



Introduction to Microsoft Excel: Part 2

Course Objectives

Introduction to Microsoft Excel is comprised of two separate classes each focusing on specific functionality of Microsoft Excel 2010:

Part 1 will show you how to:

- Navigate the *Excel* Workbook.
- Create a basic worksheet by entering text and values.
- Work with cells and cell data by using a variety of moving and copying techniques.
- Perform calculations on data using the AutoSum feature.

Part 2 will show you how to:

- Enhance a worksheet with formatting.
- Sort data in *Excel*.
- Set page display and printing options.

Introduction to Microsoft Excel Part 2

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Lesson 1

Enhancing Your Worksheet

In this lesson we'll...

- ✓ *Learn to use the formatting commands*
- ✓ *Explore Format options*
- ✓ *Use Excel's AutoFormat feature*
- ✓ *Apply conditional formatting to a worksheet*

1-A: Overview

Formatting data changes the way that numbers and text appear in a worksheet. You can use *Excel* formatting features to make a worksheet more attractive, make it easier to read, or emphasize key data. You can accomplish this by using different colors and fonts for the cell contents, adjusting column and row attributes, and altering the way numeric data is displayed. Formatting changes only the appearance of the worksheet, and not the value of the data.

Less is more!

Overuse of any formatting attribute can be distracting and make a workbook less readable.

Consider your printing output

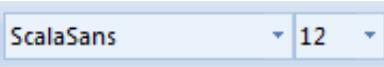
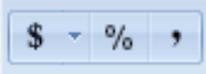
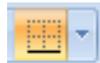
If you will be distributing a printed spreadsheet and your only option is to use a black and white printer, applying color may actually diminish the readability of your document.

Select carefully

Be cautious of applying formatting such as borders to an entire sheet, this format will be applied to them infinitely. A printout of such would include all the borders, producing pages and pages of unwanted lines.

1-B: Formatting Commands

The easiest way to make basic formatting changes is by using the **Ribbon**. The **Home** tab gives you quick access to the most commonly used formatting options available in *Excel*.

Command	Function
	Determines font type and font size.
	Applies font attributes: bold, italic, underline.
	Aligns text in the cell: left, center, right, centers text across columns and combines two or more selected adjacent cells into one cell.
	Applies number formatting: Currency style, Comma Style, Percent Style, Increase/Decrease Decimal.
	Decreases/Increases Indent.
	Adds/changes background and text colors.
	Adds lines or borders

To format data in a cell:

1. Select the data that you would like to format.
2. Click the appropriate icon on the formatting **Ribbon**.

1-C: Text Formats

Font

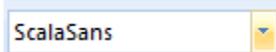
A font is the name for a collection of characters (letters, numerals, symbols, and punctuation marks) with a similar, specific design.

Font Size

The font size is the size of the text, measured in units called points.

To change the font:

1. Select a cell or range of cells.
2. In the **Font** box in the **Font** group, use the dropdown menu to select the font you want.



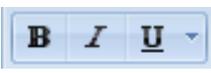
3. In the **Font Size** box,  use the dropdown menu to select the font size you want.

Live Preview

Notice that you can preview the way text will look with a specific font or size simply by hovering over a font or point size in the **Ribbon**. You do not commit to a specific font or size until you actually click to select the option from the menu.

Font Attributes

Attributes are styling formats such as **bold**, *italics*, underlining, and color that you can apply to affect the way text and numbers look in a worksheet.

You can use the **Formatting buttons**  to apply certain attributes.

Click the arrow to the right of U for additional underline styles, such as a double underline.

Or you can use the **Format Cells** dialog box to change text attributes (Figure 1-1).

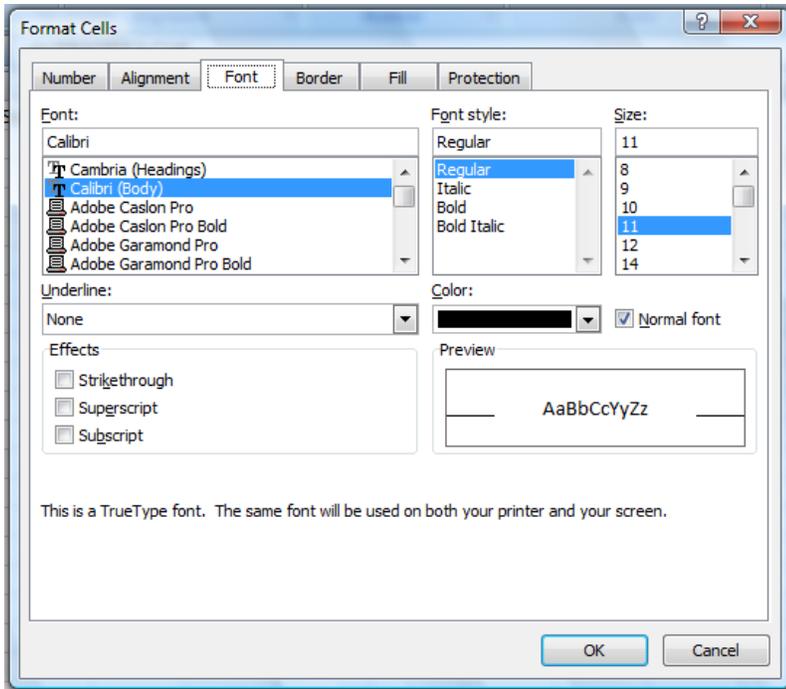


Figure 1-1: Format Cells Dialog Box

To format cells using the **Format Cells** dialog box:

1. Select the cells you wish to format.
2. Click the **Dialog Box Launcher** in the lower right of the **Font** command group on the **Home** a tab (Figure 1-2).

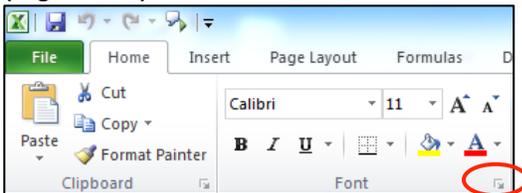


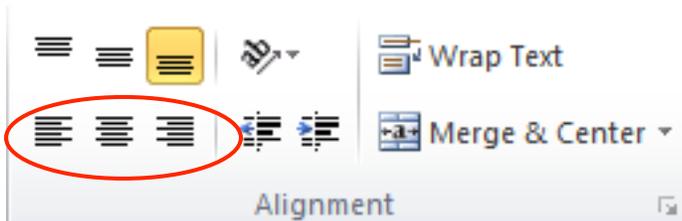
Figure 1-2: Dialog Box Launcher

3. Change desired settings.
4. Click **OK**.

1-D: Text Alignment, Wrapping and Rotation

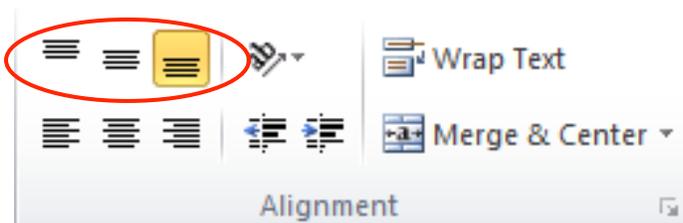
The **Ribbon** has numerous commands within the Alignment Group to change the alignment of a cell's content. To align the content of a cell, select your cells, then in the **Alignment Group** on the **Home** tab toolbar, click the appropriate button.

Align Data Horizontally within a Cell:



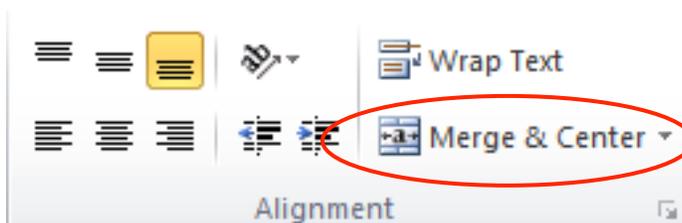
- **Align Left**, to align text to the left.
- **Center**, to center text.
- **Align Right**, to align text to the right.

Align Data Vertically within a Cell:



- Align to **Top** of cell.
- Align to **Middle** of cell.
- Align to **Bottom** of cell.

Merge a group of cells and center horizontally within the merged block:



For more alignment options (Figure 1-3), click the **Dialog Box Launcher** on the **Alignment Group**.

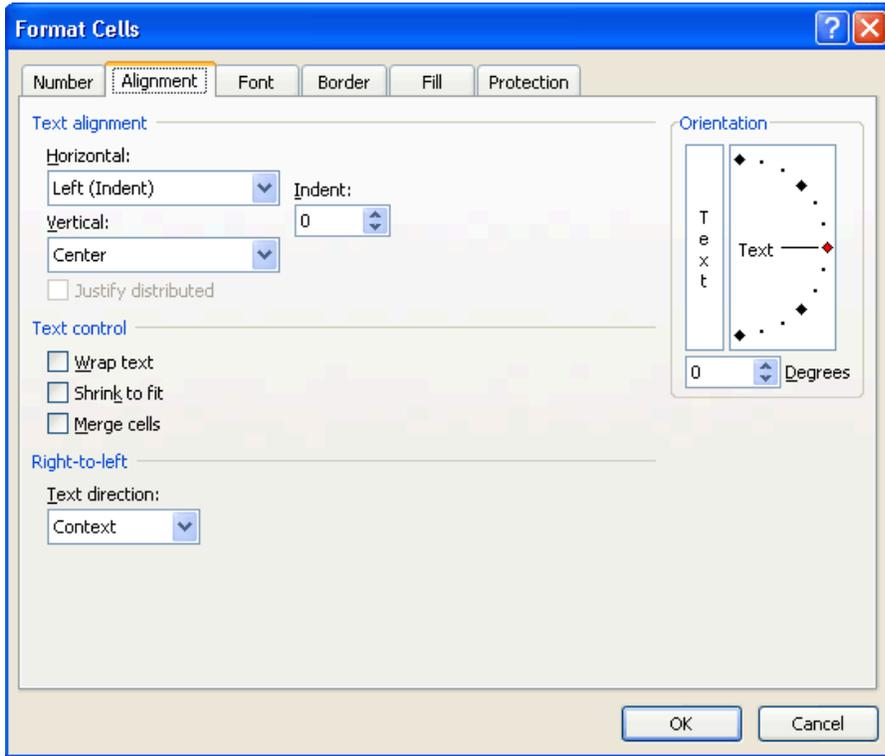
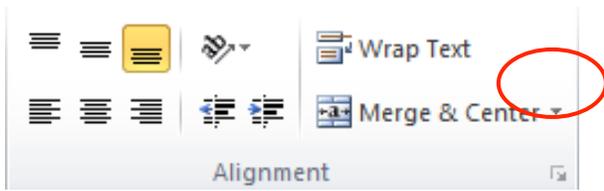
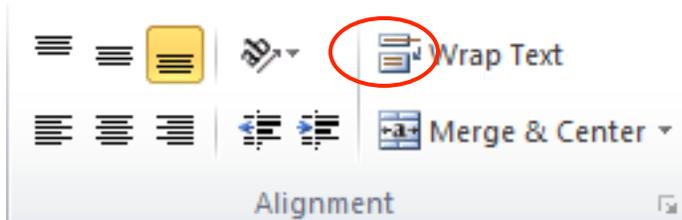


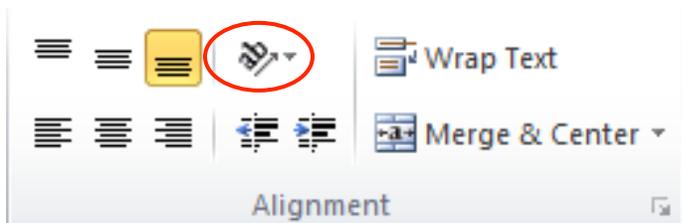
Figure 1-3: Additional Alignment Options

The data in a column is often very narrow while the label for the column is much wider. Instead of creating unnecessarily wide columns or abbreviated labels, you can use text wrapping, to display multiple lines of text within a cell, or angle text within a cell.

