

Working with Excel

Excel is used to organize and analyze data. In order to work effectively with Excel, you need to understand the building blocks that make up a worksheet. In this lesson we will review the basic elements of a worksheet: columns, rows, cells, and ranges. We will also learn about worksheet labels, how to enter and remove data, and how to print a worksheet.

Columns, Rows, Cells, and Ranges

Columns, rows, and cells make up the fundamental components of a worksheet. A **column** is a vertical series of adjacent cells from top to bottom. A **row** is a horizontal series of cells from left to right. A **cell** describes the intersection of a row and column:

	A	B	C	D
1			Column	
2				
3	Row		Cell	
4				

Each **column** has an **index letter**. Since there are only 26 letters, and far more than 26 columns on a spreadsheet, the next columns after column Z are indexed by the letters AA, AB, AC, and so on until the last column (XFD, over 16,000).

Each **row** has an **index number**. The rows are numbered from 1 through 1048576. The top left cell in the worksheet is indexed by the letter-number combination A1.

The active cell is a name given to the cell that is currently selected. The active cell is referenced in the Name Box:

	A	B	C
1			
2			
3			
4			

The Name Box above the table shows "B3", and a red arrow points to cell B3 in the spreadsheet.

Excel is designed to have data organized down the sheet under column headings more so than across the sheet in rows. This is why there are over a million rows down and only about 16000 columns across.

A **cell range** (or simply "range") is defined as a series or block of adjacent cells. A range can be a very useful tool because it allows you to make changes (such as applying formatting) to multiple

cells at once. You can select cell ranges in one of three ways: with the mouse, the Name Box, and the keyboard.

To select a range with your mouse, move your pointer over the center of a cell. Your mouse pointer will turn into a thick cross. Hold the left mouse button down and drag your pointer to select a range. (A selected range will be highlighted in blue.)



To select a range with the Name Box, type the range directly into the Name Box using the format "StartCell:EndCell". For example, if you enter the range A1:A7 and pressed Enter, these cells will be selected:



To select a range with the keyboard, you have two options. If you have a block of data in a worksheet, you can click on any data cell in the block, and press Ctrl + Shift + 8. This will select the block of data as a range. Excel will use the empty cells adjacent to the data as boundaries to the range:

	A	B	C	D	E	F
1						
2			Test 1	Test 2	Test 3	
3		Day 1	56	15	97	
4		Day 2	94	92	43	
5		Day 3	53	97	74	
6		Day 4	68	65	56	
7						



	A	B	C	D	E	F
1						
2			Test 1	Test 2	Test 3	
3		Day 1	56	15	97	
4		Day 2	94	92	43	
5		Day 3	53	97	74	
6		Day 4	68	65	56	
7						

Finally, you can select a range by clicking in the first cell of a block you want to select, press and hold Shift, and then click on the last cell in the block or use the arrow keys to select one row/column at a time.

When you select a group of cells, you should notice some numbers appear on the status bar. These numbers tell you the average, count (how many numbers), and the sum of the data in the selected cells:

	A	B	C	D	E
1					
2			Test 1	Test 2	Test 3
3		Day 1	87	29	59
4		Day 2	21	65	23
5		Day 3	38	51	94
6					

Ready Average: 51.88888889 Count: 9 Sum: 467

Creating Worksheet Labels

We know that each row and column has a header, and the combination of a column and row header identifies each cell. In order to make your worksheet much more readable, it's a good idea to label your data. Anyone who reads the worksheet will be able to make more sense of the data because it would be extremely difficult to read multiple rows and columns of unidentified numbers!

A **worksheet label** is a simple text description of the data it represents. For example, if your worksheet contains information about the age, height, and weight of a group of people, label the data as such:

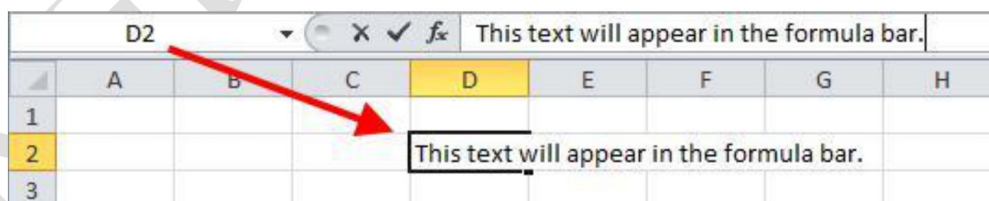
	A	B	C	D	E
1		Age	Height	Weight	
2	Alice	35	66	123	
3	Bob	40	74	160	
4	Carl	28	58	128	
5	Danielle	32	80	140	
6					

As you can see, the stats for each person and each person's name have been entered as labels. This not only makes the data easier to read, but also makes it easier to create charts and graphs based on the data. We will explore this concept later.

Entering and Deleting Data

Now that you are familiar with the basics of columns, rows, and labels, let's start working with data. First, you need to enter the data. There are a number of ways to do this.

