

# Microsoft Excel 2010 Basics

## ABOUT THIS CLASS

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This class is designed to give a basic introduction into **Microsoft Excel 2010**. Throughout the class, we will progress from learning how to open **Microsoft Excel** to actually creating a spreadsheet. It is impossible in this amount of time to become totally proficient using Microsoft Excel, but it is our hope that this class will provide a springboard to launch you into this exciting world!

### Course Objectives

By the end of this course, you will be able to

- ✓ Open Excel and create a new worksheet.
- ✓ Format columns and rows.
- ✓ Apply basic text formatting.
- ✓ Know the difference between deleting and clearing a cell.
- ✓ Automatically fill in cells.
- ✓ Merge cells.
- ✓ Use **Autosum**.
- ✓ Perform simple mathematical calculations.
- ✓ Create simple formulas.
- ✓ Print.

This booklet will serve as a guide as we progress through the class, but it can also be a valuable tool when you are working on your own. Any class instruction is only as effective as the time and effort you are willing to invest in it. I encourage you to practice soon after class. There will be additional computer classes in the near future, and I am always available for questions during Tech Tuesdays and Thursdays (call to confirm the time.)

**Meg Wempe**, Adult Services Librarian

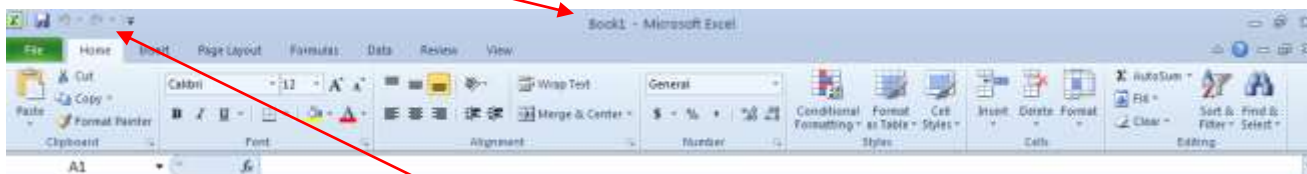


## What is Excel?

Excel is a spreadsheet program. A **spreadsheet** is a grid of rows and columns that helps organize, summarize, and calculate data. Spreadsheets are an everyday part of many professions, including accounting, statistical analysis, and project management. You can use Excel to create business forms, such as invoices and purchase orders, among many other useful documents.

This class teaches **Microsoft Excel** basics. To begin, let's open Microsoft Excel. You can do this by clicking on **Start, All Programs, Microsoft Office** and **Microsoft Excel**. Let's look at the toolbars.

This is the **Title Bar**. It gives the name of the program and the title of the workbook you are using. Since we have just opened up a new workbook and have not saved it with a name, the default title is Book1.



On the left side of the Title bar is the **Quick Access Toolbar**.

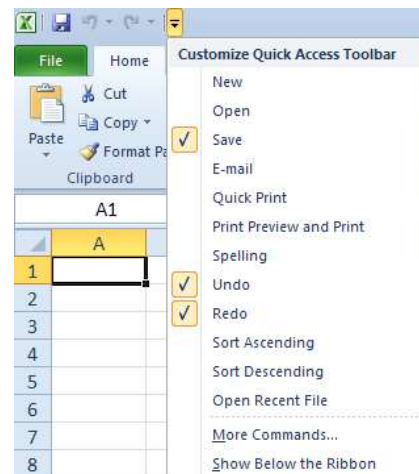
You can add or subtract commands to the toolbar by clicking on them in



the dropdown list that comes up by clicking

Under the **Title Bar** is the **Ribbon**. The **Ribbon** has eight **Tabs** that give instructions to the software. The **Ribbon Tabs** begin with **File** and continue with **Home, Insert, Page Layout, Formulas, Data, Review, and View**. On the right-hand end, there is an icon for the **Help Menu, Minimize, Restore Down, and Close**.

Clicking on one of these tabs will open the **Group**. The **Group** that belongs to each tab shows related **Command** items together. You may then choose a **Command**.