To display multiple lines of text within a cell (text wrapping), select the cell then click the text wrap button.



To angle text in a cell, click the arrow on the right of the rotate button and select a specific angle.



1-E: Cell Borders and Background Basics

- You can use colors, patterns and borders to enhance the overall appearance of a worksheet and to make it easier to read.
- You can apply borders to all the cells in a worksheet or only to selected cells to call attention to individual cells or a range of cells.

To apply a border around a range:

1. Select the range of cells on the page to which you want to add a border.
2. On the **Home** tab in the **Font** group, click the **Borders** button. 
3. Select a border style from the options that are displayed (Figure 1-4).

To apply cell shading:

1. Select the cells you want to apply shading to or remove shading from.
2. To apply a different color, click the arrow next to **Fill Color**,  and then click a color on the palette.

To shade cells with a pattern:

1. On the **Home** tab in the **Cells** group, click **Format**, then **Format Cells**, and then click the **Fill** tab.
2. To include a background color with the pattern, click a color in the **Background Color** area.
3. Click **Pattern Color** to decide which color you would like the pattern to be.
4. Click the arrow next to the **Pattern** box, and then click the pattern style and color you want.

To remove shading:

Follow Step 1 above, then click **No Color**.

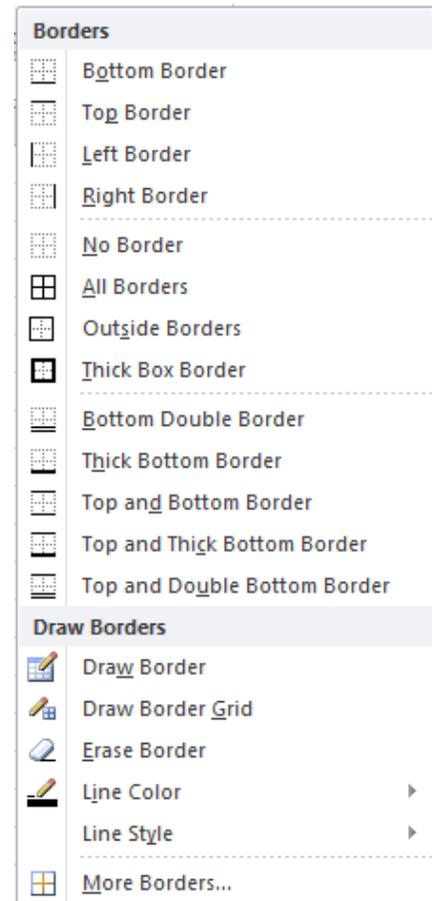


Figure 1-4 Select a Border Style

Activity 1 - 1

Format Data

You've been working on a spreadsheet to keep your department's office supply expenditures organized but would like it to look more professional and easier to read.

1. Change the font of the spreadsheet titled, "January's Office Supply Expenditures" to **Times New Roman** and **font size 16**.
2. Merge and center the title (cells B2:G2).
3. Change the background color of the title cell to dark blue.
4. Change the text of the title cell to white.
5. Select **Column G** and change the number style to percentages.

1-F: Advanced Number Formats

We have already looked at the number format available on the **Home** tab of the **Ribbon**. However, there are many other formatting options for numeric data including special formats for dates and times, zip codes, and social security numbers.

To see all available number formats (Figure 1-5), click the **Dialog Box Launcher** in the **Numbers** group on the **Home** tab.

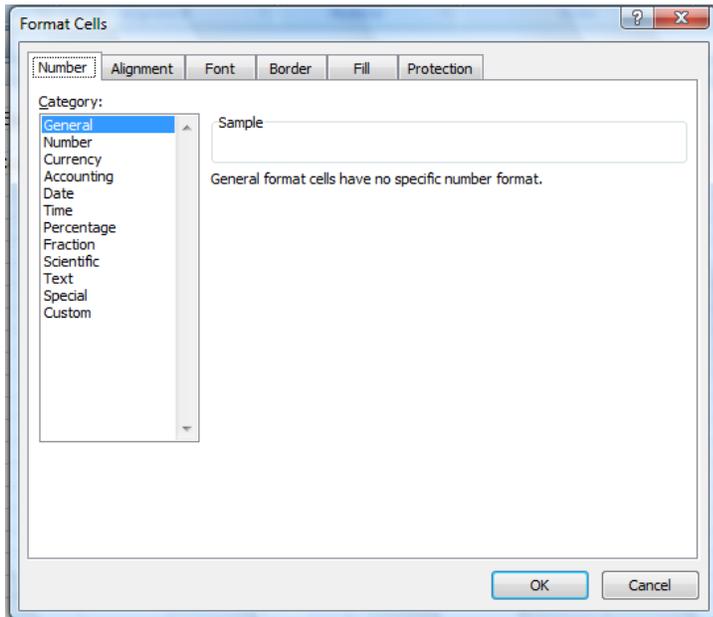


Figure 1-5: Number formats

Built-in number formats

- *General*
 - General format cells have no specific number format. Cell contents are displayed the way you entered them.
 - If the cell is not wide enough to show the entire number, rounds numbers with decimals and uses scientific notation for large numbers.
- *Number*
 - Used for general display of numbers. Two decimal places are shown as the default.
- *Currency*
 - Used for general monetary values. Numbers are displayed with two decimal places and a dollar sign (\$).
- *Accounting*
 - Same as currency, but lines up the currency symbols and decimal points in a column.
- *Date*
 - Displays date and time serial numbers as date values. Default is mm/dd/yyyy.

Excel stores dates as sequential numbers, which are called serial values. By default, January 1, 1900 is serial number 1, and January 1, 2008 is serial value 39448 because it is 39,448 days after January 1, 1900. *Excel* stores times as decimal fractions because time is considered a portion of a day.

- *Time*
 - Displays data and time serial numbers as time values. Default is hh:mm:ss AM/PM.

As values, dates and times can be added, subtracted, and used in other calculations. View a date as a serial value and a time as a decimal fraction by changing the format of the cell that contains the date or time to General format.

- *Percentage*
 - Multiplies the cell value by 100 and displays the result with a percent symbol (%) and rounds up to the nearest whole digit.
- *Fraction*
 - Displays as a fraction. Default is up to one digit (1/4).
- *Scientific*
 - Displays as a scientific format. Default is two decimal places.
- *Text*
 - Treated as text even when a number is in the cell. The cell is displayed exactly as entered.
- *Special*

- Zip Code
- Phone Number
- Social Security Number
- *Custom*
 - Used to create a custom number format.

If your desired number format is similar to one you can find in the dialog, select it, and then click on the **Custom** category. The chosen number format will be displayed in an edit box, where you can adjust it as needed.

To create a custom number format:

1. Select **Custom** in the Number formatting dialog box.
2. In the **Category** list, click a category that is similar to the one you want.
3. In the **Type** box, edit the number format codes to create the format you want.

Some common examples of custom number formats are:

Numbers with leading zeros: enter one zero for each digit in the number. For instance a 9-digit number that may have leading zeros would be 000000000.

Phone extensions: enter the format 0-0000

Activity 1 – 2

Format Data to Improve Readability

In this activity you will use the Format menu to update your formatting making your data easier to read.

1. Select B5:B16.
2. Center the list of items (B5:B16) horizontally in their cells.
3. Rotate the selected cells 45°.
4. Select B4:G4.
5. Wrap the headings in their cells, using the Wrap Text feature.
6. Format the dates under “Dates Purchased” (C5:C16) so that they all take the form MM/DD/YYYY (e.g. 3/14/2001).
7. Resize the column width of the “Dates Purchased” (Column C) so that all the dates fit properly within their cells.
HINT: You learned how to do this in Introduction to Excel Part I
8. Format the dollar amounts under “Cost Per Unit” (D5:D16) with dollar signs. Make sure the values show two decimal places.
9. Select the total (F19).
10. Make the total stand out, by formatting it **bold** and **red**.

Lesson 2:

Sorting & Filtering Data

In this lesson we'll talk about...

- ✓ *The Basics of Sorting and Filtering in Excel*
- ✓ *Sorting & Filtering Using a Table*
- ✓ *Sorting by Multiple Columns*

2-A: Sorting & Filtering Basics

Sorting is the process of rearranging records in a specified order. Sometimes you might need to sort data before displaying or printing it to meet a specific request. For example, you may want to sort a list of attendees by department to see if anyone from the same department is coming to a training session. On the other hand, you may want to sort this same list alphabetically by name to print an attendance sheet.

Excel allows you to sort list data both quickly and easily. You can sort your data by row using the contents of any column you wish, using **Sort By Column**. Data sorted can be numeric, date/time, text or logical values. Usually, you sort records in ascending (increasing) or descending (decreasing) order. *Excel* also allows you to create your own custom list to use as a sort order (see Section 2-C).

Sort Order

When a list is sorted in ascending order, *Excel* sorts the list using the following rules:

Data Type	Ascending Sort Order
Numeric	Smallest negative number to largest positive number.
Date/Time	Date and time are sorted by their numeric values, earliest date/time to latest date/time.
Text	Text is sorted left to right, character by character, first by numerical values, next by ASCII characters, such as (#), (\$) and (*), then by letters of the alphabet. <i>Example:</i> 0 1 2 3 4 5 6 7 8 9 (space) ! " # \$ % & () * , . / : ; ? @ [\] ^ _ ` { } ~ + < = > A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Apostrophes and hyphens are ignored unless two cells are identical except for the presence of an apostrophe or hyphen. <i>Example:</i> "Co-ordinator" follows "Coordinator".
Logical Values	FALSE then TRUE.
Empty Cells	Empty cells are always sorted last.

The sort orders listed above are **reversed** in a **descending** sort. However, blank cells still appear at the **bottom** of the list, even in a descending sort. If the range contains mixed data types, it will be sorted in the order shown above (that is, numeric values appear at the top, followed by dates then text and finally logical values). If your list contains numbers that should be sorted as text, format the cells as **Text** first (**Home > Format > Format Cells, Number** tab).

Filtering

Filtering is the process of showing on a particular subset of data in a worksheet.

2-B: Sorting and Filtering Using Format Data as Table

Formatting your data as a table can be accomplished in a few simple steps.

Turn Your Data into a Table:

1. Select a cell within the data you'd like to format as a table
2. Select **Format as Table** from the **Styles** group on the **Home** tab of the **Ribbon**.
3. Select a style from the gallery (you can change it later, if you want).
4. In the **Format As Table** dialog box, check to make sure the correct range of cells has been selected in the **Where is the data for your table field?**
5. If necessary, use the range selector  to re-select the appropriate range of cells for your data.
6. Leave **My table has headers** selected if your data has column headings.
7. Click **OK** when finished.