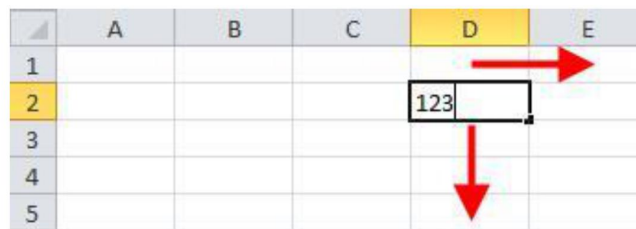
The most direct way is to click the cell you want to use (making it the active cell) and type. When you type something in the active cell, what you type will also be displayed into the Formula Bar:



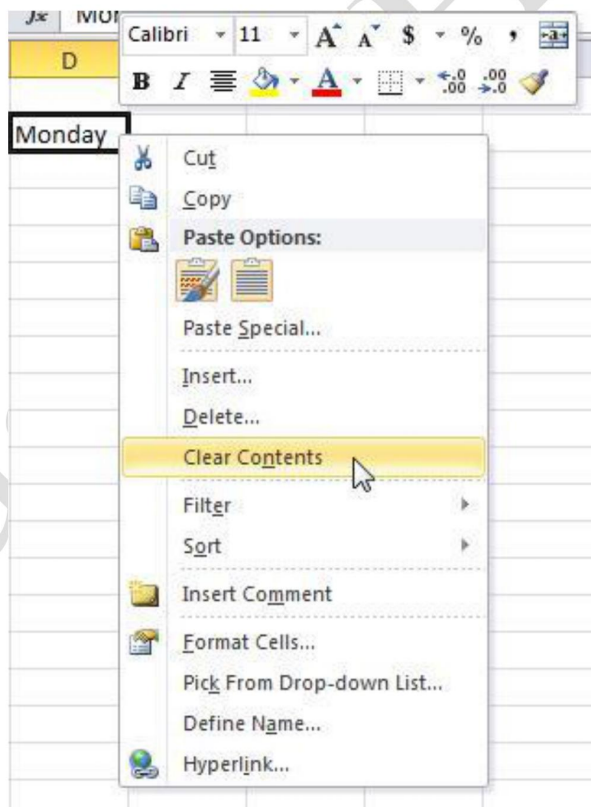
To the left of the Formula Bar are two commands: an X and a check mark. Click the X to remove the data in the active cell. Click the check mark to commit the data to this cell and move to the next row:



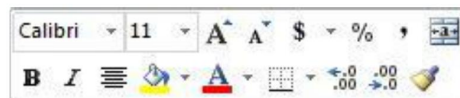
If you are typing data in a spreadsheet, you can press Tab or Enter to move the active cell. Press **Tab** to advance one column (ex. D2 to E2); press **Enter** to advance one row (ex. D2 to D3):



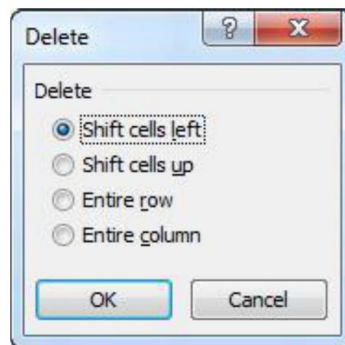
To delete data from a cell, right-click on the cell to display the drop down menu. Clicking the Clear Contents option will remove the data, but not the formatting:



As a side note, when you right-click a cell, you will see a small formatting toolbar at the top of the pop-up menu. From this small toolbar, called the **mini toolbar**, you can apply a number of formatting commands available in the Font and Alignment groups of the Home tab. This toolbar really comes in handy when you have a tab other than the Home tab in view, but you need to format some cells:



If you click the Delete option in the right-click menu, a Delete dialog box will be displayed. With the Delete option, you will physically remove rows/columns from the worksheet. Select your option and click OK:



If you select the **Shift cells left** option, all data from the cell to the immediate right will be shifted left into the now vacant cell. If the **Shift Cells Up** option is selected, the data in the cell immediately below would be shifted up into the vacant cell.

You can also delete rows and columns by clicking the Delete command the Home tab.



To delete rows, first select a row or rows. Then, click the Delete arrow to display the delete menu, and then click the Delete Sheet Rows option. This will delete the row, and shift the cells below up by however many rows were deleted

To delete columns, select the column or columns you want removed, and then choose the Delete Sheet Columns option. The columns to the right of the deleted data will be shifted left however many columns were deleted.

To delete a worksheet, switch to the worksheet you want to remove and click Delete Sheet.

Remember, clearing contents only removes the data, while deleting removes data and formatting.

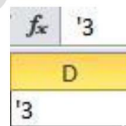
It is important to keep in mind that Excel treats text and numbers differently. A number is seen as a value in Excel, something that can be used in mathematical operations. Text is often used as labels or identifiers.

Consider the following table of data:

	A	B	C	D
1		1	2	3
2	Day 1	5	55	68
3	Day 2	52	28	27
4	Day 3	76	84	86

Cells B1:D1 have numbers for worksheet labels. Notice how these cells, like the table data(B2:D4), are right-aligned. The text in A2:A4 is left-aligned.

