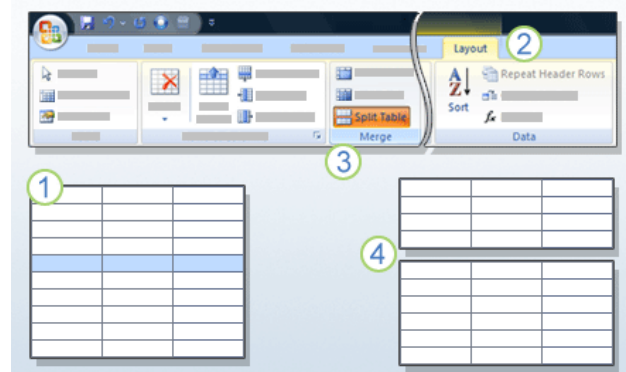
- 1) Click in a cell, or select multiple cells that you want to split.
- 2) Under **Table Tools**, on the **Layout** tab, in the **Merge** group, click **Split Cells**.
- 3) Enter the number of columns or rows that you want to split the selected cells into.

Split a table

Splitting a table can be useful if you decide you want a table to be split into smaller sections. Splitting a table is also handy if you want to format a section of a table. When working with a table, the larger the portion of the table that you can format at once, the less work you will end up doing

Splitting a table has four steps.

- 1) Highlight or place your cursor in the row that you want to become the first row of the new table.
- 2) Click the **Layout** tab.
- 3) Click **Split Table** from the **Merge** group.
- 4) A paragraph will separate the two tables.



Add text and graphics to a table

To add text to any cell in your table, click in the cell and begin typing. When you're finished with that cell, move to the next cell by pressing the **TAB** key. Or just click in any cell.

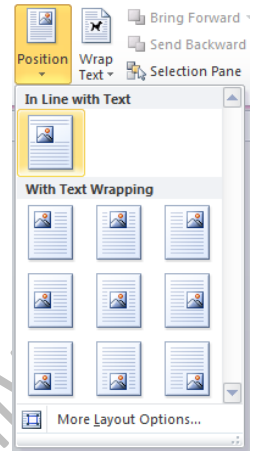
If you're at the last cell of a table, clicking the **TAB** key adds a new row to your table.

If you want to move backwards using the keyboard, hold down the **Shift** key and press **TAB**. This moves you back one cell at a time. Of course, you can also use the arrow keys to move throughout the table.

You can add more than just text to a table. You can insert a graphic into a table cell just as you do in the body of your document with the **Insert Picture** function.

When you place a picture into a table using Insert Picture, the picture is formatted to be **In Line with Text**. This setting causes your picture to act just like a text character — you can format it by using font and paragraph formatting, and it will sit securely in your table cell.

You can also paste a picture from another program, but when you do, the picture may not be formatted to be **In Line with Text**. It's easy to change this layout option: just select the graphic, select **Position** from the **Format** tab, and click **In Line with Text**.




Move or copy items in a table

- 1) Select the item that you want to move or copy.
- 2) Do one of the following:
 - a) To move the selected item, drag it to the new location.
 - b) To copy the selected item, hold down **CTRL** while you drag it to the new location.

Sort the contents of a table

In a table, you can enter information in any order and then sort by any column. If you have headings in your table, you pick the headings to sort by. If you don't have headings, you can sort by columns, numbered from left to right.

- 1) In Print Layout view, move the pointer over the table until the table move handle  appears.
- 2) Click the table move handle to select the table that you want to sort.
- 3) Under **Table Tools**, on the **Layout** tab, in the **Data** group, click **Sort**.
- 4) In the **Sort** dialog box, select the options that you want.

Sort a single column in a table

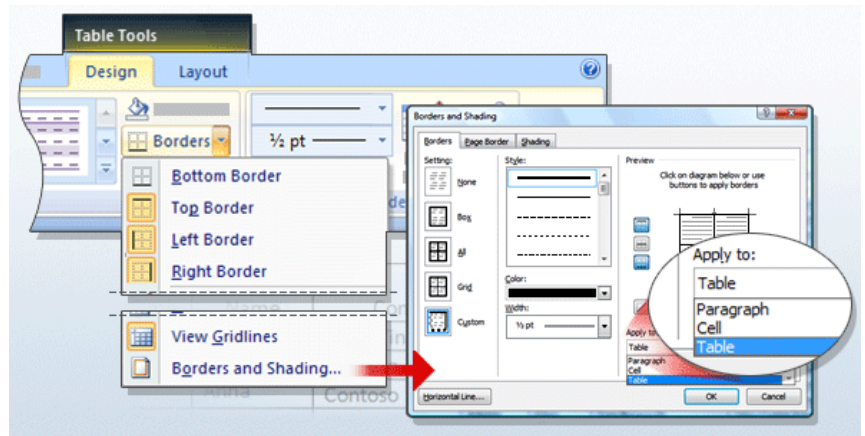
- 1) Select the column that you want to sort.
- 2) Under **Table Tools**, on the **Layout** tab, in the **Data** group, click **Sort**.
- 3) Under **My list has**, click **Header row** or **No header row**.
- 4) Click **Options**.
- 5) Under **Sort options**, select the **Sort column only** check box.
- 6) Click **OK**.

Adjust borders and backgrounds

Borders and shading are a part of a table's style. Even if you may have already selected a table's style, you can modify borders or shading. You can apply borders or shading to the entire table, individual cells, or even individual paragraphs within a table.

To remove or change the borders of a table, cell, or group of cells, highlight the cells and open the **Borders** list in the **Table Styles** group of the **Design** tab. Select from the buttons to make a change or click **Borders and Shading**.

In the **Borders and Shading** box, pay careful attention to the **Apply to** list. The **Apply to** options vary, depending on what table parts you've selected. If you accidentally selected a cell, but wanted to apply a border for the entire table, you can change the selection in the **Apply to** list.



Turn on the gridlines

If your table doesn't have borders, you might have trouble seeing the edges of the cells. Gridlines allow you to easily see cell edges. To turn on gridlines, click anywhere within the table, and then click **View Gridlines** in the **Table** group of the **Layout** tab.

Note: the gridlines do not print.

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Smart home & smart city
By
Ass.lecturer Lamia Faris

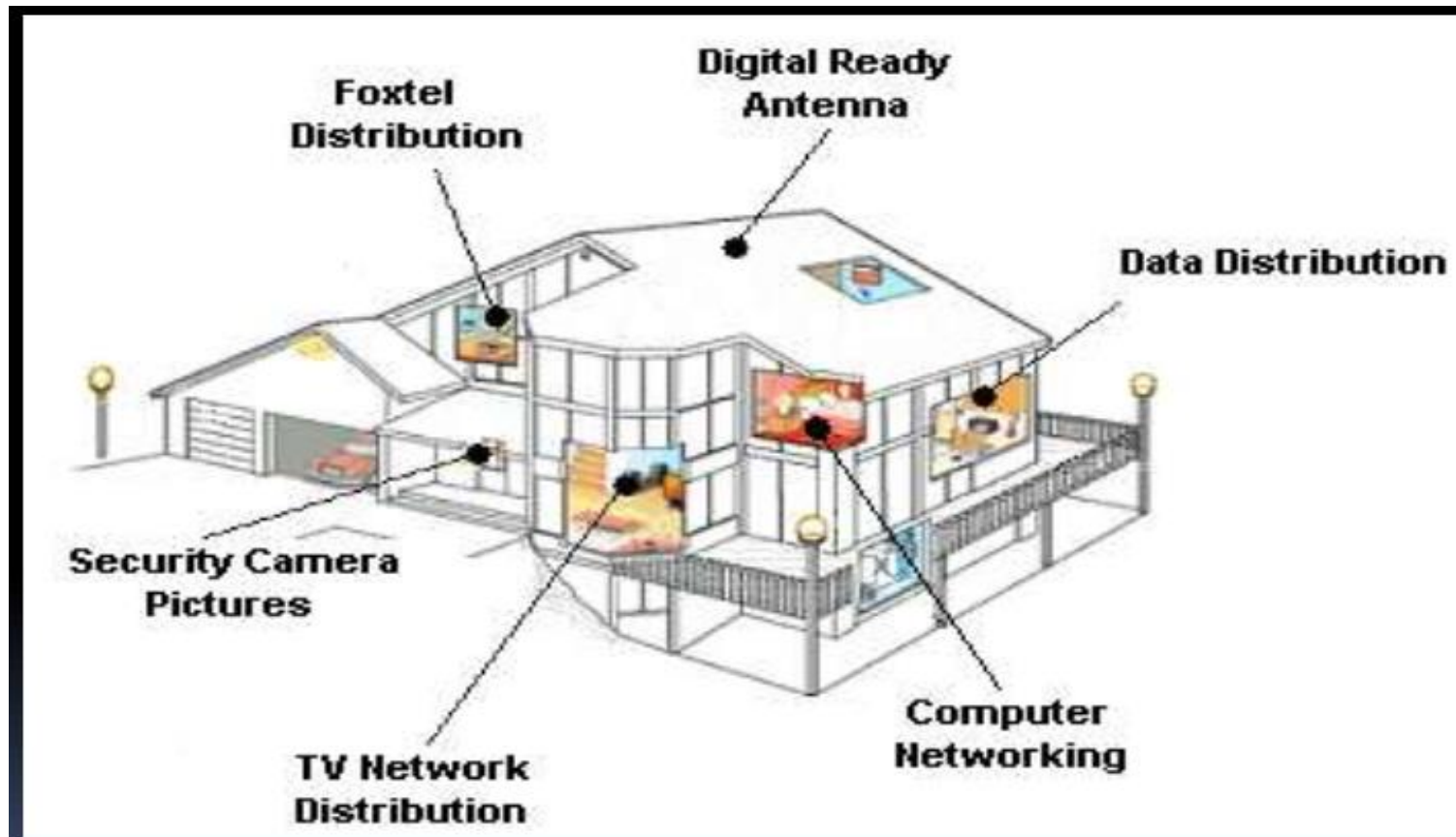
DEFINITION – SMART HOME

- Smart Home technology intelligently gives you ultimate control over your home by automating the lighting system, dimming, blinds, electrical appliances, audio and security systems.
- Smart homes connect all the devices and appliances in your home so they can communicate with each other and with you.

HOW DOES IT WORK?

- ❖ Anything in your home that uses electricity can be put on the home network and at your command. Whether you give that command by voice, remote control or computer, the home reacts.
- ❖ Smart homes work with fairly simple systems: receivers and transmitters
- ❖ Receivers detect a certain signal from the transmitter, that issues a command.