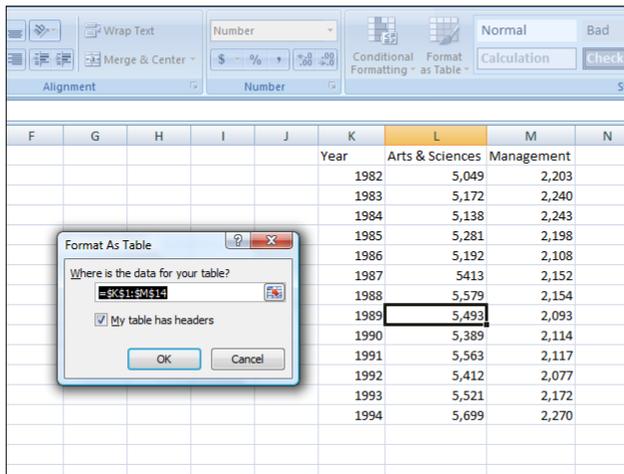


Figure 2-1: Format as Table

There are several benefits to having your data formatted as a table. Below we will look at a couple features of interest.

Table Styles

Once a table has been defined, the **Design** contextual tab will appear under **Table Tools** in the **Ribbon**.

To Change Your Table Style:

1. Place your cell selector on a cell within your table.
2. Use the **Table Styles** group on the **Design** tab to explore other table styles. Roll your cursor over the different styles.
3. To make a selection, simply **click** on the style you are interested in.

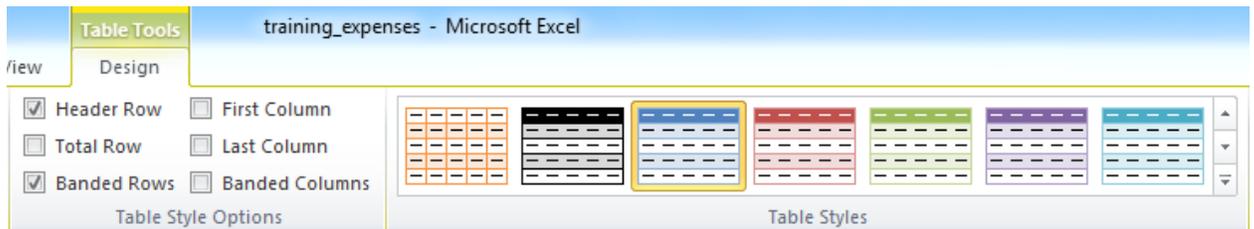


Figure 2-2: Change table style

Filter

Excel automatically turns on the **Filter** function for each of the columns in a table. The Filter drop-down box allows for quick filtering based on the data in each column.

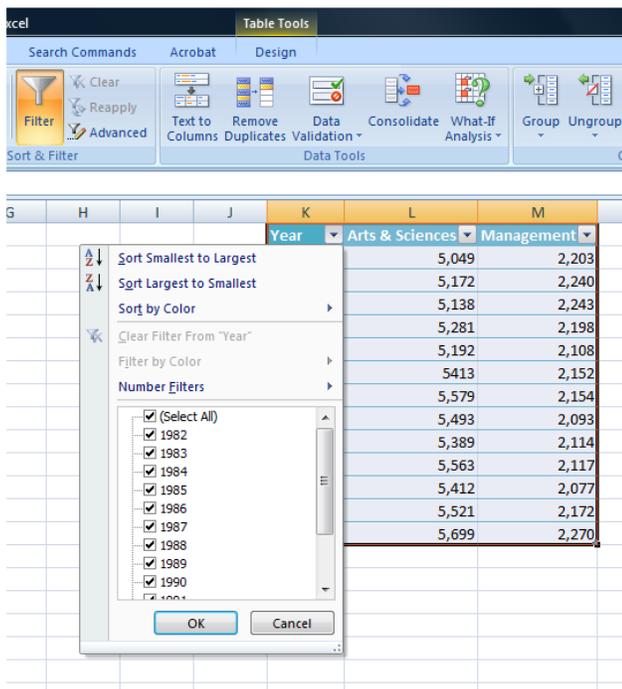


Figure 2-3: Filtering

Filter Basics:

1. Click the drop-down arrow for the column (field) you'd like to filter on.
2. Click the **Select All** option to clear all the checkmarks.
3. Select the criteria you'd like to filter on.
4. Click **OK** when finished.
5. Your data will be filtered according to your selections.
6. A filter icon  will be added to the column heading when a filter has been selected.

Remove a Filter:

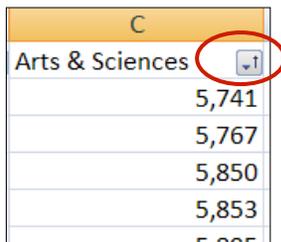
1. Click the drop-down arrow for the column (field) you'd like to remove the filter for.
2. Select the option **Remove filter from "xxx"**
3. Your filtered data will automatically be restored for that column.

Sorting Basics

Sorting your data is a vital task. Filtering tools are accessible in Excel 2010 in multiple places. Sorting on multiple columns (fields) in earlier versions of Excel sorting was limited to 3 columns. In Excel 2010 you can sort by up to 256 columns, if necessary.

Perform a Basic Data Sort Within a Table:

1. Click the drop-down Filter arrow on the column you'd like to sort on.
2. Select the  **Sort Smallest to Largest** option.
Or
3. Select the  **Sort Largest to Smallest** option.
4. Your data will be automatically sorted according to your selection.
5. An arrow will appear next to the drop-down filter box indicating the type of sort that was applied to the column.



The image shows a portion of an Excel table. The column header is 'C' and the data is 'Arts & Sciences'. The values in the cells are 5,741, 5,767, 5,850, and 5,853. A small downward-pointing arrow icon is visible to the right of the 'Arts & Sciences' header, indicating that the column is sorted. This icon is circled in red.

C
Arts & Sciences
5,741
5,767
5,850
5,853

Figure 2-4: Sort Indicator

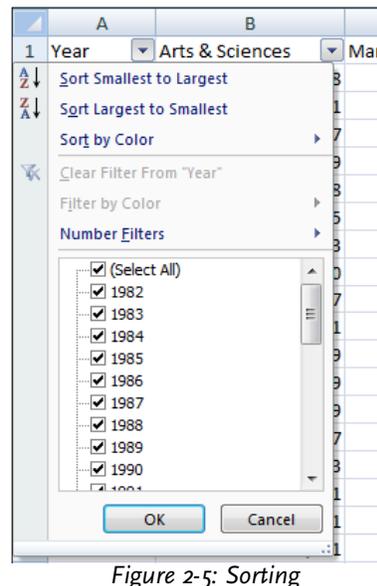


Figure 2-5: Sorting

2-C: Sorting Using Sort Commands on Home and Data Tabs

If you do not want to format your data using a table, you can also use the sort buttons on the **Home** and **Data** tabs.

Sort an entire sheet by a Column Heading:

1. Select the Heading only of the column by which you want to sort. DO NOT SELECT ANY OTHER CELLS.
2. On the **Home** or **Data** tab, click the **Sort Ascending**  or **Sort Descending**  buttons.

Sort a range of cells:

Selecting more than one cell will limit the sort area to the selection only. For example, if you selected the cell range B2:B13 in the worksheet shown below, Column B would be sorted alphabetically but Column A would not change. Consequently, the wrong first name would be shown next to each last name.

<i>List prior to sort</i>			<i>Sort range selected</i>			<i>List after sort</i>		
	A	B		A	B		A	B
1	FirstName	LastName	1	FirstName	LastName	1	FirstName	LastName
2	Joseph	Ferguson	2	Joseph	Ferguson	2	Joseph	Bradshaw
3	James	Kling	3	James	Kling	3	James	Ferguson
4	Carol	Olsen	4	Carol	Olsen	4	Carol	Hope
5	Carlos	Santos	5	Carlos	Santos	5	Carlos	Kling
6	Anne	Smolkovich	6	Anne	Smolkovich	6	Anne	Magee
7	Joanne	Hope	7	Joanne	Hope	7	Joanne	Myszka
8	Troy	Magee	8	Troy	Magee	8	Troy	Neyman
9	James	Bradshaw	9	James	Bradshaw	9	James	Olsen
10	A.J.	Myszka	10	A.J.	Myszka	10	A.J.	Santos
11	Darcy	Neyman	11	Darcy	Neyman	11	Darcy	Shrier
12	Jordan	Shrier	12	Jordan	Shrier	12	Jordan	Smolkovich
13	Rachel	Tagon	13	Rachel	Tagon	13	Rachel	Tagon

If you do select a range, and there is data in columns or rows adjacent to your selection, Excel will present you with a warning dialogue box (Figure 2-6) asking if you would like to expand your sort selection or continue sorting only the range selected.



Figure 2-6: Sort Warning

It is recommended **not** to select a range before applying a sort (unless there is one specific range that you intend to sort). To sort a column, you only need to click in one cell in that column. For example,

if you selected cell B3 in the worksheet shown below, Column B would be sorted alphabetically, along with all other data in the worksheet. Therefore, the data stays intact after the sort.

<i>List prior to sort</i>			<i>Sort cell selected</i>			<i>List after sort</i>		
	A	B		A	B		A	B
1	FirstName	LastName	1	FirstName	LastName	1	FirstName	LastName
2	Joseph	Ferguson	2	Joseph	Ferguson	2	James	Bradshaw
3	James	Kling	3	James	Kling	3	Joseph	Ferguson
4	Carol	Olsen	4	Carol	Olsen	4	Joanne	Hope
5	Carlos	Santos	5	Carlos	Santos	5	James	Kling
6	Anne	Smolkovich	6	Anne	Smolkovich	6	Troy	Magee
7	Joanne	Hope	7	Joanne	Hope	7	A.J.	Myszka
8	Troy	Magee	8	Troy	Magee	8	Darcy	Neyman
9	James	Bradshaw	9	James	Bradshaw	9	Carol	Olsen
10	A.J.	Myszka	10	A.J.	Myszka	10	Carlos	Santos
11	Darcy	Neyman	11	Darcy	Neyman	11	Jordan	Shrier
12	Jordan	Shrier	12	Jordan	Shrier	12	Anne	Smolkovich
13	Rachel	Tagon	13	Rachel	Tagon	13	Rachel	Tagon

2-D: Sort Rows by Multiple Columns

The **Sort A-Z** and **Sort Z-A** buttons will allow you to sort by one column (criteria) only. To sort by multiple columns (multiple criteria), you must use the **Sort** box.

To sort data by two or three columns:

1. Select **one cell** within the range you want to sort.
2. From the **Data** tab, click **Sort** to open the **Sort** dialog box (Figure 2-7).