## Workbooks and Worksheets

When Excel is opened, a workbook appears with three worksheets. Each worksheet contains columns and rows. There are 1,048,575 rows and 16,384 columns. The combination of a column coordinate and a row coordinate make up a cell address. For example, the cell located in the upper left corner of the worksheet is cell A1, meaning column A, row 1. The cell address is visible in the **Name Box**.

Place your cursor in the first cell, A1. The formula bar will display the cell address in the **Name Box** on the left side of the **Formula Bar**. Notice that the address changes as you move around the sheet. You can easily move from cell to cell by pressing tab or using the arrow keys.

A cell can contain any of the following:

- A number (and any associated punctuation, such as decimal points, commas, and currency symbols).
- Text (including any combination of letters, numbers, and symbols that aren't number-related).
- A **formula**, which is a math equation.
- A **function**, which is a named equation that shortcuts an otherwise complex operation.

## Creating a New Workbook

It is easy to create a new workbook! Simply, click on **File – New** and click on **Blank Workbook** to create a new workbook.

## Creating a New Worksheet

Creating a new worksheet is just as easy. By default, each Excel workbook contains three worksheets. Three tabs displaying *Sheet 1*, *Sheet 2*, and *Sheet 3* will be displayed at the bottom of the workbook to indicate the separate sheets. To add a new worksheet, simply click on the tab after the tab that says Sheet 3.

### Exercise 1

1. To change the location of a newly added worksheet, click once on the tab and hold down the left mouse button and drag the worksheet to its new location.
2. It is also possible to change the name of each worksheet. Right-click on the **Sheet 1** tab and left-click on **Rename**. Once you click on **Rename**, the name of the sheet becomes highlighted and you can simply type in a new name. Double-clicking on the tab will also enable you to type in a new name.



3. You can also change the color of the tabs by right-clicking on the tab and choosing **Tab Color**. Then simply choose a color!!!
4. It is possible to change the magnification of a worksheet so that you can read it better. To do this, click on **View** and then **Zoom**. Go ahead and try the different magnifications to see which works best for you. You can also make use of the **Zoom** bar in the lower right-hand corner to zoom to a comfortable reading size.

## Navigating and Selecting

Moving around a worksheet is easy! You can easily move from cell to cell by using the **arrow keys** or pressing **tab** (will move the cursor to the right) or **shift-tab** (shift-tab will move you to the left). You can also use your mouse to click within a cell which will select that cell. Sometimes you will want to select a **range** of cells.

A **range** is a group of one or more cells. If you select more than one cell at a time, you can then perform actions on the group of them at once, such as applying formatting or clearing the contents. A range can even be an entire worksheet.

A range is referenced by the upper left and lower right cells. For example, the range of cells B1, B2, C1, and C2 would be referred to as B1:C2.

To select a range:

- **With the mouse:** Drag across the desired cells with the left mouse button held down. Be careful when you're positioning the mouse over the first cell (before pressing the mouse button). Position the pointer over the **center** of the cell, and not over an edge. You'll know you are in the right spot when

your cursor looks like this: 

If you drag while the pointer is on the edge of the cell, Excel interprets the selection as a move operation and whatever is in the cell(s) is dragged to a different spot.

- **With the keyboard:** Select the first cell, and then hold down the **Shift** key while you press the arrow keys to expand the selection area.

To **select a nonrectangular or noncontiguous range**, select the first portion of the range (that is, the first rectangular piece), and then hold down the **Ctrl** key while you select additional cells/ranges with the mouse.



To **select an entire column**, click the column header (where the letter is). The cursor will be a vertical (for columns) or horizontal (for rows) black arrow. To **select an entire row**, click the row header (where the number is). You can click one row or column and then drag to select additional columns, or hold down **Ctrl** as you click on the headers for noncontiguous rows and/or columns.