Smart homes products



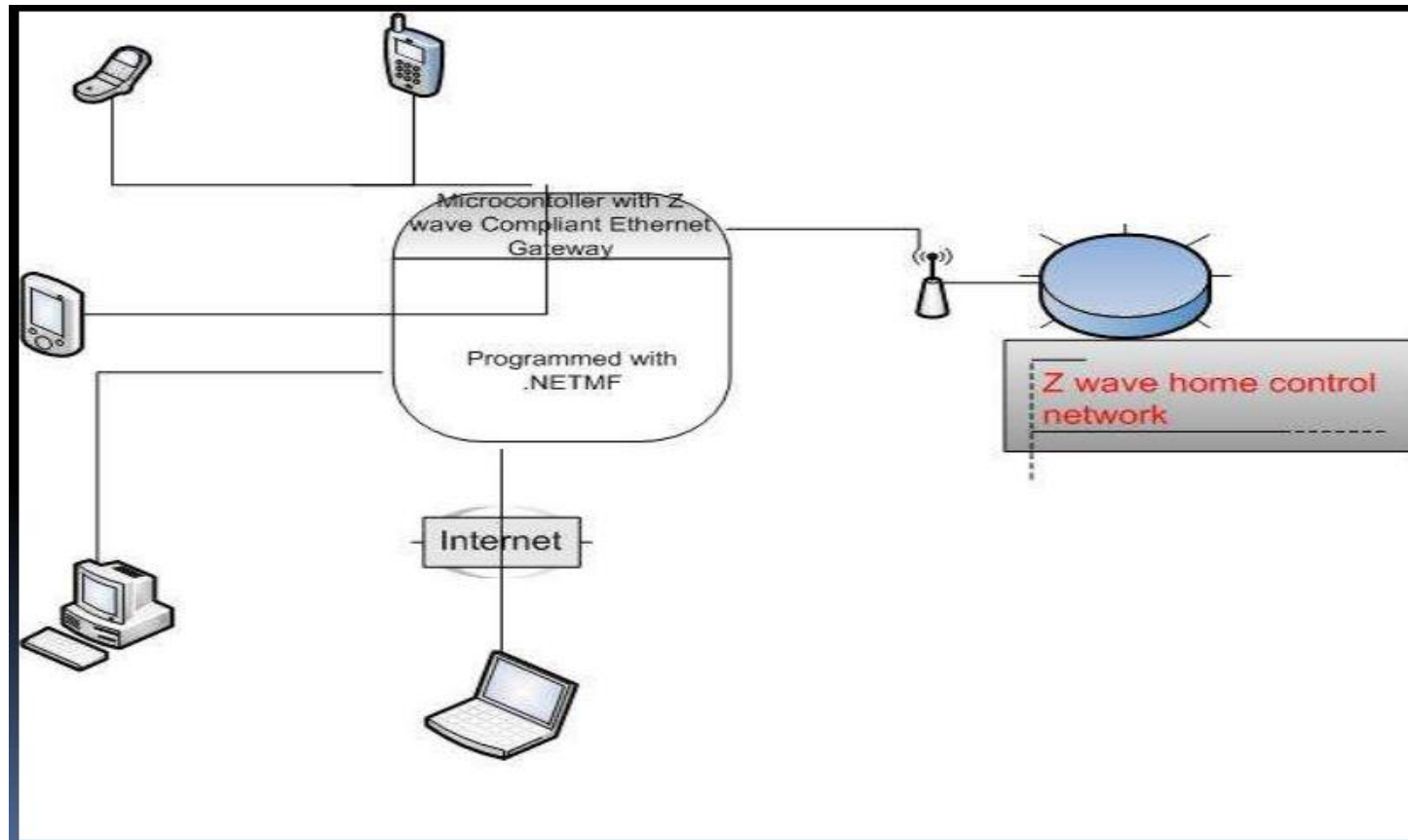
Different Types Of Systems

- ❑ X-10 , the oldest and most simplistic integrative home device was developed in the late 70's.
- ❑ This technology involved utilizing basic household wiring in order to enable the household to become synchronized “smart”
- ❑ All the household appliances act as receivers while the transmitters issue orders in numerical code

Smart home technology

- Why go through power lines when radio waves can be utilized quite like how we use cell phones or WiFi devices.
- Zig-Bee and Z-wave are the two biggest names in radio wave home automation.
- Both of these are mesh systems, meaning they are able to deliver a message to a destination using multiple methods.

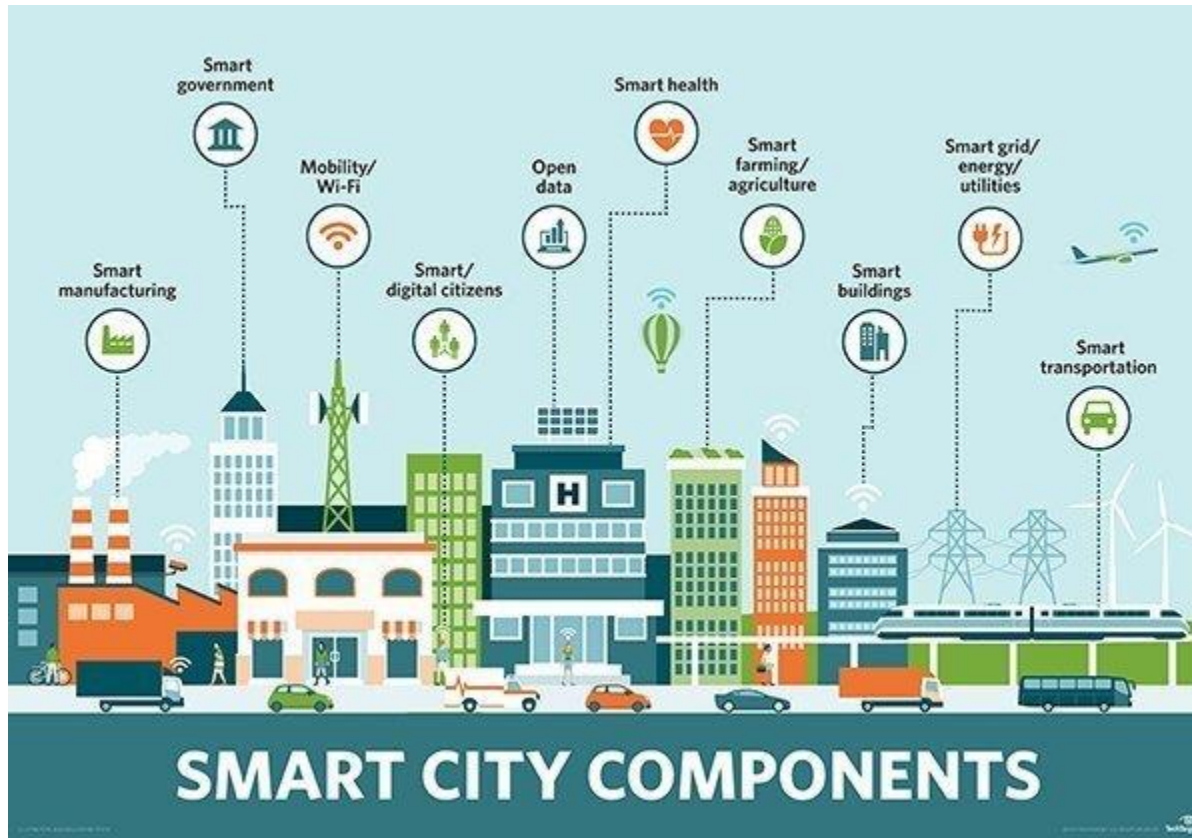
“MESH NETWORKS”



Smart city

- A smart city is a municipality that uses information and communication technologies (ICT) to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare.
- While the exact definition varies, the overarching mission of a smart city is to optimize city functions and drive economic growth while improving quality of life for its citizens using smart technology and data analysis

Smart city



The characteristics of smart city:

Several major characteristics are used to determine a city's smartness. These characteristics include:

- a technology-based infrastructure;
- environmental initiatives;
- a high functioning public transportation system;
- a confident sense of urban planning and
- humans to live and work within the city and utilize its resources.

Smart city technology

- Smart cities use a combination of the internet of things (IoT) devices, software solutions, user interfaces (UI) and communication networks. However, they rely first and foremost on the IoT. The IoT is a network of connected devices such as vehicles, sensors or home appliances that can communicate and exchange data. Data collected and delivered by the IoT sensors and devices is stored in the cloud or on servers.

Smart city technology



What's the best wireless technology for smart cities?

- The first building block of any smart city application is reliable, pervasive wireless connectivity.
- While there's no one-size-fits-all, evolving Low Power Wide Area Network (LPWAN) technologies are well suited to most smart city applications for their cost efficiency.
- The advent of 5G technology is expected to be a watershed event that propels smart city technology into the mainstream and accelerates new deployments

Examples of smart cities

While many cities across the world have started implementing smart technologies, a few stand out as the furthest ahead in development

- . These cities include:
- Kansas City, Missouri
- San Diego, California
- Columbus, Ohio
- New York City, New York
- Toronto, Canada
- Singapore
- Vienna, Austria
- Barcelona, Spain
- Tokyo, Japan
- Reykjavik, Iceland
- London, England
- Melbourne, Australia
- Dubai, United Arab Emirates
- Hong Kong, China

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NUMBERING SYSTEM

Units of Measurement

- Basic Units of Measurement All information in the computer is handled using electrical components like the integrated circuits, all of which can recognize only two states – presence or absence of an electrical signal.

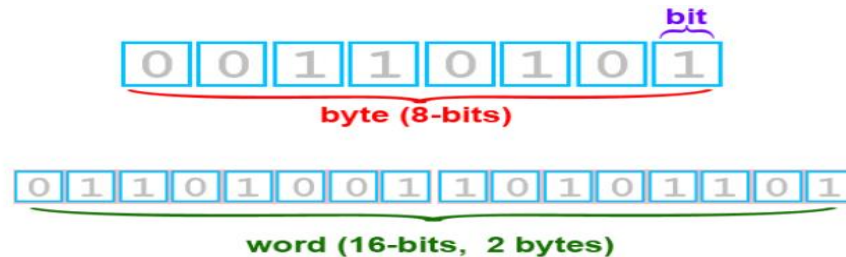
- Two symbols used to represent these two states are 0 and 1, and are known as BITS.

0 represents the absence of a signal, 1 represents the presence of a signal.

- A BIT is, therefore, the smallest unit of data in a computer and can either store a 0 or 1.

BYTES

- Equivalent to 8 bits put together to create a single computer alphabetical or numerical character.



Byte (B)=8-Bit

Kilobyte (KB)=1024 B

Megabyte (MB)=1024 KB

Gigabyte (GB)=1024 MB

Terabyte (TB)=1024 GB

ASCII

- American Standard Code for Information Interchange

- The ASCII character code for the letter A

Is $65 = 0100\ 0001$

- The ASCII character code for the letter B

Is $66 = 0100\ 0010$

etc

Numbering Systems

- Four number system
 - Decimal (D) (10)
 - Binary (B) (2)
 - Octal (O) (8)
 - Hexadecimal (H) (16)
 -

DECIMAL NUMBERS

Decimal numbers (D)(10)

$$1439 = 1 \times 10^3 + 4 \times 10^2 + 3 \times 10^1 + 9 \times 10^0$$



Thousands



Hundreds



Tens



Ones

Binary numbers?