If you want to enter a number as text (use a number as a label), put an apostrophe (‘) in front of the number. Do this by clicking the cell you want to change, adding an apostrophe in front of the number in the Formula Bar, and press Enter. The number will now be “formatted” as text:



Numbers that are formatted as text are denoted with a small green marker:

	A	B	C	D
1		1	2	3
2	Day 1	34	84	20
3	Day 2	11	11	44
4	Day 3	36	35	40

If you click one of these cells, you will see a small error notice appear. If you hover your mouse pointer over this notice, you will see a description of the notice:

	A	B	C	D	E	F	G
1		1	2	3			
2	Day 1	34	84	20			
3	Day 2	The number in this cell is formatted as text or preceded by an apostrophe.					
4	Day 3	36	35	40			

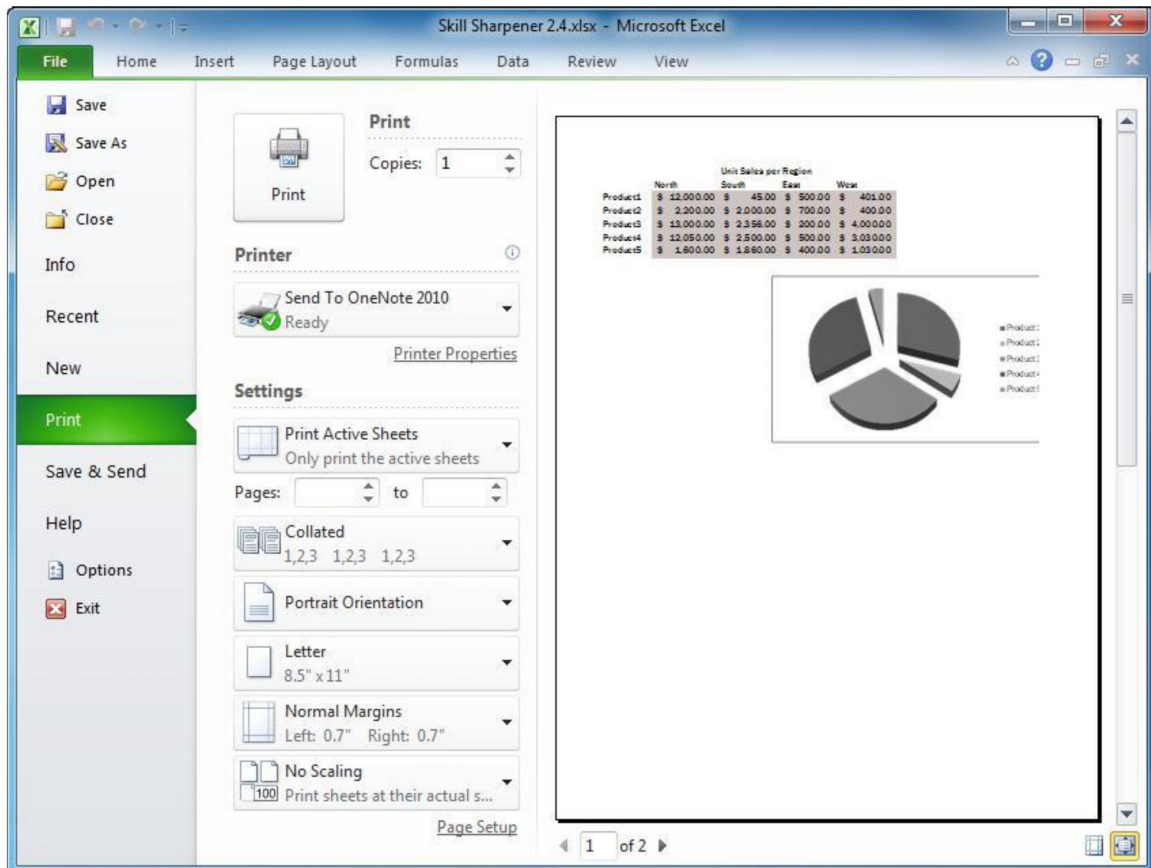
There is a pull-down arrow beside the notice; click it for more options:

	A	B	C
1		1	2
2	Day	Number Stored as Text Convert to Number Help on this error Ignore Error Edit in Formula Bar Error Checking Options...	
3	Day		
4	Day		
5			
6			
7			
8			
9			

As we proceed through this manual, we will cover more of these error notices.

Printing your Worksheet

Excel 2010 lets you perform all printing activities from a single location in the File (Backstage) menu. To open this view, click File → Print:



This view is split into two sections. On the left, there are commands to modify the printer and page properties. In fact, you might recognize some of the commands here from the Page Layout tab. **On the right**, you will see what the data will look like when printed, based on the settings in this view. You can use the arrow buttons on the bottom to browse through the pages, if your data won't all fit on one page.

When you have made your changes, click Print. We will explore printing more in the final lesson of this manual.