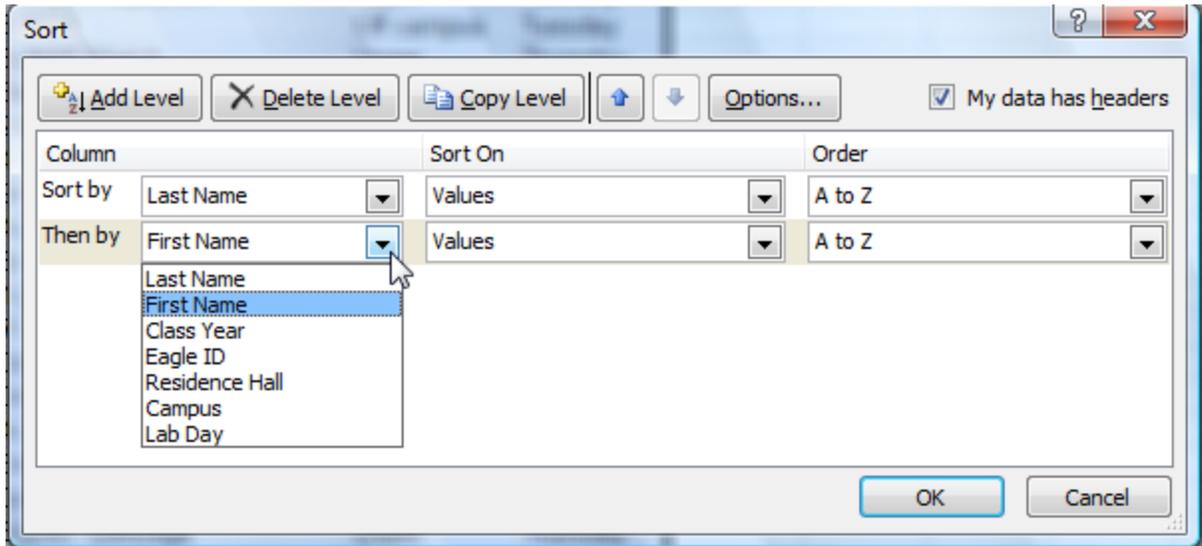


Figure 2-7: Data Menu

3. In the **Sort by** box, click the drop-down arrow to select the first column you want to sort the data by.

The Sort by list will show Column Names (Last Name) if you have selected **My data has Headers**, but will show Column Letters (Column A) if you have not.

4. Select the order you wish to sort by (**A-Z** or **Z-A**).
5. Click Add Level to further sort your columns by adding a **Then by** box. In the **Then by** boxes, click the drop-down arrow to select the second and third columns you want to sort the data by.
6. Select the order you wish to sort by (**A-Z** or **Z-A**).
7. Click **OK**.

Example:

List prior to sort

	A	B	C
1	FirstName	LastName	DepartmentName
2	Joseph	Ferguson	Center for Research
3	A.J.	Myszka	Sciences Department
4	Carol	Olsen	Center for Research
5	Troy	Magee	Center for Research and Analysis
6	Carlos	Santos	Center for Research
7	Darcy	Neyman	Sciences Department
8	Joanne	Hope	Center for Research and Analysis
9	Jordan	Shrier	Sciences Department
10	James	Kling	Center for Research
11	Rachel	Tagon	Sciences Department
12	James	Bradshaw	Sciences Department
13	Anne	Smolkovich	Center for Research

List sorted by three columns

	A	B	C
1	FirstName	LastName	DepartmentName
2	Joseph	Ferguson	Center for Research
3	James	Kling	Center for Research
4	Carol	Olsen	Center for Research
5	Carlos	Santos	Center for Research
6	Anne	Smolkovich	Center for Research
7	Joanne	Hope	Center for Research and Analysis
8	Troy	Magee	Center for Research and Analysis
9	James	Bradshaw	Sciences Department
10	A.J.	Myszka	Sciences Department
11	Darcy	Neyman	Sciences Department
12	Jordan	Shrier	Sciences Department
13	Rachel	Tagon	Sciences Department

Activity 2 - 1

Sort By Multiple Columns

The Astronomy Professor would like you to arrange the class list in alphabetical order by name so that he can use it as an attendance sheet. In this activity you will sort the **Astronomy** worksheet by name using the **Sort** dialog box.

1. Select the entire worksheet.
2. Select the **Data** tab, then select **Sort** from the **Sort and Filter** group to open the **Sort** dialog box.
3. Select the following in the Sort dialog box (Figure 2-8):
 - Sort by: **Last Name, Ascending**
 - Then by: **First Name, Ascending**
 - My data range has: **Header row**
 - Click **OK**.

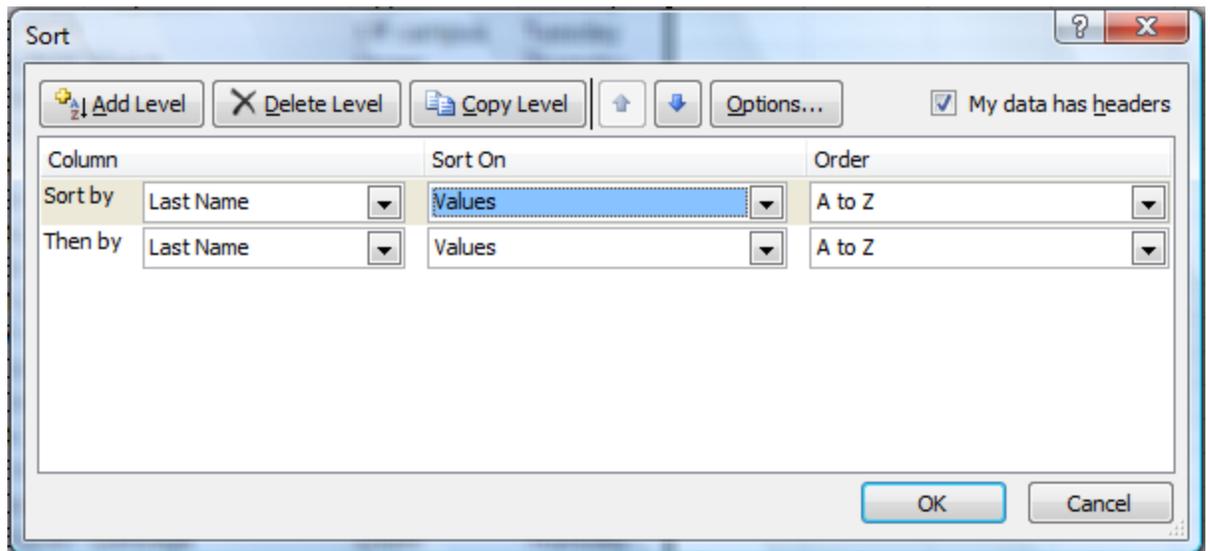


Figure 2-8: Sort dialog box

4. The worksheet is now sorted in ascending order arranged by Last Name and then by First Name. (Any students with the same last name will be secondly sorted alphabetically by first name.)

Lesson 3:

Page Display and Printing Options

In this lesson we'll learn about...

- ✓ *Freezing Rows and Columns*
- ✓ *Print Preview before you print*
- ✓ *Print a selection, a worksheet, or an entire workbook*
- ✓ *Change page orientation*
- ✓ *Fit data on a specific number of pages*
- ✓ *Adjust margins*
- ✓ *Add page numbers and dates in a header and footer*
- ✓ *Print column or row titles on every page*

3-A: Freeze Panes

There will come a time when you are working in *Excel* that you will work with a worksheet that is too large to fit on the screen. As you scroll through the data, you are unable to see the column and row information that is at the top, or on the left, of the worksheet.

You can lock rows or columns in place so that specific rows or columns remain visible when scrolling in a worksheet. In *Excel*, this is referred to as **Freezing Panes**. For example, you would freeze panes to keep row and column labels visible as you scroll.

To freeze the first row

1. Select the View tab. In the **Window** group, click **Freeze Panes**, then **Freeze Top Row** (see Figure 3-1).

To freeze the first column

1. Select the View tab. In the **Window** group, click **Freeze Panes**, then **Freeze Top First Column** (see Figure 3-1).

To freeze multiple rows or columns

1. Select the entire **Row** below the row(s) that you want to freeze, or select the entire **Column** to the right of the column(s) that you want to freeze.
2. Select the View tab. In the **Window** group, click **Freeze Panes**, then **Freeze Panes** (see Figure 3-1).

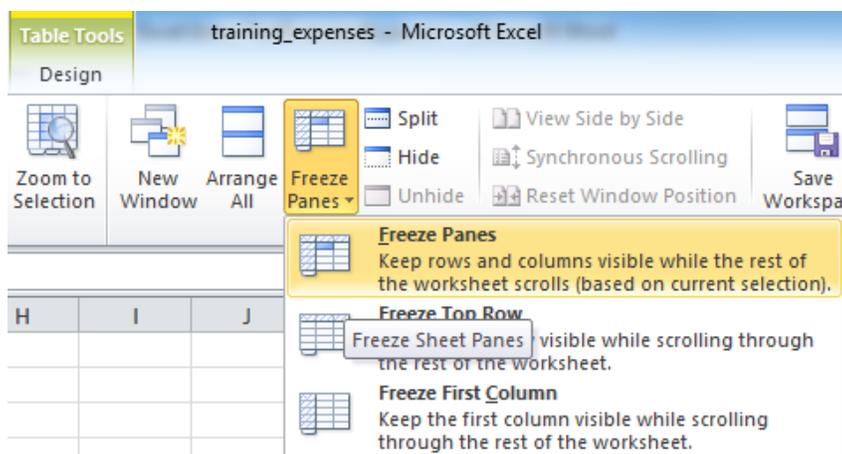


Figure 3-1: Freeze Panes

Example: Cell selection to freeze Columns A and B and Row 1.

	A	B	C	D
1	Phone	Department	Contact Last Name	Co
2	2-1460	Academic Advising Center	Sager	Jar
3	2-1573	Accounts Payable, Controller's Office (Controller's Office, Accounts Payable)	Tuller	De

Figure 3-2: Freeze both rows and columns

In the above example, after selecting cell **C2** and selecting **Window > Freeze Panes** from the menu bar:

- Columns A and B will remain visible no matter how far to the right you scroll in the worksheet.
- Row 1 will remain visible no matter how far down you scroll in the worksheet.

To unfreeze frozen rows or columns

1. Select **Unfreeze Panes** (refer to Figure 3-3).

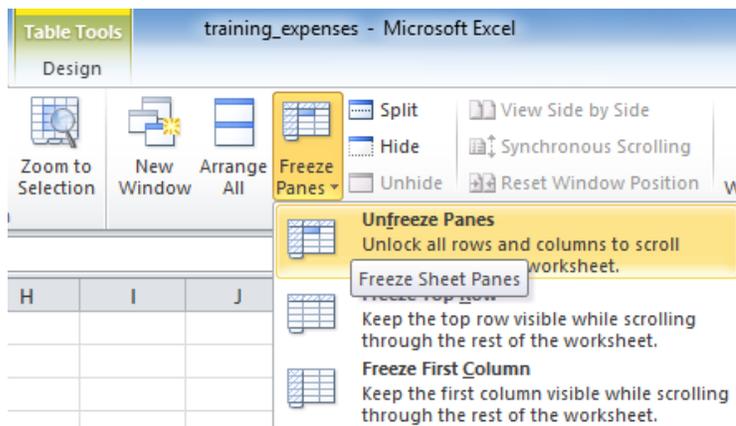


Figure 3-3: Unfreeze Panes

3-B: Printing Options Overview

You need to present a one-page report, but the last column spills over onto a second page. You want to know how to help readers get the most out of worksheets that really have to be printed on more than one page...

In Excel, there are several different ways to fit data onto the printed page. With mix-and-match printing options, sometimes it takes a bit of trial and error before you're ready to print. In this section you will learn how to get the results you want when you print in Microsoft *Excel*.

- **Print Preview**
- **Choose What Data to Print**
 - Print multiple worksheets at the same time
 - Print a selection
 - Print a named cell range
- **Page Setup: Page Layout Tab**
 - Change page orientation
 - Adjust page scaling to fit more on a page
 - Fit data on a specific number of pages
 - Select paper size
- **Page Setup: Margins Tab Options**
 - Adjust margins
 - Center data on a page
- **Page Setup: Header/Footer Tab**
 - Add page numbers, dates, and more
- **Page Setup: Sheet Tab**
 - Print column or row titles on every page
 - Print cell gridlines
 - Change the print order

3-C: Print Preview

Save paper and save time by using **Print Preview**. Preview your worksheet before you print. Print preview shows you what the printed page will look like. You can make several types of adjustments to the page in this view, while seeing exactly what you'll get before you actually print.