Most modern computer system using binary logic. The computer represents

values(0,1) .

- The Binary Number System uses base 2 includes only the digits 0 and 1
- Computers work only on two states
- On
- Off
- Basic memory elements hold only two states
- Zero / One
- Thus a number system with two elements $\{0,1\}$

Convert Decimal system to Binary system:


Example 1:

15

10=1111₂

15_D =1111_B

	15 ÷ 2
1	7 ÷ 2
1	3 ÷ 2
1	1 ÷ 2
1	0



Convert Binary system to Decimal system:

Example 1:

10110

B=22D

1	0	1	1	0
2^4	2^3	2^2	2^1	2^0
$22=1*2^4+0*2^3+1*2^2+1*2^1+0*2^0$				

(Octal System)(0)(8)

- Digits used in Octal number system – 0 to 7

Convert from Decimal to Octal

1- $(87)_{10}$ 2- $(156)_{10}$

		Reminder	
8	87	7	↑
8	10	2	↑
8	1	1	↑

$(127)_8$

$(87)_{10} = (127)_8$

		Reminder	
8	156	4	↑
8	19	3	↑
8	2	2	↑

$(234)_8$

$(156)_{10} = (234)_8$

(Octal System)(0)(8)

- Convert Octal to Decimal:

$$137 = 1 \times 8^2 + 3 \times 8^1 + 7 \times 8^0$$

$$= 1 \times 64 + 3 \times 8 + 7 \times 1$$

$$= 64 + 24 + 7$$

$$(137)_8 = (95)_{10}$$

Hexadecimal System

- Base 16
- \square ten - digits run from 0 to 9 and letter A-F
- The digits are:
- 0 1 2 3 4 5 6 7 8 9 A B C D E F

Hexadecimal System

- Convert Hexadecimal to Decimal:

$$(2AF3)_H$$

$$= 2 \times 16^3 + A \times 16^2 + F \times 16^1 + 3 \times 16^0$$

$$= 8192 + 10 \times 16^2 + 15 \times 16^1 + 3$$

$$= 8192 + 2560 + 240 + 3$$

$$= (6899)_D$$

MICROSOFT WORD 2010

Katherine Mitchell

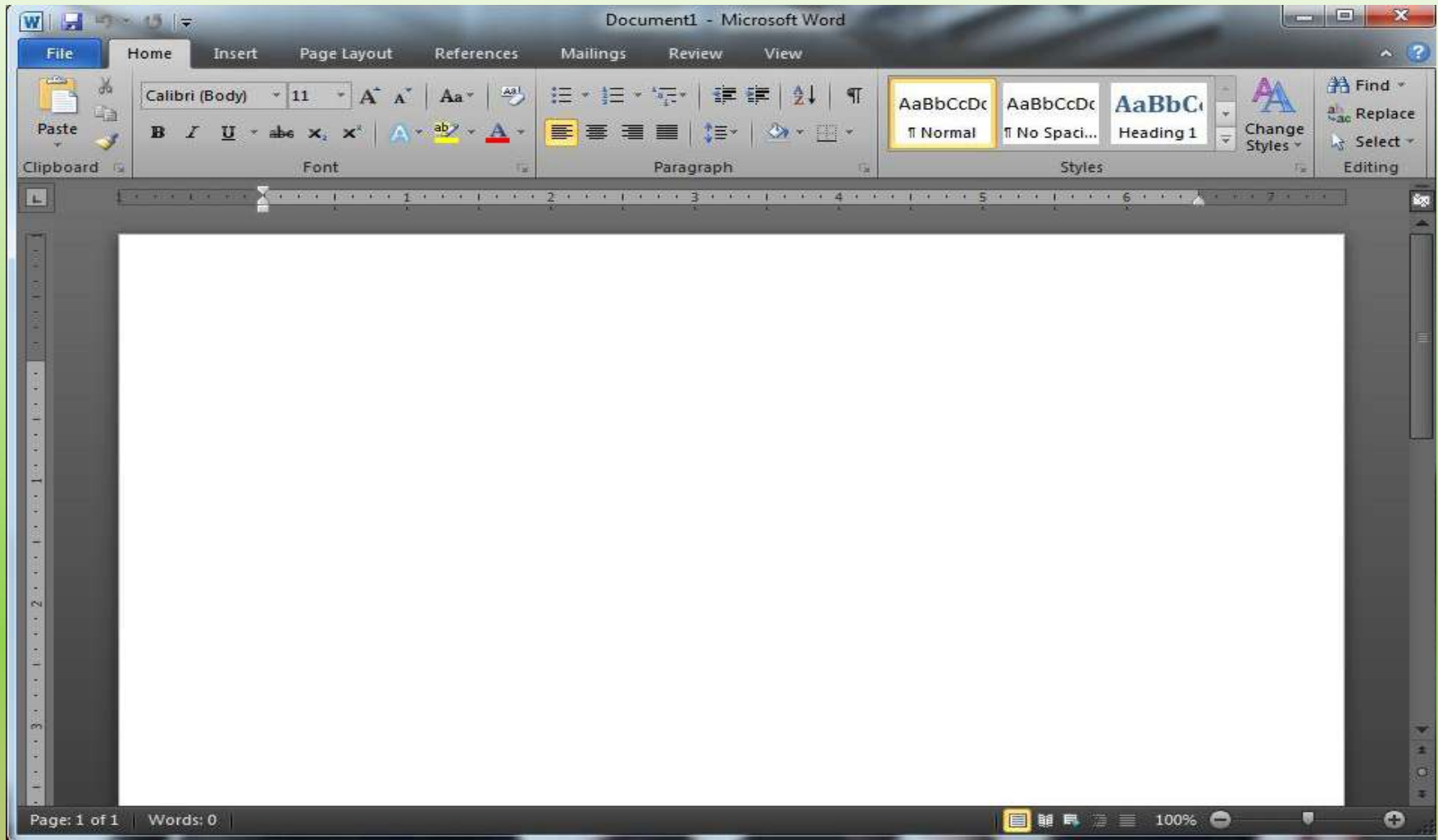
Info & Education Instructor

Muncie Public Library



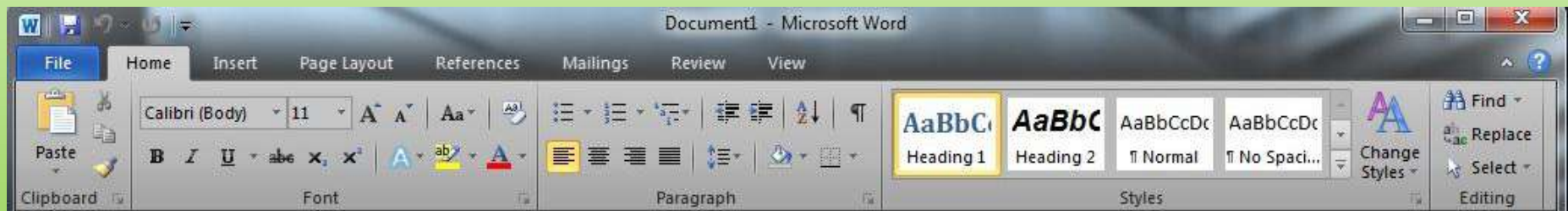
is the word processing program of the Microsoft Office suite that allows you to create *documents* and *reports*.

Microsoft Word 2010 Main Screen



Microsoft Office Interface

Ribbon / Quick Access Toolbar,
File Tab (which brings up the Backstage View)



Quick Access Toolbar

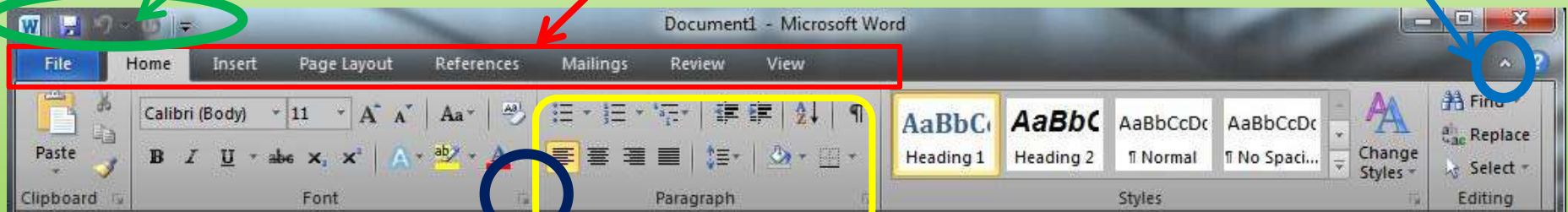
Tools shown here are always visible. You can add your favorite tools to this toolbar, allowing for a set of commands independent of the tab on the Ribbon currently displayed.

Ribbon Tabs

Click any tab on the ribbon to display a set of tools grouped together related to that task.

Hide the Ribbon

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



Dialog Box Launchers

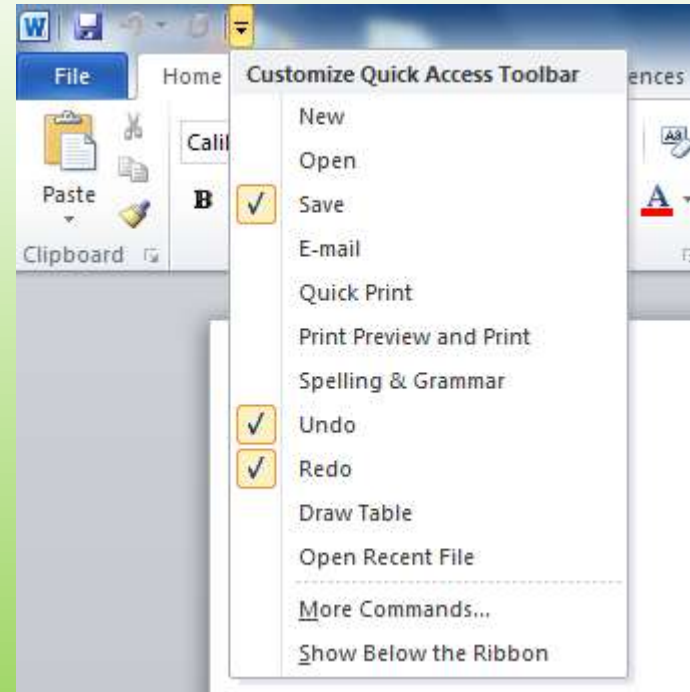
Dialog box launcher icons next to any ribbon group label can be clicked to open a dialog box with more options for that group.