## Exercise 2

Let's practice:

1. Click column B's letter to select that column.
2. Hold **Shift** and click column D's letter. Columns B, C, and D should all be selected.
3. Release the **Shift** key.
4. Hold **Ctrl** and click column G's letter. Now B, C, D, and G are all selected.
5. Release the **Ctrl** key.
6. Press and hold the **Shift** key while pressing the down arrow key two times. Now B4 through B6 are selected. This range is called B4:B6.
7. Still pressing the **Shift** key, press the right arrow two times. Now the range B4:D6 is selected.
8. Press **Ctrl+A**. This is a shortcut for selecting the entire sheet.
9. Click in any cell to undo the selection.
10. Click the square containing a gray triangle at the upper intersection of the column letters and the row numbers. The entire sheet is selected again.

## Entering and Editing Data

Let's learn how to enter data into your worksheet. First, you place the cursor in the cell in which you would like to enter data. Then you type the data and press Enter.

## Exercise 3

1. Place the cursor in cell A1.
2. Type **Jane**. Tab to the next cell and type **Smith**.
3. Move the cursor back to cell A1.
4. Change **Jane** to **Joe**.



You can also edit information in a cell by double-clicking in a cell or by clicking in the formula bar. Try these two options.

## Inserting Columns and Rows

If you don't plan your worksheet layout correctly, you might end up with too many or too few rows or columns in a certain area. You can always move data around in the sheet to help with this, but sometimes it's easier to simply insert or remove columns or rows.

### Exercise 4

To insert a column or row:

1. Right click on the column on the right of the two columns between which you wish to insert. (For example, if you wish to insert a column between E and F, right click on F.) If you wish to insert a row, right click on the row's number that is the one below where you wish to insert. (For example, if you wish to insert a row between 3 and 4, right click on 4.)
2. When the menu comes up, select **Insert** from the menu.

Appearing to the left of your highlighted column or above your highlighted row will be a new row or column.

## Formatting Columns and Rows

Often you will need to change your columns and rows in order for text to fit or for the text to fit on the page correctly. There are a number of different methods one can use to do this. Let's start with columns.


**Column Width:** The formatting that is unique to columns is *Column Width*. **Column Width** is measured in **characters**. A column's width can be from 0 to 255 characters, which is a **really** wide column! Decimal values are allowed. In fact, the default size is 8.43 characters.

A width of 12, for example, means the column is wide enough for 12 average characters, using whatever you chose as the Standard font. The default is Calibri 11 pts. (To change the font from the default, go to **Tools-Options-General-Standard font**).

## Column Width

### Exercise 5 – Autofit all




1. Move your pointer to the right edge of the heading of Column A until it changes to  which is the **Resize Column** shape.
2. Press the left mouse button down. (Don't release it yet.) The popup tip appears, showing the current width of Column A.
3. Release the left mouse button and double-click in the same spot (the right edge of Column A's heading). The column width changes so it is wide enough to display the *longest text* in any cell in the column as a single line.

Be careful when you set a column's width with **AutoFit**. The column may wind up wider than you expected. Any text will be on a *single line* in its cell. No matter how long the text is! If you accidentally find you've widened a cell out of sight to the right, use **Undo**. Then resize the column with another method.

## Column Width - Drag

Dragging is a natural method of adjusting column width. But since you can't see the change until you release the mouse button, it may take you several attempts to get a satisfactory width.

### Exercise 6

1. Type in **New Zealand** in B1. Move the pointer to the right edge of column heading B.
2. When the pointer changes to  (the **Resize Column** shape), click and drag to the right until **New Zealand** shows entirely. Since the column is not resized until you release the mouse button, you may need several tries to get the width right.

## Row Height

The only unique formatting for rows is **Row Height**. **Row Height** is measured in points, like font size, from 0 to 409 points. A row height of zero hides the row.

The default setting for **Row Height** is **AutoFit**. The row height adjusts to the largest font size in the row.

**AutoFit** will leave a little white space, called the cell padding, between the text in the cell and the cell edges. When Calibri 11 pt. is the Standard Font, the **Row Height** is **15.00 points**. Keep in mind that you can always print without the gridlines, which may make it look a little less crowded. That option is under Page Layout, in the Sheet Options section.



## Alignment Options


### Wrapping Text

When you enter text that is too long to fit in a cell into a cell, it overlaps the next cell. If you do not want it to overlap the next cell you can wrap the text.