To open print preview

Select **File > Print** from the **File** button.

To save time, add the Print Preview button to the Quick Access toolbar by clicking the drop down arrow to the right of the Quick Access toolbar in the top left of the page and selecting **Print Preview**.

In **Print Preview**, you get a view of how your worksheet will look when it is printed. Use the Print Preview buttons (refer to Figure 3-4) located at the top of the **Print Preview** window to access the different printing options available in *Excel*.

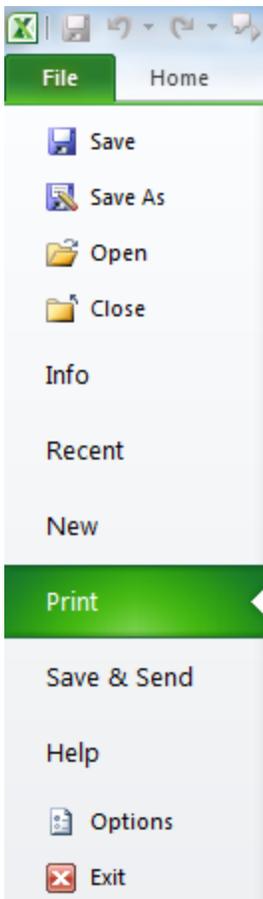


Figure 3-4: Print Preview options

Button	Function
Next Page	Previews the next page of your worksheet.
Previous Page	Previews the previous page of your sheet.

Zoom	Alters the size at which your sheet is previewed. Switch between a full-page view and a magnified partial view.
Print	Opens the Print dialog box where you can select options and start printing.
Page Setup	Opens the Page Setup dialog box where you can set up the appearance of the page.
Show Margins	Displays or hides a worksheet's margins. When the margins are displayed, you may adjust page margins, header and footer margins, and column widths by dragging the margin markers.
Close	Closes print preview.

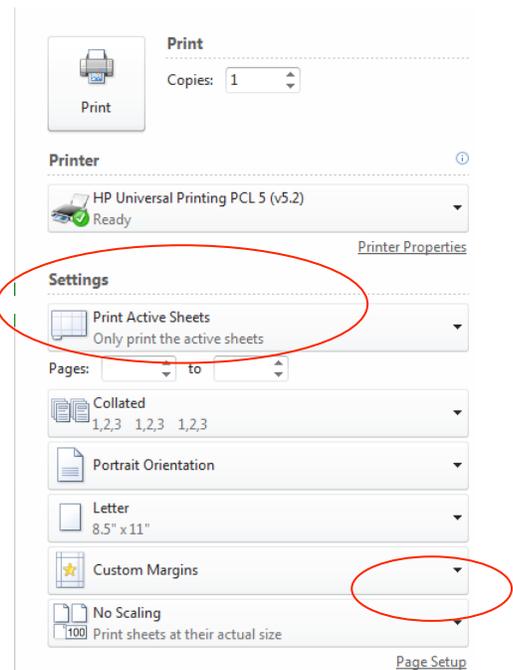
3-D: Choosing What Data to Print

In Excel, you have the option to print the current worksheet, print the entire workbook, or define a particular area to print.

Print the current worksheet

When printing your worksheet, you may not want to print the entire workbook. You can print a selected worksheet from the workbook. This will print all the active cells on the current sheet of the workbook.

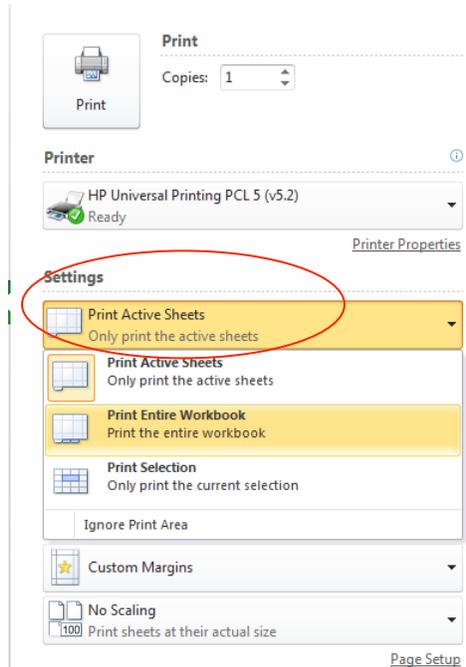
1. Select **File > Print** from the menu bar to open the Print dialog box.
2. Select the following options in the Print dialog box (Figure 3-5):
 - Print Range: **Page(s) From/To**
 - Print what: **Active sheet(s)**
 - Click **OK**.



Print the entire workbook

Printing the entire workbook will print all sheets of the workbook that contain data.

1. Select **File > Print** to open the Print dialog box.
2. Select the following options in the Print dialog box (refer to Figure 3-6):
 - Print what: **Entire workbook**
 - Click **OK**.



Define the print area

Unless you specify a print area, Excel assumes you want to print the active area of the current worksheet. You can specify a different print area through several options.

Select an area to print for a one-time-only printout:

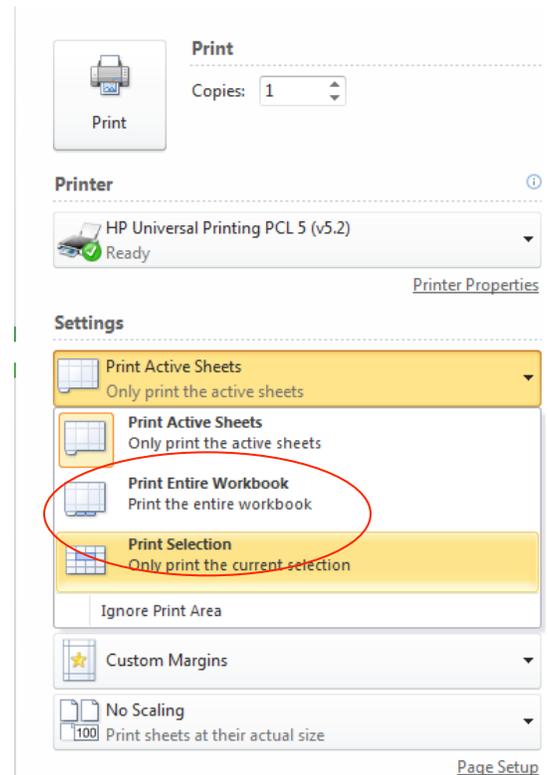
1. While in Normal view, **select the range of cells** you want to print.
2. Select **File > Print** to open the Print dialog box.
3. Select the following options in the Print dialog box (refer to Figure 3-7):
 - Print what: **Selection**
 - Click **OK**.

Create a print area for repeated use:

1. While in Normal view, **select the range of cells** you want to print.
2. Select **Page Layout tab > Page Setup Group > Print Area > Set Print Area**.
3. You can now select **File > Print**; click **OK** in the Print dialog box, and only the defined print area will be printed.
4. When you save the workbook, your defined print area is also saved.

You can save only one defined print area at a time on a worksheet. If you decide later that you want to print the entire worksheet, you must clear the defined print area.

To clear the print area, select **Page Layout tab > Page Setup Group > Print Area > Clear Print Area**.



3-E: Page Setup Options

The Page Setup dialog box provides many options for customizing your print settings in Microsoft Excel. Changes made for the page setup are made for each individual sheet. This means that one sheet can be printed in landscape orientation and another printed in portrait orientation without readjusting the settings for each sheet.

To open the Page Setup dialog box

1. Click the arrow in the lower right corner of the **Page Setup** group on the **Page Layout** tab.
2. Or, click the **Page Setup** button in Print Preview (refer to figure 3-5).



Different option tabs are available in the Page Setup dialog box (refer to Figure 3-8), each of which are explained in this section.

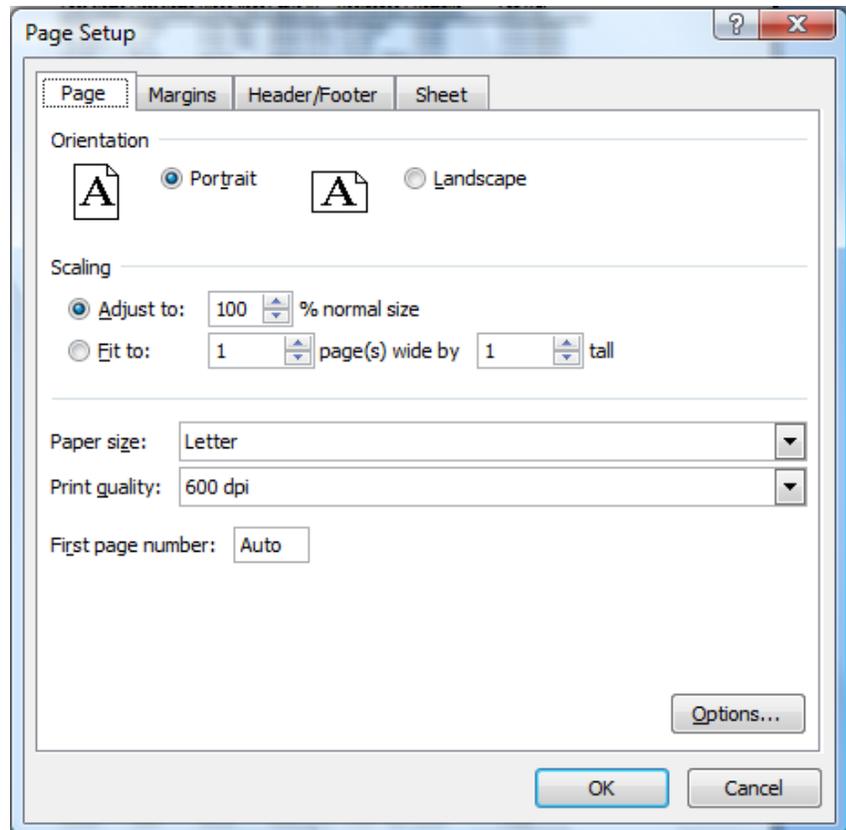


Figure 3-8: Page Setup dialog box

Page Tab

Under the Page tab (refer to Figure 3-9) of the Page Setup dialog box, you will find several options enabling you to specify how your worksheet(s) will print.