Ribbon Groups

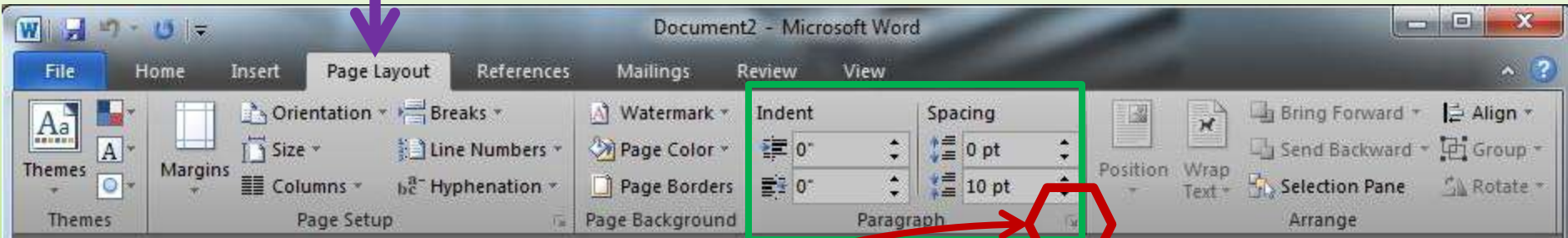
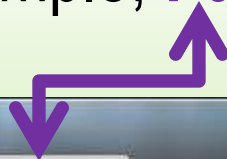
Each ribbon tab contains groups, and each group contains a set of related tools. Here, the **Paragraph** group on the **Home** tab contains tools for how text should be aligned within the document.

Customizing the Quick Access Toolbar

1. Click the down arrow to the right of the commands. A popup menu will appear with available commands.
2. Click on the **command** to add it to the **Quick Access Toolbar**.
3. If you don't see the **command** you want in the popup menu, select **More Commands** from the menu. This will open a new window that will allow you to select from all available Office commands.



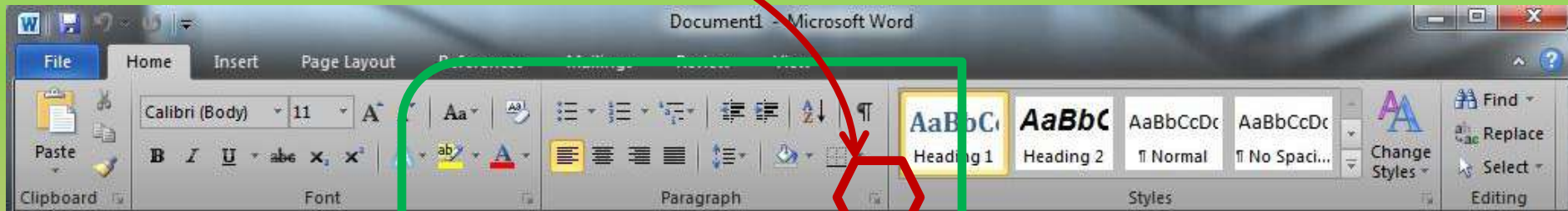
In this example, **Page Layout** is the active tab of the Ribbon



You can still get the same advanced options from either group by clicking on its dialog box launcher

Here is the **Paragraph** group in the **Page Layout** tab.

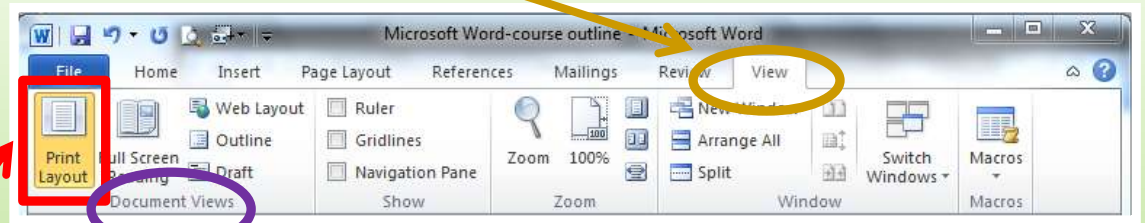
Note this Paragraph group focuses on Paragraph indent & spacing



The Home tab has its own Paragraph group with different options.

Using the View Tab

The default view in Microsoft Word 2010 is **Print Layout**, displaying the document as it would be printed.



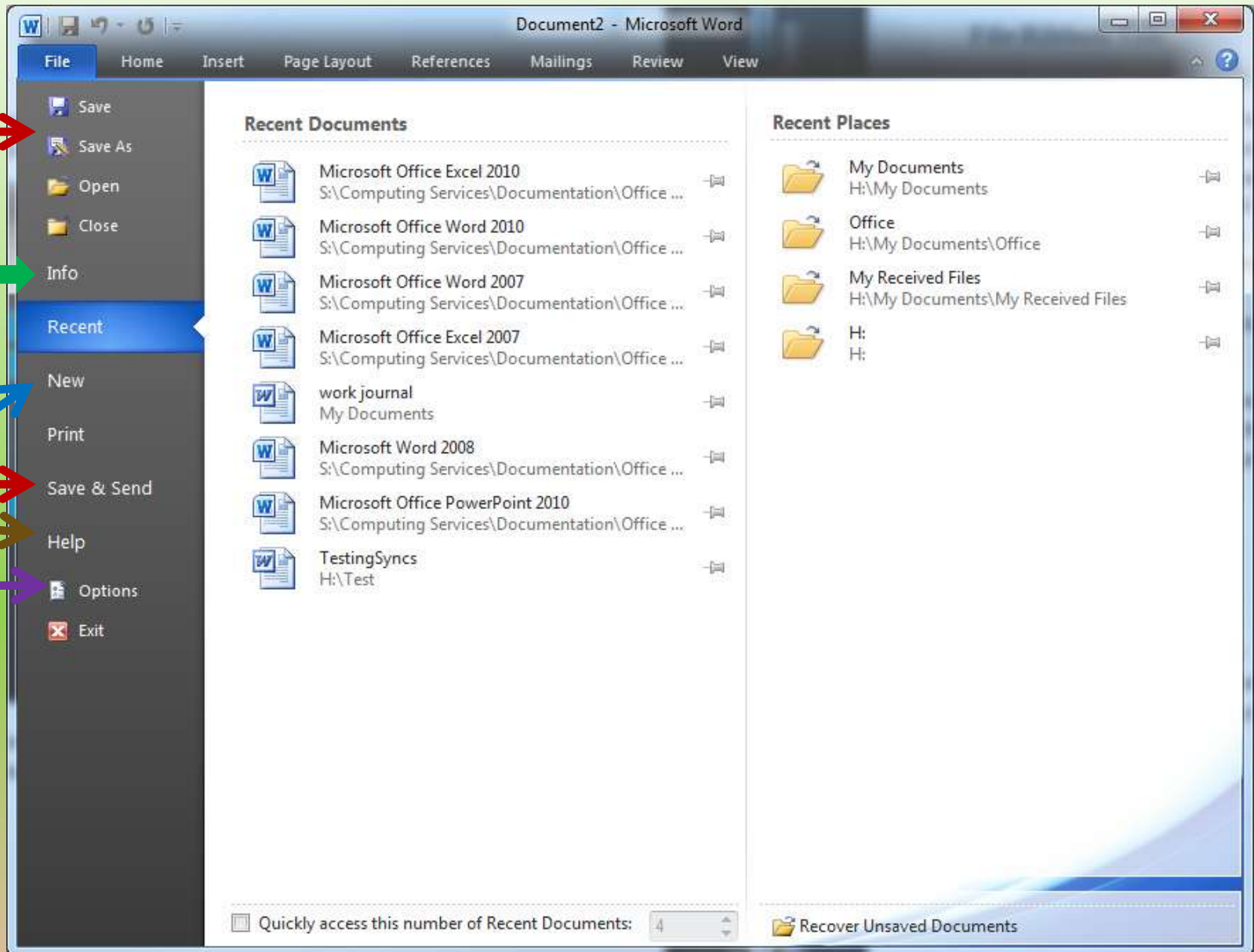
The document view can be changed by selecting one of the other Layout options from the **Document Views** group.



You can also change the **Document View** by clicking the view icons along the bottom of Microsoft Word

The **Backstage View** appears when clicking the File Tab on the Ribbon. This is a set of commands you use to **do** things to a document.

Save (& Send)
Inspect documents for hidden Metadata or personal information
Create
Help
Set Options such as turning on or off Auto Complete suggestions

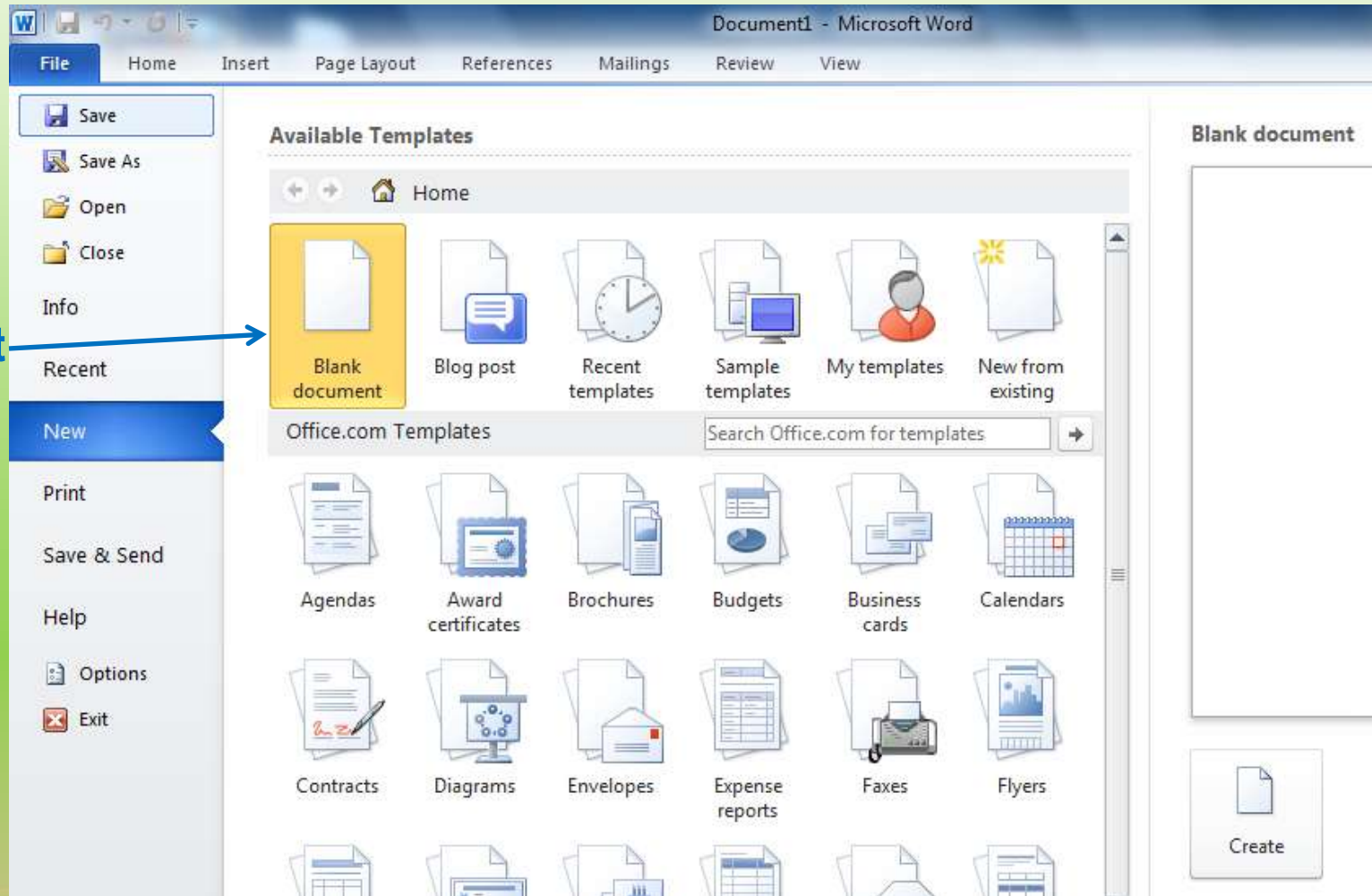


Creating A New Document

Click **File**

Click **New**

You can select **Blank Document** (this is selected by default) and then click



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

How to open a document?