#### Exercise 7

1. Open another new sheet.
2. Move to cell A1.
3. Type “**Text too long to fit**”. (After typing, click out of the cell and back in again.)
4. From the **Ribbon**, choose **Home >Alignment > Wrap Text**.
5. You will notice after you click Wrap Text, it is highlighted.

### Merging Cells

Sometimes, rather than having text wrap in a cell, you will actually want the text to run across the width of the data. Usually when making a spreadsheet, you need to create a heading for the sheet. This heading should run across the width of your data. To do this, one must merge the cells across the width of the data. Select the range of cells, and click  the **Merge and Center** button under Alignment group. The heading is now centered over the data.

### Moving to a New Worksheet

In **Microsoft Excel**, each workbook is made up of several worksheets. Before moving to the next topic, let’s move to a new worksheet. You can move from worksheet to worksheet by clicking on the tabs at the bottom of the worksheet. Let’s move to **Sheet 2**.

### Formatting Text and Data

Once information has been entered into a cell, you might want to change or enhance the way the information is displayed. Text can be formatted in the same way that one uses in Microsoft Word or PowerPoint. Most of the formatting choices can be found in the **Font** grouping under the **Home** tab. There are numerous ways to format data. Let’s look at some. Remember to always make sure that the cell you want to format is selected. Similar to Word, “if you want to affect it, you have to select it.”



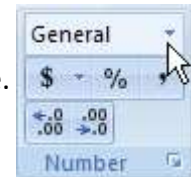


## Using Formatting Buttons

On the **Ribbon**, make sure the **Home** tab is selected. In the **Number Group** box, there are several buttons which allow one-click formatting.

From the dropdown box, you have several options – currency, percentage, date, and time and more.

There are also buttons to increase decimal values, add a comma, or put in percentage.

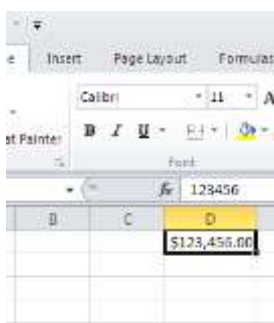


Notice how each number changes depending on the formatting.

You can also format the cell by right clicking on the cell(s) and selecting the “Format Cells.” If the “Number” tab isn’t already selected, do so, and then select from the menu for currency, time, fraction, etc. Depending on the option you choose, you will be given further options to the right.

### Exercise 8

1. Move the cursor to cell D1.
2. Type **123456**. Hit enter and then move back into D1. At this point it is necessary to move out of the cell and then back in, as that is the only way to get the appropriate menu up!
3. Right click on the number. A menu will pop up. Click on *Format Cells*.
4. Click on “**Number**” tab at top, if necessary.
5. Select “Currency” under Category and be sure that Decimal Places is set to 2.
6. Click OK, and view the cell.



It should look like the following:

## Deleting vs Clearing a Cell



Many beginners get confused about clearing versus deleting in Excel, so let's look at this concept briefly. When you clear the content from a cell, the formatting for that cell is still there. It may be helpful to think of an Excel worksheet as a stack of empty cardboard boxes, each one with its open side facing you. You can put something into a cell or take something out. When you take something out of a cell, it's called clearing its content. The cell itself remains in the "stack," but it's now empty.

To **clear the content** from a cell:

1. Press Delete on the keyboard.
2. Right-click the cell and then select Clear Contents.
3. On the Home tab, in the Editing group, select Clear > Clear Contents.



Unfortunately, clearing a cell's content doesn't clear its formatting.

To **clear formatting**:

1. On the Home tab, in the Editing group, select Clear > Clear Formats
2. To clear both contents and formats at once, select Clear All.

In contrast, deleting the cell removes the cell itself from the stack and makes the surrounding cells shift. Think about what happens when you pull a box out of a stack of boxes -- the boxes above it fall down one position, right? It's the same thing with Excel cells, except it's reverse-gravity (cells fall up rather than down), and you have the choice of making the remaining cells shift up or to the left. Let's look at how this works.

## Filling Cells Automatically

You can use **Microsoft Excel** to fill cells automatically with a series. For example, you can have Excel automatically fill in times, the days of the week or months of the year, years, and other types of series. Days of the week and months of the year fill in a similar fashion.