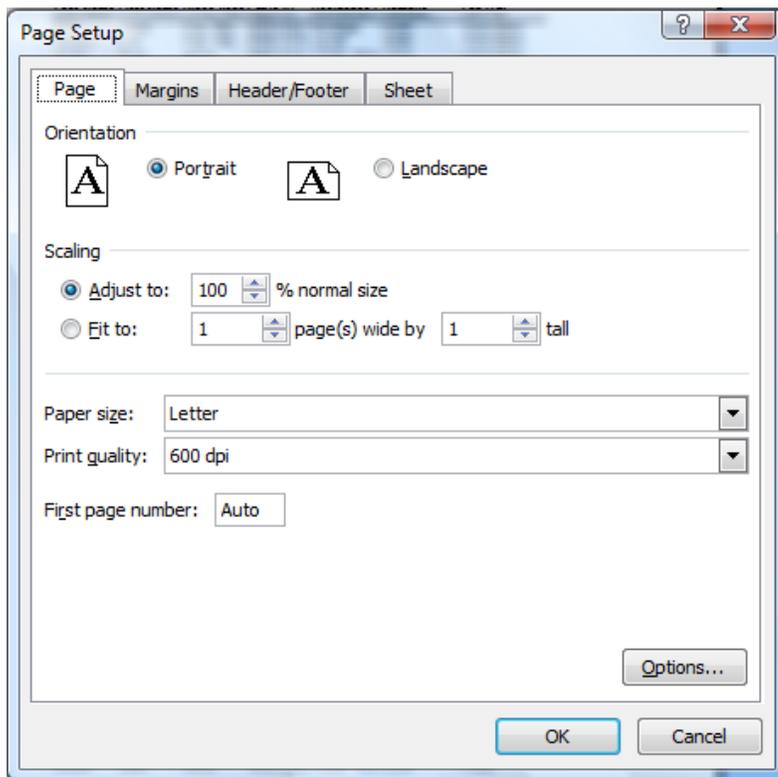


Figure 3-9: Page Tab of Page Setup Dialog Box

Option	Description
Orientation	Selects the width of the printed page. Most documents are portrait; however, many worksheets may be easier to read in the landscape mode.
Scaling	Adjusts the percentage of the printed copy's actual size. Options are available for fitting all columns or rows to a certain number of pages. The default size of the printed copy is 100%.
Paper size	Selects the paper size to match the stock currently loaded in the printer.
Print quality	Adjusts the resolution of your printer.
First page number	Sets the page number that will print on the first page. If you want the first page number to be number one (1), leave the selection on Auto

Instructions for setting some of the most common options in the Page tab of the Page Setup dialog box are described below.

Orientation

By default, Excel prints most worksheets in **portrait** (tall) orientation, but many worksheets may be easier to read in the **landscape** (wide) orientation. When you print with portrait orientation, you get more rows on the page, but fewer columns. When you turn the page on its side and print with landscape orientation, you get more columns on the page, but fewer rows. Changing the orientation can help to fit a large worksheet on one sheet of paper.

To change page orientation:

1. Select **Page Layout** tab.
2. Select the **Page Setup** group.
3. In the **Orientation** section, select **Portrait** or **Landscape** (Figure 3-10).
4. Click **OK**.

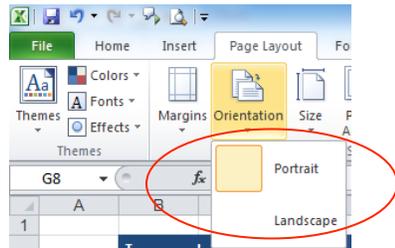


Figure 3-10: Orientation

Scaling

The scaling option allows you to adjust the actual size of the printed copy. The default size of the printed copy is 100%. You can adjust the scale to a percentage of the normal size (**Adjust to**), or choose to fit the worksheet to a specific number of pages (**Fit to**). Both of these scaling options allow you to reduce or enlarge the entire worksheet.

To adjust page scaling by a percentage:

1. Select the **Page Layout** tab.
2. Select the **Scale to Fit** group.
3. Select **Scale** (refer to Figure 3-11).
4. In the % **normal size** box, type the appropriate percentage (or click the up or down arrows to select the appropriate percentage).
5. Click **OK**.

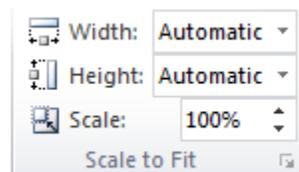


Figure 3-11: Adjust to

To fit the worksheet to a specific number of pages:

1. Select the **Page Layout** tab.
2. Select the **Scale to Fit** group.
3. In the **Scale to Fit** section, select the **Dialogue Box launcher** (refer to Figure 3-12).
4. Click **Fit To** and in the **page(s) wide by tall** boxes, type the value of pages wide by the value of pages tall (or click the up or down arrows to select the appropriate values).
5. Click **OK**.

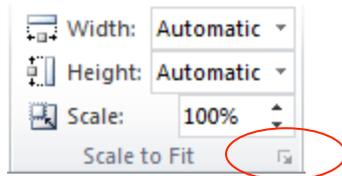
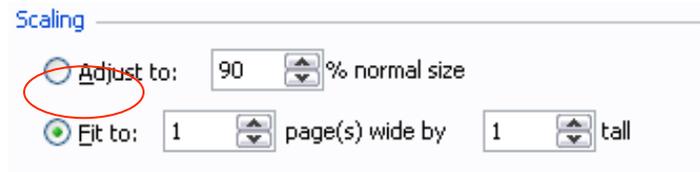


Figure 3-12: Fit to



Paper Size

The default paper size is 8 1/2" x 11" sheets, but you can select other available paper sizes, such as legal (11" x 14").

To select a different paper size:

1. Select **File > Print**.
2. Click on the drop down list that is title **Letter** and select the desired size (refer to Figure 3-13).
3. Click **OK**.

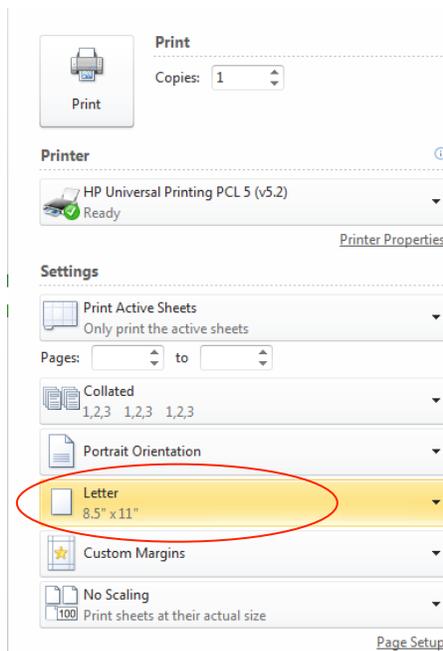


Figure 3-13: Paper size

Margins Tab

The Margins tab (Figure 3-14) of the Page Setup dialog box provides options enabling you to set all your margins and center your sheet both vertically and horizontally.

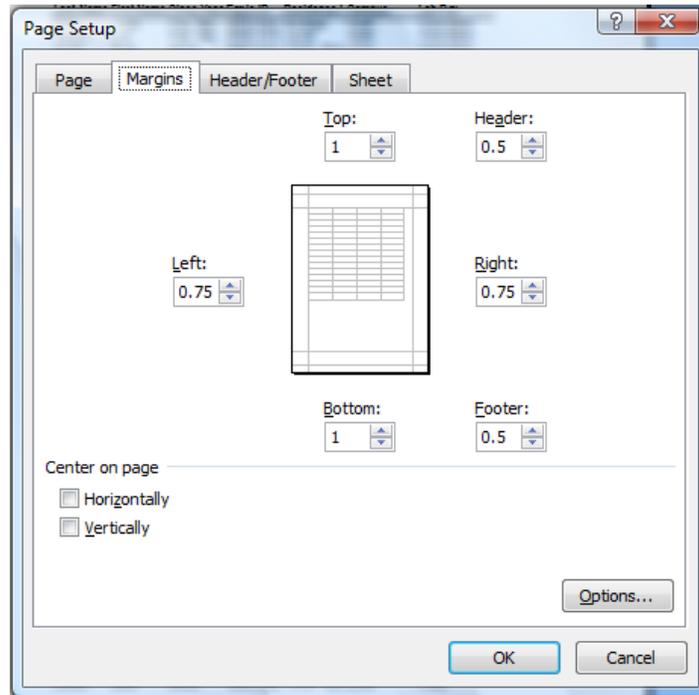


Figure 3-14: Margins Tab of Page Setup dialog box

Option	Description
Top, Bottom	Adjusts the top and bottom margins.
Left, Right	Adjusts the left and right margins.
Header, Footer	Adjusts the location of the header and footer.
Center on page	Centers the worksheet on a printout horizontally, vertically, or both.

Instructions for setting some of the most common options in the Margins tab of the Page Setup dialog box are described below.

Page Margins

The default margins for the top and bottom of a printed page are 1 inch. For the left and right, the default margins are three quarters of an inch. However, on the Margins tab, you can click in the **Top**, **Bottom**, **Left**, and **Right** boxes to enter new sizes for the margins.

 You can also drag the margin lines in **Print Preview** to change margins. Select **File > Print > Print Preview** and click the **Margins** button.

To change page margins:

1. Select the **Page Layout** tab.
2. In the **Page Setup** group select **Margins**.
3. Select **Custom Margins** and in the **Top**, **Bottom**, **Left** or **Right** boxes (refer to Figure 3-15), type the appropriate margin size (or click the up or down arrows to select the appropriate size).
4. Click **OK**.

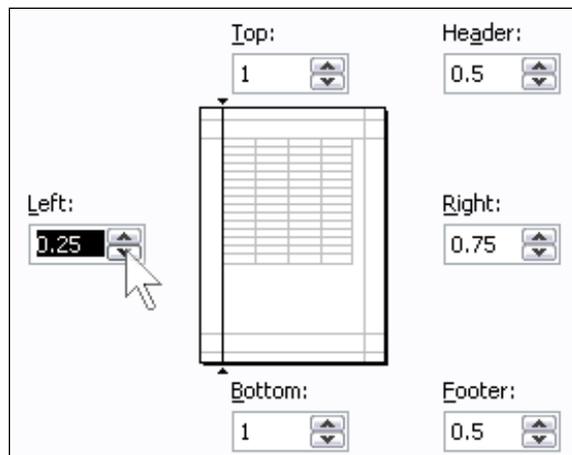


Figure 3-15: Page margins

 Keep in mind that you can adjust the margins only so far; your printer sets its own limits on just how narrow the margins can be.

Center Data on a Page

Excel starts to print data in the upper left corner of the page. If your data doesn't fill a printed page, the off-center position can look odd. If you like, you can center data on the page so that it doesn't look lopsided.

To center your data on the page use the **Dialogue Box launcher** under the **Page Setup** group in the **Page Layout** tab. Under **Center on page**, select the **Horizontally** and **Vertically** check boxes. You can see what the result looks like right there in the preview.

To center data on a page:

1. Select the **Page Layout** tab.
2. Select the **Dialogue Box launcher** in the **Page Setup** tab.
3. In the **Center on page** section, select **Horizontally** and/or **Vertically** (refer to Figure 3-16).
4. Click **OK**.

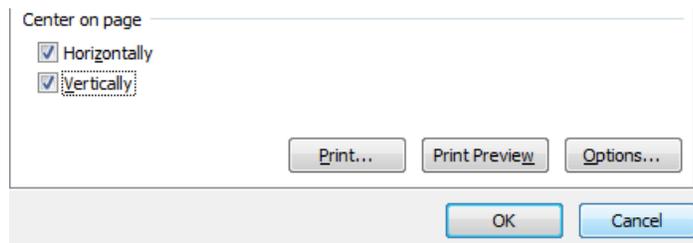


Figure 3-16: Center on page

Data prior to center



Figure 3-17: Data in default location

Data after center



Figure 3-18: Data centered horizontally and vertically

Header/Footer Tab

The Header/Footer tab (Figure 3-19) of the Page Setup dialog box allows you to access options to adjust the information at the top of each page (**header**) or the bottom of each page (**footer**). Headers and footers are descriptive text printed at the top and bottom of every page in your worksheet. Headers and footers may contain the date, page number, filename, text, or the contents of a cell.