The image shows a Microsoft Word window titled 'Document1 - Microsoft Word'. The 'File' menu is open, and the 'Open' option is selected. An 'Open' dialog box is displayed in the foreground, showing a file explorer view of a network location. A black rounded rectangle highlights the left-hand side of the dialog box, which contains a tree view of folders and drives. A blue callout box with a white arrow points to this area, containing the text 'This is the Navigation Pane'.

The 'Open' dialog box shows the following table of files:

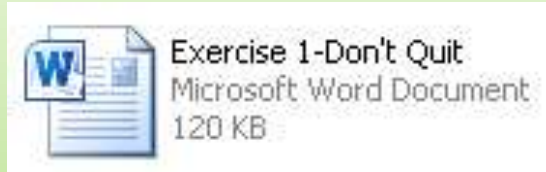
Name	Date modified	Type
Circulation	12/9/2011 11:26 AM	File folder
Collections Comm. Work	10/19/2010 12:22 ...	File folder
Desk Schedules	8/12/2011 3:57 PM	File folder
Desktop Shortcuts	5/23/2010 10:20 PM	File folder
Display Stuff	10/3/2011 1:01 PM	File folder
Electronics Comm	5/18/2011 2:54 PM	File folder
FAR Comm Stuff	8/25/2010 5:29 PM	File folder
FMLA Stuff	2/7/2012 3:18 PM	File folder
Geek Squad	8/15/2011 2:58 PM	File folder
Holocaust Documentation Committee_fi...	5/23/2010 10:20 PM	File folder
Homebound	1/24/2012 2:44 PM	File folder
ILF 2011 Presentation	11/14/2011 4:12 PM	File folder

The 'Navigation Pane' (highlighted area) contains the following items:

- Recent Places
- Libraries
 - Documents
 - Music
 - Pictures
 - Podcasts
 - Videos
- Computer
 - Local Disk (C:)
 - public (\\\mpldat
 - kmitchell\$ (\\\mp
 - work (\\\mpldata

Now you get to Open a Document

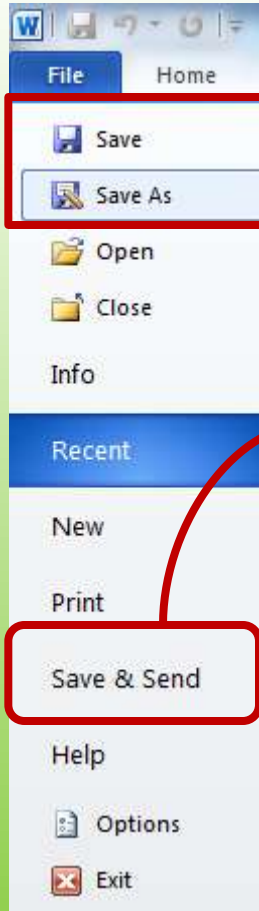
Open



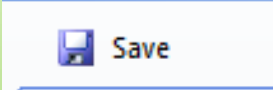
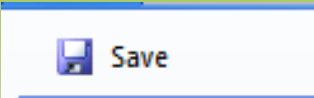
There are 2 ways to open the file:

Open Word 2010 application and click on file. In the pull down menu, click Open. Look for Desktop at the navigation pane and click on it. Find the file Exercise 1-Don't Quit.

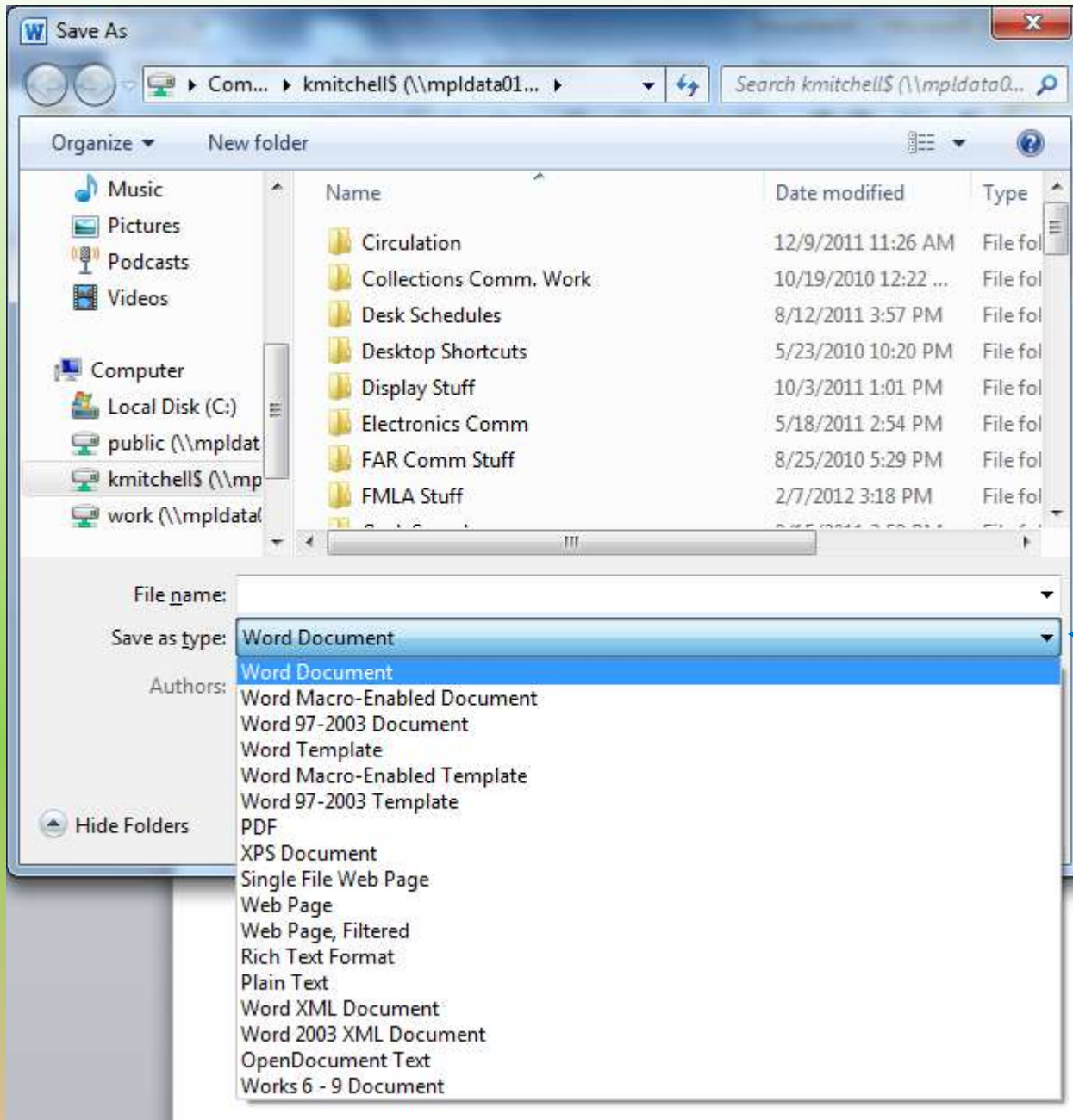
Minimize or close all tabs. View your desktop and find the file Exercise 1-Don't Quit. Double-click on it to Open.

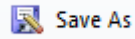



Saving a document...

- The default file format when clicking  is the Word Document (.docx) file format.
- This file format ensures that all document formatting is saved and will be available the next time the file is open.
- Clicking  saves your document to a default location.

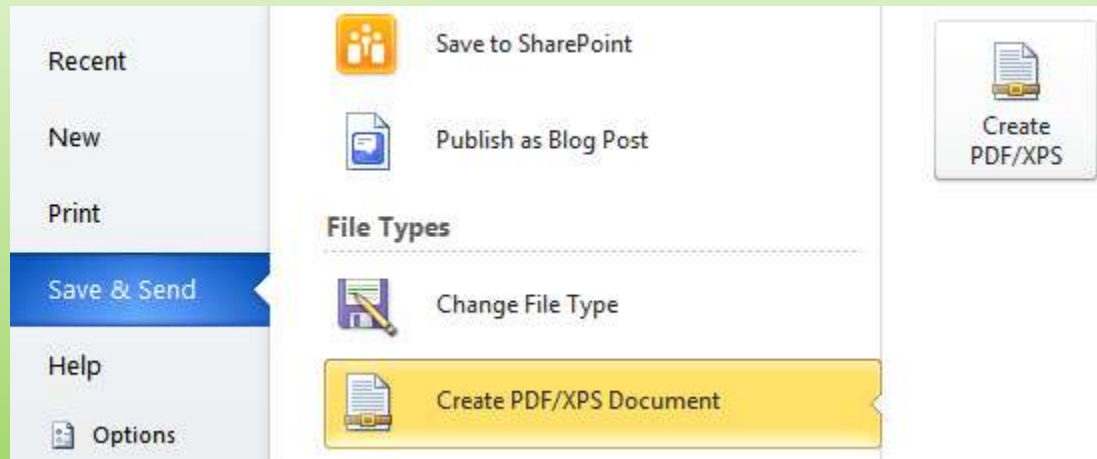
(can be changed in the Options section under the File Tab)



If the file needs to be shared with a computer with Word 2003 or earlier (.doc), or you need a different file type than .doc, Use 

Change  Save as type to the type you need.