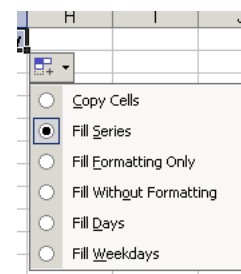
### Exercise 9

1. Let's move to another worksheet.
2. In cell A1, type **Sunday** and click the **B** for bold in the Font group.
3. Find the small black backward "L" in the lower right corner of the highlighted area. When you hover over this backward "L," the cursor will become a black "+." This is called the *Fill Handle*.



4. Grab the *Fill Handle* and drag with your mouse to fill cell A1 to G1. Note how the days of the week fill the cells in a series. Also, note that the **Auto Fill Options** icon appears.

	A	B	C	D	E	F	G	H
1	<b>Sunday</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	
2								
3								
4								



- Click the **Auto Fill Options** icon. Click on **Copy Cells**.
- Choose the **Fill Series** radio button. The cells fill as a series from Sunday to Saturday again.
- Click the **Auto Fill Options** icon again.
- Choose the **Fill Without Formatting** radio button. The cells fill as a series from Sunday to Saturday, but the entries are not bolded.
- Click the **Auto Fill Options** icon again.
- Choose the **Fill Weekdays** radio button. The cells fill as a series from Monday to Friday.

## Filling Time

### Exercise 10

- Click on a new worksheet. Type **1:00** into cell A1.
- Grab the **Fill Handle** and drag with your mouse to highlight cells A1 to A24. Note that each cell fills using military time.
- Click anywhere on the worksheet to remove the highlighting.

To change the format of the time:

- Select cells A1 to A24.
- Choose from the **Ribbon: Home > Number**.
- Click on the drop down box and choose **Time**.
- The time is no longer in military time.
- If you wish to change the formatting further, click on the dropdown arrow in lower right-hand corner of number group and choose the way you want the time to appear.

## Filling in Numbers



### Exercise 11

1. Click on another worksheet. Type a 1 in cell A1.
2. Grab the **Fill Handle** and drag with your mouse to highlight cells A1 to A7. The number 1 fills each cell.
3. Click the **Auto Fill Options** icon.
4. Choose the **Fill Series** radio button. The cells fill as a series starting with 1, 2, 3.

And finally, here is one more interesting fill feature.

1. Go to cell A1.
2. Type **Lesson 1**.
3. Grab the **Fill Handle** and drag with your mouse to highlight cells A1 to A6.
4. The cells fill in as a series: Lesson 1, Lesson 2, Lesson 3, and so on.

## Performing Mathematical Calculations

### Formulas

A **formula** is an equation that performs some type of operation and issues a result. In Excel, formulas always begin with an equal sign. Here are some formula examples:

- **=2+6**: This formula is strictly math. If you place this formula in a cell, the cell displays **8**.
- **=A1+6**: Same as the preceding, but this time you're adding 6 to whichever value is in cell A1 and displaying the result in the cell into which you enter this formula. This formula does not change A1's contents.
- **=A1+A2**: Same thing again, but you're adding the contents of cell A1 to the contents of cell A2.
- **=A1+A2-A3**: In this example, multiple cells are referenced.

Here are the symbols you can use in formulas to indicate mathematical operations:

- **+**: Addition
- **-**: Subtraction
- **\***: Multiplication
- **/**: Division

### Exercise 12

To try a basic formula, do the following:

1. In a new worksheet, type **6** in cell A1 and **7** in cell A2.



2. In cell A3, type **=A1+A2**, and then press **Enter**.
3. Select cell **A3**. Notice that it displays **13** in the cell itself, and in the formula bar, the original formula you entered appears.
4. Click in the formula bar to move the insertion point there and edit the formula to read as follows: **=A1+A2+5**. Then press **Enter**. The value now appears as **18**.
5. Change the value in cell A1 to **4**. The value in A3 changes to 16.

## Autosum

Let's add a column of numbers using the **AutoSum Button**  $\Sigma$ . To select the **AutoSum** button choose **Home > Editing >  $\Sigma$**  and automatically add a column of numbers.