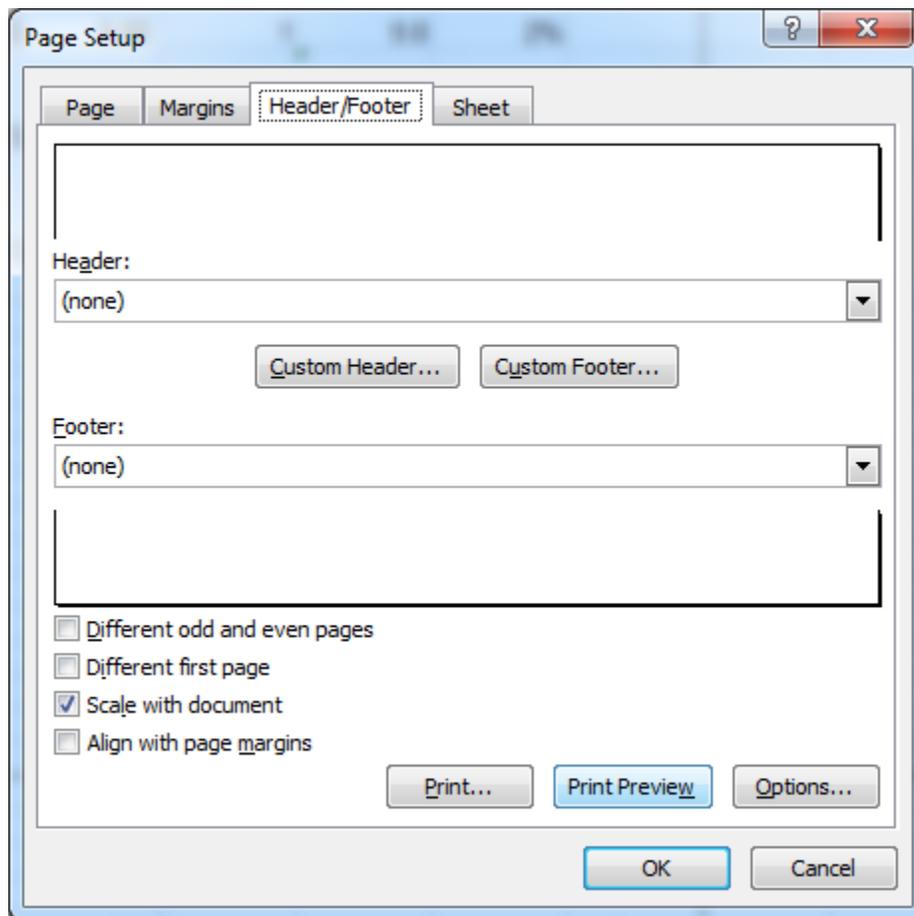


Figure 3-19: Header/Footer Tab of Page Setup dialog box

Option	Description
Header	Offers a choice from a list of preset headers. Previously used headers will appear in this list.
Custom Header...	Allows you to create your own header. Options include adding time, data, page numbers, and text. In addition, you can change the font associated with all of these options.
Custom Footer...	Allows you to create your own footer. Options include adding time, data, page numbers, and text. In addition, you can change the font associated with all of these options.
Footer	Offers a choice from a list of preset footers. Previously used footers will appear in this list.
Different odd and even pages	Allows you to have different header/footer on odd/even pages.
Different first page	Allows you to have a different header/footer on the first page.
Scale with document	Allows you to specify whether the headers and footers should use the same font size and scaling as the worksheet.
Align with page margins	Check this to specify whether the headers and footers should use the same font size and scaling as the worksheet.

Headers and Footers

Like titles and headings, page numbers help people find their way around longer printouts. Excel can add page numbers automatically, top or bottom, as headers or footers. You can also use headers and footers to identify the name of the worksheet. Dates can also be helpful pieces of information in a header or footer, allowing your audience to know when the data was printed or last updated.

Excel has two types of headers and footers available. The first, **preset**, comprises Microsoft Excel samples and headers or footers you have used in the past. The second type: **custom**, is defined by you.

To add a preset header or footer:

1. Select the **Page Layout** tab.
2. Select the **Dialogue Box launcher** in the **Page Setup** group.
3. Click the arrow next to the **Header** box (or the **Footer** box) and choose from the list (refer to Figure 3-20).
4. If you want both a header and a footer, click the other arrow and choose from that list, also.
5. Click **OK**.

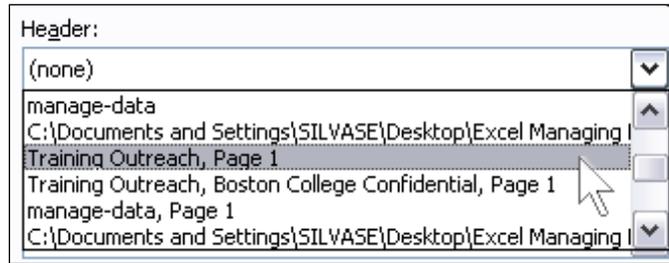


Figure 3-20: Header list

Sometimes, you may want to create your own headers or footers. Excel allows you to customize your header and footer information to suit the needs for a given worksheet. You can adjust the font face and the size, add your own text, and pick up fields of information from Excel.

To add a custom header or footer:

1. Select **Page Layout** from the menu bar.
2. Select the **Dialogue Box launcher** in the **Page Set** group.
3. In the **Header/Footer** tab click the **Custom Header** or **Custom Footer**
4. In the Header or Footer dialog box, type and insert desired header or footer information in the **Left**, **Center** and/or **Right** sections (Figure 3-21).

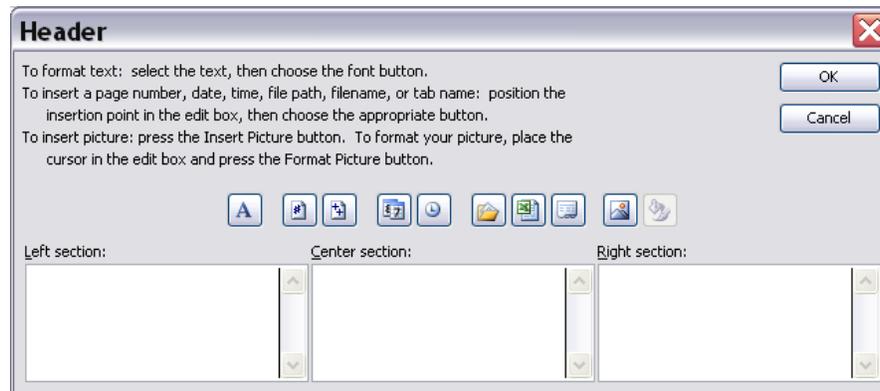


Figure 3-21: Header dialog box

There are several options available in the Header/Footer dialog boxes. Each is explained in the following table.

Button	Excel Code	Description
		Displays the Font dialog box so you can adjust the font, size, and style of the text for each of the three sections of the header or footer.
	&[Page]	Inserts the page number.
	&[Pages]	Inserts the total number of pages.
	&[Date]	Inserts the date.
	&[Time]	Inserts the time.
	&[Path]&[File]	Inserts the path and filename.
	&[File]	Inserts the filename of the workbook.
	&[Tab]	Inserts the name of the current worksheet.
	&[Picture]	Displays the Insert Picture dialog box so you can insert a picture.
		Displays the Format Picture dialog box so you can adjust picture properties.

- When you have finished entering the header or footer information in the dialog box, click **OK** to close the Header or Footer dialog box.
- Click **OK** to close the Page Setup dialog box.

Example Custom Header:

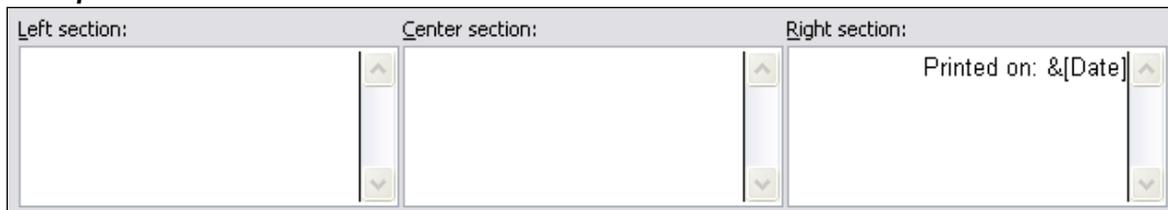


Figure 3-22: Header dialog box

Example Custom Footer:

Left section:	Center section:	Right section:
&[File], &[Tab]		Page &[Page] of &[Pages]

Figure 3-23: Footer dialog box

Example Custom Header and Footer as seen in worksheet:

Phone	Department	Contact Last Name
2-1685	AHANA Student Programs	Stone
2-1463	AICUM	Drake
2-1238	Air Conditioning (Facilities Services, HVAC Shop)	Bess
2-1380	Alcohol Education Program	Gillum
2-1575	Alumni & Development Reports, Development (Development, Alumni & Development Reports)	Cowell
2-1686	Alumni Association	Kenney
2-1464	Alumni Association, Administration	Slotnick
2-1381	Alumni Association, Chapters	Kilpatrick
2-1239	Alumni Association, Chapters and Classes	Linton
2-1576	Alumni Association, Classes	Mcbride
2-1687	Alumni Association, Communications	Knapp
2-1577	Alumni Association, Inst for Learning in Retirement	Allen
2-1688	Alumni Magazine (Marketing Communications, Office of)	Laduceur
2-1240	Alumni Relations & Development, Law School (LawSchool, Alumni Relations & Development)	Eames
2-1465	American Studies Program (English Department)	Pina
2-1241	Animal Care Facility	Avila
2-1466	Annual Giving, Classes, Development (Development, Annual Giving, Classes)	Lipsitt
2-1242	Annual Giving, Operations & Marketing, Development (Development, Annual Giving, Operations & Marketing)	King
2-1382	Annual Giving, Regions & Vol Ldrshp, Development (Development, Annual Giving, Regions & Vol Ldrshp)	Sherlock
2-1578	Archives & Manuscripts (Library, Bums)	Granger
2-1689	Amy ROTC: http://www/wbc.edu/dubstrtc/	Brown

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Figure 3-24: Worksheet with custom header and footer

Sheet Tab

Under the Sheet tab (Figure 3-25) of the Page Setup dialog box, you are provided with several options for selecting what you want printed.

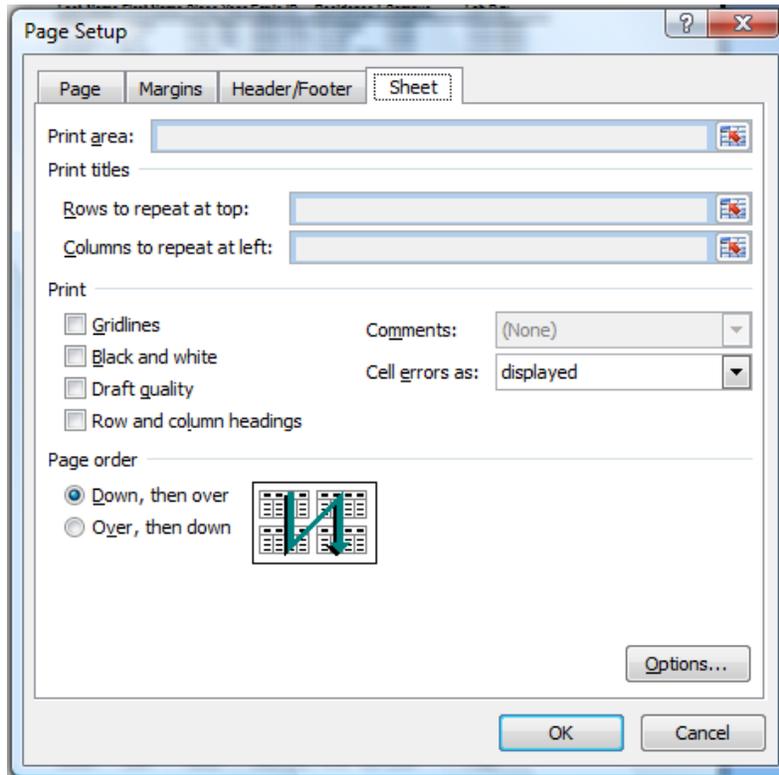


Figure 3-25: Sheet Tab of Page Setup dialog box

Option	Description
Print area	Specifies a range of cells to print.
Print titles	Specifies the rows or columns to print on each page. This is useful in printing heading rows at the top of each page in a report. Options for this section include Rows to repeat at top and Columns to repeat at left .
Print	Allows only certain elements of your worksheet to be printed. Options include Gridlines , Black and white , Draft quality , Row and column headings , Comments , and Cell errors as .
Page order	Controls the order in which the pages of your worksheet are numbered and printed when the printout does not fit on one page.