Here is a way to save directly to a **PDF** (portable document format) file:

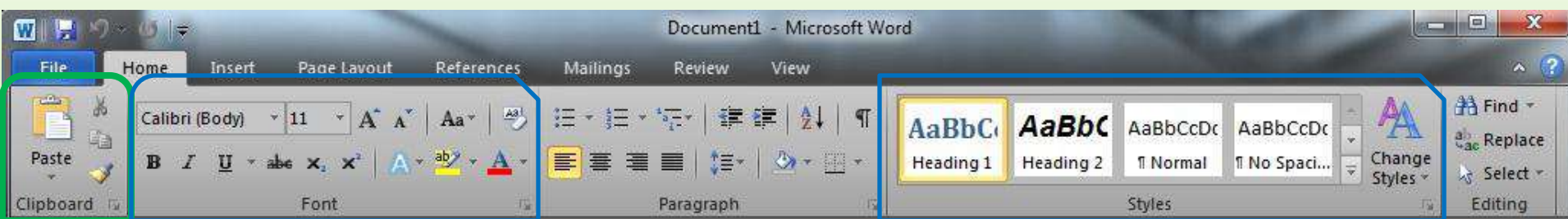


To save a Word document as a PDF, click the **File** tab, and then click **Save & Send**. Click on **Create PDF/XPS Document** and then click **Create PDF/XPS** (XPS is from Microsoft / PDF is from Adobe)

XPS stands for [XML Paper Specification](#) – fixed layout document format designed to preserve document fidelity, providing device-independent document appearance. Users can put their digital signature on XPS documents.

<http://www.journalofaccountancy.com/Issues/2011/Apr/XPS.htm>

Home Tab - Styling your Document



Font Formatting – change Font Style, Size, Color

Cut / Paste Text

Highlight the text you wish to move, click 

Move your cursor to the desired location

Click



Copy / Paste Text

Highlight the text you wish to copy, click 

Move your cursor to the desired location

Click



File Home Insert Page Layout References Mailings Review View

Calibri (Bo

B I

Paste Options:

Paste Special...

Set Default Paste...

Word Options

- General
- Display
- Proofing
- Save
- Language
- Advanced**
- Customize Ribbon
- Quick Access Toolbar
- Add-Ins
- Trust Center

Use overtyping mode

Prompt to update style

Use Normal style for bulleted or numbered lists

Keep track of formatting

Mark formatting inconsistencies

Updating style to match selection: Keep previous numbering and bullets pattern

Enable click and type

Default paragraph style: Normal

Show AutoComplete suggestions

Cut, copy, and paste

Pasting within the same document: Keep Source Formatting (Default)

Pasting between documents: Keep Source Formatting (Default)

Pasting between documents when style definitions conflict: Use Destination Styles (Default)

Pasting from other programs: Keep Source Formatting (Default)

Insert/paste pictures as: In line with text

Keep bullets and numbers when pasting text with Keep Text Only option

Use the Insert key for paste

Show Paste Options button when content is pasted

Use smart cut and paste [Settings...](#)

Image Size and Quality

Document1

Discard editing data

Do not compress images in file

Set default target output to: 220 ppi

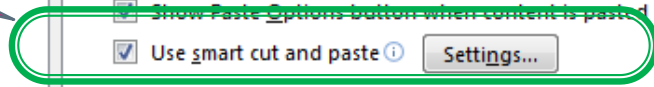
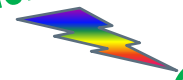
Show document content

Show background colors and images in Print Layout view

Show text wrapped within the document window

OK Cancel

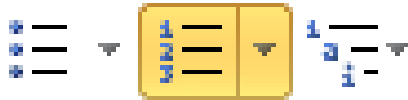
Unclick this box



Here is how you stop the button from coming up after you paste something if you don't like it

Paragraph Formatting From the Home Tab

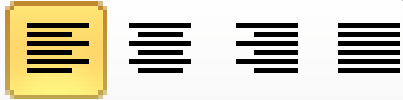
Bullets and
numbered lists



Indentations, Sorting, &
Display Format Symbols

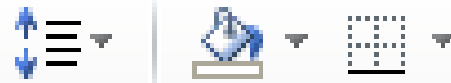


Alignment

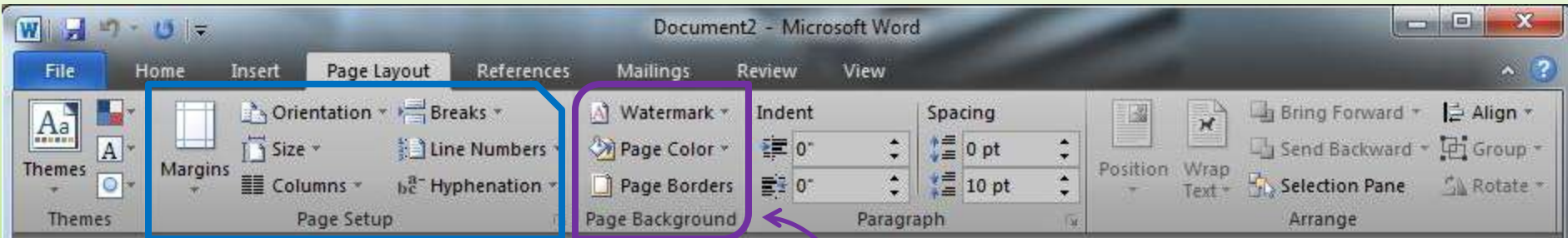


Paragraph

Line spacing, Shading, & Borders



For additional paragraph formatting options, click the **Paragraph Dialog Box** icon.



Page Setup

(contains options to specify the layout of a page)

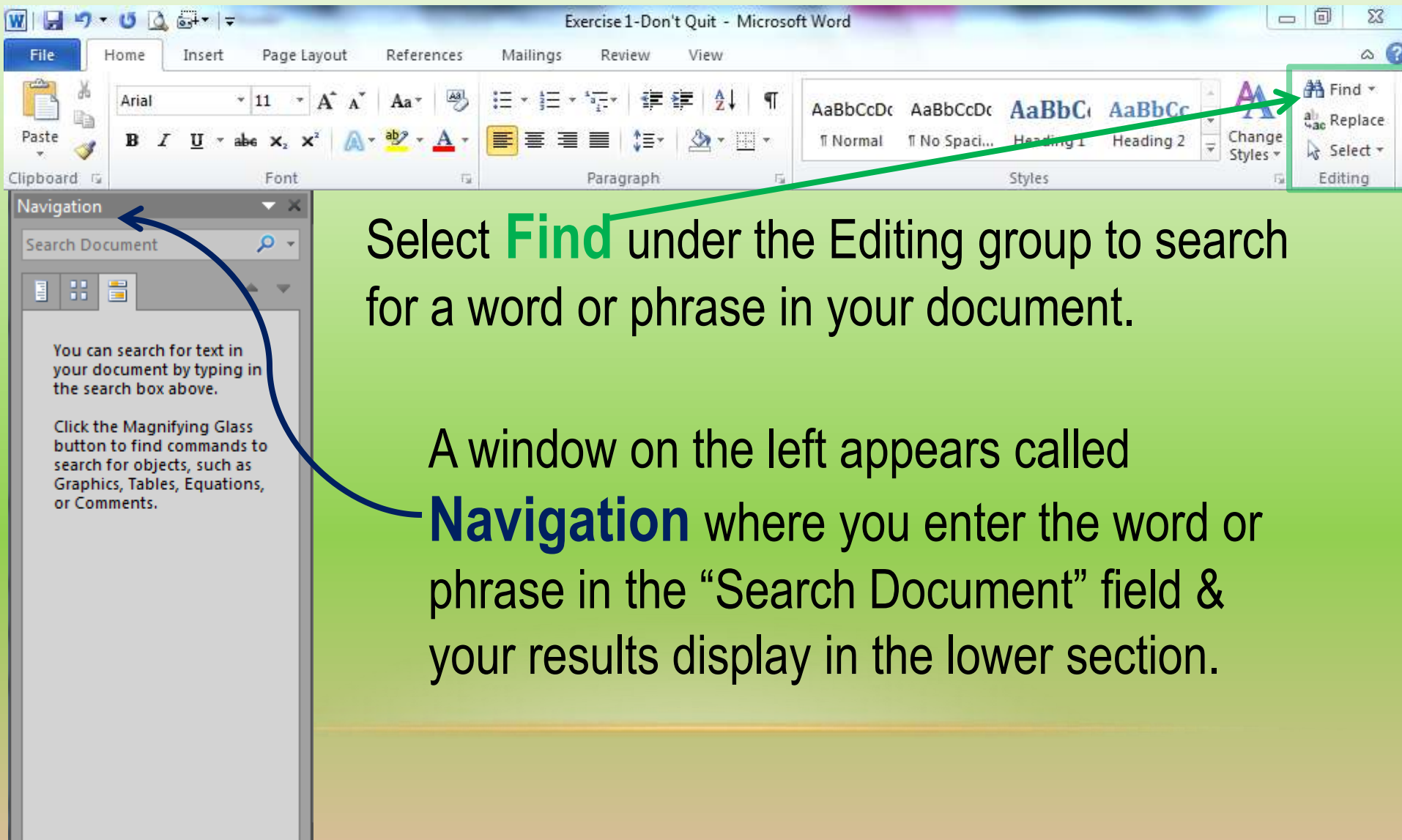
- Margins
- Orientation
- Page size

Page Background

- Watermark
- Page Color
- Page Border

PRINT YOUR DOCUMENT

Find



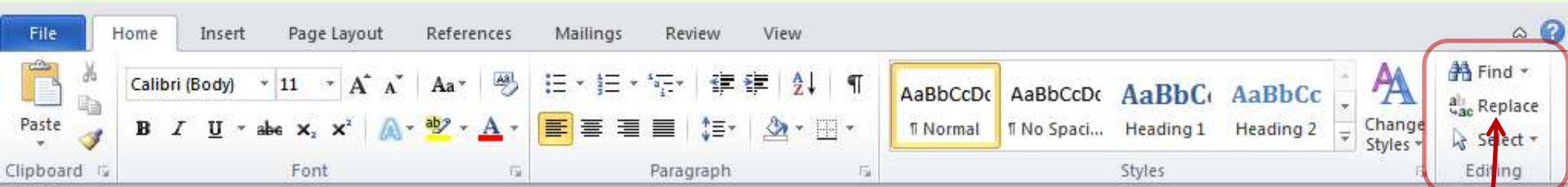
The image shows a screenshot of the Microsoft Word interface. The title bar reads "Exercise 1-Don't Quit - Microsoft Word". The ribbon is set to the "Home" tab, with the "Editing" group selected. The "Find" button, represented by a magnifying glass icon, is highlighted with a green box and a green arrow pointing to it. Below the ribbon, the "Navigation" task pane is open on the left side. It features a "Search Document" field with a magnifying glass icon. Below the field, there is a section titled "You can search for text in your document by typing in the search box above." and another section titled "Click the Magnifying Glass button to find commands to search for objects, such as Graphics, Tables, Equations, or Comments." A blue arrow points from the "Find" button in the ribbon to the "Search Document" field in the Navigation pane.

Select **Find** under the Editing group to search for a word or phrase in your document.