### Exercise 13

1. Type in the numbers 5, 7, 3, 9, 4, 8 in column C.
2. Move your cursor to select C7. Click the **AutoSum** button  $\Sigma$  found on the **Ribbon** under **Home > Editing**.
3. C1 to C6 should now be highlighted.
4. Press **Enter**. Cells C1 through C6 are added together.

You can also write a formula to sum a column by typing in:

**=sum(c1:c6)** Note that there is no space between sum and the parenthesis.

## More Formula Examples

The math operators in Excel have an order of operation, just like in regular math. The order of operation is the order in which they're processed when multiple operators appear in the same formula. Here are the rules that determine the order:

1. Any operations that are in parentheses, from left to right
2. Multiplication (\*) and division (/)
3. Addition (+) and subtraction (-)

Parentheses override everything and go first. So, if you need to execute an operation out of the normal order, you place it in parentheses. Now let's try some formula examples that refer to cells and use math operations. For this exercise, enter the following values in cells in a blank worksheet:



A1: 12 A2: 6 A3: 4 A4: 9

### Exercise 14

Now let's create the following formula:

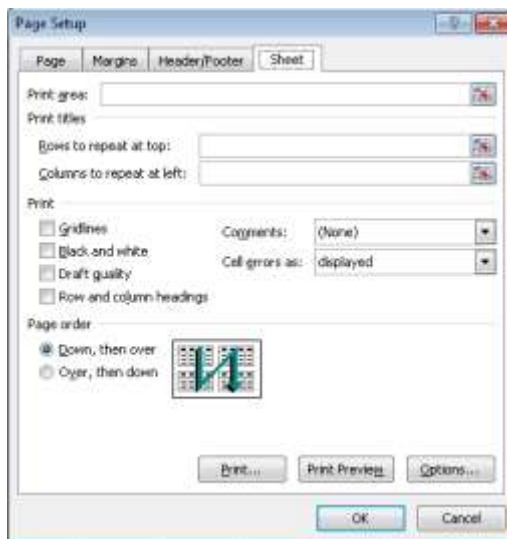
\*\*\*In cell A5, create a formula that adds A1+A2+A3+A4.

### Preparing to Print

**Let's prepare to print!** If your worksheet is more than one printed page, it is possible to have the heading on each page by going to the **Page Layout** tab, in the **Page Setup** group and click **Print Titles**.





On the **Sheet** tab, under **Print Titles**, do one or both of the following:

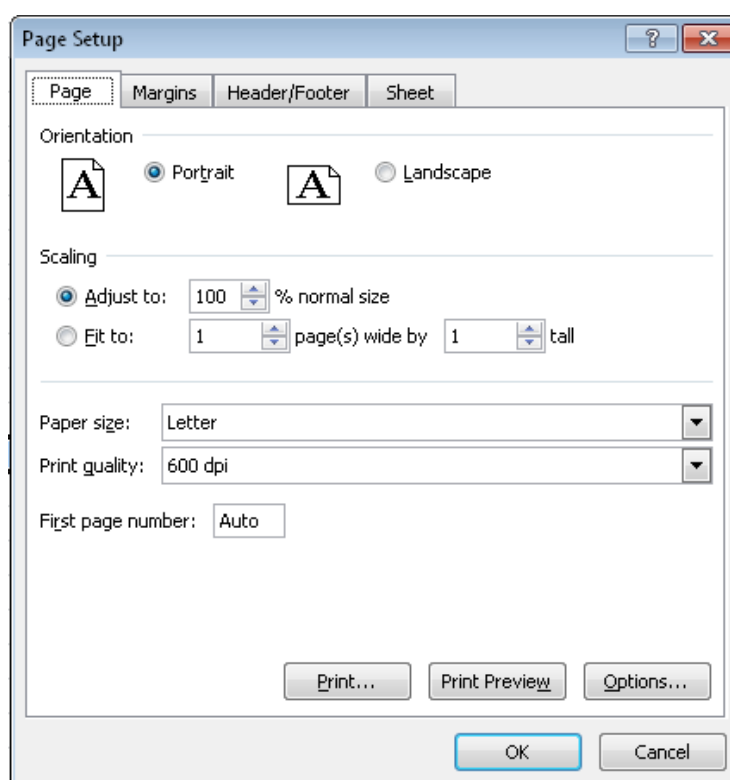


In the **Rows to repeat at top** box, type the reference of the rows that contain the column labels if you want the heading repeated on each page.