Instructions for setting some of the most common options in the **Sheet** tab of the **Page Setup** dialog box are described below.

Print Titles

When you are working with large worksheets, repeating information (like row or column headings) on subsequent pages can help improve the readability of your printed worksheets. You don't want readers flipping back to page 1 to look for column or row titles that identify data on page 2 or 3, etc.

You can specify **print titles** for both columns and rows. After print titles have been defined, they will print on every page of a multi-page worksheet.

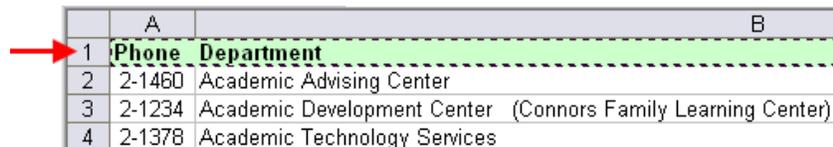
To add a column print title:

1. Select **Page Setup > Print Titles**.
2. Select the **Sheet** tab.
3. In the **Print titles** section, click the **Collapse Dialog**  button at the right end of the **Rows to repeat at top** box (refer to Figure 3-26).



Figure 3-26: Rows to repeat at top collapse button

4. The Page Setup dialog box is now shrunk so that you can view the worksheet to select the row(s) to be printed on every page.
5. In the worksheet, click the **row header(s)** of the row(s) you want to repeat on the top of every printed page (refer to Figure 3-27).



	A	B
1	Phone Department	
2	2-1460	Academic Advising Center
3	2-1234	Academic Development Center (Connors Family Learning Center)
4	2-1378	Academic Technology Services

Figure 3-27: Select row to repeat at top

6. Click the **Expand Dialog**  button to re-open the Page Setup dialog box.
7. The absolute cell reference for the row(s) is now entered in the **Rows to repeat at top** box.
8. Click **OK**.

Rows to repeat at top example absolute cell references:

\$1:\$1 Repeats row 1 at the top of every page.

\$1:\$2 Repeats rows 1 and 2 at the top of every page.

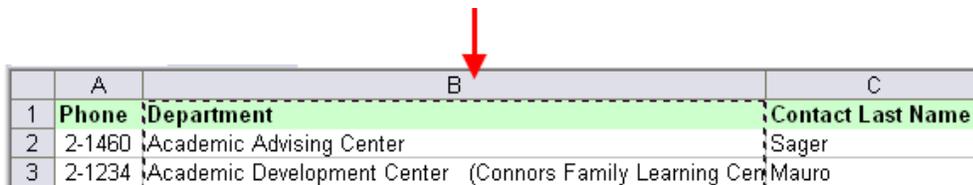
To add a row print title:

1. Select **Page Setup > Print Titles**.
2. Select the **Sheet** tab.
3. In the **Print titles** section, click the **Collapse Dialog**  button at the right end of the **Columns to repeat at left** box (Figure 3-28).



Figure 3-28: Columns to repeat at left collapse button

4. The Page Setup dialog box is now shrunk so that you can view the worksheet to select the column(s) to be printed on every page.
5. In the worksheet, click the **column header(s)** of the column(s) you want to repeat on the left of every printed page (Figure 3-29).



The image shows an Excel worksheet with three columns: A, B, and C. The headers are "Phone", "Department", and "Contact Last Name". The "Department" header is highlighted in green. A red arrow points to the "Department" header.

	A	B	C
1	Phone	Department	Contact Last Name
2	2-1460	Academic Advising Center	Sager
3	2-1234	Academic Development Center (Connors Family Learning Cen	Mauro

Figure 3-29: Select column to repeat at left

6. Click the **Expand Dialog** button to re-open the Page Setup dialog box.
7. The absolute cell reference for the column(s) is now entered in the **Columns to repeat at left** box.
8. Click **OK**.

Columns to repeat at left example absolute cell references:

\$B:\$B Repeats column B at the left of every page.

\$A:\$B Repeats columns A and B at the left of every page.

Print Cell Gridlines

Excel automatically prints worksheets without cell gridlines. However, it may be easier for some readers to view data on paper with the cell gridlines in place.

To print cell gridlines:

1. Select the **Page Layout** tab from the menu bar.
2. Look in the **Sheet Options** tab.
3. Select **Print** under **Gridlines** (Figure 3-30).

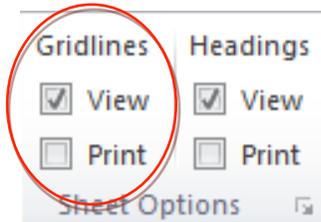


Figure 3-30: Print gridlines

Example:

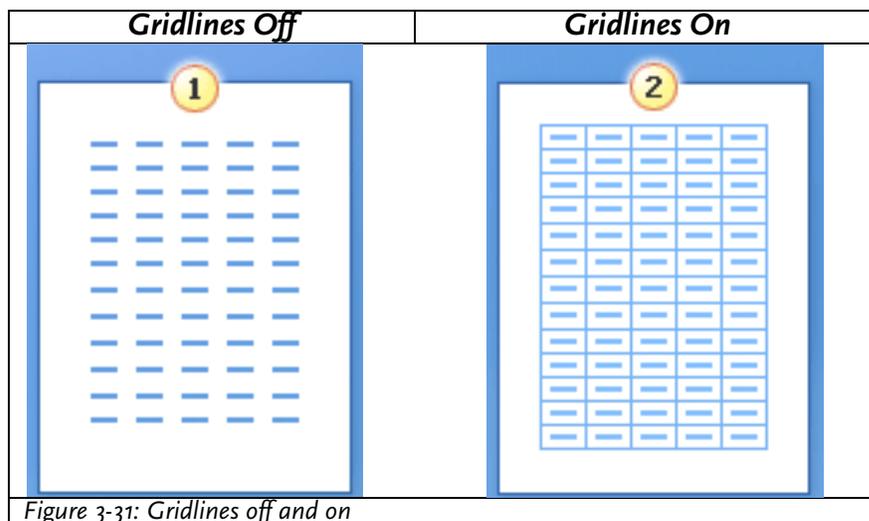


Figure 3-31: Gridlines off and on

Print Order

A large Excel worksheet has to print down many rows and sideways many columns, with some printed pages containing different columns than other pages. The printout divides the worksheet horizontally and vertically. Excel splits worksheets that run wide and long by printing pages down, and then over (refer to Figure 3-32).

Excel prints all the rows in one set of columns down to the bottom of the worksheet. Then, Excel goes back up to the top, moves over, and prints down the next set of columns to the bottom, and so on, until all the data is printed.

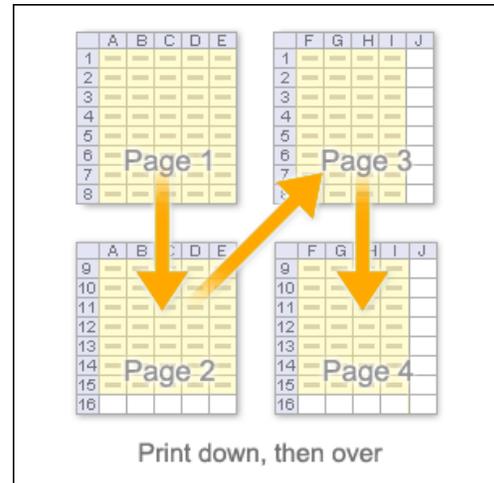


Figure 3-32: Default print order down then over

For example, if a worksheet has 10 columns, A through J, and 204 rows, Excel might print columns A through E, rows 1 through 204, and then print columns F through J, rows 1 through 204. If it printed forty rows per page, the sixth page would have only four rows on it.

If you want to, you can change this order so that Excel prints first over, and then down (refer to Figure 3-33).

Then, for the same example worksheet, Excel would first print all the way across: forty rows of columns A through E on one page, followed by forty rows of columns F through J on the next page. On the third page, it would print forty more rows of columns A through E, and then those same rows of F through E on the fourth page, and so on until it reached the end.

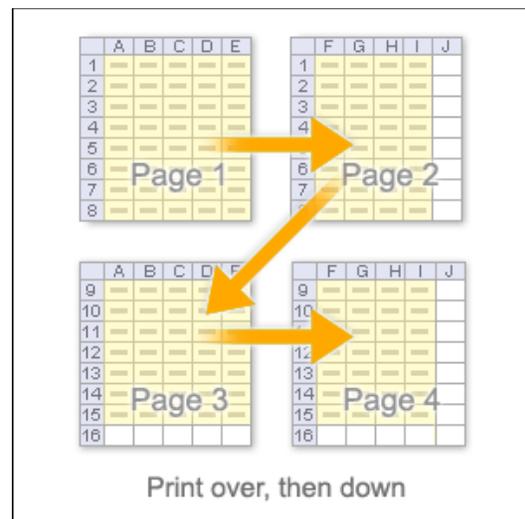


Figure 3-33: Print order over then down

To change print order:

1. Select **Page Setup** from the menu bar.
2. Select the **Sheet** tab.
3. In the **Page order** section, select **Over, then down** (refer to Figure 3-34).
4. Click **OK**.

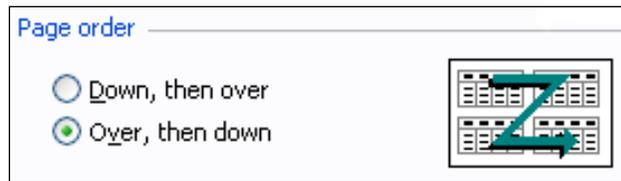


Figure 3-34: Page order

For more information on *Excel*, the following sources are recommended:

- Try the **Help** menu built into *Microsoft Excel*.
- Use the free online training and Quick Reference guide for Excel available from *Microsoft*: <http://office.microsoft.com/excel>



Take free, online *Excel* training courses: <http://office.microsoft.com/training>

Once at the above Web page, from the **Browse Training Courses** section, select **Excel**. “Audio course: Get to know Excel: Create your first workbook” and “Audio course: So that's how! Great Excel features” are two examples you will find in the *Excel* Courses listing.

Windows users at Boston College may also use *Microsoft eLearning Modules*
For details, view:
<http://www.bc.edu/mselearning>

Introduction to Excel 2010: Part 2

This course book was created by BC ITS Training & Communications.

For more information about training at Boston College please visit www.bc.edu/training

Documentation related to computing at BC is available at www.bc.edu/help

Questions related to technology can be directed to 617-552-HELP or help.center@bc.edu

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