A window on the left appears called **Navigation** where you enter the word or phrase in the “Search Document” field & your results display in the lower section.

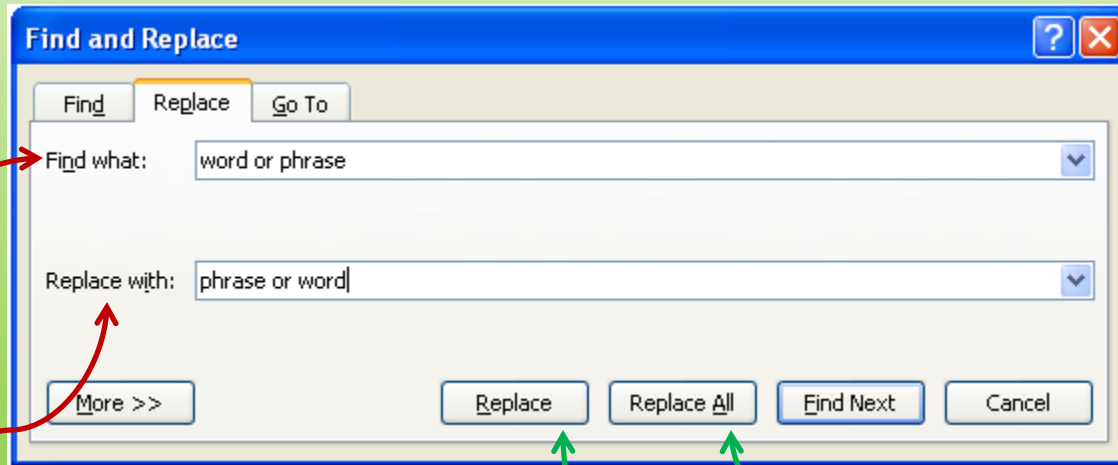
Replace

is used to replace a word or phrase with another:



Enter the word or phrase you want replaced in the **“Find what”** box

Enter the word or phrase replacing your term in the **“Replace with”** box



Select **Replace** under the Editing group

You can replace all occurrences of the word or phrase by clicking the **Replace All** button or replace the word or phrase one at a time by clicking the **Replace** button.

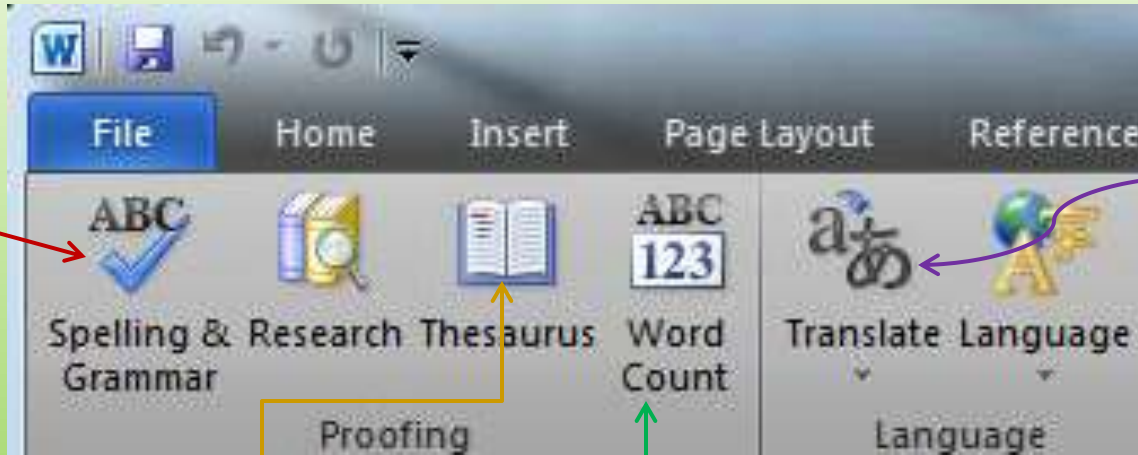
Review Tab



This tab is used to review your document, including proofing the document, adding comments, tracking changes, and comparing a document against a previous version.

Proofing

The proofing group assists with proofing your document after it is finished.



Spelling & Grammar

icon is used to check for spelling and grammar problems within the document.

Thesaurus

icon looks up for the meaning of a selected/highlighted word.

Word Count icon will provide you with statistics for your document, including number of words, characters, pages, paragraphs, and lines.

Translate

icon translates your document from one language to another.

Insert Tab

Used to insert various types of objects

The screenshot displays the Microsoft Word ribbon with the Insert tab selected. The ribbon is divided into several groups of options, each highlighted with a colored box and labeled with a category name:

- PAGES** (Red box): Includes Cover Page, Blank Page, and Page Break.
- TABLES** (Green box): Includes Table.
- ILLUSTRATIONS** (Blue box): Includes Picture, Clip Art, Shapes, SmartArt, Chart, and Screenshot.
- LINKS** (Brown box): Includes Hyperlink, Bookmark, and Cross-reference.
- HEADERS & FOOTERS** (Dark Blue box): Includes Header, Footer, and Page Number.
- TEXT** (Purple box): Includes Text Box, Drop Cap, Object, Quick Parts, WordArt, Signature Line, Date & Time, and Text.
- SYMBOLS** (Pink box): Includes Equation and Symbol.

The labels for the categories are written vertically in the center of each box:

- PAGES
- TABLES
- ILLUSTRATIONS
- LINKS
- HEADERS & FOOTERS
- TEXT
- SYMBOLS

Chapter One

Introduction to Computer

Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use¹.

Functionalities of a computer²

Any digital computer carries out five functions in gross terms:

- Takes data as input.
- Stores the data/instructions in its memory and use them when required.
- Processes the data and converts it into useful information.
- Generates the output
- Controls all the above four steps.



Computer Components

Any kind of computers consists of **HARDWARE AND SOFTWARE**.

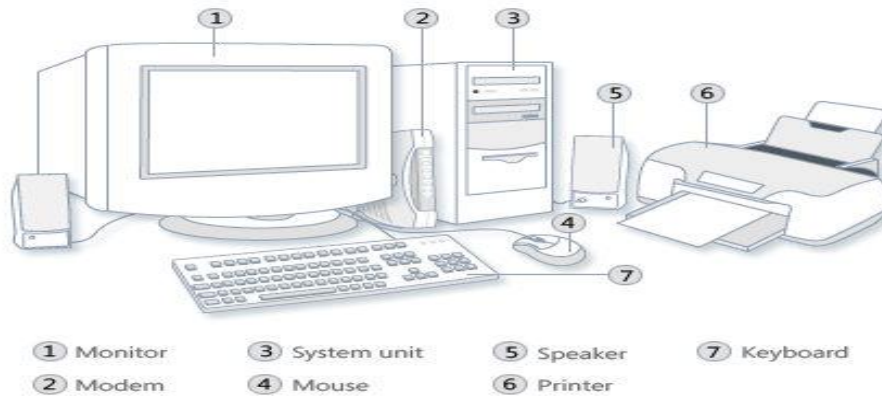
Hardware:

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.³

¹ Vermaat, Misty E. Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014

² http://www.tutorialspoint.com/computer_fundamentals/computer_quick_guide.htm



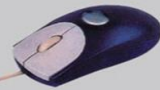









³ http://en.wikipedia.org/wiki/Computer_hardware



Input Devices

Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance.

Input device Translate data from **form** that humans understand to one that the computer can work with. Most common are keyboard and mouse

Examples of Manual Input Devices			
Keyboard 	Numeric Keypad 	Pointing Device 	Remote Control 
Joystick 	Touch Screen 	Scanner 	Graphics Tablet 
Microphone 	Digital Camera 	Webcams 	Light Pens 

Example of Input Devices:-

1. Keyboard	2. Mouse (pointing device)	3. Microphone
4. Touch screen	5. Scanner	6. Webcam
7. Touchpads	8. MIDI keyboard	9.
10. Graphics Tablets	11. Cameras	12. Pen Input
13. Video Capture Hardware	14. Microphone	15. Trackballs
16. Barcode reader	17. Digital camera	18. Joystick
19. Gamepad	20. Electronic Whiteboard	21.

Note: The most common use keyboard is the QWERTY keyboard. Generally standard Keyboard has 104 keys.

Central Processing Unit (CPU)

A CPU is brain of a computer. It is responsible for all functions and processes. Regarding computing power, the CPU is the most important element of a computer system.

The CPU is comprised of three main parts :

* **Arithmetic Logic Unit (ALU)**: Executes all arithmetic and logical operations. Arithmetic calculations like as addition, subtraction, multiplication and division. Logical operation like compare numbers, letters, or special characters

* **Control Unit (CU)**: controls and co-ordinates computer components.

1. Read the code for the next instruction to be executed.
2. Increment the program counter so it points to the next instruction.
3. Read whatever data the instruction requires from cells in memory.
4. Provide the necessary data to an ALU or register.
5. If the instruction requires an ALU or specialized hardware to complete, instruct the hardware to perform the requested operation.

* **Registers** :Stores the data that is to be executed next, "very fast storage area".

Primary Memory:-

1. **RAM**: Random Access Memory (RAM) is a memory scheme within the computer system responsible for storing data on a temporary basis, so that it can be promptly accessed by the processor as and when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off. RAM stores data randomly and the processor accesses these data randomly from the RAM storage. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell.
2. **ROM** (Read Only Memory): ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.

Secondary Memory:-

Stores data and programs permanently :its retained after the power is turned off

1. **Hard drive (HD)**: A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that store and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces.
2. **Optical Disk**: an optical disc drive (ODD) is a disk drive that uses laser light as part of the process of reading or writing data to or from optical discs. Some drives can only read from discs, but recent drives are commonly both readers and recorders, also called burners or writers. Compact discs, DVDs, and Blu-ray discs are common types of optical media which can be read and recorded by such drives. Optical drive is the generic name; drives are usually described as "CD" "DVD", or "Bluray", followed by "drive", "writer", etc. There are three main types of optical media: CD, DVD, and Blu-ray disc. CDs can store up to 700 megabytes (MB) of data and DVDs can store up to 8.4 GB of data. Blu-ray discs, which are the newest type of optical media, can store up to 50 GB of data. This storage capacity is a clear advantage over the floppy disk storage media (a magnetic media), which only has a capacity of 1.44 MB.