In the **Columns to repeat at left** box, type the reference of the columns that contain the row labels if you want those to show.

You can also click the **Collapse Dialog** button  at the right end of the **Rows to repeat at top** and **Columns to repeat at left** boxes, and then select the title rows or columns that you want to repeat in the worksheet. After you finish selecting the title rows or columns, click the **Collapse Dialog** button  again to return to the dialog box.

**We want our sheet to print with no gridlines, and centered horizontally across the page, but not vertically.**  
We also want it to print in portrait orientation.



1. **Page** tab: Make sure that **Portrait** is selected.
2. **Margins** tab: All should be 0.5 inch. Click to **Center on Page Horizontally**.



3. **Sheet** tab: There should not be a check under **Print** in the **Gridline** section.

To print, click on **File > Print** in the **backstage** area. **Print preview** automatically displays when you click on the **Print** tab in the **backstage** view. Whenever you make a change to a print-related setting, the preview is automatically updated. To view each page, click the arrows below the preview.

Clicking the **File** tab displays the **Backstage** area view.

Click the **Print** tab to print a document, change print-related settings, and to automatically display a preview of your document.

Click the **Print** button to print your document.

This dropdown shows the currently selected printer. Clicking the dropdown will display

These dropdown menus show currently selected **Settings**. Rather than just showing you the name of a feature, these dropdown menus show you what the status of a feature is and describes it. This can help you figure out if you want to change the setting from what you have.





Make sure you take a look at the **Preview Pane** to assure that all of your columns and rows are showing. If all looks well, it's now time to print!



## Tips and Troubleshooting

### Recognizing Cursor Styles

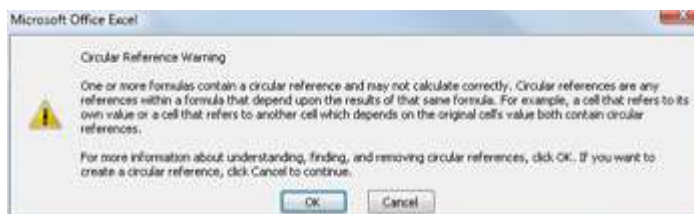
There are four common cursor styles used in Excel.

	<p>Click and drag to highlight multiple cells with this cursor, or click in a cell to select the single cell</p>		<p>Click and drag with this cursor to fill cell contents into cells below or to the right.</p>
	<p>Click and drag the contents of the selected cell to any other cell.</p>		<p>Click to place the cursor into the Formula bar so that you can edit an equation or function.</p>

### Common formula errors

Here are some of the most common mistakes people make when entering formulas and functions:

- **Not putting in all the required arguments:** If a function is expecting more arguments than you have entered, and you get a dialog box, be sure you've placed commas between the arguments and that you haven't overlooked any.
- **Circular references:** If you refer to the cell's own address in a function, you create a circular error, which is like an endless loop. Suppose that you enter **=A1+1** into cell A1. You'll get an error message like the one below. If you click **OK** at this message, a Help window appears to help you find the problem.



- **Text in an argument:** Most functions require numeric arguments. If you enter text as an argument, for example, =SUM(text), the word #NAME? appears in the cell. This happens because Excel allows you to name ranges of cells using text, so technically =SUM(text) isn't an invalid function. It is invalid only if there's no range that has been assigned the name "text."
- **Hash marks (###) in a cell:** This happens when the cell isn't wide enough to display its value. Widen the column to fix this.

If you receive an error when copying a formula, don't panic; it happens to everyone. Use the skills you learned earlier in this chapter to display the formulas and then check them for the common errors discussed here.

**Congratulations!** You've completed the **MS Excel 2010 Basics** class. Please take a moment to fill out the survey. Your feedback is *very* important to us!