3. Flash Disk

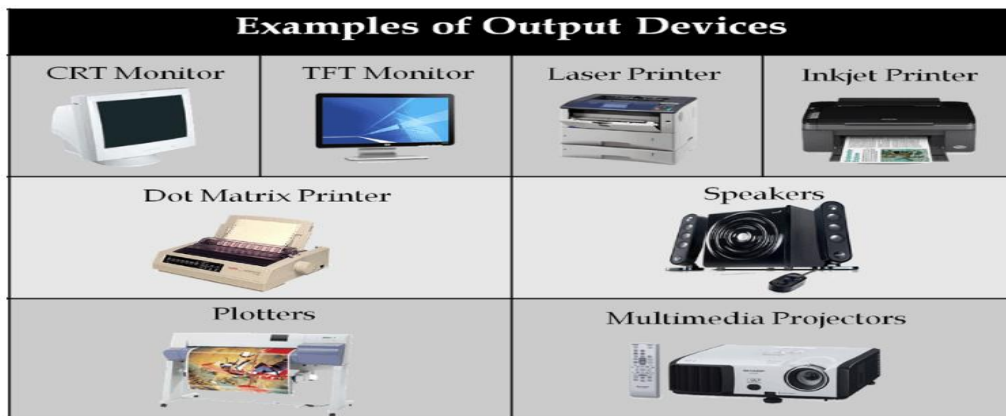
A storage module made of flash memory chips. A Flash disks have no mechanical platters or access arms, but the term "disk" is used because the data are accessed as if they were on a hard drive. The disk storage structure is emulated.

Comparison between Main memory (RAM) and Secondary Memory (Hard disk)

RAM	Hard Disk (Hard Drive)
Memory	Storage
Smaller amount (typically 500 MB-6 GB)	Much larger amount (typically 80GB to 1000 GB)
Temporary storage of files and programs A little like your real desktop - has only your current work on it (which could be ruined by a spill of Coke or coffee!)	Permanent storage of files and programs Like a file cabinet - has long-term storage of work (it's safe from spills!)
Contents disappear when you turn off power to the computer and when the computer crashes	Contents remain when you turn off the power to the computer (they don't disappear unless you purposely delete them), and when the computer crashes
Consists of chips (microprocessors)	Consists of hard disks (platters)
When you want to use a program, a temporary copy is put into RAM and that's the copy you use	Holds the original copy of the program permanently

Output devices

An output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form.



Example on Output Devices:

1. Monitor	2. LCD Projection Panels
3. Printers (all types)	4. Computer Output Microfilm (COM)
5. Plotters	6. Speaker(s)
7. Projector	

Note Basic types of monitors are a.Cathode Ray Tube (CRT). B. Liquid Crystal Displays (LCD). c.light-emitting diode (LED).

Printer types: 1-Laser Printer. 2-Ink Jet Printer. 3-Dot Matrix Printer

Software

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and application software which is used by users to accomplish specific tasks.

Software Types

- A. System software** is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display. Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software.
- B. Application software** is used to accomplish specific tasks other than just running the computer system. Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database, etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications.

Comparison Application Software and System Software

	System Software	Application Software
	Computer software, or just software is a general term primarily used for digitally stored data such as computer programs and other kinds of information read and written by computers. App comes under computer software though it has a wide scope now.	Application software, also known as an application or an "app", is computer software designed to help the user to perform specific tasks.
Example:	1) Microsoft Windows 2) Linux 3) Unix 4) Mac OSX 5) DOS	1) Opera (Web Browser) 2) Microsoft Word (Word Processing) 3) Microsoft Excel (Spreadsheet software) 4) MySQL (Database Software) 5) Microsoft PowerPoint (Presentation Software) 6) Adobe Photoshop (Graphics Software)
Interaction:	Generally, users do not interact with system software as it works in the background.	Users always interact with application software while doing different activities.
Dependency:	System software can run independently of the application software.	Application software cannot run without the presence of the system software.

Unit of Measurements

Storage measurements: The basic unit used in computer data storage is called a bit (binary digit). Computers use these little bits, which are composed of ones and zeros, to do things and talk to other computers. All your files, for instance, are kept in the computer as binary files and translated into words and pictures by the software (which is also ones and zeros). This two number system, is called a “binary number system” since it has only two numbers in it. The decimal number system in contrast has ten unique digits, zero through nine.

Computer Storage units

Bit	BIT	0 or 1
Kilobyte	KB	1024 bytes
Megabyte	MB	1024 kilobytes
Gigabyte	GB	1024 megabytes
Terabyte	TB	1024 gigabytes

Size example

- 1 bit - answer to an yes/no question
- 1 byte - a number from 0 to 255.
- 90 bytes: enough to store a typical line of text from a book.
- 4 KB: about one page of text.
- 120 KB: the text of a typical pocket book.
- 3 MB - a three minute song (128k bitrate)
- 650-900 MB - an CD-ROM
- 1 GB -114 minutes of uncompressed CD-quality audio at 1.4 Mbit/s
- 8-16 GB - size of a normal flash drive

Speed measurement: The speed of Central Processing Unit (CPU) is measured by Hertz (Hz), Which represent a CPU cycle. The speed of CPU is known as Computer Speed.

CPU SPEED MEASURES	
1 hertz or Hz	1 cycle per second
1 MHz	1 million cycles per second or 1000 Hz
1 GHz	1 billion cycles per second or 1000 MHz

Computers classification^{***}

Computers can be generally classified by size and power as follows, though there is Considerable overlap:

- **Personal computer:** A small, single-user computer based on a microprocessor. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.
- **workstation :** A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.
- **minicomputer :** A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.
- **mainframe :** A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.
- **supercomputer :** An extremely fast computer that can perform hundreds of millions of instructions per second.

Laptop and Smartphone Computers

LAPTOP: A laptop is a battery or AC-powered personal computer that can be easily carried and used in a variety of locations. Many laptops are designed to have all of the functionality of a desktop computer, which means they can generally run the same software and open the same types of files. However, some laptops, such as netbooks, sacrifice some functionality in order to be even more portable.

Netbook: A netbook is a type of laptop that is designed to be even more portable. Netbooks are often cheaper than laptops or desktops. They are generally less powerful than other types of computers, but they provide enough power for email and internet access, which is where the name "netbook" comes from.

Mobile Device: A mobile device is basically any handheld computer. It is designed to be extremely portable, often fitting in the palm of your hand or in your pocket. Some mobile devices are more powerful, and they allow you to do many of

^{***}<http://www.acobas.net/teaching/survival/handouts/pcwebopedia.pdf>

the same things you can do with a desktop or laptop computer. These include tablet computers, e-readers, and smartphones.

Tablet Computers: Like laptops, tablet computers are designed to be portable. However, they provide a very different computing experience. The most obvious difference is that tablet computers don't have keyboards or touchpads. Instead, the entire screen is touch-sensitive, allowing you to type on a virtual keyboard and use your finger as a mouse pointer. Tablet computers are mostly designed for consuming media, and they are optimized for tasks like web browsing, watching videos, reading e-books, and playing games. For many people, a "regular" computer like a desktop or laptop is still needed in order to use some programs. However, the convenience of a tablet computer means that it may be ideal as a second computer.

Smartphones: A smartphone is a powerful mobile phone that is designed to run a variety of applications in addition to phone service. They are basically small tablet computers, and they can be used for web browsing, watching videos, reading e-books, playing games and more.

Data, Information and Knowledge

Data: Facts and figures which relay something specific, but which are not organized in any way and which provide no further information regarding patterns, context, etc. So data means "unstructured facts and figures that have the least impact on the typical manager."

Information: For data to become information, it must be contextualized, categorized, calculated and condensed. Information thus paints a bigger picture; it is data with relevance and purpose. It may convey a trend in the environment, or perhaps indicate a pattern of sales for a given period of time. Essentially information is found "in answers to questions that begin with such words as who, what, where, when, and how many".

Knowledge: Knowledge is closely linked to doing and implies know-how and understanding. The knowledge possessed by each individual is a product of his experience, and encompasses the norms by which he evaluates new inputs from his surroundings.

The content of the human mind can be classified into four categories:

1. Data: symbols
2. Information: data that are processed to be useful; provides answers to "who", "what", "where", and "when" questions
3. Knowledge: application of data and information; answers "how" questions
4. Wisdom: evaluated understanding.

We need to understand that processing data produced Information and process Information produces Knowledge and so on

Characteristics of Computer

Speed, accuracy, diligence, storage capability and versatility are some of the key characteristics of a computer. A brief overview of these characteristics are

- **Speed:** The computer can process data very fast, at the rate of millions of instructions per second. Some calculations that would have taken hours and days to complete otherwise, can be completed in a few seconds using the computer. For example, calculation and generation of salary slips of thousands of employees of an organization, weather forecasting that requires analysis of a large amount of data related to temperature, pressure and humidity of various places, etc.
- **Accuracy:** Computer provides a high degree of accuracy. For example, the computer can accurately give the result of division of any two numbers up to 10 decimal places.
- **Diligence:** When used for a longer period of time, the computer does not get tired or fatigued. It can perform long and complex calculations with the same speed and accuracy from the start till the end.
- **Storage Capability:** Large volumes of data and information can be stored in the computer and also retrieved whenever required. A limited amount of data can be stored, temporarily, in the primary memory. Secondary storage devices like floppy disk and compact disk can store a large amount of data permanently.
- **Versatility:** Computer is versatile in nature. It can perform different types of tasks with the same ease. At one moment you can use the computer to prepare a letter document and in the next moment you may play music or print a document. Computers have several limitations too. Computer can only perform tasks that it has been programmed to do.

Computer cannot do any work without instructions from the user. It executes instructions as specified by the user and does not take its own decisions.

Computer Viruses*

Viruses: A virus is a small piece of software that piggybacks on real programs. For example, a virus might attach itself to a program such as a spreadsheet program. Each time the spreadsheet program runs, the virus runs, too, and it has the chance to reproduce (by attaching to other programs) or wreak havoc.

- E-mail viruses:** An e-mail virus travels as an attachment to e-mail messages, and usually replicates itself by automatically mailing itself to dozens of people in the victim's e-mail address book. Some e-mail viruses don't even require a double-click -- they launch when you view the infected message in the preview pane of your e-mail software [source: Johnson].
- Trojan horses:** A Trojan horse is simply a computer program. The program claims to do one thing (it may claim to be a game) but instead does damage when you run it (it may erase your hard disk). Trojan horses have no way to replicate automatically.
- Worms:** A worm is a small piece of software that uses computer networks and security holes to replicate itself. A copy of the worm scans the network for another machine that has a specific security hole. It copies itself to the new machine using the security hole, and then starts replicating from there, as well.

What are some tips to avoid viruses and lessen their impact?*

- Install anti-virus software from a reputable vendor. Update it and use it regularly.
- In addition to scanning for viruses on a regular basis, install an "on access" scanner (included in most anti-virus software packages) and configure it to start each time you start up your computer. This will protect your system by checking for viruses each time you run an executable file.
- Use a virus scan before you open any new programs or files that may contain executable code. This includes packaged software that you buy from the store as well as any program you might download from the Internet.
- If you are a member of an online community or chat room, be very careful about accepting files or clicking links that you find or that people send you within the community.
- Make sure you back up your data (documents, bookmark files, important email messages, etc.) on disc so that in the event of a virus infection, you do not lose valuable work.

*<http://computer.howstuffworks.com/virus.htm>

*<http://www.us-cert.gov/publications/virus-basics>